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# Witnessing an ATtempt of Cardiopulmonary resuscitation in Hospital (WATCH study): a phenomenological study exploring patients' and healthcare professionals' experiences

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# Copyright statement

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# WITNESSING AN ATTEMPT OF CARDIOPULMONARY RESUSCITATION IN HOSPITAL (WATCH STUDY): A PHENOMENOLOGICAL STUDY EXPLORING PATIENTS' AND HEALTHCARE PROFESSIONALS' EXPERIENCES

by

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# Author's declaration

At no time during the registration for the degree of Doctor of Philosophy has the author been registered for any other University award without prior agreement of the Doctoral College Quality Sub-Committee.

Work submitted for this research degree at the University of Plymouth has not formed part of any other degree either at the University of Plymouth or at another establishment.

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# Research outputs

**Publications in peer-reviewed journals**

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Fiori, M., Endacott, R., Latour, J. M. (2019) Exploring patients' and healthcare professionals' experiences of patient-witnessed resuscitation: A qualitative study protocol. *Journal of Advanced Nursing*, 75 (1), pp. 205-214. DOI: 10.1111/jan.13824

Fiori, M., Endacott, R., Latour, J. M. (2019) Public involvement in designing a study on patient-witnessed cardiopulmonary resuscitation in hospital. *Nursing in Critical Care*, First published: 17 April 2019 DOI: 10.1111/nicc.12429

**Conference abstracts and presentations**

Fiori, M. (2018) Witnessing fellow patients' resuscitation: what is the impact?

Oral presentation at *European Resuscitation Council (ERC) Congress*, 20-22 September 2018, Bologna, Italy. Ian Jacobs and Peter Steen Young Investigator Awards, runner up.

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Poster at *EuroHeartCare, Annual Congress of the Association of Cardiovascular Nursing and Allied Professions*, 2-4 May 2019, Milan, Italy

Fiori, M., Cutello, C.A., Coombs, M., Endacott, R., Latour, J.M. (2019) Witnessing CPR of a fellow patient in hospital: a qualitative study exploring patients' experiences. Resuscitation, 142(S1), pp. e61-e62. DOI: 10.1016/j.resuscitation.2019.06.148

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# Abstract

**Witnessing an ATtempt of Cardiopulmonary resuscitation in Hospital (WATCH study): a phenomenological study exploring patients' and healthcare professionals' experiences**

**Martina Fiori**

The experience of hospital patients who witness resuscitation is an unexplored area within resuscitation science. This study was conducted to explore the phenomenon of witnessed resuscitation from the perspective of hospital patients and healthcare professionals. To inform the study design, a systematic review was conducted. Results identified a few, outdated studies demonstrating that witnessing resuscitation may be physically and psychologically stressful. Stakeholder consultation with former hospitalised patients and experts in resuscitation practice further informed the development of the descriptive, phenomenological study design used. The lived experiences of 16 witnessing patients and of 20 healthcare professionals involved in resuscitation were explored through in-depth interviews and focus groups conducted in one hospital site in the United Kingdom. Six themes were developed across the patient and healthcare professional groups, derived from phenomenological analysis. In essence, patients and healthcare professionals understand that emergencies are part of hospital life. Witnessing resuscitation is a negative experience resulting in perceptions of emotional impact, especially for patients where death, at times, was challenging. Healthcare professionals recognised the perceived impact on witnessing patients whilst attending to their own, and the team's emotional needs. Patients understood the priorities of care but wanted information and reassurance. This was not always offered by staff due to patient confidentiality and communication challenges. Staff shielded patients from events using curtains, but this was not effective, leaving patients exposed to grieving families and death. After witnessing resuscitation, patients felt safe and had confidence in the staff. This study has generated new evidence on an important aspect of resuscitation in hospital and this can inform interventions to improve the experience of witnessing patients and healthcare professionals' support practices. The experience of witnessing patients during resuscitation must be acknowledged by healthcare professionals, and sufficient information and emotional support provided.

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# Glossary of terms

This glossary includes terms for which there are accepted definitions and colloquial terms, such as Crash Team. References are provided for the former and lay explanations for the latter.

**Cardiac arrest**

Cardiac arrest means that the heart has stopped pumping blood around the body. This may occur for many reasons, but loss of the electrical coordination that controls the normal heartbeat is usually responsible. The most likely cause is ventricular fibrillation, in which the normal orderly electrical signal that controls the heartbeat becomes completely disorganised and chaotic, and the heart is unable to act as a pump.

From: https://www.resus.org.uk/faqs/faqs-cpr/ (Accessed: 16/03/2020)

**Cardiopulmonary Resuscitation (CPR)**

Cardiopulmonary resuscitation (CPR) is defined as the administration of chest compressions and/or defibrillation undertaken when an individual's breathing or heartbeat has stopped (Nolan *et al.*, 2014).

**Crash team**

A medical team with special equipment able to be mobilised quickly to treat cardiac arrest.

**Crash trolley or crash cart**

A cart stocked with emergency medical equipment, supplies, and drugs for use by medical personnel especially during efforts to resuscitate a patient experiencing cardiac arrest.

**Do not attempt Cardiopulmonary Resuscitation (DNACPR)**

Do Not Attempt CPR (DNACPR) is a decision not to attempt CPR, made and recorded in advance, to guide those present if a person subsequently suffers sudden cardiac arrest or dies. In the past, the term 'DNR' (Do not resuscitate) was used, but that gave a false impression that all those who received CPR would be resuscitated (i.e. would recover). Therefore, it was changed into 'DNAR' (Do not attempt resuscitation). However, health professionals use the word 'resuscitation' when referring to other forms of treatment, for example 'fluid resuscitation' when treating a person who is severely dehydrated. Because a 'DNAR decision' is only about CPR and not about withholding any other treatment that a person may need or benefit from, the term was changed again into using 'DNACPR' to make it clear that the decision referred only to CPR.

From: https://www.resus.org.uk/faqs/faqs-dnacpr/ (Accessed: 16/03/2020)

**National Cardiac Arrest Audit**

The National Cardiac Arrest Audit (NCAA) is a UK-wide database of in-hospital cardiac arrests, supported by the Resuscitation Council (UK) and the Intensive Care National Audit & Research Centre (ICNARC). NCAA monitors and reports on the incidence of and

outcome from, in-hospital cardiac arrests in order to inform practice and policy. It aims to identify and foster improvements in the prevention, care delivery and outcomes from cardiac arrest.

From: https://ncaa.icnarc.org/ (Accessed: 16/03/2020)

**Phenomenon**

A fact or situation that is observed to exist or happen, especially one whose cause or explanation is in question. In phenomenology, any object whatsoever considered insofar as it is viewed from the perspective of consciousness (Giorgi, 2009).

**Phenomenology**

Phenomenology is an approach to qualitative research that focuses on the commonality of a lived experience within a particular group. The fundamental goal of the approach is to arrive at a description of the nature of the particular phenomenon (Creswell, 1998).

**Resuscitation team**

The resuscitation team may take the form of a traditional cardiac arrest team, which is called only when cardiac arrest is recognised. Alternatively, hospitals may have strategies to recognise patients at risk of cardiac arrest and summon a team before cardiac arrest occurs. The term 'resuscitation team' reflects the range of response teams.

From: https://www.resus.org.uk/resuscitation-guidelines/in-hospital-resuscitation/ (Accessed: 16/03/2020)

**Treatment escalation plan (TEP)**

The treatment escalation plan (TEP) is a form that the doctor completes in discussion with the competent patient or relative, documenting what treatment would be appropriate if that patient were to become acutely unwell. Treatments such as ventilation of the lungs (invasive and non-invasive), cardiac resuscitation, renal replacement therapy, intravenous fluids and antibiotics, among others are discussed (Obolensky *et al.*, 2010). The TEP should be initiated and completed in any of the possible healthcare settings (acute or community), and should be accessible to all healthcare professionals who come into contact with the patient.

**Witnessed resuscitation**

Witnessed resuscitation is the experience of having been 'witness to' a resuscitation attempt in which the witness (or bystander) performed an active or passive role (or) the experience of being 'witnessed by' others whilst applying the skills of resuscitation (Walker, 2006, p.385).

# Chapter 1 Introduction and aim of the WATCH study

## 1.1 Introduction

In this first chapter, the wider research context of the topic of this PhD thesis, that is patient-witnessed resuscitation in hospital settings, is defined. The research question, aim, and objectives of the WATCH study are stated; the significance of the study is justified in relation to why this study is important for clinical practice, education and further research; and the researcher's background is explained. The chapter concludes by outlining the structure of the thesis.

Cardiopulmonary resuscitation (CPR) is defined as the administration of chest compressions and/or defibrillation, undertaken when an individual's breathing or heartbeat has stopped (Nolan *et al.*, 2014). It is recognized as a near-universal first aid technique and, together with defibrillation, represents a fundamental component of treatments when attempting to restore life in case of cardiac arrest (Nolan, Soar & Eikeland, 2006). The first description of closed chest cardiac massage, or chest compressions, was reported in the literature in the ground-breaking work by Kouwenhoven, Jude and Knickerbocker (1960). In this work, use of chest compressions with out-of-hospital cardiac arrest victims demonstrated remarkable success. This technique of closed chest massage, together with mouth-to-mouth artificial respiration became known as CPR and gave rise to the basic life support (Tucker *et al.*, 1994).

Cardiac arrest, cardiopulmonary arrest or circulatory arrest is the loss of mechanical heart function and effective blood circulation. If not treated by CPR, it inevitably results

in the end of life, but if promptly treated, cardiac arrest can potentially be reversible and circulation can be restored (Schluep *et al.*, 2018). Sudden cardiac arrest must be distinguished from the cessation of cardiorespiratory function as part of the natural dying process (Fritz, Slowther & Perkins, 2017; Kouwenhoven, Jude & Knickerbocker, 1960). The main cause of sudden cardiac arrest is an abrupt disorganisation of the heart's rhythm, called ventricular fibrillation. It can be triggered by a myocardial infarction or present as a catastrophic rhythm disturbance (Whitcomb & Blackman, 2007). Respiratory insufficiency is the second most common cause (Andersen *et al.*, 2019). In the medical literature, cardiac arrest is usually referred to as out-of-hospital cardiac arrest and in-hospital cardiac arrest.

International data has identified that whilst few patients sustain cardiac arrest, the mortality rate for these patients is high. In Europe, according to the latest European Resuscitation Council (ERC) guidelines (2015), cardiac arrests occur in 0.5-1.0 per 1000 inhabitants per year, with survival rates from in-hospital and out-of-hospital cardiac arrest, widely varying between 2-30%, (Bossaert *et al.*, 2015). The ERC also reports that whilst there has been slow improvement in survival rates over recent years, survival rates after out-of-hospital cardiac arrest remain low, with an average survival to hospital discharge of 7.6% (Bossaert *et al.*, 2015). Data on incidence and survival of in-hospital cardiac arrest are limited (Schluep *et al.*, 2018). Current literature describes a prevalence of 1-6 events per 1000 hospital admissions (Fennessy *et al.*, 2016; Hodgetts *et al.*, 2002; Sandroni *et al.*, 2007; Skogvoll *et al.*, 1999). Up to date epidemiologic data regarding in-hospital and out-of-hospital cardiac arrest and relative survival rates are expected in the new ERC resuscitation guidelines, to be released in 2020.

In the US, the American Heart Association (AHA) documented an incidence of more than 350,000 out-of-hospital cardiac arrests and 209,000 in-hospital cardiac arrests in 2016, and a survival rate to hospital discharge of 12% for out-of-hospital cardiac arrest and up to 24.8% for in-hospital cardiac arrest (American Heart Association, 2016). In the UK since 2009, the Resuscitation Council (UK) and the Intensive Care National Audit and Research Centre (ICNARC) have established the UK national clinical audit for in-hospital cardiac arrest. The aim of this audit is to improve resuscitation care and outcomes through the provision of timely, validated comparative data to participating hospitals. In 2014, the first data from the UK National Cardiac Arrest Audit (NCAA) database collected from 2011 were published, reporting an incidence rate of adult in-hospital cardiac arrest of 1.6 per 1000 hospital admissions with a survival rate to hospital discharge of 18.4% (Nolan *et al.*, 2014). More recently, the latest data from NCAA documented a decrease in the total number of in-hospital cardiac arrest, despite a higher number of hospitals participating in the audit. This resulted in an average rate of 1.0 cardiac arrests per 1000 hospital admissions in 2019, with survival rate at hospital discharge of 23.5% despite an initial return of spontaneous circulation after 20 minutes of CPR in 52.2% of cases (National Cardiac Arrest Audit, 2019).

There is a developed evidence base on management of cardiac arrest. The treatment of cardiac arrest consists of chest compressions, ventilation, and early defibrillation (Monsieurs *et al.*, 2015; Neumar *et al.*, 2015). Early initiation of CPR is associated with improved outcomes of both out-of-hospital and in-hospital cardiac arrest (Bircher, Chan & Xu, 2019; Hasselqvist-Ax *et al.*, 2015). Hence, CPR training for all hospital personnel has been prioritised for decades in most hospitals, facilitating the early identification and management of cardiac arrest prior to the arrival of the cardiac arrest team

(Andersen *et al.*, 2019). Whilst this body of work focuses on support of the patient who has sustained cardiac arrest and on training staff to manage the arrest, such work also indicates potential for patients to witness cardiac arrest and CPR during hospital admission.

Whilst lifesaving, CPR is a stressful procedure (Nolan *et al.*, 2014; Zijlstra *et al.*, 2015). Witnessing resuscitation in hospital can have impact on a large audience, including family members, healthcare professionals and fellow patients. The issue of witnessed resuscitation has interested clinical healthcare professionals and researchers since the late 1980s (Doyle *et al.*, 1987). Today, the understanding and the investigation of witnessed resuscitation is facilitated by the operational definition developed by Walker (2006). According to this definition, witnessing resuscitation is "the experience of having been 'witness to' a resuscitation attempt in which the witness (or bystander) performed an active or passive role (or) the experience of being 'witnessed by' others whilst applying the skills of resuscitation" (Walker, 2006, p.385). Whilst aspects of witnessed resuscitation have been investigated focusing mainly on the presence of family members during resuscitative efforts in adult and paediatric contexts, a knowledge gap appears to exist with regards to in-hospital resuscitation witnessed by fellow patients. In fact, little is known about the perceived impact that witnessing such a stressful procedure can have on other patients being cared for in the same shared hospital space where the resuscitation is taking place. Exploring the experiences of other hospital patients could offer new knowledge to the concept of witnessed resuscitation and contribute to its deeper understanding. Moreover, the current lack of evidence-based recommendations for hospital healthcare professionals on how to support patients who witness CPR, indicates the need to move research in this direction. This research

contributes to the development of an evidence base with the potential to improve hospital care practices in the area of witnessed CPR.

## 1.2 Aims and objectives

The general research question addressed in this thesis is:

> *What are the experiences of the patients and of the healthcare professionals regarding patients witnessing resuscitation of another patient in hospital?*

The aim of the WATCH study is to investigate the perceived impact of patients witnessing a CPR attempt on another patient and to identify the best support for patients by healthcare professionals.

The objectives are:

- To explore the experiences of hospital patients witnessing a CPR attempt on another patient;
- To identify the experiences of healthcare professionals involved in CPR and the support they provide to patients who witness CPR.

## 1.3 Significance of the research

Much of the previous research in this area has focused on family-witnessed resuscitation, exploring the views of patients, relatives and healthcare professionals on this aspect of witnessing resuscitation and recognising the importance for family members to be close to their loved ones during life-threatening times. This body of work has allowed the practice of family-witnessed resuscitation to be endorsed by several professional organisations (American Association of Critical-Care Nurses, 2016; Australian and New Zealand Committee on Resuscitation, 2016; Emergency Nurses

Association, 2018; Fulbrook *et al.*, 2007; Oczkowski *et al.*, 2015) and to be recognised and supported in resuscitation guidelines in a number of countries (Bossaert *et al.*, 2015). While this advancement is certainly important, other areas of witnessed resuscitation remain unexplored, leaving many clinical settings without policies and guidelines to address and improve clinical practice. Patient-witnessed resuscitation is one of these unexplored areas.

The significance of the WATCH study lies in understanding the experience of hospital patients when they witness resuscitation on a fellow patient and the experience of the healthcare professionals involved in the resuscitation efforts. Understanding these experiences will contribute to identifying witnessing patients' needs, current barriers and limitations in the support that is provided to them. It will also inform strategies for improving care during and after witnessing resuscitation events in hospital wards. This work will fill a gap in research and in clinical practice knowledge. Resuscitation events in hospital are stressful not only for patients receiving CPR and their families, but also for witnessing patients, and all the healthcare professionals involved. A greater understanding of the perceived impact of these events and of how patients can be supported has potential to benefit all involved. While healthcare professionals in many clinical settings are skilled to support family members during resuscitation of a relative, they might not be prepared to assist and support patients who witnessed a resuscitation event of a fellow patient. Moreover, the lack of guidelines and policy documents on this issue, and of a clear pathway to help healthcare professionals support the witnessing patients, may exacerbate healthcare professionals' uncertainties in discussing resuscitation events with the witnessing patients. Little research has been conducted on the perceived impact of witnessing a resuscitation attempt of a fellow patient and on

the coping strategies and support mechanisms for both patients and healthcare professionals. This lack of research limits the understanding of the phenomenon of patient-witnessed resuscitation and the development of supportive strategies.

In summary, the WATCH study investigating the perceived impact that witnessing resuscitation in hospital has on fellow patients and on healthcare professionals is important for several reasons. Firstly, knowing what the perceived impact is on witnessing patients can help understand patients' needs at this time. Secondly, understanding the perceived impact on healthcare professionals providing resuscitation can help identify what resources they need to be able to support witnessing patients. Thirdly, identifying current limitations, barriers and gaps in support strategies can provide a basis for future clinical guidelines. Finally, this study contributes to the body of knowledge on witnessed resuscitation research. This study can provide future directions for research into this complex topic.

## 1.4 Researcher's background

This section is provided to contextualise the researcher's position with regards to the research topic. My journey as a nurse started ten years ago in Italy, where I started with my nursing undergraduate degree and subsequently continued and completed my Master in Nursing Sciences. Since then, I gained experience of working in different clinical research settings in Italy, and in a hospital setting in the United Kingdom as a ward nurse. During this time, my interest and motivation to understand and improve patients' experiences have always been at the core of my nursing practice. My exposure to resuscitation events during my clinical career is limited. However, on one occasion, I

was present during CPR of one of the patients on the ward during my shift. I was not involved in delivering the CPR interventions. However, I noticed the response of the fellow patients. I heard the alarm bell whilst I was carrying out the morning medication round. When I reached the patient's bed my nurse colleague who was looking after the patient that day had already initiated cardiopulmonary resuscitation. Immediately, the area around the patient's bed was occupied by an experienced team of professionals who efficiently responded to the cardiac arrest and were able to sustain the patient's life. I quickly realised that my help was not needed in the resuscitation effort, while the rest of the patients in the ward were still waiting for their medications and were suddenly left unattended. When completing the medication round, I could notice that the patients who had witnessed the CPR scene looked worried. Whilst I instinctively tried to reassure them, I realised that I was relying on my intuition rather than on the evidence base. This event made me acutely aware that patients in hospital who are exposed to CPR on fellow patients may be affected in ways that healthcare professionals are not fully aware. This understanding has inspired and motivated me to focus on patients' hospital experience and to research ways to improve their care during these challenging times for them.

## 1.5 Structure of the thesis

This doctoral thesis is organised in eleven chapters.

Chapter 1 introduces the research study by defining the topic, stating the aims and objectives, explaining the significance and the anticipated impact of the study and the researcher's background and providing an overview of the thesis structure.

Chapter 2 establishes the background literature in relation to the concept of witnessed resuscitation.

Chapter 3 examines and appraises the literature regarding patient-witnessed resuscitation, in the form of a systematic literature review, published in the *European Journal of Cardiovascular Nursing* (Fiori, Latour & Los, 2017).

Chapter 4 reports on consultations with members of the public and professional stakeholders conducted to inform the design of the research study, and is published in *Nursing in Critical Care* (Fiori, Endacott & Latour, 2019a).

Chapter 5 critiques and justifies the philosophical, theoretical and methodological underpinnings of the research study.

Chapter 6 provides the details of the research protocol, published in the *Journal of Advanced Nursing* (Fiori, Endacott & Latour, 2019b).

Chapter 7 sets the context of the study findings. It details the characteristics of the sample of patient and of healthcare professional participants, followed by a description of the life-world of resuscitation in hospital.

Chapter 8 describes the lived experiences of witnessing patients.

Chapter 9 describes the lived experiences of healthcare professionals.

Chapter 10 provides a description of the essence of the phenomenon of patient-witnessed resuscitation, followed by a critical discussion of the main study findings in light of the existing clinical and theoretical literature.

Chapter 11 concludes the thesis, addressing the research question, explaining the implications and recommendations for clinical practice, education and research and acknowledging the limitations of the research.

# Chapter 2 Background

## 2.1 Introduction

In this chapter, background literature on the topic of witnessed resuscitation is established. First, a definition of the concept of witnessed resuscitation is provided. Then the evolution of this concept within the literature is explored in relation to both family-witnessed resuscitation and public-witnessed resuscitation. Finally, literature regarding patient-witnessed CPR is introduced.

## 2.2 The concept of witnessed resuscitation

Witnessed resuscitation is a controversially debated issue in the literature (Hanson & Strawser, 1992). Since the 1980s, a new approach began to inform resuscitation from cardiac arrest. In 1987, the published work of Doyle *et al.* (1987) questioned the equity of a policy that excluded the presence of family during resuscitation of hospital patients. This sparked professional and ethical debate, still not resolved in many countries. Initially triggered by two episodes where family members explicitly asked to be admitted to the emergency room during the resuscitation efforts on their family member, the first initiative was developed to allow family presence during resuscitation in hospital (Doyle *et al.*, 1987). Successively, Hanson and Strawser (1992) published a follow-up on the initiative, and this demonstrated positive feedback from family members, who felt comforted by staff during resuscitation efforts. Although initial concerns were expressed by staff, results demonstrated that family presence did not cause disruption during resuscitation activities.

In subsequent decades, works that have informed this area of the literature have linked witnessed resuscitation mainly to the presence of family or relatives, although no clear definition of the concept was provided. In 2000, Boyd (2000, p.171) published a literature review on the opinions, consensus and current research regarding witnessed resuscitation, explicitly defining it as "the process of active 'medical' resuscitation in the presence of family members". During this time, the concept of witnessed resuscitation was mostly designated as in-hospital settings, associated with the emergency room and the accident and emergency department.

Challenging this traditional view, Walker (2006) worked on the development of an operational definition of witnessed resuscitation, which expanded the concept beyond the restrictions of its association with family presence in the emergency department. The aim of Walker's work was to provide a conceptually solid foundation for further empirical research on this topic with a definition that was inclusive of different environments and witness characteristics. Walker's definition of witnessed resuscitation was the result of a concept analysis conducted following Rodgers's (1989; 1991) evolutionary approach. Rodgers's inductive method of concept development takes into account the dynamic, changing nature of a concept over time and within a particular context. Hence, the concept definition is intended as an ongoing process to serve further enquiry, rather than a precise and absolute definition (Rodgers, 1989; 1991). Collecting multiple definitions and relevant usages of the concept existing in the literature, Walker developed a wider conceptualisation of witnessed resuscitation, providing a clear understanding of the procedure of resuscitation; the environments; the characteristics of the witnesses; and the roles of the witness involved in the witnessed resuscitation attempt. The resulting operational definition of witnessed resuscitation is: "the

experience of having been ‘witness to’ a resuscitation attempt in which the witness (or bystander) performed an active or passive role (or) the experience of being ‘witnessed by’ others whilst applying the skills of resuscitation” (Walker, 2006, p.385).

With this definition, and through the explication of four defining attributes, Walker firstly clarified that resuscitation is a procedure performed in an attempt to restore respiratory, cardiac or cardio-respiratory function, when this is compromised or suddenly ceased for either a primary airway, breathing or cardiovascular problem or as a result of life-threatening disease or trauma. Secondly, Walker differentiated between an active and a passive role of the witness, including both possibilities in the definition. The former witnesses a cardiac arrest and actively applies their knowledge and skills of resuscitation, whilst the latter acts as a passive observer. Thirdly, Walker emphasised that those performing resuscitation skills can also be “witnessed by” others, thus including the aspect of “being witnessed” in the definition. Finally, Walker acknowledged the diversity of environments in which the witnessed resuscitation event may take place, not just as out-of-hospital (primary care) or in-hospital (secondary care) settings, but also to include, on a much broader level, real-life events versus fiction, legitimating the media as a means to indirectly witness resuscitation (Walker, 2006). In this way, resuscitation portrayed in the media is also included in the concept of “witnessed resuscitation”, allowing for the expansion of the body of knowledge from the perspective of the public who witness resuscitation indirectly through the media. This is particularly relevant as it reflects how most of the public experience resuscitation.

It was considered pertinent to the scope of this research to establish a literature background that focused on the different perspectives undertaken so far to investigate the concept of witnessed resuscitation. Walker’s (2006) expanded and inclusive

definition was considered a sound foundation to help organise existing knowledge. Moreover, as also advocated by the author, it was helpful to identify unexplored areas of inquiry around the relatively new and still evolving concept of witnessed resuscitation. Using the defining attributes of witnessed resuscitation, and focusing on the contexts of both in-hospital and out-of-hospital resuscitation, scrutiny was made of the perspectives of active and passive witnesses; the perspectives of those witnessed by others whilst performing resuscitation; and the perspectives of those witnessing resuscitation through the media.

The examined literature was organised in two main areas which reflected different attributes of the definition: family-witnessed CPR and public-witnessed CPR. Family-witnessed CPR is traditionally regarded as family presence in the context of in-hospital resuscitation; this aspect has been extensively explored from the perspectives of the witnessing relatives, patients who survived cardiac arrest, and the healthcare professionals who are witnessed by family members whilst performing resuscitation. Public-witnessed CPR, as traditionally explored in the literature, refers to resuscitation in out-of-hospital settings, witnessed by non-family members, where witnesses are the lay first responders who have an active role in the resuscitation. For the purpose of this thesis and this informing literature review, public-witnessed resuscitation also included the perceptions of the public who passively witnessed resuscitation as portrayed by the media. Whilst a substantive body of evidence exists regarding the areas of family-witnessed resuscitation and of public-witnessed resuscitation, a third unexplored area was identified, which possesses the attributes defined by Walker. Resuscitation witnessed by fellow patients, from now on referred to as patient-witnessed resuscitation, looks at the concept of witnessed resuscitation from the perspective of

the fellow patients, acting as witnesses of resuscitation, in a hospital setting. Patient-witnessed resuscitation, the object of investigation and discussion of this thesis, is introduced at the end of this chapter, and explored in detail in Chapter 3, through a systematic literature review.

## 2.3 Family-witnessed resuscitation

Family-witnessed resuscitation has been defined by the Emergency Nurses Association as the presence of family in the patients' care area, in a location that affords family members visual or physical contact with the patient during CPR (Emergency Nurses Association, 2009). Considering the increasingly recognised value of allowing family participation in patient care, allowing and supporting family presence during CPR is receiving increased support in some clinical settings. However, although the benefits for the patients and relatives in being with their family member during CPR have been explored in the literature (Paplanus *et al.*, 2012b; Toronto & LaRocco, 2019), healthcare professionals still have concerns regarding its implementation (Paplanus *et al.*, 2012a; Sak-Dankosky *et al.*, 2014). The theory of family-centred care has been used to support this practice, in paediatric and adult populations, on the basis that patients should receive holistic care, and family members can be of help to the patient and the clinicians during critical times of illness (Bamm & Rosenbaum, 2008; Davidson *et al.*, 2017; Kleinpell *et al.*, 2018; Sak-Dankosky *et al.*, 2017).

### 2.3.1 Family member perspective

Over the last ten years, the perceptions and experiences of family members regarding family presence during resuscitation have been explored and reviewed in the literature

(Toronto & LaRocco, 2019). Findings of these studies suggested that family members view their presence during resuscitation of a relative as a fundamental right and that family members value the choice to be present at this time (Champ-Gibson *et al.*, 2016; Duran *et al.*, 2007; Leske, McAndrew & Brasel, 2013; Leung & Chow, 2012; Meyers, Eichhorn & Guzzetta, 1998; Meyers *et al.*, 2000). Family members do not seem concerned about any potential emotional impact on them from being present during CPR procedures (Duran *et al.*, 2007; Meyers, Eichhorn & Guzzetta, 1998; Mortelmans *et al.*, 2010). Instead, some family members identify that it could facilitate acceptance of their relative's death and support their own emotional healing (Duran *et al.*, 2007; Meyers, Eichhorn & Guzzetta, 1998), and also provide closure (Champ-Gibson *et al.*, 2016; Meyers *et al.*, 2000).

Such results are consistent with other studies which identified that relatives valued the choice of whether or not to be present during CPR (Pasquale *et al.*, 2010; Sak-Dankosky *et al.*, 2019). Although witnessing CPR can be potentially overwhelming (Toronto & LaRocco, 2019), family members who witnessed CPR did not regret being present (Albarran *et al.*, 2009) and reported lower symptoms of anxiety and post-traumatic stress disorder, compared to those who did not witness CPR (Jabre *et al.*, 2013; Jabre *et al.*, 2014). Among those who had the experience of being present during resuscitation of a relative, family members believed that their presence benefitted both themselves and the patient (Toronto & LaRocco, 2019). Relatives were able to share valuable information with the healthcare team (Champ-Gibson *et al.*, 2016; Leske, McAndrew & Brasel, 2013; Meyers *et al.*, 2000; Weslien *et al.*, 2006), as well as being able to pass information to other family members (Leske, McAndrew & Brasel, 2013). Moreover, relatives felt they could provide the patient with physical, emotional and spiritual

support and comfort, by touching the patient and also by assisting in post-mortem care (Leske, McAndrew & Brasel, 2013; Meyers *et al.*, 2000). Sak-Dankosky *et al.* (2019), exploring the preferences of relatives of intensive care patients in relation to family-witnessed resuscitation, also identified that family members advocated physical proximity to the patient and involvement in patients' care in the event of CPR. The need to be physically close to the relative having CPR was also confirmed in other studies (Giles, de Lacey & Muir-Cochrane, 2016; Pasquale *et al.*, 2010) and was considered the most important need for families, due to belief that their presence has impact on the patient's wellbeing (Khalaila, 2013). Moreover, Sak-Dankosky *et al.* (2019) found that relatives wished to receive care and information based on their unique situation. The need for honest information to be given to relatives about the CPR situation and the treatment, and the need for support, has been identified in other studies (Gaeeni *et al.*, 2015; Masa'Deh *et al.*, 2013). Ultimately, observing the professionalism and teamwork of staff during CPR seemed to help relatives feel confident that everything was done to assist the patient (Champ-Gibson *et al.*, 2016; Leske, McAndrew & Brasel, 2013; Meyers *et al.*, 2000).

### 2.3.2 Patient perspective

The perspectives of patients who had family members present while undergoing invasive procedures or resuscitation were first explored by Eichhorn *et al.* (2001). In their sample, only one patient received CPR. However, the findings of the interviews suggested that although it might be a difficult experience for the family members, the benefits of being present, for both patients and relatives, outweighed the potential of adverse consequences, as supported in literature regarding family members (Toronto & LaRocco, 2019). Further studies have explored the opinions of patients regarding family

presence during resuscitation in different settings, reporting mixed views (McMahon-Parkes *et al.*, 2009). The reasons for any lack of support for family presence during CPR included the distressing effects of the event on the family (Grice, Picton & Deakin, 2003), an increase in anxiety for the staff, and interference with the resuscitation procedure (Gulla, Twist & Singer, 2004). Motives in support of the presence of family members during CPR included a desire to respect the ethics of the family's right to choose (Duran *et al.*, 2007; Gulla, Twist & Singer, 2004), and a recognition that the presence of relatives could improve the professionalism and the resuscitative efforts of the staff (Gulla, Twist & Singer, 2004). Subsequently, McMahon-Parkes *et al.* (2009) and Albarran *et al.* (2009) investigated the opinions of both resuscitated and non-resuscitated patients, who mostly shared similar preferences towards family-witnessed CPR, with the finding that patients who underwent resuscitation were more likely to be supportive of family-witnessed resuscitation (Albarran *et al.*, 2009).

The reasons why patients supported family presence during CPR included the possibility to receive the care and emotional support of their family; the opportunity to gain an accurate understanding of the life-saving procedures; and the knowledge that family members would be better able to deal with closure as a result of being present at the resuscitation (McMahon-Parkes *et al.*, 2009). However, in these studies, patients also understood that family needs have to be balanced with allowing the resuscitation team to manage the emergency and make discretionary decisions, which may include shielding relatives, or dealing with confidentiality issues (Albarran *et al.*, 2009; McMahon-Parkes *et al.*, 2009). Resuscitated and non-resuscitated patients agreed in supporting the practice of offering the option to the relatives to be present or not, consistent with previous studies (Duran *et al.*, 2007; Grice, Picton & Deakin, 2003; Gulla,

Twist & Singer, 2004; Meyers *et al.*, 2000). However, patients also held the view that staff should seek and document patients' preferences regarding family-witnessed CPR, at the time of hospital admission, thereby helping guide decision-making in case of CPR (Albarran *et al.*, 2009). Other studies explored this area further, advocating that patients could nominate relatives they think might cope with witnessing resuscitation and have this documented (Benjamin, Holger & Carr, 2004; Twibell *et al.*, 2015; Wagner, 2004). In fact, a recent study identified that patients have specific preferences about the person they would want with them in case of CPR, and these preferences should be formalised through a written patient consent (Bradley *et al.*, 2017).

Another concern was the fear of delaying CPR whilst waiting for the family members to be present, which highlighted the need for having clear discussions on the processes related to CPR and family presence to avoid misconceptions (Bradley *et al.*, 2017). Conversely, a recent qualitative study highlighted the fear and resistance of patients and relatives of families being present during CPR, due to the potential distressing perceived impact on the family (Tiscar-Gonzalez *et al.*, 2019). However, the main limitation to family presence during resuscitation of a relative seems to be that staff do not offer this opportunity to family members (Dwyer, 2015).

### 2.3.3 Healthcare professional perspective

The benefits of facilitating family presence during resuscitation have been recognised by professional organisations in a range of countries and are officially supported in their position statements (American Association of Critical-Care Nurses, 2016; Australian and New Zealand Committee on Resuscitation, 2016; Oczkowski *et al.*, 2015). In Europe, the *European Resuscitation Council* (ERC) guidelines promote the autonomy of and support for of both patients and their family members (Bossaert *et al.*, 2015). The joint

statement of the *European federation of Critical Care Nursing associations*, the *European Society of Paediatric and Neonatal Intensive Care* and the *European Society of Cardiology Council on Cardiovascular Nursing and Allied Professions* support the right of the patient to have a family member present during resuscitation, and agrees that relatives should have this option offered (Fulbrook *et al.*, 2007). In the United States, the *Emergency Nurses Association* published a position statement and clinical practice guidelines, supporting family presence during resuscitation in the emergency department and advanced care planning involving patients and their families (Emergency Nurses Association, 2018; Vanhoy *et al.*, 2019). Despite the endorsement of family-witnessed resuscitation from relevant professional organisations, this practice is still viewed with concern and meets resistance from healthcare professionals. A substantive body of work has been published in the last decade exploring healthcare professionals' attitudes towards family presence during resuscitation in different clinical settings, including emergency departments, critical care and intensive care units, cardiac departments and non-critical care settings (Johnson, 2017; Sak-Dankosky *et al.*, 2014; Walker, 2008; Walker & Gavin, 2019).

Although studies reported differences in professionals' perspectives, a negative attitude towards the presence of family members seemed to be common among healthcare staff (Al-Mutair, Plummer & Copnell, 2012; Sak-Dankosky *et al.*, 2014; Sak-Dankosky *et al.*, 2015; Salmond, Paplanus & Avadhani, 2014; Walker, 2008; Walker & Gavin, 2019). Cultural background was identified as an influencing factor of such a negative perspective, in particular regarding the way it shapes the family-healthcare professional's relationship for the family, and the family approach to death and grief (Demir, 2008; Gunes & Zaybak, 2009; Sheng, Lim & Rashidi, 2010; Walker, 2008). Greater

work experience in the area and previous practice or education regarding family-witnessed resuscitation was found to facilitate the presence of the family (Axelsson *et al.*, 2010; Gordon *et al.*, 2011; Gutysz-Wojnicka *et al.*, 2018; Leung & Chow, 2012; Madden & Condon, 2007; Mitchell & Lynch, 1997; Sak-Dankosky *et al.*, 2015; Twibell *et al.*, 2008; Walker, 2008; Yanturali *et al.*, 2005), although concerns were expressed regarding risks for both family and healthcare professionals.

One of the main risks for the family in being present at resuscitation was considered to be the risk of psychological trauma and long-term stress from witnessing CPR (Sak-Dankosky *et al.*, 2014; Sak-Dankosky *et al.*, 2017; Walker, 2008; Walker & Gavin, 2019), although this point was in contrast with the views of family members in other studies (Toronto & LaRocco, 2019). Another concern for the staff was that family presence could interfere with resuscitation efforts (Sak-Dankosky *et al.*, 2017), distract the team from performing resuscitation (Sak-Dankosky *et al.*, 2014), or increase staff stress levels (Walker & Gavin, 2019). Other studies suggested that the presence of relatives could instead lead to more professional behaviours (Demir, 2008; Meyers *et al.*, 2000).

Importantly, the concern that a dedicated person has to take care of the family members who are witnessing resuscitation was also raised uniformly among studies (Davidson *et al.*, 2011; Gordon *et al.*, 2011; Johnson, 2017; Sak-Dankosky *et al.*, 2017; Sheng, Lim & Rashidi, 2010). This concern led to the issue of shortage of staff during resuscitation, another barrier for the correct implementation of family-witnessed CPR (Axelsson *et al.*, 2010; Ganz & Yoffe, 2012; Köberich *et al.*, 2010; Sak-Dankosky *et al.*, 2017; Wacht *et al.*, 2010). Consistently, Mortelmans *et al.* (2010) advocated the importance of addressing staff shortage issues, stating that a successful practice of family-witnessed CPR is not possible without the essential support for the family. Professionals also advocated for

local guidelines (Johnson, 2017; Madden & Condon, 2007; Sak-Dankosky *et al.*, 2015; Walker & Gavin, 2019), to help them in clinical decisions involving the family (Sak-Dankosky *et al.*, 2014).

Thus, the examined literature demonstrates that the practice of family-witnessed resuscitation, as endorsed in statements from professional organisations and officially supported by resuscitation guidelines in many countries, is desirable and may be further embedded through organisational and educational changes. The implementation of local clinical protocols is advocated to guide healthcare professionals in the decision-making regarding family presence, in the logistics of conducting resuscitation in the presence of the family members, and in ensuring that adequate resources are allocated to support the family whilst staff are involved in resuscitation. Moreover, education and training focused on improving healthcare professionals' skills of resuscitation and on the holistic principles of family-centred care are recommended to increase healthcare professionals' confidence and enhance their support towards this practice.

## 2.4 Public-witnessed resuscitation

A thorough review of published papers and grey literature did not reveal a definition of public-witnessed resuscitation. For the purpose of this thesis, the term is used to identify literature regarding resuscitation events witnessed by non-family members and non-fellow patients of those who suffer cardiac arrest and require resuscitation. Therefore, any relevant literature that explored views and perspectives of bystanders or lay first responders of out-of-hospital resuscitation was identified. In addition, it was considered pertinent to the aim of this chapter to include literature documenting the portrayal of

resuscitation events in the media, for a wider understanding of how resuscitation is perceived by the lay population.

### 2.4.1 Bystander perspective

Bystander CPR is defined as an "attempt to perform basic cardiopulmonary resuscitation by someone who is not a part of an organised emergency response system". "Lay responder CPR" and "citizen CPR" are synonyms for bystander CPR (Cummins *et al.*, 1991a, p.961). "Community first responder" is another term that currently defines "usually a lay person who make him/herself available to be dispatched by the ambulance control to attend an incident" (Resuscitation Council (UK) & BLS/AED Subcommittee, 2010). It is recognised that in out-of-hospital cardiac arrests, initiating bystander CPR, before the arrival of emergency medical services, can increase the chances of survival twofold to threefold (Hasselqvist-Ax *et al.*, 2015; Sasson *et al.*, 2010). In the last decade, great effort has been made to improve bystander CPR rate in out-of-hospital cardiac arrest (Neumar *et al.*, 2015). However, fears and potential misconceptions might understandably prevent lay rescuers commencing resuscitation (Becker *et al.*, 2019).

Issues relating to the psychological impact associated with bystander CPR, barriers and motivations to respond to out-of-hospital cardiac arrests have been explored in the literature. The brief report by Genest *et al.* (1990) with its focus on volunteer ambulance attendants, was the first to identify the psychological aftermath of participating in resuscitation attempts. Reactions experienced included involuntary thoughts, feelings and mental images related to the resuscitation events (Genest *et al.*, 1990). Subsequent works have kept the focus on the bystanders' experience and their psychological reactions (Axelsson *et al.*, 1996; Axelsson *et al.*, 1998). Positive factors that characterised bystander experience were found to include feeling a sense of humanity, competence

or courage; less positive factors on the other hand, included feeling a sense of obligation or feeling exposed (Axelsson, Herlitz & Fridlund, 2000). Nevertheless, it is remarkable that amongst other factors, knowing that the victim had a fatal outcome and the lack of debriefing opportunity after the event had significant negative effect on bystander experience (Axelsson *et al.*, 1998).

The practice of debriefing bystanders after a resuscitation attempt was subsequently investigated by Møller *et al.* (2014), who encountered positive feedback amongst those who received it. Participants reported that talking about the experience with a healthcare professional was the most important benefit of receiving debriefing, as it helped them cope with the emotional reactions and increased their confidence in providing CPR again in the future (Møller *et al.*, 2014). Concerns about post-traumatic stress disorder (PTSD) and long-term psychological distress in bystanders were also raised. Whilst no evidence of PTSD was found in volunteer responders (Zijlstra *et al.*, 2015), severe short-term psychological impact and psychological distress after three months were found in two studies (Stassart *et al.*, 2017; Zijlstra *et al.*, 2015). Similarly, Mathiesen *et al.* (2016) found that bystanders reported negative outcomes as: having recurrent images of the event, being concerned for the outcome of the victim and feeling guilty for unsuccessful outcomes. Comparable findings were also found in a recent study conducted by Mausz, Snobelen and Tavares (2018), who highlighted that bystanders experienced uncomfortable emotional reactions in the short-term after the resuscitation attempt, including having to contend with self-doubt and unanswered questions about the event. Mathiesen *et al.* (2016) also identified that coping strategies, such as talking extensively with other people about the event, healthcare debriefing and professional counselling helped participants process the event.

Given the importance of involving the lay population in providing first response to out-of-hospital cardiac arrests in the community, recent studies had focused on the motivations and barriers to become a community first responder (Barry, Guerin & Bury, 2019; Becker *et al.*, 2019; Bouland *et al.*, 2017; Mathiesen *et al.*, 2017; Phung *et al.*, 2018). Motivating factors were found to be either altruistic, such as giving something back to the community, or the result of pre-existing interest in social and emergency care (Barry, Guerin & Bury, 2019; Phung *et al.*, 2018). However, multiple barriers are still present among lay rescuers (Barry, Guerin & Bury, 2019; Becker *et al.*, 2019; Bouland *et al.*, 2017; Mathiesen *et al.*, 2017). Fear and the feeling of being exposed to risk and traumatic situations were considered important challenges when providing bystander CPR (Barry, Guerin & Bury, 2019; Mathiesen *et al.*, 2017). Other explored barriers were fear of litigation, liability, risk of disease transmission, fear of hurting the victim and lack of skills (Becker *et al.*, 2019; Bouland *et al.*, 2017; Dukes & Girotra, 2018; Mausz, Snobelen & Tavares, 2018).

Nevertheless, bystanders overall considered CPR provision and the cooperation with the emergency medical services to be the expected behaviour of any community citizen (Mathiesen *et al.*, 2017). This sense of duty for the community and the institutions (Mathiesen *et al.*, 2017), as well as previous effective CPR training (Bouland *et al.*, 2017) seemed to help bystanders overcome their fears and contribute to responding to out-of-hospital cardiac arrests. However, the study of Mausz, Snobelen and Tavares (2018) emphasised that the long-term psychological consequences of bystanders are still poorly understood. Therefore, those consequences and the appropriate aftercare of bystanders involved in out-of-hospital cardiac arrest might not be properly addressed in CPR programmes for lay people.

### 2.4.2 Public perspective of resuscitation in the media

Public education is crucial to raise awareness of the importance of bystander CPR in the response to out-of-hospital cardiac arrests. However, knowledge of the public in regard to resuscitation is, in great part, dependent on the way this is portrayed in the media. In a relatively recent article in a popular British newspaper entitled "CPR rarely works – why do people have so much faith in it?", the misconceptions about this usually unsuccessful procedure were explored (Huntingdon, 2018). Indeed, the issue of the representation of cardiac arrests, resuscitation procedures and related survival rates in the public press and television has been debated for over twenty years. Attention to television as an important source of information on resuscitation for the lay public was first drawn by Diem, Lantos and Tulsky (1996). These authors were concerned that inaccurate representation of CPR could lead to unrealistic expectations of the resuscitation process and unrealistic hopes of survival in real life. Importantly, they discussed that television was a key source that the public used to learn about illness and death, and thereby influenced people's beliefs regarding medicine (Diem, Lantos & Tulsky, 1996). In their work, the authors systematically analysed the occurrence and causes of CPR in different American medical dramas finding that in most cases cardiac arrest was caused by trauma and occurred among a relatively young population.

Similar results were identified by Gordon, Williamson and Lawler (1998), in British medical dramas. However, while Diem, Lantos and Tulsky (1996) found that television depicted a CPR survival rate much higher than most optimistic survival rates in the scientific literature, Gordon, Williamson and Lawler (1998) described how in their study, the overall CPR success rate was more realistic. Arguably, a correlation was found between television medical drama consumption and overestimation of survival chances

after CPR among students participants, while practical knowledge of CPR seemed to mitigate, although not eliminate, this effect (Van den Bulck, 2002). In successive studies, Harris and Willoughby (2009) compared the characteristics of patients, causes and success rates of CPR on television with published resuscitation statistics. While the immediate success rate realistically reflected contemporary statistics, they found that the lack of depiction of a poor medium to long-term outcome could give misleading perception of falsely high chances of total recovery from CPR (Harris & Willoughby, 2009).

Wetsch *et al.* (2012) focused on the quality of CPR performed in a medical television series, comparing characteristics and causes of cardiac arrest, and resuscitation efforts, to the corresponding AHA guidelines (American Heart Association, 2000; American Heart Association, 2005), finding it often inadequate. These results were similar to the findings of Mgbako *et al.* (2014), who compared resuscitation actions in movies with the actions outlined in the chain of survival (Cummins *et al.*, 1991b). Mgbako *et al.* (2014) found the use of defibrillators in films inadequate and queried whether such an inaccurate representation of life-saving interventions represented a missed opportunity of educating the lay public. This is particularly relevant in the case of out-of-hospital defibrillation, where correct public understanding and use of the equipment could make the difference between life and death.

Almost two decades after the first published work on this topic, and despite the great advancement in educating the public and patients around life-sustaining interventions and in improving healthcare communication on care preferences (Institute of Medicine, 1997; Sudore *et al.*, 2014; Volandes, 2007), little difference has been found in the depiction of CPR in television (Portanova *et al.*, 2015). Importantly, these authors argued

that such inaccurate portrayal of CPR on television could not only give patients false expectations, but also impact on how decisions about advanced care planning and end-of-life are made. Older adults are particularly noted as considering television as their main source of health information (Adams & Snedden, 2006; Jones, Brewer & Garrison, 2000). As identified by Diem, Lantos and Tulsky (1996) and more recently by Lockey (2014), Mgbako *et al.* (2014) and Colwill *et al.* (2018), television could represent a powerful tool for mass public health education, if correctly employed.

At present, authors across the literature still advocate the involvement of the television industry for a more faithful portrayal of resuscitation events in order to help the public set appropriate expectations and take sensible decisions regarding their own and their relatives' care (Alismail *et al.*, 2018; Portanova *et al.*, 2015). However, it is recognised that whilst television is a medium that can easily reach large numbers of the population, it is primarily an entertainment tool, and that there is no substitute for health education provided by knowledgeable professionals as a means of tackling public misconceptions about resuscitation (Harris & Willoughby, 2009).

## 2.5 Patient-witnessed resuscitation

Witnessing resuscitation from the perspective of fellow patients has only been explored in a small number of research studies. However, as observed by Köberich (2018), patient-witnessed resuscitation is also a facet of witnessed resuscitation, of which we still have only limited understanding. The systematic review presented in the following chapter of this thesis has analysed existing evidence regarding the impact of patients witnessing CPR on another patient and it has highlighted that the literature on the topic

is sparse, of low quality, and mostly outdated (Fiori, Latour & Los, 2017). Early interest in this topic has been evident in the literature since the late 1960s, with studies undertaken exploring patient stress caused by the presence of other critically ill fellow patients in coronary care settings (Hackett, Cassem & Wishnie, 1968; Jones, 1967; Wolf, 1969). Nonetheless, only five articles documenting some sort of physiological and psychological impact in patients witnessing CPR were considered relevant for inclusion in the systematic review (Badger, 1994; Bruhn *et al.*, 1970; Hackett, Cassem & Wishnie, 1968; Isaksen & Gjengedal, 2006; Sczekalla, 1973). In particular, physiological reactions such as increase of heart rate (Bruhn *et al.*, 1970; Sczekalla, 1973) and systolic blood pressure (Bruhn *et al.*, 1970) and psychologic reactions such as increased anxiety (Bruhn *et al.*, 1970) were observed in the study groups of patients witnessing resuscitation. Qualitative studies identified coping strategies used by witnessing patients in response to the resuscitation event of their fellow patient, including denial and dissociation (Badger, 1994; Hackett, Cassem & Wishnie, 1968; Isaksen & Gjengedal, 2006). Although limited, mostly weak and outdated, these findings suggested that hospital patients may find witnessing resuscitation on a fellow patient a stressful experience. No new research studies seemed to have been published since this systematic review, showing that the knowledge gap regarding patient-witnessed resuscitation is yet to be filled.

## 2.6 Chapter summary

In this chapter, the literature regarding the concept of witnessed resuscitation was explored and the background for this research established. The operational definition of witnessed resuscitation adopted in this chapter highlighted the possible active or passive role of the witness in different environments, while performing or observing the

application of resuscitation skills on a victim of cardiac arrest. The experience of the family of a cardiac arrest victim and of the public witnessing a stranger's cardiac arrest and resuscitation was considered of relevance to provide background knowledge in regard to this concept. Family-witnessed resuscitation represents an aspect that has been significantly investigated, highlighting the right of patients and family members to choose to be present during in-hospital resuscitation, despite the reservations of the healthcare professionals. Literature on public-witnessed resuscitation, focusing on the experience of bystanders performing CPR and on the perceptions of the lay public regarding media portrayal of CPR, showed that despite the improvements in public education, there is still misconception and often inadequate knowledge regarding resuscitation and its possible outcomes. Finally, the literature regarding patient-witnessed resuscitation, which is analysed in a systematic review presented in the following chapter, was introduced.

# Chapter 3 Systematic literature review

In this chapter, a systematic literature review is presented that provides a detailed overview of the existing evidence about the impact on patients witnessing resuscitation attempts on fellow patients in hospital settings. The limited results indicated that the topic of patient-witnessed resuscitation has not been extensively explored in the literature and the existing evidence is sparse and mostly outdated. However, this systematic literature review followed a rigorous approach in identifying existing published works, assessing quality and rigour, and informing the research study in this thesis.

This systematic review, published in the *European Journal of Cardiovascular Nursing,* was conducted and reported according to the PRISMA guidelines (Moher *et al.*, 2009).

The bibliographical details of the work, a description of the work and an estimated percentage of contribution (%) of each author are as follows: Fiori, M. (90%), Latour, J.M. (5%), Los, F. (5%). The percentages of contribution have been agreed among all authors.

**"Am I also going to die, doctor?" A systematic review of the impact of in-hospital patients witnessing a resuscitation of another patient.**

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## 3.1 Abstract


### Background

There is a growing interest on the impact of family witnessed resuscitation. However, evidence about the effect of hospitalized patients witnessing other patient's resuscitation is limited.

### Aim

The aim of this systematic review is to explore the existing evidence related to the impact on patients who witness resuscitation attempts on other patients in hospital settings.

### Methods

Databases BNI, CINAHL, EMBASE, MEDLINE and PsycINFO were searched with the terms: *patient, inpatient, resuscitation, CPR, cardiopulmonary resuscitation* and *witness*. Search strategy excluded the terms *out-of-hospital*, *family* or *relative*. Inclusion criteria were studies related to patients exposed to a resuscitation attempt performed on another patient; quantitative and qualitative design; physiological or psychological outcome measures. No limitations of date, language or settings were applied.

### Results

Five of the 540 identified studies were included; two observational studies with control group and three qualitative studies with interviews and focus groups. Articles were published between 1968-2006, and were mostly rated low quality of evidence. Quantitative results of the observational studies showed an increased heart rate in the study group witnessing a resuscitation ($p=0.05$), increased systolic blood pressure ($p<0.01$) and increased anxiety ($p<0.01$). The qualitative studies highlighted coping

strategies adopted by exposed patients in response to witnessing resuscitation including denial and dissociation.

## Conclusions

Our findings suggest that patients may find witnessing resuscitation a stressful experience. However, the evidence is sparse and mainly of poor quality. Further research is needed to better understand the impact of patients witnessing a resuscitation of another patient and to identify effective support systems.

## Keywords

Hospital; Patients; Emergency Treatment; Trauma and Stressor Related Disorders; Resuscitation

## 3.2 Introduction

The National Cardiac Arrest Audit 2014 documented that 22,628 adult patients in UK hospitals received cardiopulmonary resuscitation (CPR), defined as the receipt of chest compressions and/or defibrillation (Nolan *et al.*, 2014). Overall, the incidence of in-hospital cardiac arrests is 1.6 per 1000 hospital admissions resulting in a high number of in-patients who might potentially witness resuscitation on other in-patients (Nolan *et al.*, 2014).

Admission to hospital is considered a stressful experience for patients (Ahmadi, 1985; Meister *et al.*, 2016; Shuldham *et al.*, 1995; Ulrich *et al.*, 2004; Wilson-Barnett, 1978). Stress has been shown to have a significant impact on how patients perceive their hospital experience and is greatly influenced by the environment in which they are nursed (Bhandarkar *et al.*, 2011). Patients admitted to hospitals face many changes leading to potentially stressful responses. On admission, the "person" takes the role of "patient", and while receiving medical treatment and nursing care, the sense of identity and privacy are violated (Gammon, 1998). Anxiety can also be increased by separation from the family (Ismail, 2008; Teasdale, 1995) and by medical and surgical procedures (Gammon, 1998). Moreover, wards in most European hospitals are organized into bays (Dowdeswell, Erskine & Heasman, 2004), which usually accommodate two to six patients, exposing their vulnerability to stressors related to peer-patients. Emergency interventions and invasive procedures performed on other in-patients such as CPR are typical examples of stressors that may be encountered.

CPR attempts are stressful events (Zijlstra *et al.*, 2015) where the life of a patient is at risk. This may be partially because outcomes of survival after CPR procedures are highly overestimated by lay public (Kostoulakos & Bradley, 1997; Roberts, Hirschman &

Scheltema, 2000), also due to the skewed images of CPR given by television fiction (Van den Bulck, 2002). These expectations are likely to influence both patients' perception of their own survival (Van den Bulck, 2002) and lay public's and first responders' perceptions of CPR success in real life. Lay people attempting CPR face a traumatising experience, difficult to deal with on psychological level (Van den Bulck, 2002). There is evidence to suggest unrealistic expectations of CPR outcomes may generate extra psychological burden, especially if the resuscitative attempt fails (Jones, Brewer & Garrison, 2000). Despite this, the current literature on witnessed resuscitation focuses mainly on the presence of family members during CPR.

Witnessed resuscitation by family members is a debatable and controversial phenomenon which first received attention in the literature over two decades ago (Hanson & Strawser, 1992). Nowadays, allowing family members to witness CPR of their beloved ones is gaining momentum across clinical settings (Boucher, 2010; Colbert & Adler, 2013; Meyers *et al.*, 2000; Paplanus *et al.*, 2012b). Although the evidence base of family witnessed CPR is growing and providing knowledge to best practices, limited evidence is available in supporting patients witnessing other patient's CPR. Therefore, the aim of this systematic review is to examine the existing evidence concerning the impact on in-patients witnessing resuscitation carried out on a fellow patient.

## 3.3 Methods

The systematic review is structured and reported according to the PRISMA guidelines (Appendix I: Electronic Supplement Material 1) (Moher *et al.*, 2009).

### 3.3.1 PICO & Eligibility criteria

Following the PICO (Population, Intervention, Comparison and Outcome), the review question was defined as: What is the impact (O) of in-patients (P) witnessing a resuscitation attempt of a fellow patient (I) compared to not witnessing a resuscitation of another patient (C)?

Criteria for inclusion were discussed and agreed in advance by the authors before the searches were conducted. Study population was limited to those describing in-patients admitted to hospitals, while those describing the impact on family members, staff or out-of-hospital scenarios were excluded.

Due to the anticipated limited research in this area, outcome criteria were intentionally kept as broad as possible, to include any relevant published article. Therefore, outcome measures of impact, including both physiological and psychological factors, were considered for inclusion. No limits were set on study design, publication date or language.

### 3.3.2 Information sources and search strategy

Searches to identify relevant literature were undertaken using the following databases: BNI (1992-February 2016), CINAHL (1981-February 2016), EMBASE (1980-February 2016), MEDLINE (1946-February 2016) and PsycINFO (1887-February 2016). MeSH terms and keywords included in the search strategy were: patient*, inpatient*, in patient*, inpatients, witness*, CPR, cardiopulmonary resuscitation, resuscitat*, resuscitation (Appendix II: Electronic Supplement Material 2, Search strategy MEDLINE; the full search strategy of all databases is available from the authors). Terms relating to outcome measures were included in the initial search but resulted in limited number of

papers. Therefore, search terms related to the impact of patients were excluded in the main search strategy on 9th of February 2016. Further relevant publications were identified through reference mapping of identified articles and discussion with experts. Additionally, Google Scholar was searched including keywords from the search strategy and forward citation of the included articles was performed.

### 3.3.3 Study selection, data collection process, and data items

Two independent authors (MF, FL) screened all titles and abstracts identified in the search strategy considering their eligibility for inclusion. Any discrepancies were discussed with the third author (JML). Potentially relevant papers were read in full to determine eligibility based on the inclusion and exclusion criteria. Data items of the included studies were defined as: study aim, design, sample size, population characteristics and settings, outcome measures and main findings.

### 3.3.4 Strength of evidence and risk of bias assessment

In order to determine the quality of the selected studies and to address the reliability of recommendations for future research and clinical practice, selected studies were assessed for strength of evidence and risk of bias. The quantitative studies were assessed using the Cochrane GRADE system (Higgins & Green, 2011; Moher *et al.*, 2009). The GRADE approach rates quality of evidence on four categories, from very low to high quality, depending on study design and characteristics. Quality of evidence can be upgraded or downgraded based on the presence of certain limitations. Factors that may decrease or increase quality of evidence are: study design, (in)directness of evidence, (in)consistency of results, (im)precision of results, and publication bias. Qualitative studies were assessed through the hierarchy of evidence scale as proposed by Daly *et al.* (2007). In this scale, studies are divided into four categories based on their design,

limitations and evidence given for practice. From the strongest (level I) to the weakest (level IV), these categories are: generalizable studies, conceptual studies, descriptive studies and single case studies. The authors reviewed the included studies to determine the quality of evidence, with disagreements resolved by discussion.

### 3.3.5 Synthesis of results

The selected studies were grouped by study design: quantitative and qualitative research methods. Further structured synthesis of the quantitative studies was not possible because the identified studies used heterogeneous outcome measures. Synthesis of the qualitative studies was performed by reviewing the identified themes and sub-themes and identifying any overarching themes.

## 3.4 Results

### 3.4.1 Study selection

In total, 862 records were identified from the initial search strategy (Figure 3.1). A further eight records were identified from Google Scholar, forward citation and reference mapping. After removing 330 duplicates, 540 articles were screened by title and abstract. Of these, 530 articles were not relevant. The full-texts of the 10 remaining articles were reviewed and five articles were excluded. Reasons for exclusion were: nurse's personal reflection about patients witnessing CPR, other non-CPR procedures, the needs of patients in a Coronary Care Unit (CCU) and two examples of witnessing CPR scenarios not describing analytical data (Eshel, Marcovitz & Stern, 2016; Jones, 1967; Playfair, 2010; Vanson, Katz & Krekeler, 1980; Wolf, 1969). Ultimately, five articles were

included in the analysis (Figure 3.1) (Badger, 1994; Bruhn *et al.*, 1970; Hackett, Cassem & Wishnie, 1968; Isaksen & Gjengedal, 2006; Sczekalla, 1973).

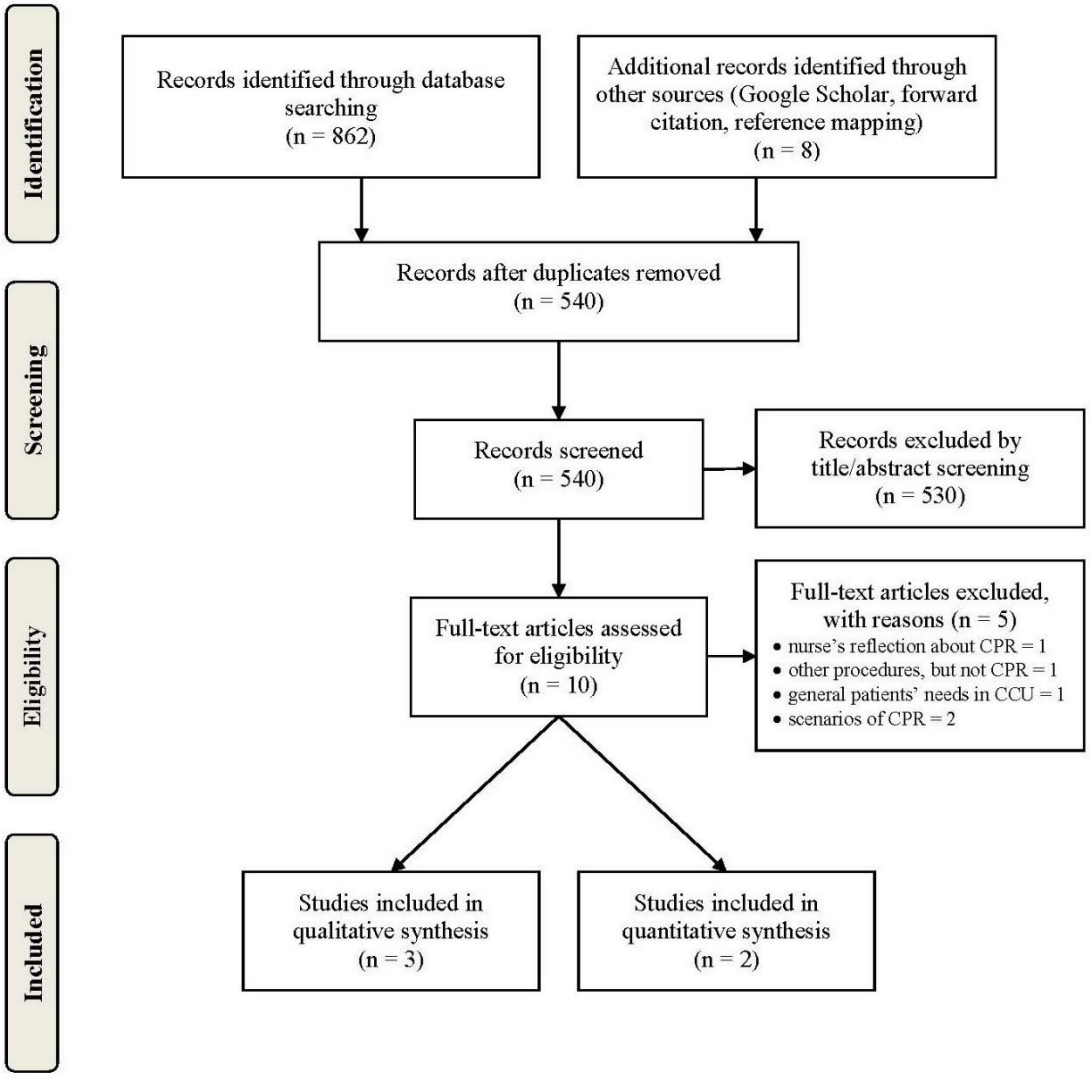


*Figure 3.1 PRISMA Flow diagram*

## 3.4.2 Study characteristics

Of the five studies identified, two were observational studies with control groups (Bruhn *et al.*, 1970; Sczekalla, 1973) and three studies used a qualitative design using interviews, observations and focus groups (Badger, 1994; Hackett, Cassem & Wishnie, 1968; Isaksen & Gjengedal, 2006). Sample sizes ranged between 25 and 50 participants. One article

did not specify the sample size, addressing only the number of events witnessed (Badger, 1994).

Three studies recruited patients from CCUs with both single and multiple-bedded rooms. One study recruited patients from two cardiac wards and rehabilitation and one study was performed in a cardiac rehabilitation centre. The study characteristics and main findings are presented in Table 3.1.

*Table 3.1 Summary of findings*

| Author(s) & Year | Aims | Study Design | Sample Size | Setting | Number of CPR events | Methods | Outcome Measure(s) | Findings |
|---|---|---|---|---|---|---|---|---|
| **Badger, 1994** | To describe psychological impact of witnessing a medical emergency | Qualitative, interviews and observations | Sample not specified.<br><br>CPR carried out on 12 patients and between 6-9 patients per CPR event were interviewed | Outpatient cardiac rehabilitation department | 12 CPR events, all successful | Inductive analysis of patients interviews, observations and field notes over five years (1989-1993) | Not applicable | Three themes:<br><br>Attributional searching<br><br>Mastery<br><br>Disassociation |
| **Bruhn et al, 1969** | To identify physiological and psychological responses of patients who witnessed deaths | Observational study with control group | 29 patients total:<br><br>Study group: n=17 (witnessed a death after CPR)<br><br>Control group: n=12 (no critical events witnessed) | CCU | Number not specified, all CPR events unsuccessful | Marsh's method analysis comparing differences between groups | 1. Systolic blood pressure (SBP) and heart rate (HR)<br><br>2. Mood scored on a 4 point scale | 1. SBP and HR: within study group, higher SBP ($p<0.01$) and HR ($p<0.05$) after witnessing a death (day 1) than on day 3.<br><br>Between groups, higher SBP ($p<0.05$) in study group than control group on day 1.<br><br>2. Mood: increase in anxiety ($p<0.01$) in Study Group vs Control group after 24h |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Hackett et al, 1968** | To examine causes of stress to patients, including witnessing CPR | Qualitative, interviews and review of patients' charts | 50 patients interviewed, of which 11 patients witnessed CPR | CCU | Number not specified, all CPR events unsuccessful | Interviews, review of charts/notes. Analysis method not reported | Not applicable | 10 themes of CCU stay, including a theme 'Witnessing Cardiac Arrest' with sub-themes: denied fear; admitted fear; irritability and annoyance, astonishment (team efficiency), empathy, dissociation, reassurance |
| **Isaksen & Gjengedal, 2006** | To explore the significance of fellow patients for patients with MI | Qualitative, focus group | 25 patients, of which 1 witnessed CPR | Cardiac units and rehabilitation groups | 2 CPR events, unsuccessful | 5 focus groups.<br><br>Data Analysis: independent open coding; cluster of codes; main and sub categories. | Not applicable | 4 main categories, including 'disturbances', with the sub-category: dramatic events. |
| **Sczekalla, 1973** | To measure variations on heart rate of patients exposed to resuscitation procedures on other patients | Multi-centre observational study with control group | 37 patients total:<br>Study group: n=25<br>Hospital A: n=13<br><br>Hospital B: n=12<br>Control group:<br>Hospital B: n= 12 | CCUs in two<br><br>hospitals | Number and outcome of CPR events not specified | Comparison of HR:<br><br>1. Within the study group at baseline and after exposure<br><br>2. Between study and control group | HR measures:<br><br>Study group: last routine HR prior exposure; at CPR onset, then every 15 min; after 4 hrs.<br><br>Control group: 4 hourly from 8AM to 8PM | Increased HR 4hrs after baseline for both study groups (hospital A and B).<br><br>Increased HR 4hrs after baseline between study group and control group (p=0.05)<br><br>In study group (hospital A) two patients arrested after exposure to CPR |

### 3.4.3 Strength of evidence

Considering the quality appraisal of the studies, the two quantitative papers (Bruhn *et al.*, 1970; Sczekalla, 1973) were rated as level IV, the lowest quality (Table 3.2). Both were observational studies, using indirect measures of outcome and at high risk of bias affecting the findings (due to lack of randomisation, allocation concealment and lack of blinding or correction for loss-to follow up).

*Table 3.2 GRADE quality assessment of included quantitative studies*

| **Study Design** | **Limitations** | **Inconsistency** | **Indirectness** | **Imprecision** | **Publication bias** | **Quality of Evidence** |
|---|---|---|---|---|---|---|
| **Bruhn et al, 1969 observational** | Serious Limitation | No serious inconsistency | Some uncertainty about directness | Sparse data | Undetected | ⊕○○○ |
| **Sczekalla, 1973 observational** | Serious Limitation | No serious inconsistency | Some uncertainty about directness | Sparse data | Undetected | ⊕○○○ |

⊕⊕⊕⊕ High: randomised trials or double upgraded observational studies
⊕⊕⊕○ Moderate: downgraded randomised trials or upgraded observational studies
⊕⊕○○ Low: double downgraded randomised trials or observational studies
⊕○○○ Very Low: triple-downgraded randomised trials or downgraded observational studies or case series/reports

Among the three qualitative studies, two were descriptive studies and were both rated as level III (Badger, 1994; Hackett, Cassem & Wishnie, 1968). The articles described limited qualitative analysis methods and the findings were not transferable. One article was a conceptual study, rated level II, describing a theoretical framework based on conceptual analysis (Isaksen & Gjengedal, 2006) (Table 3.3).

*Table 3.3 Quality assessment of included qualitative studies*

| Study | Features | Limitations | Evidence for Practice | Overall Level Given |
|---|---|---|---|---|
| **Badger, 1994** | **Level III** Purposeful sampling of individuals experiencing the phenomenon under study, from a selected group and setting with no further diversification | **Level III** The study describes anecdotal observations of participants and their experience. Data saturation not mentioned | **Level II** Not generalizable findings. Need further research on other groups. Evidence for practice and suggestions for interventions | **Level III** |
| **Hackett et al, 1968** | **Level III** Sample selected to illustrate practical rather than theoretical issues. Limited information about used methods | **Level IV** Applicability to other scenarios not considered. Data saturation not mentioned | **Level III** Identifies a phenomenon and issues for further consideration | **Level III** |
| **Isaksen & Gjengedal, 2006** | **Level II** Sample selected on theoretical concepts, based on analysis of literature. Conceptual analysis recognizes diversity in participants' views. | **Level II** Theoretical concepts that emerge during analysis do not lead to further sampling. | **Level II** Provides good evidence and residual uncertainties are clearly identified | **Level II** |

### 3.4.4 Outcome measures

The selected studies used a variety of outcome measures including: heart rate (Bruhn *et al.*, 1970; Sczekalla, 1973), systolic blood pressure (Bruhn *et al.*, 1970), mood (Bruhn *et al.*, 1970), and recurring themes raised by patients (Badger, 1994; Hackett, Cassem & Wishnie, 1968; Isaksen & Gjengedal, 2006) regarding the experience of witnessing resuscitation.

None of the studies used validated instruments to assess the impact of witnessing resuscitation. Bruhn *et al.* (1970) and Sczekalla (1973) used physiological measures as indirect approximations of stress. Bruhn *et al.* (1970) also measured aspects of mood including anxiety, depression, hostility, anger and fear, using a non-validated 4 points scale (0=absent; 1=mildly present; 2=moderately present; 3=markedly present) based

on subjective observations by the head nurse. The qualitative studies focused mainly on exploring recurrent themes, as is usual with qualitative studies, rather than measuring an *a priori* defined outcome (Badger, 1994; Hackett, Cassem & Wishnie, 1968; Isaksen & Gjengedal, 2006).

Follow-up periods were either not stated (Badger, 1994; Hackett, Cassem & Wishnie, 1968; Isaksen & Gjengedal, 2006; Sczekalla, 1973), or carried out at three days after exposure (Bruhn *et al.*, 1970), with no justification given in any case. Given the variety of outcomes measures used, it was not possible to pool data for analysis.

### 3.4.5 Synthesis of results

In three studies, CPR procedures witnessed by patients were unsuccessful (Bruhn *et al.*, 1970; Hackett, Cassem & Wishnie, 1968; Isaksen & Gjengedal, 2006). Patients with myocardial infarction in CCUs were continuously monitored on ECG and most of them were on sedative drugs (Sczekalla, 1973), or had continuous IV therapy, urethral catheter and vital signs were recorded hourly, at least (Hackett, Cassem & Wishnie, 1968). Hackett, Cassem and Wishnie (1968) did not provide other details of continuous monitoring or medications of the participants. No details about patients' medical condition in CCU, continuous monitoring or level of sedation were provided in Bruhn's study (Bruhn *et al.*, 1970). Isaksen and Gjengedal (2006) only specified that participants from cardiac units and rehabilitation groups had myocardial infarction in the last five years, but no further details were provided. Differently, patients from the cardiac rehabilitation program had a variety of cardiac conditions and they witnessed different medical emergency on fellow patients, all of them followed by successful CPR procedures. In this case, patients' vital signs were recorded before exercise and several

times during the workout and some patients were on telemetry monitoring. No further details were given about medications (Badger, 1994).

Among the quantitative studies, Sczekalla's study reported a significant increase in heart rate in patients witnessing resuscitation attempts, when compared to those not exposed ($p=0.05$), four hours after the exposure than at baseline (Sczekalla, 1973). No significant difference was reported regarding the variation of heart rate within exposed patients, in different environmental settings (Hospitals A and B).

Bruhn *et al.* (1970) reported no significant change in heart rate between the study group and control group, although blood pressure was significantly increased ($p<0.05$) in the study group at day one. These patients also experienced significantly higher blood pressure ($p<0.01$) and heart rate ($p=0.05$) between day one and day three. Additional outcome measures included aspects of patient's mood such as anxiety, depression, hostility, anger and fear. The study group reported an increased anxiety 24 hours after witnessing a death after CPR compared to the control group ($p<0.001$) but no significant increase was reported in depression, hostility, anger and fear.

With regard to the three qualitative studies, two used interviews and other data collection techniques such as review of patients' charts, anecdotal observations and field notes (Badger, 1994; Hackett, Cassem & Wishnie, 1968), one used focus groups (Isaksen & Gjengedal, 2006). The study conducted by Badger (1994) found patients adopted a range of strategies to cope with witnessing a cardiac arrest in a rehabilitation setting. The first psychological response reported by study participants appeared to be shock, disbelief and denial, shown by the lack of any outward expressions of fear or panic and a general calm demeanour. Following inductive analysis of the qualitative data, three cognitive themes were identified: attributional searching (trying to find a

cause for the arrest), mastery (hypervigilance regarding rehabilitation and medications) and dissociation from the patient affected (restoring self-esteem through self-enhancing evaluations). Similarly, Hackett and colleagues (1968) found that most of the patients witnessing a cardiac arrest denied fear either during or after the arrest and none of the patients identified himself with the patient affected. Other themes unique to this article were the annoyance and irritation expressed towards those undergoing resuscitation, rapidly followed by astonishment at the efficiency of the arrest team, and reassurance by the arrest drill, as the patient felt safer after witnessing the CPR attempt. In Isaksen and Gjengedal's study (2006), only one participant in the five focus groups witnessed two unsuccessful resuscitation attempts of another patient. This experience was coded under the theme "disturbances" and sub-category "dramatic events". The participant's narrative was described as a chaotic situation, where, even if a folding screen was pulled, the patient could still hear everything.

In summary, these results suggest that witnessing CPR on another patient may represent a stressful experience, both physiologically and psychologically. Physiological stress factors were indicated by increased heart rate and blood pressure. The identified psychological stress experiences were related to anxiety, fear, disturbance and patients might adopt various coping strategies to respond to these stressful stimuli.

## 3.5 Discussion

This review aimed to determine the impact of patients witnessing CPR on a fellow patient through a systematic review of the existing literature with only five articles meeting the inclusion criteria. The limited evidence suggests that patients experience

physiological stress response while witnessing CPR, such as increased heart rate and blood pressure. The psychological burden of patients is demonstrated by emotions such as anxiety and disturbance, and by adopting a range of coping strategies. The most common strategies were described as dissociation from the affected patient and denial.

Some excluded studies focused on patients witnessing non-CPR procedures. For example, Vanson, Katz and Krekeler (1980) documented that patients in an open bay who witness invasive procedures such as a Swan-Ganz catheter insertion, temporary trans-venous pacemaker insertion, had a higher pulse rate ($p<0.001$) than patients nursed in glass-enclosed individual rooms. These results suggest that exposure to emergency procedures being performed on other patients is considered stressful and the environment in which the patients are hospitalised may influence their stress levels.

In the past decades, the concept of a "healing environment" has gained attention, emphasising the patient's physical and psychological comfort on healing and satisfaction (Frampton, Gilpin & Charmel, 2003; Sloane & Sloane, 2003). Following this concept, hospital architecture and configuration of patients' rooms are changing worldwide. In the UK, the NHS has advised that at least 50% of all patients beds should be in single rooms in new hospitals (Dowdeswell, Erskine & Heasman, 2004; Gesler *et al.*, 2004). Patients in single rooms have reported significantly more satisfaction than patients in multi-bedded rooms, especially in relation to quality of care, privacy, and dignity (Maben *et al.*, 2016; Reid *et al.*, 2015; Van de Glind, De Roode & Goossensen, 2007). One study compared the impact of multiple and single rooms on patients in CCUs (Leigh *et al.*, 1972). Results showed that multi-bedded units provided more social contact, while the single-bedded units provided more privacy and protection from witnessing other patients in distress. However, there was no evidence that quiet and protective single

rooms reduced anxiety levels (Leigh *et al.*, 1972). Based on case scenarios, Eshel, Marcovitz and Stern (2016) recommended to place the sickest patients in single rooms to prevent witnessed emergency procedures by other patients. However, stronger evidence is needed to hypothesise that single rooms prevent avoidable stress stimuli among in-hospital patients.

There is also evidence to suggest that while some patients may find that the presence of roommates provides comforting social support (Ulrich *et al.*, 2004), other studies indicate that a roommate, especially when seriously ill, is considered a source of stress for hospitalised patients (Larsen, Larsen & Birkelund, 2013; National Institute for Health and Care Excellence, 2012; Van der Ploeg, 1988). Consequently, witnessing a traumatic event regarding another patient may exacerbate this stress condition, with negative effects on patients' long-term outcomes. In such cases, support has been highlighted as an important issue, providing reassurance, listening and therapeutic touch (Playfair, 2010). Badger (1994) proposed a three phases nursing support strategy for patients including: 1) Comprehensive nursing assessment and construction of a good relationship with the patient (pre-event phase); 2) Providing factual information about events and honest answers to peer patients' questions (crisis phase); 3) Organising group meetings explaining what happened and anticipating medical outcome, with guidance if patient is suspected not to survive (post-event phase).

Witnessing resuscitation may also lead to stress responses in volunteer lay-responders (Genest *et al.*, 1990). A recent qualitative study has shown that providing out-of-hospital CPR is emotionally challenging for lay-rescuers (Mathiesen *et al.*, 2016). Among 20 interviewed lay-rescuers, the main themes were related to concern, uncertainty and coping strategies. Most rescuers experienced emotional responses having flashbacks

and nightmares lasting from days to months. All study participants found it beneficial to discuss their experiences with family and friends while some required professional counselling (Mathiesen *et al.*, 2016). Studies support the importance of debriefing lay-rescuers to help them to cope with emotional reactions after performing out-of-hospital CPR (Axelsson *et al.*, 1998; Møller *et al.*, 2014; Zijlstra *et al.*, 2015).

To date, literature on witnessed CPR has mainly focused on family presence during CPR and support for family members. Two European studies documented that UK critical care and cardiovascular nurses were more positive in supporting the presence of family members during CPR than non-UK nurses (Axelsson *et al.*, 2010; Fulbrook, Albarran & Latour, 2005). Axelsson *et al.* (2010) also found that cardiovascular nurses have concerns about family presence and uncertainties about the benefits for family members. Despite this, nurses strongly believe that support to the family should be provided by a designated team member with appropriate qualification (Axelsson *et al.*, 2010). Both studies recognised the lack of local protocols to regulate family-witnessed CPR in Europe (Axelsson *et al.*, 2010; Fulbrook, Albarran & Latour, 2005). Chen *et al.* (2017) recommended the implementation of family-witnessed CPR policies in Taiwanese regional hospitals, demonstrating that family-witnessed CPR is gaining attention in Asian countries. From a patient perspective, a qualitative study highlighted that successfully resuscitated patients were supportive to having their family members witnessing their CPR, for the emotional support and the advocacy of the family (McMahon-Parkes *et al.*, 2009). A recent cross-sectional study confirmed these results. About 50% of the participants wished to have family members during their CPR, not only for support but also to ensure that the team is providing the best care (Bradley *et al.*, 2017). Moreover, participants would like to express their preference about family presence and family

members with formal consent on admission, as also confirmed by Albarran *et al.* (2009). In the case of family members, a recent qualitative study found that the choice to be present or not during a relative's CPR seems to help in alleviating the pain of a death, through the feeling of having helped to support the patient during that important moment (De Stefano *et al.*, 2016).

Finally, evidence showed growing interest on the public's perspectives regarding family presence during CPR. Medical television series play a major role in the transmission of medical information and can influence the public's perceptions about what happens in hospitals (Lederman, 2013). From the analysis of two medical dramas series, it seems that family presence during CPR is not portrayed as recommended by guidelines (Lederman, 2013). Ong, Chung and Mei (2007) compared the attitudes of the public and medical staff. The public was more positive to family presence during CPR than staff, believing this would help in the grieving process, while staff believed that relatives would have a traumatic experience (Ong, Chung & Mei, 2007). Mazer, Cox and Capon (2006) found that almost half of the public in a random telephone survey preferred to be present during CPR on a loved one and reversely desired to have family present if undergoing CPR themselves. Although evidence exists regarding the perceptions of family witnessed CPR by the public, patients, family, and healthcare professionals, the topic of witnessed resuscitation by other patients remains unexplored. While some suggestions to improve supportive strategies to patients who witnessed CPR have been described, limited evidence-based recommendations are available (Fulbrook *et al.*, 2007; National Institute for Health and Care Excellence, 2012). This includes advice for healthcare staff providing support to those patients. The 2015 European Resuscitation Guidelines do not provide guidance regarding supportive strategies to in-patients

witnessing CPR of other patients while hospitalized (Bossaert *et al.*, 2015). Therefore, further robust research is needed to address clinical practice about supporting patients who witness other patients' resuscitation.

### 3.5.1 Limitations

The main limitation of this review was the low quality and low number of the included studies. Overall, these studies were methodologically flawed, greatly limiting the strength of any conclusion that can be drawn. Furthermore, most papers included in this review are outdated, with three of them published before 1975. Therefore, we were not able to clearly define the scope of impact of patients witnessing CPR on other patients, limiting our ability to define evidence-based recommendations for clinical practice.

### 3.5.2 Conclusion

The findings of this review provided limited evidence of the impact of patients witnessing other patients' resuscitation in hospital settings. The findings suggest that patients may experience witnessing resuscitation stressful. This review highlights a gap in the current knowledge of supporting in-patients experiencing CPR of another patient. Therefore, to overcome the knowledge and research gap, it is recommended to reconsider the paradigm of witnessed CPR and include a focus towards in-hospital fellow patients. Specifically, in-depth explorative studies are needed to determine the scope of impact of patients witnessing CPR on other patients, including the need for long-term follow-up care. It is hoped these studies would inform specific psychological support interventions to be implemented and tested in hospital settings. This will contribute to gain further insight into the impact of witnessed CPR and to inform future best practices.

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## 3.8 Disclosures

The authors declare that there is no conflict of interest.

# Chapter 4 Stakeholder consultations

In this chapter, consultations conducted with members of the public and professional stakeholders regarding the importance of exploring the phenomenon of patient-witnessed resuscitation through a research study are presented. The consultations sought to understand views of former patients with heart disease and healthcare professionals involved in resuscitation activities in hospital settings about patient-witnessed resuscitation. This was undertaken to inform the design of the WATCH study as reported in this thesis. In particular, the relevance of the topic, potential methodological issues and the ethical feasibility of the empirical proposed study were explored with stakeholders.

The stakeholder consultations, published in the journal *Nursing in Critical Care*, were conducted according to the NIHR Research Design Service (RDS) patient and public involvement (PPI) Handbook (NIHR, 2014).

The bibliographic details of the work, a description of the work and an estimated percentage of contribution (%) of each author are as follows: Fiori, M (90%), Endacott, R. (5%), Latour, J.M. (5%). The percentages of contribution have been agreed among all authors.

**Public involvement in designing a study on patient-witnessed cardiopulmonary resuscitation in hospital**

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## 4.1 Abstract


### Aims and Objectives

The aim of this paper is to report the findings of the consultation rounds with former patients and healthcare professionals to inform the design of a qualitative study. We aimed to understand stakeholders' views regarding the relevance of a proposed study looking at the impact of patients witnessing cardiopulmonary resuscitation on other patients in hospital, the appropriateness of the proposed methodology and ethical aspects.

### Key issues

We conducted an online survey (n=22) and telephone interviews (n=4) with former patients linked to the British Heart Foundation charity and a focus group (n=15) with hospital healthcare professionals involved in resuscitation activities. Data were analysed through thematic analysis. The consultation rounds provided valuable advice on three major themes: conceptual aspects, methodological aspects and practical suggestions. The conceptual aspects were related to the relevance of the proposed study, the emotional impact for participating patients, and how the social interaction among patients could influence the witnessing experience. Methodological advice related to recruitment strategies and data collection methods such as the use of individual and focus group interviews, the timeframe of interviews with patients, and the topics of the interview guides. In the third theme, practical suggestions were provided, such as strategies to advertise the study, improving the public and participants engagement throughout the study process and disseminating the findings. Overall, the study proposed in this consultation was considered relevant and worthy by patients and

healthcare professionals to raise awareness and generate new evidence on an unconsidered aspect of resuscitation and of patients' hospital experience.

## Points of learning for critical care practitioners

These stakeholders' consultation rounds constituted a valuable exercise to design high-quality research based on a shared vision among researchers, service users and clinicians. They also provided pragmatic advice to inform critical care practice to support patients witnessing cardiopulmonary resuscitation in hospital.


## Keywords

Cardiopulmonary resuscitation, public opinion, research design, patients, nursing

## 4.2 Background

Witnessed cardiopulmonary resuscitation (CPR) is a research topic that is gaining attention in the last decades. In the UK, the average incidence of in-hospital cardiac arrest is around 1.1 per 1000 hospital admissions (National Cardiac Arrest Audit, 2018). While a considerable amount of literature regarding family-witnessed CPR has been published (Breach, 2018; Toronto & LaRocco, 2019) and guidelines for supporting family members have been established (Fulbrook *et al.*, 2007), evidence investigating the impact of witnessing CPR of other patients in hospital and addressing the support they may need is still limited (Fiori, Latour & Los, 2017). The need to extend the knowledge on the framework of witnessed CPR in further directions has been highlighted in the nursing research agenda, including the perspectives of hospital patients who witness CPR of other patients and of healthcare professionals involved in their care (Köberich, 2018; Walker, 2006).

The involvement of the public and patients (PPI) is becoming an integral part of health research (Brett *et al.*, 2014). There is an internationally growing interest in involving patients and the public to set new research priorities that respond to stakeholders' needs and concerns in healthcare (Canadian Institute of Health Research, 2018; Dent & Pahor, 2015; Frank *et al.*, 2015; McKenzie *et al.*, 2017; National Health Medical Research Council, 2016). In the UK, the organisation "INVOLVE", established in 1996 by the National Institute of Health Research (NIHR), advocates the co-production of research projects supporting active cooperation between the public, practitioners and researchers (Hickey *et al.*, 2018). In addition, most research projects in the National Health Service (NHS) are reviewed for ethical approval by a Research Ethics Committee (REC). Therefore, robust PPI consultations represent an essential part of the ethical

review application, describing the role of the public and patients in designing and delivering the research (Health Research Authority & INVOLVE, 2016). In particular, at the very early stage of developing a research protocol a PPI consultation is highly valuable to address patient-relevant outcomes (NIHR, 2014).

A well-established tradition of public engagement involves mostly disease-specific and long-term condition patient groups. The long-term relationship between users and health services often facilitates the level of trust and mutual engagement and the specific disease allows identifying a clearly defined population (Hirst, Irving & Goodacre, 2016). However, when conducting research in emergency or critical care, involving the public and patients might represent a challenge (Burns *et al.*, 2018). Emergency care is characterized by short term, broad range of application and heterogeneity of patients (Hirst, Irving & Goodacre, 2016). CPR is, by definition, an emergency life-saving procedure, which every person could potentially be exposed to. It does not refer to disease-specific patient population and it may be encountered in different settings. Therefore, researchers may face challenges in identifying patients to involve in research at the design stage and beyond.

Despite the joint effort of professional and public organisations in setting research priorities in emergency care (Smith *et al.*, 2017), the views of stakeholders regarding patient-witnessed CPR in hospital are yet to be explored. Therefore, in line with NIHR guidance for researchers (NIHR, 2014), the views of multiple stakeholders were sought on the design of a proposed research study exploring patients' and healthcare professionals' experiences of witnessing CPR of other patients in hospital.

## 4.3 Aim

The aim of this paper is to report the findings of PPI consultations with people with heart diseases and hospital professionals involved in CPR activities to inform a study proposal on patient-witnessed CPR in hospital. The objectives of the consultation were to determine their views regarding:

- The relevance of the research question and the aim of the proposed study;
- The appropriateness of the proposed design and methods;
- The ethical feasibility of the proposed study.

## 4.4 Methods

### 4.4.1 Approach

An exploratory inductive approach with qualitative methods was used to understand the stakeholders' opinions on the proposed research study, which is summarised in Figure 4.1. A qualitative online survey and semi-structured telephone interviews were conducted among people with heart diseases. A focus group was conducted with hospital professionals involved in CPR in a large acute hospital. The consultations were conducted between February and June 2017.

In line with the NIHR and INVOLVE statement on ethics and PPI exercises, formal ethical approval was not required to conduct these consultations since the involved people were acting as specialist advisors in planning and designing a research protocol (NIHR, 2014). However, ethical measures to protect confidentiality and data protection, such as anonymization and secure data storage were undertaken, following the Good Clinical

Practice (GCP) and qualitative research ethics guidelines (European Medicines Agency, 2017; Richards & Schwartz, 2002).

**The WATCH study: Witnessing an ATtempt of CPR in Hospital**

**Our study proposal**
Impact and support of hospital patients witnessing a cardiopulmonary resuscitation (CPR) attempt on other patients: a qualitative study.

**Why we need to do this study**
Cardiopulmonary resuscitation involves receiving chest compressions and/or defibrillation. This lifesaving procedure is carried out when someone stops breathing or has no heartbeat. Every year in the UK thousands of hospitalised patients witness CPR carried out on other patients. At present, little is known about the impact of patients who witness a CPR attempt on other patients.

**What we aim to do**
We aim to investigate the impact of patients who have witnessed CPR on another patient and to identify the best support that can be delivered to patients by healthcare professionals. Therefore, our objectives are to:
• Explore the experiences of hospital patients after witnessing CPR on another patient;
• Identify the experiences of healthcare professionals involved in CPR and the support they provide to their patients;
• Define barriers, enablers and best practices improving the support to hospital patients who witness CPR on another patient.

**How we plan this study**
We will conduct semi-structured interviews with 12-15 patients and four focus groups with 4-8 healthcare professionals to explore their experiences.
Patients willing to participate must have had an experience of witnessing a CPR attempt on another patient. Two interviews per patient will be done. The first interview, while the patient is still in the hospital, aims to explore the initial impact of witnessing CPR. The second interview will take place after four weeks and aims to explore the longer-term impact of the experience.
For the healthcare professionals, the focus groups will explore the experiences, current practice and views of providing support to patients who witness CPR. Only healthcare professionals who have had a recent experience of a CPR attempt in their ward will be invited.

**What we hope this study benefits**
With the findings of the study we will develop and implement practice guidelines to support patients who witnessed a CPR attempt. These practice guidelines will help patients to cope with the experience. Above all, we will share our new knowledge with colleagues, patients and the public to encourage the delivery of better care to patients.

*Figure 4.1 Summary of the proposed study*

### 4.4.2 Public and professional involvement and recruitment

Members of the British Heart Foundation, a UK based charity supporting people with heart diseases, were involved in these consultations. The charity allows researchers to access its patients' involvement network *Heart Voices,* which includes volunteers interested in taking part in research consultations. The *Heart Voices* Patient Engagement Officer helped the researchers to e-mail to the volunteers a plain English summary of the proposed study, the consultation purpose and a link to participate in an online survey. In literature, a sample size ranging from 15 to 50 participants is considered adequate for a small project based on qualitative surveys (Braun & Clarke, 2013). For this exercise, a sample of 20 advisors was considered large enough to gain sufficiently rich feedback. The advisors were people with heart disease who had been hospitalised and who were willing to share their experience. Responders who agreed to be engaged further in the consultation process, by replying directly to the researchers' e-mail, were contacted to arrange a follow-up telephone interview.

Fifteen professional stakeholders were invited to participate in the consultation during a study day for professionals involved in CPR and representatives of different hospital wards. In agreement with the resuscitation officers, the outline of the study was presented during the Resuscitation Link Nurse/Person meeting, held at the hospital site, which involved registered nurses and other health professionals. Prior to the meeting, a study summary was e-mailed to the participants, explaining the purpose of the consultation. At the meeting, the researchers presented the outline of the proposed study and invited the healthcare professionals to share their views in a focus group.

### 4.4.3 Data collection

Volunteers of *Heart Voices* participated in an online survey and subsequent telephone semi-structured interviews. The research team developed the online survey using Survey Monkey and published it online. The survey included six open questions regarding the relevance of the research topic and the proposed study design. The *Heart Voices* Patient Engagement Officer reviewed the draft of the survey for suitability prior to forwarding it to the members. The web link to the online survey was available for a duration of four weeks.

Subsequently, telephone interviews were used to get a deeper insight of the stakeholders' views on some of the themes raised in the survey. A semi-structured interview guide was developed based on the preliminary analysis of the survey responses. The interviews were audio-recorded and transcribed. After the transcription, the audio records were destroyed and the transcripts were anonymised.

The consultation with the professional stakeholders was completed as one focus group. The research team developed a semi-structured discussion guide focused on feasibility and logistical considerations, as participant recruitment and data collection methods. In agreement with the professionals attending the focus group, the discussion was not audio recorded. A second observer made detailed notes of the discussion without adding any personal details of the participants nor reporting any direct quote.

In total, 37 stakeholders were involved in these consultations. Twenty-two members of *Heart Voices* participated in the online survey; of these, three men and one woman (n=4) voluntarily contacted the researchers after the survey to be further involved in the consultation and took part in one telephone interview. Telephone interviews lasted from 14 to 50 minutes. Fifteen healthcare professionals took part in one focus group

interview. The focus group comprised twelve registered nurses, one radiographer, one matron and one resuscitation officer and lasted around one hour.

### 4.4.4 Data analysis

The data generated from the qualitative survey, the telephone interviews and the focus group were organised using NVivo 11. Data were analysed through thematic analysis (Braun & Clarke, 2006), using an inductive approach, not driven by any existing theory to allow frequent and significant themes to emerge from the data. The first author (MF) read and re-read the full transcribed text for familiarisation with the data and formulated an initial index of codes. Similar codes were merged together in sub-themes. The sub-themes were then renamed and collated together under potential main themes. Two experienced researchers (JML and RE) reviewed the identified themes and sub-themes. Data collected from the consultations were analysed separately for each stakeholder group and subsequently merged together under three final themes: conceptual aspects, methodological aspects and practical suggestions, summarised in Table 4.1. Rigour and trustworthiness were ensured through participants' checking of the telephone interviews and focus group transcriptions and through the review of data collection, analysis and interpretation of findings process by the research team members (MF, JML, RE).

*Table 4.1 Findings of the consultation rounds*

| Themes | Sub-themes | Codes |
|---|---|---|
| **Conceptual aspects** | Relevance of the study | Awareness on the other patients' perspectives |
| | | Current practice in hospital |
| | | Beneficial value |
| | Emotional impact | Potentially traumatic experience |
| | | Lack of privacy |
| | | Need of sharing the experience |
| | | Need of support |
| | Social interaction | Patients' relationship |
| | | Patients' conditions |
| | | Length of hospitalisation |
| | | Social comparison |
| **Methodological aspects** | Patient Recruitment | Early recruitment |
| | | Involvement of resuscitation team |
| | | Follow clinical team advice |
| | Patient data collection | Face-to-face interviews |
| | | Open questions |
| | | Flexible time schedule |
| | | Presence of a third person |
| | Professionals data collection | Focus group |
| | | Individual interviews |
| | | Logistic organisation |
| | | Separate for resuscitation team |
| **Practical suggestions** | Seek professional and family perspectives and emotional impact | |
| | Acknowledge patients' conditions, context emotional burden | |
| | Keep the public involved | |
| | Advertise the study to increase visibility | |

## 4.5 Findings

### 4.5.1 Conceptual aspects

Overall, all the stakeholders considered the study very relevant to allow the researchers to gain new knowledge about patient-witnessed CPR, to give voice to the witnessing patients and to shed a light on the current practice in hospital wards. In fact, professional stakeholders emphasised during the discussion that although resuscitation officers and nurses do informal checks on patients witnessing CPR answering their questions, this is not a standardised practice everywhere and needs further exploration.

A main theme arising from the consultation was the emotional impact that witnessing resuscitation can generate on patients. Witnessing CPR was considered by many stakeholders potentially traumatic and the lack of privacy was one of the factors potentially influencing the experience:

> *"But if you are in a bay, let's say six beds, and something happens to one of the other people in that bay, all the other five people are always involved as well, aren't they? They have all been affected."* [Ref. 1, telephone interview]

The need to share the experience with somebody appeared to be important, too. This aspect was linked to the importance of providing emotional support after the event and follow-up with patients on possible long-term consequences of the experience:

> *"I think it is very important to support somebody because I've spoken to many people that witnessed a cardiac arrest, and they need to speak about it, because otherwise if they keep it for themselves it is going to affect them quite badly."* [Ref. 4, telephone interview]

Another important theme regarded the social interaction between the patients, and its impact on the witnessing experience. Elements such as the length of the hospitalisation, the medical condition, the bond developed between the resuscitated patient and the

witnesses, and mechanisms of social comparison seemed to have a role in determining the whole experience:

> *"The degree of friendship they had developed with the person receiving CPR is also important. At one of the events that I witnessed, a fellow patient was shouting and trying to get to the bed as she felt she could help her 'friend' and they should not give up on her. I think this is different to seeing someone coming in via A&E or with whom you had never talked to or shared a bay."* [Ref. 1, telephone interview]

> *"I knew that happened, I knew it was shocking and I also knew the patient passed away* […] *and it actually caused some concern to me, because I thought – Is it going to happen to me?-"* [Ref. 3, telephone interview]

### 4.5.2 Methodological aspects

Both consultees groups discussed recruitment strategies to involve in the study patients who witnessed CPR. A general consensus was reached on early recruitment within the first few days after the event, while some concerns regarded the modalities of recruitment and the professional figures involved. Most stakeholders agreed on allowing some time between the recruitment and the interview to let the participants reflect and prepare themselves for the conversation. Professional stakeholders suggested involving the resuscitation team to flag up the CPR events to the research team during daytime and engaging the ward nurses to promote the study with eligible patients.

BHF consultees considered face-to-face interviews an appropriate data collection method to explore patients' experiences deeply:

> *"I think face-to-face interviews are essential for the first interview* […]. *Witnessing such an event is very traumatic for other patients, and I think a personal interview should be conducted privately. I think the interviewer should be prepared to spend a long time with some interviewees so that they can relive the experience and cope with the questions."* [Ref. 2, online survey]

They also provided relevant suggestions on how to develop the interview guide including how to introduce the study:

> *"I think you need to put the patient at some sort of ease and explain them the protocol."* [Ref. 3, telephone interview]

Prompting initial specific questions to understand the context and break the ice:

> *"I would like to start with this sort of specific* (questions) *to get into it for example: what time of the day did it occur? Did they know the patient well? Who actually carried it* (CPR) *out?* […] *they are kind of specific* (questions) *and easier for them to answer initially."* [Ref. 1, telephone interview]

And final open questions about the experience of witnessing CPR and the developed feelings:

> *"I wouldn't put more specific things on things like ehm…-can you tell me how you felt about it? What thoughts did you have?- I think those just need to be left totally open for them to say their views."* [Ref. 1, telephone interview]

Everyone agreed with the need of a private space to conduct the interview in hospital. Consultees of both groups suggested allowing the presence of a third person during the interview, as a relative, to reassure the patient and provide an independent perspective of the experience.

Professional consultees considered focus group interviews a valid method to explore healthcare professionals' experience on supporting patients witnessing CPR. However, some concerns arose regarding the logistical organisation of the interviews, considering the workload of the hospital staff and the difficulties in gathering groups of participants at once. Therefore, consulted professionals suggested conducting individual interviews besides focus groups, with professionals who satisfy recruitment criteria to accommodate to their schedule and increase the chance of participation.

### 4.5.3 Practical suggestions

Stakeholders highlighted a number of suggestions considered valuable by the researchers. Patients stressed the need to seek also professionals' perspectives and the emotional impact on professionals and family members:

> *"The staff need to be interviewed about their feelings too and why they are resistant to discussing the incident with the other patients. It's a bit like an elephant in the room…we all see it happening then nobody talks about it."* [Ref. 8, online survey]

This is also reflected in the discussions with the healthcare professionals: a member of the group reported that in some areas the staff take few minutes to debrief about the event. They reflect on what happened, what went well and what did not and what kind of support can be provided to the rest of the staff involved and the patients.

BHF consultees stressed the point of keeping the public involved during all the research. Considering medical team advice in identifying suitable participants and acknowledging the context of the event, the conditions and the possible emotional burden of the witnessing patients was also recommended:

> *"*[…]*All people are individual and unique, and all feel, think and act differently. When compiling a study, every single difference has to be factored in.* […]*"* [Ref. 6, online survey]

They also suggested the researchers to approach patients together with a staff nurse or a member of the CPR team, to help establish a trustworthy rapport. Some professional stakeholders suggested advertising the study in the hospital through fliers, internal communications, presentations to senior staff meetings to facilitate the participation of healthcare professionals in the study and their engagement in patients' recruitment. Others proposed to introduce the discussion of the study during daily debriefs in the wards. Both groups of consultees stressed the importance of disseminating findings

among relevant audiences. Patients suggested spreading the results through the BHF newsletter and public events, while professional stakeholders proposed presenting the results during study days for staff in the hospital.

## 4.6 Discussion

This paper appears to be the first published work presenting stakeholders' consultations on the perspectives of patients and professionals on patient-witnessed resuscitation. This exercise makes a valuable contribution to the design and the development of a research study aiming at exploring the impact of patient-witnessed resuscitation from patients', nurses' and other healthcare professionals' perspective (Fiori, Endacott & Latour, 2019b).

The findings of this consultation showed that all participating stakeholders considered new research on patients witnessing resuscitation highly relevant and necessary. Findings highlight that resuscitation involves everyone in the room. Witnessing patients might find the experience distressing and there seems to be a need among patients to improve disclosure about the incident.

The four consultees who participated in the telephone interviews reported that in their previous experiences of witnessing CPR, they might have found beneficial to discuss the incident with healthcare staff. Similarly, the need to disclose with a member of staff when patients witness the deterioration of fellow patients was found in a study exploring patients' interaction in a hospital ward (Laursen, 2016). In both cases, patients' need for support was not always met by healthcare staff. Patients often engage with other patients and share their feelings and concerns among them. Peer support during

hospitalisation appears to provide a unique sense of empowerment as patients feel understood by a peer that has been through a similar process (Borregaard & Ludvigsen, 2018), but this cannot substitute for professional support.

These consultations provided valuable information on methodological aspects too. Patients were mindful of the impact of CPR on healthcare professionals, supporting the inclusion of hospital staff in the study population. Perspectives and practices of healthcare professionals have been previously investigated mainly regarding family presence during resuscitation (Sak-Dankosky *et al.*, 2014), but not toward witnessing patients yet. To facilitate participation, consultees suggested adopting multiple data collection methods, as individual and focus group interview. The use of multiple data collection methods is supported to help triangulation (Patton, 2002) and in nursing research the combination of individual and focus group interviews is adopted to enhance data richness (Lambert & Loiselle, 2008). Consultees also advised on recruitment strategies, supporting early patient recruitment, but allowing a flexible interview time schedule.

Within the scope of designing a research study, these findings raise ethical reflections about researching on sensitive topics. Nursing and health research often focuses on aspects of life that are considered sensitive (Enosh & Buchbinder, 2005), but although facing some ethical challenges, exploring these topics is essential to gain a deeper understanding of patients' needs and to progress towards better care. Consultees suggested including support strategies to help patients coping with the potential discomfort of the event and of the interview. Therefore, on-site support services were involved to ensure that study participants would receive appropriate information and practical advice about possible emotional responses they may encounter. A supportive

approach was maintained from the development of the guide until the conclusion of the interview. Interview guides were based on consultees' advice of asking open not leading questions and limiting closed questions to set the context of the event. Additionally, other strategies of sensitive questioning supported by the literature were adopted (Cowles, 1988; Elmir *et al.*, 2011; Nieswiadomy, 1998). A certain flexibility in the interview guide was allowed to let the topics emerge gradually following participants' pace (Brannen, 1988).

Finally, following stakeholders' advice of keeping the public engaged during the whole research process, the BHF consultees involved through the telephone interviews were invited to constitute an advisory group to consult with the research team throughout the further stages of the research.

### 4.6.1 Limitations

We are aware that these stakeholder consultations have some limitations. The recruitment of a very specific sample may not reflect the full spectrum of views of patients and healthcare professionals towards the proposed study. People with heart disease involved in the consultations were recruited through *Heart Voice,* therefore keen to participate in research consultations. In the same way, participating professionals were all involved in CPR activities in the hospital, either in first line or as spokespersons of the resuscitation team in the different wards. Therefore, their views and overall support for the proposed research might not reflect the views of the clinical hospital staff who do not deal often with CPR.

## 4.7 Conclusion

This consultation provided valid feedback on the relevance and feasibility of a research study on patient-witnessed CPR. The findings enhanced conceptual, methodological and ethical choices taken in the development of the study protocol and highlighted research points that need to be addressed. The enthusiastic participation of stakeholders in our consultations encourages the advancement of health research in partnership with the public, patient and professional stakeholders. These consultation rounds have been informative and significant to perform high quality research on the impact of patient-witnessed CPR in hospital and to address future clinical practice in critical care.

## 4.8 Impact

**a) What is known about the subject**

- Witnessing CPR may represent a stressful experience that has been investigated from different bystanders' point of view, but not from fellow patients' perspective.
- Involving public, patient and professional stakeholders in defining research priorities is now paramount to design and deliver sound healthcare research responding to user and professional needs.
- The views of stakeholders on research focusing on patient-witnessed CPR have not previously been explored.

**b) What this paper contributes**

- This paper outlines an overview of multiple stakeholder opinions on the relevance of a novel research study on patient-witnessed CPR and provides methodological advice on conducting the proposed study taking into account participant needs.
- It gives an insight on the main ethical issues identified by former patients and healthcare professionals.
- Finally, it provides a worked example of strategies used to conduct a successful PPI consultation.

# Chapter 5 Methodology

## 5.1 Introduction

In this chapter, the rationale for the philosophical, theoretical and methodological decisions underpinning the WATCH study is stated. These decisions were informed by the results of the systematic review of the literature reported in Chapter 3 and findings of the stakeholder consultations described in Chapter 4. First, in this chapter, the philosophical and theoretical underpinnings of the study are examined. Different methodological approaches are then considered, and the choice of the selected approach, based on descriptive phenomenology, is justified. Finally, a critique of the methods used to conduct this study is discussed. The detailed study protocol is presented in Chapter 6.

## 5.2 Purpose of the study

The work conducted in the previous stages of this doctoral project through a systematic review of the literature and through stakeholder consultations, identified gaps in relation to the understanding of the phenomenon of patient-witnessed CPR. In particular, the systematic review provided limited evidence documenting the impact on patients of witnessing resuscitation of a fellow patient in hospital settings and on existing support strategies for witnessing patients. The stakeholder consultations conducted with former hospitalised patients and healthcare professionals involved in hospital resuscitation practice also confirmed the necessity and relevance of conducting novel research to address these knowledge gaps. Stakeholders provided valuable advice

regarding conceptual, methodological and practical aspects that new research should take into account.

Based on the findings of the systematic review and supported by the stakeholder consultations, the following research question was formulated to take into account perspectives of witnessing patients and of healthcare professionals involved in CPR activities:

> *What are the experiences of the patients and of the healthcare professionals regarding patients witnessing resuscitation of another patient in hospital?*

In addition to understanding these experiences, it was also important to identify the best support that could be delivered to patients by healthcare professionals. The objectives of the study were therefore:

- To explore the experiences of hospital patients witnessing a CPR attempt on another patient.
- To identify the experiences of healthcare professionals involved in CPR and the support they provide to patients who witness CPR.

Any research question guides the choice of an appropriate methodology to conduct the research study, and informs the design to achieve the research objectives (Watson *et al.*, 2008). Given the limited evidence available, an exploratory approach was required to investigate the phenomenon of patient-witnessed CPR. The choice of qualitative methods for the WATCH study was justified by the fact that such methods allow a rich and multi-faceted understanding of a phenomenon, revealing and retaining the complexity of individual experiences and meanings through qualitative data (Braun & Clarke, 2013). Exploratory qualitative research, by its nature, is not driven by pre-defined

quantitative measures and categories; it is open-ended as it permits a full range of responses to emerge, including unanticipated outcomes. This is essential for the process of knowledge generation because it allows multiple aspects of the phenomenon under study to be considered, offering a deep understanding (Bryman, 2016). Hence, qualitative methods were considered well-suited to understand the experiences of patients witnessing CPR and of healthcare professionals involved in their care.

## 5.3 Philosophical underpinnings

A fundamental starting point when embarking on this research was the necessity to understand and justify the methodological choices underpinning this study in light of the philosophical and theoretical framework. According to Crotty's framework (Crotty, 1998), every research process is characterised by four basic elements, which logically inform one another: epistemology, theoretical perspective, methodology, and methods. Firstly, epistemology is the theory of knowledge embedded in the theoretical perspective and in the methodology. It refers to the nature of knowledge, and the rationale for our belief in it; it responds to the questions: *How do we know what we know? What is the basis of our knowledge?* Secondly, the theoretical perspective is the philosophical stance or set of assumptions about reality that informs the methodology; it provides a context for the process and grounds its logic and criteria. It states the assumptions that are embedded within a certain methodology. Thirdly, the methodology is the strategy or plan of action governing the choices and uses of a particular research method; it informs the rationale of the choice of a particular research method and the way the chosen method will fulfil the aims of the research. Fourthly, the research methods are the techniques and procedures used to gather and analyse

data related to the research question. Methods are the concrete activities necessary to achieve the aims and objectives, and answer to the research question.

Therefore, defining the theoretical framework of this research required careful analysis of each of the four elements, in order to establish a sound foundation based on the most appropriate choice of philosophical, theoretical and methodological approaches. Sections 5.4 – 5.7 discuss which philosophical, theoretical and methodological approaches were chosen to inform the design of this research, as shown in Figure 5.1 and the reasoning behind the choices.

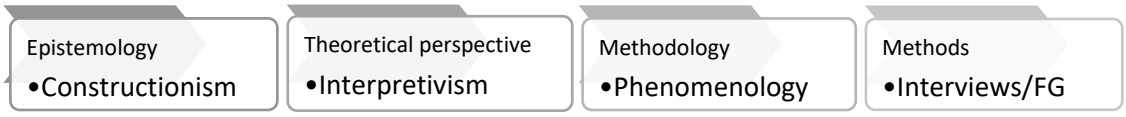


*Figure 5.1 Theoretical framework of the research design [from (Crotty, 1998)]*

## 5.4 Ontology and epistemology

Ontology and epistemology are intrinsically connected. Ontology is the study of being and it responds to the question: *What counts as reality* (Crotty, 1998, p.10)*?* It concerns on what is considered reality, and what there is to know about the world (Ritchie & Lewis, 2003, p.11). Crotty, although not including the ontological element in his framework, affirmed that both ontology and epistemology inform the theoretical perspective, responding to the questions: *What is that we want to know* (ontology)*? How do we want to know it* (epistemology)*?* Therefore, an ontological claim needs to be made before stating the epistemological position.

The fundamental ontological question considers whether reality exists separately from human conceptions and interpretations. The *realist* ontological orientation affirms that

reality is entirely independent from the human understanding and knowledge of it (Ritchie & Lewis, 2003): there is only one objective reality that can be investigated, univocally measured, and therefore generalised. In contrast to realism, *relativism* argues that there is not a single reality, but a series of alternative social constructions. According to relativism, the way things exist (reality) is derived from the meanings that individuals give to those realities (Crotty, 1998). Relativism looks at the subjective meaning of reality, rather than at an objective truth, and holds the knowledge as contextual (Crossan, 2003; Drummond, 2005). Following this approach, realities are mental constructions based on experiences and on the social and cultural contexts attached to them. Hence, these constructions are not more or less true than others, but rather more or less informed or sophisticated (Guba & Lincoln, 1994), and can be understood through an in-depth exploration of the experiences and contexts of the individuals. Therefore, given the research question, relativism was the appropriate ontological underpinning of the WATCH study.

Epistemology is driven by ontological assumptions. The epistemological approach provides the "philosophical grounding for deciding what kinds of knowledge are possible and how we can ensure they are adequate and legitimate" (Maynard, 1994, p.10). From an epistemological point of view, the process of knowledge acquisition can be typically deductive or inductive, although this distinction is not so clear-cut. Deduction makes use of collected data and observations to test existing theoretically-derived hypotheses (a top to bottom process), whilst induction uses observations of the world to build new patterns and theories (a bottom-up process) (Ritchie & Lewis, 2003). In the WATCH study, an inductive approach was used to collect and analyse data.

Epistemology also examines the relationship between knowledge and the researcher during the research process, and the connection between facts and values. An *objectivist* epistemology, likely informed by a realist ontology, is where the researcher will maintain an outsider's (*etic*) perspective (Harris, 1976) through objectivity and distance from the subjects of the study. The aim of the objectivist researcher is to discover the meaning of the object under study, independently from the interpretations that an individual may impose on that object. Following this approach, the researcher will discover a factual, value-free truth, unaffected by the behaviours and the values of the researcher. A *constructionist* epistemology, on the other hand, is likely to be informed by a relativist ontology; here the researcher will adopt an insider's (*emic*) perspective (Harris, 1976), interacting with study participants to understand their realities. The meanings, which exist as a result of engagement of the individual with the realities of the world, are not discovered by the researcher alone, but constructed together with the participants during the research process. The process of knowledge, in this case, is still empirical and grounded in the data. It is not informed by a singular underlying reality that provides the foundation to that knowledge to be true, but by multiple, possible different realities. The potential influence of the researcher on the phenomenon being researched is acknowledged: knowledge is defined through the lens of the researcher's values (value-mediated) or agreed between the researcher and research participants.

In between these two positions, a third position is known as *'empathic neutrality'*. This is where researchers recognise that their research cannot be free from their own values and seek to be neutral in their approach and to make their assumptions transparent. Reflexivity is an approach used to help researchers reflect on how their beliefs, background and presence can influence the way data is collected and analysed (Ritchie

& Lewis, 2003). In the WATCH study, reflexivity was used to help identify any personal or professional experiences that could influence the study and data collection and analysis. The strategy used to minimise any influence from these was the bracketing technique. Further details of these techniques are explored in following sections of this chapter. Given these assumptions, constructionism was considered the appropriate epistemology to inform the theoretical perspective of the proposed research.

## 5.5 Theoretical perspective

The theoretical perspective is the philosophical standpoint that informs the methodology and it is essential to an understanding of the assumptions that govern the way a certain methodology conceives and investigates the world. It is informed by the ontological and the epistemological underpinnings. However, it needs to be clarified that, similar to ontological and epistemological orientations, different theoretical perspectives do not have set boundaries, and a certain level of overlapping can be sometimes found among similar perspectives. In this research, a relativist ontology and a constructionist epistemology inform an *interpretivist* theoretical perspective, to underpin a study focusing on the exploration of individuals' perceptions of a given social phenomenon, in this case hospital resuscitation witnessed by patients.

Interpretivism emerged in contrast to *positivism* in an attempt to understand and explain human and social reality (Crotty, 1998). The theoretical perspective of positivism developed during the seventeenth and eighteenth centuries within the Enlightenment age, in which the dominant idea was that human reasoning could discover truths about the world, religion, and politics (Duignan, 2019). In line with Enlightenment principles

and in the context of scientific discovery, the claim of positivism was that valid, unambiguous and accurate knowledge of the world could be obtained through the rigorous application of the scientific method. Influenced by realist ontology and objectivist epistemology, positivism focused on the importance of objectivity in the discovery of a single true reality, and on the development of knowledge by careful and direct observation of the world through the human senses. Following this approach, inductive reasoning was applied to data collected through direct observation in order to develop knowledge and formulate general laws from empirical instances (Willis, 2007). Moreover, positivists viewed the researcher and the researched as independent entities that did not exert influence over each other (Guba & Lincoln, 1994), and believed that objective and value-free research is possible (Willis, 2007). Whilst the major area of knowledge to make use of positivism and of the scientific method was that of the natural sciences, this school of thought also had a major influence on the advancement of social sciences over the last centuries. Within the latter, one of the major proponents of positivism was Auguste Comte (1798–1857), who asserted that the social world could and should be studied in the same way as the natural world, based on direct observations from which universal and invariant laws of human behaviour could be identified (Ritchie & Lewis, 2003). From a pure positivistic perspective therefore, the methods used in natural science are considered appropriate for the study of social phenomena (Willis, 2007). Since the aim of the WATCH study was to capture the richness of different human experiences rather than a universal and invariant law of behaviour, a positivist approach was not considered appropriate to underpin the theoretical perspective of this research.

In reaction to the positivist perspective, interpretivism started to develop during the nineteenth and early twentieth centuries from the ideas of the illuminist philosopher Immanuel Kant. In his *Critique of Pure Reason* (1781), he argued that other ways of knowing the world exist that are different from direct observations; perception is not only related to the evidence of the senses but also to the human interpretation of what the senses are telling to the individual. Kant started to shift the focus of knowledge acquisition from observation to understanding. The "understanding" of the world transcends the basic empirical enquiry and emerges from thinking and reflecting on what happens, giving an interpretation of the phenomenon being studied (Ritchie & Lewis, 2003). Further developments of this theoretical perspective distinguished between "understanding", intended as an interpretive approach needed to study human and social phenomena, and "explaining", intended as an experimental approach focused in causality that is used in natural science (Crotty, 1998).

While some interpretivists asserted that natural reality and social reality are in essence different kinds of realities that require different methods of investigation (Schwandt, 2000), Max Weber (1864-1920) believed that maintaining a merely observational approach was not sufficient to gain a full understanding of the humans' lived experiences. He stressed that the researcher should strive to understand the meaning of individual and social experiences and explain them in the context of the social, cultural and historical background in which people lived those experiences (Ritchie & Lewis, 2003). Grounded in Weber's thought, the interpretivist approach looks at the interpretations of the social world, in relation to the cultural and historical context of that moment in time (Crotty, 1998). This definition of interpretivism reflects the one provided by Ritchie and Lewis, which states that interpretivism is the school of thought

that stresses the importance of interpretation as well as observation in understanding the social world (Ritchie & Lewis, 2003). These philosophical assumptions fit well with the aim of the WATCH study, supporting its orientation toward understanding the meaning of the phenomenon of patient-witnessed resuscitation for those who experience it.

Crotty (1998) however, argues that in recent times interpretivism has lost its interest for empirical verification and for causal explanation. Instead, interpretivist researchers seem to have embraced the distinction between social and natural sciences, accepting that they require different methods of investigation. At this present time, the issue of whether there is a critical distinction between the natural and the human sciences on the basis of different aims, explanation and understanding, goes beyond the interpretivist debate and still remains unsettled (Schwandt, 2000).

The positivist and interpretivist theoretical perspectives have been traditionally associated with the application of quantitative and qualitative research respectively (Bryman, 2016). Whilst quantitative research emphasises the measurement and analysis of causal relationships between variables, claiming value-free, objective results, qualitative research stresses the socially constructed nature of reality, the interrelation between the researcher and what is studied and the situational context of the inquiry (Denzin & Lincoln, 2000). These intrinsic characteristics of both quantitative and qualitative research are reflected in the ontological, epistemological and theoretical underpinnings described so far. It is of interest to note, however, that the discussion on this radical dichotomic distinction among social scientists is still ongoing. Atkinson (1995) warned that such simplistic polarisation between positivist and interpretivist perspectives and between quantitative and qualitative research is not applicable to the

study of the real world. In nursing research, Thorne et al. (1999) reflected on the risk of oversimplifying the articulated philosophical and theoretical discourse behind research approaches. Moreover, Crotty (1998), in his research framework, argues that the distinction between quantitative and qualitative does not occur earlier than at the methods level. Awareness of this debate is important to justify the theoretical framework that informs the methodological choices of the WATCH study, and to note, once again, the association between interpretivism and qualitative research.

In summary, in order to capture the meaning of lived experiences of patients who witnessed resuscitation on another patient and of the healthcare professionals involved in their care, adopting an interpretivist theoretical framework was considered the most appropriate choice for this study. Such a framework, with its epistemological leaning towards constructionism, emphasises that knowledge is constructed by human beings rather than through value-free observations and universal laws. Human beings are shaped by different social variables such as culture, gender, age, life-experience or emotional temperament. The perceived impact of witnessing the same event, in this case the resuscitation of a fellow patient, is different for every individual and may even change over time and after a period of reflection. The chosen framework allows for such flexibility, whereas a more positivist approach might reduce the depth of the research findings.

## 5.6 Methodological approach

Within the interpretivist theoretical perspective, multiple methodologies mainly associated with qualitative research, are referred to in the literature including:

phenomenology (Crotty, 1998; Galvin & Holloway, 2015; Parahoo, 1997), grounded theory (Corbin & Strauss, 2008; Crotty, 1998), ethnography and case studies (Willis, 2007). Regardless of their use of different methods, these methodological approaches have a focus on the understanding of the world of the lived experience from the point of view of those who live it, thereby ultimately "interpreting" and "reconstructing" subjective meanings (Hill Bailey, 1997; Schwandt, 2000). The researcher becomes an instrument of data collection, with data being collected mainly in the form of words or pictures through interviews and observations; participants' words are analysed and described through rich and expressive language (Bogdan & Biklen, 1992; Eisner, 1991; Merriam, 1988). This interpretative tradition characterises extensive qualitative work in health research (Green & Thorogood, 2018). *Phenomenology*, a methodological tradition well established in nursing science (Dowling, 2007), seeks to identify the essence of human experiences concerning a phenomenon, as described by the participants (Creswell, 2003). Following careful consideration of the other mentioned methodologies, phenomenology was chosen as the most appropriate methodological approach to answer the research question. Phenomenology has the potential to truly capture the lived experience of patients who witness resuscitation of a fellow patient and of the healthcare professionals involved in hospital resuscitation.

An initial consideration was made between phenomenology and *grounded theory*. These two methodologies share the same interest in terms of description and understanding of a phenomenon (Osborne, 1994), but grounded theory aims to 'derive a general, abstract theory of a process or interaction grounded in the views of the participants' (Creswell, 2003, p.14). According to Charmaz (2006), grounded theory is best suited for research questions regarding the understanding of social processes that

underpin a phenomenon, as distinct from capturing the essence of an individual's experience. One of the distinctive characteristics of grounded theory is the theoretical sampling of participants, where the sampling strategy is not set a priori, but might change as the theory development process evolves (Chen *et al.*, 2012; Marshall, 1996). In phenomenology, a purposive sampling is used to find people who can 'illuminate the phenomenon of interest' with their personal experience (Osborne, 1994, p.183), which was found most appropriate for the aims of this research. Concerning data collection and analysis, phenomenology analyses data gathered mainly from in-depth interviews to produce a rich and detailed description and interpretation of the human experience. Grounded theory on the other hand, develops theoretical explanations and tentative hypotheses about relationships among categories of data, by constantly comparing data as research proceeds, and attempting to categorise on a best fit basis (Osborne, 1994). Braun and Clarke (2013) argued that the production of a full grounded theory is a highly demanding process, achievable in larger studies not constrained by time and resource pressures. Given the little work conducted in the area of patient-witnessed resuscitation, the aim of the WATCH study was not to generate theory or an understanding of basic psychosocial processes; it was to bring new knowledge to this under-researched area through describing experiences. Therefore, use of a grounded theory approach was rejected.

Another comparison was undertaken between phenomenology and *ethnography*. Both methodologies focus on the meaning of the experience of a phenomenon. However, while phenomenology looks at the essential structures of meaning, based on the individual experience, ethnography searches for predictable patterns of thought and behaviour among a cultural group of people in a specific natural setting (Osborne, 1994).

Therefore, ethnography offers the opportunity to create descriptive cultural knowledge of a specific group and of the activities and interactions of that culture-sharing group (Cohen, Morrison & Manion, 2007; Creswell, 1998). To fulfil its purpose, ethnography would have been more indicated to explore cultural aspects regarding the phenomenon of witnessing resuscitation, rather than the individual lived experience of patients and healthcare professionals. In ethnography, the research process involves fieldwork over a long period of time and the collection of primarily observational data (Creswell, 1998), together with depth-interviews of key informants (Hill Bailey, 1997). The ethnographer is immersed in the day-to-day lives of the people, understanding the 'way of life' from the native (participant) point of view (Spradley, 1979, p.3). In the context of the WATCH study, ethnographic fieldwork was unlikely to be achieved for the nature of the specific research setting and for the unpredictable nature of resuscitation events. In fact, this would have required the researcher spending prolonged time in a specific clinical ward, observing the behaviour of patients and of healthcare professionals, with a low chance of witnessing the occurrence of a patient's cardiac arrest and subsequent resuscitation performance.

Finally, a distinction was made between phenomenology and *case studies*. In case study research, the researcher explores in depth a case, such as an event, an activity, or a process, or one or more individuals, to study the particularity and the complexity of the single case in relation to its natural context (Merriam, 2009; Stake, 1995; Yin, 2014). The cases are bounded by time and activity, and researchers collect detailed information using a variety of data collection procedures, including observations, interviews, audio-visual material, documents and reports (Stake, 1995). In the case of the WATCH study, case study could represent a possible methodological choice. It would have offered the

opportunity to explore in depth the same, or more than one, case of witnessed resuscitation in hospital, from the perspective of the witnessing patients bounded in the same time and space of the event, and of the healthcare professionals who responded to the cardiac arrest event performing resuscitation. However, such an approach was considered unlikely to be feasible, due to the challenges in tracking retrospectively both the witnessing patients and the healthcare professionals involved in the same resuscitation event.

### 5.6.1 Phenomenology

Phenomenology is defined as an interpretative, qualitative form of research that seeks to study phenomena that are perceived or experienced by individuals, identifying the essence of such experience (Creswell, 2003). Within nursing as a science of caring, phenomenology has developed as a valid approach to study human phenomena related to the lived experience of nurses and patients, and produces knowledge that is practically relevant to nursing practice (Flood, 2010). In understanding the lived experience (Creswell, 2003), phenomenology is both a philosophical attitude and a research approach (Cohen, 1987). As a consequence of its dual nature, the use of phenomenology in nursing research has been critiqued (Koch, 1995; Parse, 1995; Walters, 1995), as its philosophical underpinnings are not completely understood or explained by nursing researchers in their studies (Paley, 1997; Yegdich, 2000). To avoid such confusion, a brief overview of phenomenology as a philosophy is now presented.

#### *Philosophical roots of phenomenology*

Modern phenomenology developed from the work of Edmund Husserl (1859-1938) and Martin Heidegger (1889-1976), who were the first to refer to phenomenology as a philosophy. Husserl, often considered the founder of phenomenology, introduced the

concept of '*life-world*', claiming that natural science could not be used to study all human phenomena (Crotty, 1996), and that rigorous science was needed to search for the truth in the lived experience (LoBiondo-Wood & Haber, 2002). The life-world, defined as the everyday world of human experience (Giorgi, 2009), is not directly accessible to knowledge, because is taken for granted, and the experiences are implicitly understood by the human beings. Husserl invited us not to take for granted the experiences of the life-world, but to re-examine them with an open mind (Koch, 1995), and go back to the 'things themselves' (Crotty, 1998). For Husserl, the aim of phenomenology was to fully describe a lived experience, stressing that only those who had experienced that phenomenon can communicate it to the community (Todres & Holloway, 2004). The lived experience as understood here is the way a subject gets in contact and interacts with an object, situation, or life event (McCance & Mcilfatrick, 2008). Through intentionality, the consciousness of an individual attributes a meaning to the object or situation experienced. Intentionality is an essential feature of consciousness, in the sense that consciousness is always intentionally directed to give a meaning to an object or to perceive that object in a certain way.

The phenomenon, in a pure phenomenological stance, is the whole process of perceiving the object through an individual's experience and of attributing a meaning to it (Giorgi, 1997). The phenomenological understanding is based on the combination of two types of meaning: an 'objective meaning', defined as what it is perceived, and the 'phenomenal meaning' defined as the way how it is perceived (Giorgi, 1997, p.237); Husserl called the objective meaning '*noema'* and the phenomenal meaning '*noesis'* (Husserl, 2001). Such meanings are constructed by people through their engagement with the life-world, and the role of the researcher is to analyse how people intentionally

give meanings to a phenomenon and arrive at its essence (Sadala & Adorno Rde, 2002). From an epistemological point of view, the notion of intentionality places emphasis on the interaction between the subject and the object: it therefore rejects objectivism, where the meaning of the object exists regardless of the subject, and subjectivism, where the meaning is imposed to the object by the subject (Crotty, 1998). Husserl focused primarily on description, developing a method to uncover the ultimate structures of the consciousness, the essences (Koch, 1995), intended as the most essential meaning for a particular context (Kleinmann, 2004). To do so, the phenomenologist has to suspend all personal preconceptions, beliefs, and prejudices, to allow the essences of the phenomena to emerge and to be captured. This process, vital for the description of the experience, is called '*bracketing'* (LeVasseur, 2003).

In contrast to the previous approach, Heidegger brought *hermeneutics* to the understanding of human experiences, viewing the lived experience as something to be interpreted, rather than described (Racher & Robinson, 2003). This approach differed from the former in that the philosopher brings his own knowledge and experience to the understanding process (Walters, 1995). Hermeneutics is defined as the science of interpretation (Allen & Jensen, 1990), and the aim of hermeneutical phenomenology is the interpretation of phenomena. It focuses on the experience of understanding, and seeks to answer the ontological question of how people come to understand the phenomena they experience; Husserl's descriptive phenomenology, on the other hand, focused on the epistemological question of what people know of their experiences (Koch, 1995). Heidegger conceived human existence, the '*dasein'* (being-in-the-world), as the experience of being that is peculiar to humans (Thompson, 1990), therefore tied completely to the context of the world. To understand people's experience it is

necessary, therefore, to understand their context and background (Munhall & Oiler, 1986). This process of understanding the being-in-the-world is only possible through pre-understanding, all the presuppositions that are intrinsically part of the being, shaped by culture and background. The contribution of past experiences and preconceptions to the understanding is acknowledged and these elements are embraced in the interpretative process, rather than bracketed out (McCance & Mcilfatrick, 2008). For Heidegger, the interpretive process is achieved through what is termed a hermeneutic circle. In this process, understanding of the whole experience is enhanced by reference to the individual parts, whilst understanding of each individual part is established by returning again to the whole (Koch, 1996).

An important distinction between descriptive and interpretive phenomenology is whether or not the knowledge of the phenomenon is dependent on interpretation (McCance & Mcilfatrick, 2008). Another distinction depends upon whether the researcher applying phenomenology as a methodology has to bracket personal knowledge, experience and preconceptions, in order to answer to the research question. Although it is arguable to a certain extent that no description is able to completely exclude interpretation and vice versa (Sandelowski, 2000), it was considered important to understand which approach would best suit the exploration of the research question in relation to the background of the researcher. The choice of research methods based on Husserl's phenomenology seemed to be most appropriate to explore and describe the phenomenon of patient-witnessed resuscitation, giving credence to the different experiences of patients and healthcare professionals. Moreover, as Mapp (2008) advocates, a descriptive approach offers the researcher a greater flexibility of exploration without the constraint of having detailed prior first-hand knowledge of the

phenomenon under study to provide interpretation. The researcher can in fact provide a rich descriptive account of the lived experience from the perspective of those who have experienced them. For this reason, a descriptive approach was considered more appropriate for the naivety of the researcher regarding the phenomenon of patient-witnessed CPR in hospital.

### *Descriptive phenomenology as a methodological approach*

Three main schools have evolved from the philosophical roots of Husserl's and Heidegger's phenomenology, developing different phenomenological methodologies for research application (Polit, Beck & Hungler, 2001). The Duquesne school, represented by the psychology researchers Van Kaam (1966), Colaizzi (1978) and Giorgi (1985), is based on Husserl's approach and focuses on *description*. A second school is based on Heidegger's approach and focuses on hermeneutic *interpretation*. Finally, the Dutch school combines aspects of the descriptive and interpretive approach, and has been promoted by Van Manen (1984). While the first two schools have traditionally characterised phenomenological research approaches in nursing, the third one is lately gaining in popularity.

Consistently with the choice of a descriptive phenomenological orientation, a research approach that could generate a deep and rich description of the lived experience of the phenomenon of witnessed CPR from the perspective of the participants was adopted. Within the Duquesne school, Giorgi offered a structured approach that provides concrete guidance regarding the collection of described experiences; the application of the phenomenological reduction by the researcher; and the search for the essence (Giorgi, 1997; Giorgi, 2009). Giorgi developed his approach in an attempt to make Husserl's philosophical approach applicable to research by combining aspects of

philosophical phenomenology, human science and psychology. Firstly, he drew attention to the process of collecting the experiences, explaining that concrete descriptions of the experiences needed to be collected from the participants within their natural attitude. The natural attitude is defined as the way in which ordinary people perceive the things of everyday life, including their preconceptions, and what they take for granted. These descriptions are obtained either through interviews or by the participant's own written version of events. Participants themselves choose what they will describe, within the scope of the phenomenon of inquiry, as well as the depth and extent of the description. The goal of the researcher is to seek a description that is faithful to the actual lived event.

Secondly, Giorgi highlighted that whilst participants should maintain a natural attitude in describing their experience, the researcher must apply phenomenological reduction in order to acquire and analyse those experiences. The researcher must assume the raw data to be simply the describer's perception of their own experience, without questioning whether the events really happened as they were described. Moreover, the researcher here must bracket personal past experiences and knowledge about the phenomenon and withhold personal views to be able to uncover the meaning of the experience for the participants.

Thirdly, through the reduction of the descriptions to meanings, Giorgi sought to identify and describe the higher-level structure of the concrete experiences of the participants, which he called the scientific essence. This essence attempts to describe the common meaning of the studied phenomenon, given all the different original descriptions provided from the participants. Although a level of abstraction is required to reach the scientific essence, the result is a middle-range generalisation, which Giorgi distinguished

from the philosophical essences that aim at the most universal generalisation. Giorgi claimed that a philosophical essence would not help in understanding the lived experience. Instead, the scientific essence is able to elevate meaning from the individual, concrete description to a common general level whilst still remaining tied to the specific context of the life-world in which the phenomenon unfolds, as well as to the discipline perspective that the researcher applied to the study of the phenomenon. In the case of the WATCH study, this would involve creating a general meaning from the experiences of individual patients and healthcare professionals who had witnessed the resuscitation of a patient in a hospital setting, and doing so from the discipline perspective of nursing science.

## 5.7 Methods

### 5.7.1 Phenomenological interview and focus group

In phenomenological research, the interview is usually the main method of data collection (Flood, 2010; Watson *et al.*, 2008). Through this technique, the descriptions of the participants can be explored, illuminated and probed (Kvale, 1996). This is undertaken through use of reflection, clarification, requests for example and descriptions and listening techniques (Jasper, 1994). Usually, the style of the phenomenological interview is unstructured, one-to-one (van Teijlingen & Ireland, 2003) and open-ended (McCance & Mcilfatrick, 2008). The researcher might follow an interview guide with a general plan of the interview direction, to help cover three main areas: the context of the interviewee's experience, the construction of the experience and the reflection on the meaning of the experience (Seidman, 1991). The interview

might start with a social conversation aimed at creating a relaxed and trusting atmosphere to establish a rapport with the participant (Giorgi, 2009; Moustakas, 1994). The interview usually then unfolds with one or few questions to invite the participant to describe the experience as fully as possible (Giorgi, 2009; McCance & Mcilfatrick, 2008). The researcher seeks to collect information about the experience as well as the feelings, views and attitudes expressed by the participants. From a phenomenological perspective, these feelings, views and attitudes provide the clues that help uncover the meanings of the experience (Crotty, 1996). It is acknowledged that conducting phenomenological interviews requires specific sensitivity and good interview skills (Giorgi, 2009; McCance & Mcilfatrick, 2008; Polit, Beck & Hungler, 2001). The researcher has to pay particular attention in directing the participant to speak about the phenomenon of interest, while avoid leading the participant's answers to gain the information the researcher's is seeking in the data (Giorgi, 2009). Although the right balance might be challenging to find at times, the risk of a leading interview style is to introduce bias in the data, while keeping the interview within the boundaries of the investigated phenomenon is important to gain relevant and revelatory data. In conducting interviews in a descriptive phenomenological approach, the researcher has to bracket personal views and pre-judgements aside and not let these influence the participants' descriptions (Mapp, 2008; McCance & Mcilfatrick, 2008). To do so, the researcher has to assume a critical stance, by abandoning beliefs, knowledge and attitudes in relation to the phenomenon, and maintain this stance throughout the interview (Bevan, 2014).

Another data collection technique that can be used within a phenomenological approach is focus group, although it is less common and more controversial. Focus group

is a popular data collection technique in nursing research (McLafferty, 2004), although its use in combination with phenomenology is not univocally accepted (Bradbury-Jones, Smabrook & Irvine, 2009). Focus groups are broadly defined as group interviews (Kevern & Webb, 2001; Sim, 1998) aimed at exploring the "formation and negotiation of accounts, within a group context, and how people define, discuss and contest ideas through social interaction" (Tonkiss, 2017, p.238). The main characteristic of focus groups is the interaction among participants on a certain topic (Kitzinger & Barbour, 1999) therefore providing evidence about similarities and differences in the participants' opinions and experiences (Joyce, 2008). The researcher usually acts as moderator of the focus group, facilitating the discussion among participants without participating in it (Fern, 2001), with one or few open questions. The moderator is required to have good interview and facilitation skills, including the ability to listen to different participants and balance contributions between dominant and shy respondents. As in phenomenological interviews, the moderator of focus groups must withhold personal viewpoints so as not to influence participants' responses. A note taker might also be present to assist the moderator (Joyce, 2008).

The use of focus groups in phenomenology has been criticised because the interaction among the participants violates the phenomenological principle of seeking the essence of a phenomenon from the individual 'uncontaminated' descriptions of participants (Webb & Kevern, 2001). However, Bradbury-Jones et al. (2009), referring to Husserlian phenomenological interviews, has argued that the uncontaminated view of the experience is maintained by the bracketing exercise of the researcher, not the participants. Therefore group interaction would not contaminate the description of the individual participants, but instead enrich it with details raised from the discussion

(Spielberg, 1975). Other phenomenology scholars confirmed the compatibility of focus groups and descriptive phenomenology, viewing supported collaboration and dialogue as part of the phenomenological endeavour. A group approach was also perceived to assist the researcher in bracketing personal prejudices, as other group members might be able to challenge personal assumptions (Halling, Kunz & Rowe, 1994; Halling & Leifer, 1991).

## 5.8 Rigour and trustworthiness

The issue of establishing rigour in qualitative research has been and still is the object of a complex debate, generating different positions among researchers and methodologists (Polit, Beck & Hungler, 2001). Lincoln and Guba (1985) promulgated a framework for the trustworthiness of qualitative research paralleling the standards of reliability and validity for quantitative research, which is overall considered the gold standard for qualitative studies. They suggested four criteria: credibility, dependability, confirmability and transferability.

Credibility is the confidence in the truth of the findings for the participants and for the context of the research. Research has to be conducted in such a way as to present believable findings that are credible to external readers. To achieve credibility in the WATCH study, reflexivity strategies were undertaken and an audit trail was shared with the research team throughout the steps of the research. Efforts were made to provide a complete representation of the dataset in reporting the findings.

Dependability refers to the stability of the data, over time and when measured under the same conditions in different occasions. It corresponds to the quantitative criterion

of reliability and assesses whether the study, if replicated with same or similar participants, in the same or within similar context, would generate the same or similar findings. To achieve dependability, multiple data collections techniques were adopted, in order to increase the stability of the data. In Chapter 7, 8 and 9, findings include extracts of raw data, to allow the reader to assess the reliability of interpretation.

Confirmability corresponds to objectivity in quantitative research and refers to the congruence between two or more people about the data's accuracy, relevance, or meaning. It looks at whether or not the data is a true representation of what the participants said, and not based on researcher's biases and perspectives. To achieve confirmability, the initial stage of coding in data analysis was conducted independently by two researchers. Further stages of analysis were supervised by a third senior member of the research team, ensuring that rigour in the interpretation of the data was maintained.

Transferability refers to how applicable the qualitative findings are to other contexts or groups. It corresponds to the quantitative criterion of generalisability and is dependent on the variety and richness of descriptive data provided in the findings in order to understand the context and to assess the applicability in other settings. To achieve transferability, a detailed description of the context of the reality of hospital setting, where the phenomenon of patient-witnessed resuscitation was explored in this study, is provided in Chapter 7.

One last criterion was added by the same authors in later writings (Guba & Lincoln, 1994): authenticity refers to the fair and faithful representation of a variety of different realities as expressed by participants, which allows the readers to grasp a heightened sense of the described experience, including moods, feelings and contexts. To achieve

authenticity, particular attention was placed on transcribing accurately the audio-recorded interviews and in reporting the findings in order to keep the richness of the data. This relates not only to the textual element, but also to non-verbal cues and emotional expressions of participants, documented in field notes.

## 5.9 Chapter summary

In this chapter, the philosophical and theoretical framework from which the WATCH study was designed has been established and critiqued. The study is rooted in a relativist and constructionist philosophical perspective, which has informed the use of phenomenology as a methodology embedded in the interpretivist paradigm. This philosophical and theoretical framework, with its focus on a socially constructed reality and on the understanding of individual experiences, proved to be a sound approach in underpinning the research study. A critical comparison of different qualitative methodologies informed the choice of phenomenology. Phenomenology was identified as the most appropriate methodology to gain a deep exploration of patients' and healthcare professionals' lived experience of patient-witnessed resuscitation. Examination of the main features of phenomenological interviews and of the use of focus groups in phenomenology has established that the adoption of both methods as data collection techniques in this study supports a richer description of the experience. In the following chapter, the details of the research protocol for the study will be presented.

# Chapter 6 Study protocol

In this chapter, the research protocol of the WATCH study, designed following the recommendations provided by the systematic literature review, the stakeholder consultations and a thorough analysis of different methodological approaches, is detailed. Following these considerations, the study used individual and focus group interviews to gain an in-depth understanding of the lived experience of patients who witnessed resuscitation attempts of other patients in hospital, and of healthcare professionals involved in resuscitation events.

This study protocol was published in the *Journal of Advanced Nursing*.

The bibliographic details of the work, a description of the work and an estimated percentage of contribution (%) of each author are as follows: Fiori, M (90%), Endacott, R. (5%), Latour, J.M. (5%). The percentages of contribution have been agreed among all authors.

**Exploring patients' and healthcare professionals' experiences of patient-witnessed resuscitation: a qualitative study protocol.**

Exploring patient-witnessed CPR in hospitals

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## 6.1 Abstract


### Aim

To explore the experiences of patients and healthcare professionals regarding patients witnessing resuscitation on another patient in hospital clinical wards.

### Design

Phenomenological qualitative study.

### Methods

Participants will be recruited from nine wards in a university hospital in England. Data collection will include two in-depth interviews with patients who witnessed resuscitation: the first interview one week after witnessing resuscitation and the second interview after one month. Individual and focus group interviews with healthcare professionals will be also conducted. Data will be transcribed, managed in NVivo 11 and analysed using phenomenological analysis. The National Health Service, Health Research Authority and University Ethics Committee approved the study (May 2018). The study is funded by Resuscitation Council UK (December 2017) and will be conducted between May 2018 and March 2019.

### Discussion

While witnessed resuscitation is a major topic of interest in nursing, specific research on the impact of patients who witness resuscitation on fellow patients is limited. This study will use qualitative methodology to inform the evidence base of a clinical problem with limited understanding. The findings of this study will contribute to the framework of witnessed resuscitation and to identifying the barriers and enablers towards a greater

support of patients who witness resuscitation in hospital. This new acquired knowledge will be beneficial for the improvement of future nursing care.

## Impact

The evidence gained from this study can support the development and implementation of guidelines and inform hospital policies to support patients witnessing resuscitation to optimize the quality of nursing care provided.


## Keywords

Hospitals, patients, nursing, resuscitation, cardiopulmonary resuscitation, heart arrest, qualitative research, interview, focus group.


## Summary statement

Why this study is needed:

- Evidence on the impact of witnessing resuscitation in hospital is limited and is mostly focused on family members witnessing the resuscitation of a relative.
- Experiences of patients and current practices of healthcare professionals on patient-witnessed resuscitation need to be explored to understand this phenomenon.
- The study represents a unique opportunity to explore the views of patients, nurses and allied healthcare professionals of an understudied topic and may inform advanced clinical nursing practice related to the support of patients in hospitals.

## 6.2 Introduction

Cardiopulmonary resuscitation (CPR) is recognized as a near-universal first aid technique (Whitcomb & Blackman, 2007), undertaken when an individual's breathing or heartbeat has stopped. Cardiac arrest is a major public health problem worldwide, resulting in damaging consequences not only for the survivors, but also for their families and the health care systems (Attin, Tucker & Carey, 2016). Incidence of in-hospital cardiac arrests continues to be rarely reported (Nolan *et al.*, 2014; Sandroni *et al.*, 2007) and not uniformly across countries. A review of international studies of in-hospital cardiac arrests reported an incidence range of 1-5 per 1000 patients admitted (Sandroni *et al.*, 2007). More recently, the National Cardiac Arrests Audit data of in–hospital cardiac arrests in 183 acute hospitals of the National Health Service (NHS) in the UK documented 16,210 in-hospital cardiac arrests, meaning 1.5 cardiac arrests per 1000 hospital admissions in 2017 (National Cardiac Arrest Audit, 2017). In the US, the American Heart Association documented an incidence of 209,000 in-hospital cardiac arrests in 2016 (American Heart Association, 2016), although the denominator is unclear. These data indicate that there is the potential for patients to witness CPR during a stay in hospital.

It is recognized that although lifesaving and associated with an increasing survival rate (Bergum *et al.*, 2015), CPR represents a stressful procedure that may be linked to unsuccessful outcomes (Nolan *et al.*, 2014; Zijlstra *et al.*, 2015). Therefore, witnessing resuscitation could have effects on a large audience, including family members, healthcare professionals and fellow patients. While aspects of family witnessed resuscitation have been explored, evidence on the impact of patient-witnessed resuscitation appears limited. This study aims to address the knowledge gap on witnessed resuscitation and extend understanding of the experiences of patients

witnessing fellow patients' resuscitation in hospital, to inform future clinical interventions and research studies.

### 6.2.1 Background

Witnessed CPR is a controversially debated issue gaining attention in the international nursing research agenda (Köberich, 2018). Walker (2006) defined witnessed resuscitation as "the experience of having been 'witness to' a resuscitation attempt in which the witness (or bystander) performed an active or passive role (or) the experience of being 'witnessed by' others whilst applying the skills of resuscitation" (Walker, 2006, p.385). Traditionally, since the first pioneering research into family participation during resuscitation conducted by Doyle *et al.* (1987), the "witnesses" under study were mostly the family members of patients undergoing CPR. This aspect of witnessed CPR has been extensively explored from different perspectives: the relatives' and patients' opinions have been investigated and they are overall favourable towards family presence during CPR, as this seems to help relatives to cope with the grieving process and gives patients a sense of support (Albarran *et al.*, 2009; Bradley *et al.*, 2017; De Stefano *et al.*, 2016; Paplanus *et al.*, 2012b). Healthcare professionals' attitudes and concerns have also largely been explored. Although multidisciplinary consent is growing towards the presence of family members during resuscitation, many clinicians do not feel sufficiently confident to fully support this practice and barriers still exist, as the fear that relatives might interfere with the CPR procedures and influence the resuscitation performances (Chen *et al.*, 2017; Fulbrook, Albarran & Latour, 2005; Paplanus *et al.*, 2012a; Sak-Dankosky *et al.*, 2014). Another aspect that has been explored is witnessed resuscitation by proxy, especially as portrayed by media. Television is a major source of information about CPR (Diem, Lantos & Tulsky, 1996), potentially a powerful tool for education

(Lockey, 2014) and can influence the way a resuscitation event and its consequences are perceived by the public. Although depicting CPR on television may initially have helped the public familiarising with the fact that such events may occur in hospital (Grice, Picton & Deakin, 2003; Hadfield-Law, 1999), recent studies showed that the portrayal of CPR on television is still far from reality. Considering that the public is significantly influenced by medical TV series, this may link to falsely high expectations of short and long-term success of CPR, to misinformed public CPR knowledge and may influence care decisions (Alismail *et al.*, 2018; Colwill *et al.*, 2018; Harris & Willoughby, 2009; Portanova *et al.*, 2015). Nonetheless, as reminded by Köberich, our view on those affected by witnessing resuscitation is still narrow (Köberich, 2018).

A smaller number of research studies have explored the concept of witnessed resuscitation from the perspective of fellow patients. A recent systematic review on the impact of patients witnessing CPR on another patient highlighted that the literature on the topic is sparse, of low quality, and mostly outdated (Fiori, Latour & Los, 2017). Only five articles were identified documenting some sort of physiological and psychological impact in patients witnessing CPR. In particular, increased heart rate (Bruhn *et al.*, 1970; Sczekalla, 1973), systolic blood pressure and anxiety (Bruhn *et al.*, 1970) were observed in the study group witnessing resuscitation. Coping strategies in response to witnessing resuscitation, including denial and dissociation were highlighted among the qualitative studies (Badger, 1994; Hackett, Cassem & Wishnie, 1968; Isaksen & Gjengedal, 2006). The findings of this systematic review, although limited and weak, suggest that patients may find witnessing resuscitation a stressful experience. Combined with the lack of recent studies, this evidence underlines a gap in the current knowledge of witnessed resuscitation from the other patients' perspective and their needs for support. The

findings of the study described in this protocol could contribute to expand the concept of witnessed resuscitation from a different perspective and generate an evidence base to improve hospital care practice.

### 6.2.2 Patient and Public Involvement (PPI) and clinical nurses consultation

Formal PPI and stakeholder consultations were undertaken with people with heart disease and hospital nurses involved in CPR to inform the design and the development of the present research study. The PPI consultations were organised based on the NIHR *Patient and Public Involvement in Health and Social Care Research: A Handbook for researchers* as guidance (NIHR, 2014) and the INVOLVE *Briefing notes for researchers* (INVOLVE, 2012). Using an exploratory approach, a qualitative online survey (n=22) and semi-structured telephone interviews (n=4) were conducted among former patients who are members of the British Heart Foundation (BHF), a UK charity, and a focus group was organized with nurses (n=15) involved in CPR in an acute hospital. The consultations were conducted between February and June 2017.

Overall, all participants considered this research would be of value to inform patient-witnessed CPR support guidelines and important to raise clinicians' awareness on this topic. Participants also highlighted a number of suggestions, considered by the researchers and included in the development of this study protocol. The main suggestions from patients regarded: the need of witnesses to talk about their experience, hence the potential relieving value of the interview itself; the emotional impact of witnessing CPR, therefore the provision of emotional support after the interview; the differences in patients' medical conditions and personal background, thus flexibility on time and venue in interview scheduling. Nurses emphasised recruitment strategies; the adoption of multiple data collection methods to explore their

experiences, as focus groups and individual interviews, was suggested to increase the chance of participation.

A PPI advisory group involving the BHF members who participated in the telephone interviews was established. This group is currently engaged in the research and contributed to the revision of the study protocol, the interview guides and the information material for the study participants.

## 6.3 The study

### 6.3.1 Aim

The aim of this study is to investigate the impact of patients witnessing a CPR attempt on another patient and to identify the best support that can be delivered to patients by healthcare professionals. Specific objectives are:

- To explore the experiences of hospital patients witnessing a CPR attempt on another patient;
- To identify the experiences of healthcare professionals involved in CPR and the support they provide to patients who witness CPR.

### 6.3.2 Methodology

This study will adopt a qualitative research design using a phenomenological approach. Given the limited evidence available on the topic of patient-witnessed CPR, qualitative methods are considered well suited to understand the experiences of patients witnessing CPR and of healthcare professionals caring for them. Qualitative research

methods in fact, allow a higher degree of flexibility in data collection and a full range of responses, without being driven by pre-defined quantitative measures (Bryman, 2016).

Following Husserl's philosophical approach, phenomenology aims to understand the meaning of human lived experiences about a phenomenon. Beyond this, as a research method greatly applied in nursing research (Dowling, 2007), phenomenology generates methodical, systematic, critical and intersubjective knowledge (Giorgi, 1997). The proposed method involves the description, reduction and the search for essential structures of the phenomenon investigated (Giorgi, 2000).

The involvement of patients, public, and nurses has been considered an essential aspect of the overall development of the study, from prioritising the research questions to future application in practice of the new acquired knowledge. In particular, the initial engagement with BHF former patients and clinical nurses provided a valid contribution to the conceptual design of the study. Ongoing engagement is intended to gain continuous feedback along the whole delivery of the study, up to the dissemination of the findings (INVOLVE, 2012; NIHR, 2014).

### *Participants*

Two participant groups were identified to address the aim of the study: hospital patients who witnessed CPR on other patients and healthcare professionals involved in CPR in hospital wards. According to the literature on qualitative methods for phenomenological studies, a criterion-based purposive sampling strategy will be used, where all individuals studied meet a certain criterion defined in advance by the researcher or have experienced the phenomenon under study (Braun & Clarke, 2013; Creswell, 1998; Holloway, 1997). In this study, the criterion for sampling is: to have

witnessed CPR on other patients for the patients group; to have been present during a CPR event in their ward for the healthcare professionals group.

### Patients

The researcher will conduct in-depth interviews to gain insight from the participants. Following guidelines of qualitative research, which generally consider 5 to 25 participants to provide sufficient data (Creswell, 2003), a sample up to 15 participants will be considered representative for this study. Included patients should:

- Be over 18 years old; able to communicate in English;
- Have had experience of witnessing a CPR attempt on another patient in the ward in which they were admitted at the time of the event;
- Be able to give written consent.

Patients under 18 years of age and patients not able to provide informed consent, as per Mental Capacity Act (2005), will be excluded from the study.

Most clinical wards in the hospital have between 26 to 29 beds and are arranged in multi-bedded rooms with two to six beds. The nine wards with the highest incidence of cardiac arrests, where it is more likely that patients will witness CPR procedures, will be selected to conduct the study. Recruitment will be through the cooperation between the resuscitation team, the clinical care team of the wards, the local research nurse and the research team, based on a shared recruitment flowchart (Figure 6.1). The ward managers will make a blueprint of the multi-bedded room at the moment of the CPR event. In addition, the records of the CPR performed in the hospital will be shared regularly between the resuscitation team and the research team. Eligible participants

will be identified by the local research nurse among the patients who witnessed CPR, based on the blueprint.

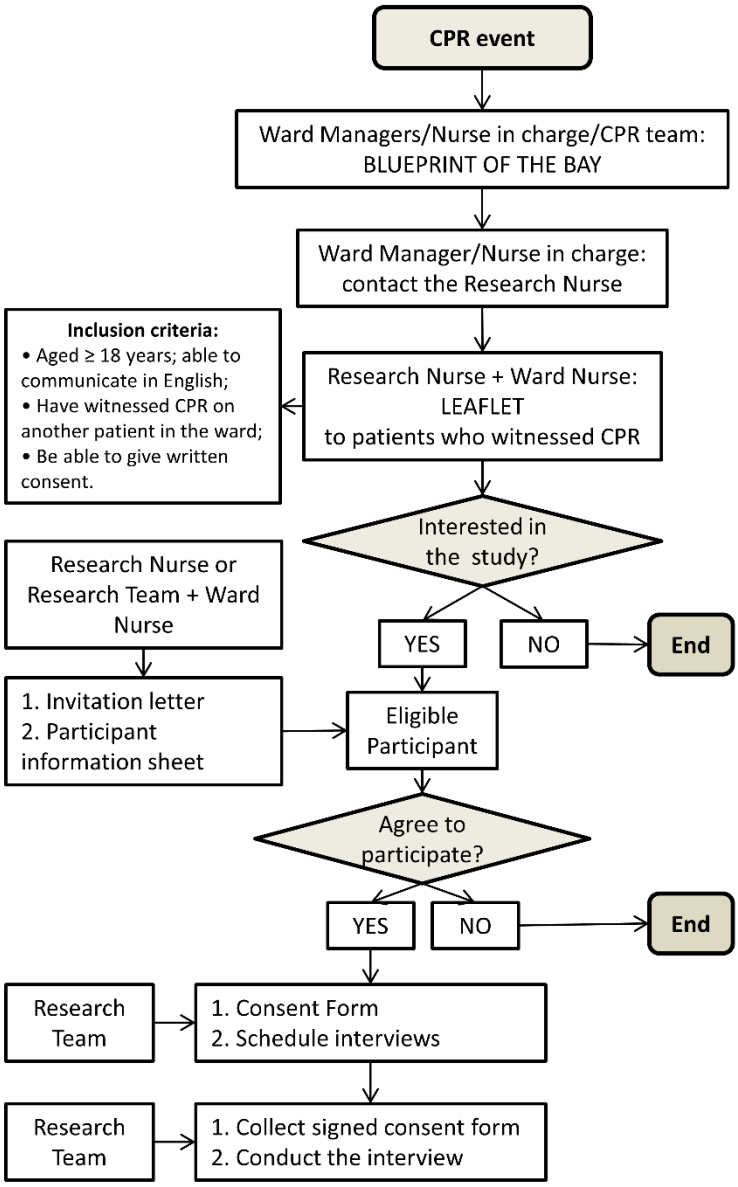


*Figure 6.1 Recruitment of study participants (patients group)*

### Healthcare professionals

Focus group and individual interviews will be conducted with healthcare professionals involved in a CPR attempt, including nurses, doctors, healthcare assistants and other healthcare professionals. Up to 20 participants across focus group and individual interviews will be considered appropriate to gain rich and sufficient data. Sample size will include four to eight participants for each focus group interview. In literature, three to six focus groups are considered appropriate for a medium-sized research project (Braun & Clarke, 2013). Three focus group interviews will be conducted with healthcare professionals. A specific focus group will be conducted with members of the resuscitation team of the hospital, to set their experiences and views aside from the rest of professionals and avoid undue influence. The other two focus groups will be conducted with professionals from different wards. As advocated by the stakeholders' consultation, it is anticipated that not all those who are willing to participate in the study will be able to join a focus group. Hence, researchers will conduct individual interviews, besides focus groups, for those wishing to participate. It is anticipated that approximately six to eight individual interviews will be conducted.

Healthcare professionals included in the study will:

- Be nurses, doctors, healthcare assistants and other healthcare professionals.
- Have >6 months of clinical experience;
- Have been present during a CPR event in their ward in the last 6 months.

The ward managers will facilitate the recruitment of potential participants for the focus groups and the individual interviews, liaising between the research team and the

healthcare professionals in their wards. The study will be also advertised through the hospital staff bulletin to increase visibility and engagement.

## *Data collection*

### Patient interview

Two in-depth interviews will be conducted with every participant to explore the experience of patients. The first interview will be conducted up to one week after the CPR event and is designed to capture the initial impact of witnessing CPR. The second interview will be conducted four to six weeks after the event and will explore any sustained impact of the experience. Both interviews will follow an interview guide (Appendix III: Patient Interview Guide I; Appendix IV: Patient Interview Guide II). The interview questions constitute an invitation for participants to share their experience with the researcher in an open and supportive way, leaving them free to unfold their story as they prefer. The researcher will follow the development of the discussion using prompts when necessary, ensuring a sensitive and empathetic approach. Before the interview, the researcher will ensure that participants feel comfortable to be interviewed and after the interview emotional support will be offered, if needed.

The interviews will take place in a comfortable environment at the convenience of the participant: a hospital quiet room or area in the ward, or at the bedside if the participant is still admitted in the hospital. A quiet place, either at participant's home, at the hospital or at the university, will be chosen if the participant has been discharged. All attempts will be made to maximise privacy and reduce interruptions. Each interview will last 40-60 minutes. Interviews will be audio recorded and non-verbal cues will be documented as field notes.

### Healthcare professional focus groups and individual interviews

Focus group sessions will be conducted by the researcher and an observer/note taker of the research team. Discussion will be facilitated through a few open questions to generate a debate about similarities and differences in the participants' opinion and experiences about their practice towards other patients during a CPR event. Individual interviews will be conducted by the researcher. Individual and focus group interviews will follow an interview guide (Appendix V: HCP Interview Guide; Appendix VI: HCP Focus Group Guide). Focus group and individual interviews will be audio recorded and visual cues will be documented as field notes. Demographic and professional information from participants will be collected. Focus group and individual interviews will be conducted in the hospital, during participants' working hours, according to their availability. All efforts will be made to provide a comfortable environment to facilitate open communication with participants. The focus groups and individual interviews will be expected to last 40-60 minutes each.

#### *Data analysis*

Qualitative data from the individual and the focus group interviews will be transcribed and processed in QSR International NVivo 11, a qualitative analysis software program, and analysed through phenomenological analysis.

The phenomenological analysis method consists of five essential steps (Giorgi, 1985; Giorgi, 1997; Giorgi & Giorgi, 2003), described as follows:

1. The researcher will read and re-reads the entire text to get a general sense of the whole experience of witnessing resuscitation.

2. The researcher will then divide the significant text segments into “meaning units” keeping the participants’ own words. The researcher will next eliminate redundancies and relate the meaning units to each other and to the overall sense of the experience.

3. The researcher will read all the meaning units again and compare and discuss them with the research team. The research team will convert the raw text meaning units in agreed codes that describe significant aspects of the experience.

4. The researcher will categorize the phenomenological codes into main themes, and cluster similar subthemes into the related main themes.

5. Finally, the researcher will develop an overall description of the essence of the participants’ experience by merging the main themes and the subthemes in a flowing narration.

A coding framework will be developed iteratively by reading, coding and revising each transcript and it will be discussed and agreed among the research team (Appendix VII: Coding Framework Extract). Potential themes and subthemes will be also verified by a further researcher to ensure rigour and accuracy of the interpretation of the findings. Data collected from patients’ interviews and from healthcare professionals’ individual and focus group interviews will be analysed and reported separately. During this process, some of the patients and healthcare professionals involved in the study will be invited to read the findings and to reflect on the preliminary findings. In the final stage of analysis, findings will be again shared with them to reflect on the final narration of the phenomenon and encouraged to provide advice for further refinements.

"Bracketing", intended as setting aside all researcher's prejudgments, is a fundamental strategy in phenomenology. For the purpose of this study, bracketing is considered essential to initially set researcher's prejudice aside and not to influence the narrative process. However, the iterative nature of data collection and data analysis of the research study may not make bracketing feasible throughout the entirety of the study phases. The researcher will take self-reflective notes during the data collection and data analysis phases to help the bracketing process, reflecting critically on her own beliefs and position in the research. The researcher will then integrate the field and self-reflective notes in the data analysis to reflect on the analysis process and support the interpretation of the participants' answers.

Demographic data will be analysed through descriptive statistics, in terms of prevalence, mean, median and standard deviations using IBM SPSS Statistics 24 software package.

### 6.3.3 Ethical considerations

The study protocol was approved on 2nd May 2018 by the National Health Service Health Research Authority (REC reference: 18/SW/0069; Protocol number: FHHS-218744-MF-202; IRAS project ID: 218744) and on 18th May 2018 by the University Research Ethics Committee (FHHS-218744-MF-202; Reference Number: 17/18-807) (Appendix VIII: REC Favourable Opinion; Appendix IX: HRA Approval Letter; Appendix X: Faculty Research Ethics and Integrity Committee Approval).

All the efforts will be made to protect the participants and the researchers. This is a central aspect of the study and will be rigorously enforced, according to established ethical framework (Beauchamp & Childress, 2001). The ethical principles regarding studies and research involving human beings stated in the Declaration of Helsinki (2013) were also considered.

### *Consent, confidentiality and data protection*

All participants will receive an invitation letter and a participant information sheet (Appendix XI: Patient Invitation Letter; Appendix XII: Patient Participant Information Sheet; Appendix XIII: HCP Invitation Letter; Appendix XIV: HCP Participant Information Sheet). The study and the implications of participation will be verbally explained by the researcher before providing a written consent form. However, prior to any data collection activity, either individual or focus group interviews, the participant information sheet will be reinforced, the consent form reviewed again and instructions on participants' right to withdraw will be confirmed. Pseudonyms will be allocated in all interviews and transcriptions of data will be anonymised, to ensure confidentiality. Participants' identifiable information will only be used for the purposes of arranging interviews and obtaining signed consent. Demographic data will be aggregated among participants and compiled in tables. Records will be stored securely on a password protected computer and paper copies of the consent form will be stored separately in a locked cabinet, only accessible by the researchers. This information will be held securely for ten years, according to the University Research Ethics Policy.

### *Risk for the participants*

#### Patients

Witnessed resuscitation may be a sensitive topic for participants to discuss. To safeguard participating patients, before the interview, the researcher will ensure that participants feel comfortable to be interviewed and share their experience. During the interview, participants could ask to pause or terminate the interview at any time, without any consequence. After the interview, participants will have the opportunity to disclose to the researcher about the interview, and if any upsetting and unsettling feelings raised

from the interview, they will be signposted to the Pastoral and Spiritual Care service of the trust, after the first interview, and referred to their General Practitioner, after the second interview. Participants will be informed of this possibility in the information sheet, prior to the beginning of the data collection and this will be part of the decision-making process. In line with the NICE guidelines on post-traumatic stress disorder (NICE, 2005), this is a support pathway to facilitate a person's recovery, as advocated by the scope of this research study, to ensure that in case of distress patients receive adequate follow up. If participants express the preference of withdraw from the study, they can do so at any time, before, during and after the interview, without detriment for their care.

### Healthcare professionals

The research team is aware that taking part in focus group or individual interviews can evoke emotive thoughts among participating healthcare professionals (Elmir *et al.*, 2011). If this occurs, the participant can withdraw from the study at any time without detriment. However, the single participants may not be identifiable in the transcribed data of the focus group and therefore, the individual quotations might not be removable. At the end of the focus group or the individual interview, participants will be invited to disclose with the researcher if any sensitive issues have arisen with them from their participation. Participants will be advised to seek appropriate follow up with the Occupational Health and Wellbeing service of the hospital.

### *Risk to the researcher*

Qualitative researchers could also be at risk of emotional stress (Dickson-Swift *et al.*, 2008). In the literature, the issue of 'vicarious traumatization' is described as the emotional burn-out caused by immersing oneself into the lived experience that has been

difficult to the participant (Elmir *et al.*, 2011). Arrangements for the researcher conducting the interviews to debrief with an experienced researcher will be facilitated. In addition, private time to reflect will be implemented into the research regime post interview. In the case the interviews with patients will be conducted at their home or at a mutually agreed place, the researcher will abide to the University Lone worker policy. A schedule of interviews will be shared with the research team and contact pre and post interview will be made with a member of the research team to ensure no harm has occurred.

### 6.3.4 Rigour

To ensure the rigour of this study, phenomenological reduction will be undertaken by bracketing past knowledge about the studied phenomenon in order to describe it as it is experienced and presented by participants (Giorgi, 1997). Although the researcher conducting the interviews is inexperienced with respect to the phenomenon investigated, not having had personal experiences of witnessed CPR as a patient nor having been in the situation of caring for patients witnessing CPR on other patients, it is acknowledged that the iterative process of data collection and data analysis will inevitably influence the researcher's opinion. However, the researcher will strive to focus on the stories of participants and on the meanings behind their narratives without prejudgement.

Trustworthiness (Lincoln & Guba, 1985) will be strengthened by ensuring that all the participants' points of view are taken into account and sharing the research findings with the participants, in order to confirm that the researcher has correctly understood their narratives. Moreover, the employment of multiple sources and methods of data collection should support triangulation, resulting in greater confidence of the findings

(Gerrish & Lacey, 2010). Field and self-reflective notes will be taken during the data collection and data analysis to enhance transparency and to provide an audit trail of context and how key decisions on interpretation were made (Green & Thorogood, 2018). Finally, the design, the data collection and data analysis processes of the study have been revised by and discussed with the PPI advisory group.

## 6.4 Discussion

The need to move towards a broader perspective of witnessed CPR by conducting scientifically sound studies to address the limited evidence around this topic has been well recognized internationally (Köberich, 2018). Few previous studies have explored the psychological impact of witnessing medical emergencies, including CPR on other patients, using both qualitative and quantitative methods (Badger, 1994; Bruhn *et al.*, 1970; Hackett, Cassem & Wishnie, 1968; Isaksen & Gjengedal, 2006). Other studies have focused on fellow patients' interaction in different hospital contexts highlighting that despite a sense of companionship, the other patient could be cause of distress, especially when witnessing someone being particularly ill (Larsen, Larsen & Birkelund, 2013). Patients feel emotionally involved with their fellows: the situation of a critically ill patient can impact on the witnessing patient, generating swinging feelings between hope, anxiety and despair (Laursen, 2016). However, the effect of patient-patient interaction in the specific context of CPR events needs to be further explored. This study could provide an insight on such a topic.

Given the potentially sensitive nature of the topic and the explorative approach required to meet the aim of this study, qualitative methods of research are considered

appropriate (Elam & Fenton, 2003). Thus, methodological choices and anticipated challenges are addressed. While individual interviews are a traditional data collection method in phenomenological studies, the choice of focus groups in phenomenology requires further justification. Although largely used in nursing, the main critique against focus group in phenomenological research is the loss of the uncontaminated description of the individual experience (Webb & Kevern, 2001). Aware of the debate, the authors believe that in this study, the combined use of individual and focus group interviews could ultimately help in enriching the understanding of the experiences of participants. Even in a group interaction in fact, participants can add their individual insights while sharing it with the other participants and cross-checking for understanding of meanings both among participants and with the researcher (Bradbury-Jones, Smabrook & Irvine, 2009).

Similarly, the choice of the sample size and the issue of saturation are addressed. One of the criteria used to define sample size was data saturation, intended as 'the number of interviews needed to get a reliable sense of thematic exhaustion and variability within the dataset' (Guest, Bunce & Johnson, 2006, p.65). In their experiments with data from in-depth interviews Guest, Bunce and Johnson (2006) found that around twelve interviews were sufficient to achieve data saturation, given a relatively homogeneous sample and a narrow scope research. Moreover, although sample size uses to vary widely across qualitative studies, small samples of fewer than twenty participants are considered best suited to generate fine-grained data, offering a closer involvement with study participants (Crouch & McKenzie, 2006). Therefore, for the scope of this research and the characteristics of the selected population, sample size appears to be adequately justified.

Furthermore, the potentially sensitive topic of this study leads to some challenges in the interviewing process. Cowles (1988) and Sieber and Stanley (1988) defined a sensitive topic as one having the potential to cause physical, emotional or psychological distress to participants or the researcher. However, knowledge on a phenomenon can only be sought from those whose experience it (Crotty, 1998). In this study, to minimize the risks of emotional burden for the participants, strategies as process consent will be adopted. Process consent consists in the immediate renegotiation of consent as circumstances change or unexpected events occur during the interview (Munhall, 1988). Nevertheless, some literature supports the positive effects of the interviews even on sensitive topics (Lepore & Ragan, 2000). In fact, interviews may prove to be cathartic for participants (East *et al.*, 2010). Telling their stories can help the participants to get a sense of relief (Leseho & Block, 2005), and to make sense of the experience (Carlick & Biley, 2004). It could also give the participant a sense of empowerment and of purpose, by contributing to the scope of the research (Beck, 2005; East *et al.*, 2010; Peters, Jackson & Rudge, 2008). These arguments were confirmed by the PPI consultees, who considered the benefit of communication important and potentially therapeutic, although they stressed the importance to provide emotional support beside the interviews.

Although the challenges that this protocol may present, this study constitutes an important opportunity to incorporate the perspectives of fellow patients and healthcare professionals into the exploration of the framework of witnessed resuscitation.

### 6.4.1 Limitations

Cardiac arrests and therefore CPR events are unpredictable in most of the cases. This study will take place in clinical wards in a large hospital, where patients are not necessarily on a continue monitoring. Therefore, the unpredictability of the events and

the quick turnover of patients in the wards may affect patients' recruitment. Further limitations include the voluntary nature of the sample, as usually adopted in qualitative research. This may lead to a possible bias, as only participants with certain characteristics or coping mechanisms may take part in the study. However, keeping the participation voluntary is considered essential to avoid any kind of coercion in participants' recruitment. Finally, practical and logistic challenges are anticipated in the organization of focus groups with healthcare professionals, due to the high workload in the hospital.

## 6.5 Conclusion

This study protocol represents one of the first research to thoroughly investigate the phenomenon of witnessed CPR from the perspective of the fellow patients. The paucity of evidence in this specific context underlines the importance of conducting this study to generate new empirical knowledge. It is acknowledged that findings in qualitative research are context-specific and not generalizable to other settings or populations. However, it is hoped that the findings could offer a rich and detailed insight into the phenomenon of patient-witnessed resuscitation and could be beneficial to the development of future guidelines and the improvement of clinical practice. It is also expected that the development of this protocol could provide a base of evidence for further measurements of the phenomenon combined with quantitative methods.

## 6.6 Acknowledgments

The authors thank Helen Neilens, Research Advisor at University Hospitals Plymouth NHS Trust in Plymouth, Devon, UK, for her contribution to the development of this research protocol and the members of the PPI advisory group from *Heart Voices*, British Heart Foundation, UK, for their valuable advice on the study design and their engagement during the protocol development process.

## 6.7 Conflict of Interest

No conflict of interest has been declared by the authors.

## 6.8 Funding Statement

This research received a Research and Development Grant from Resuscitation Council UK.

## 6.9 Author Contributions

All authors have agreed on the final version and meet the following criteria recommended by the ICMJE (http://www.icmje.org/recommendations/):

- substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data;
- drafting the article or revising it critically for important intellectual content.

# Chapter 7 Study context: participant characteristics and the life-world of hospital resuscitation

## 7.1 Introduction

In the next three chapters, the findings of the WATCH study are presented. The study aimed to investigate the phenomenon of patient-witnessed CPR in hospital in order to understand the perceived impact on witnessing patients and to identify effective strategies to support patients. To fulfil this aim, the experience of patients who witnessed CPR on another patient and the experience of healthcare professionals involved in CPR were explored. Findings are supported by direct quotations from participants, indicated in *"italics"* and followed by the type of interview and individual participant code. The participant code signifies patient (Pt), healthcare assistant (HCA), registered nurse (RN), junior doctor (JD) or senior doctor (SD), for example Int1/Pt1 or FG1/JD3. In reporting direct quotations from patient and healthcare professional participants, the following transcription conventions were adopted: (…) indicates words omitted to shorten quotation; [not italicised text] indicates explanatory information added by the researcher; … indicates short pause.

This chapter starts reporting the characteristics of the sample of the patient participants and of the healthcare professional participants. Then, a description of the life-world of resuscitation in hospital, as narrated by the patients and healthcare professionals, is presented; this provides a sense of the reality of life in hospital for the participants of the study.

## 7.2 Characteristics of the patient sample

The patient participants of the WATCH study comprised of 16 patients admitted to a single acute hospital site in the South West of England, UK. No record was held of the number of patients who received the leaflet with the information to participate in the WATCH study during the recruitment phase of the study. However, based on the number of CPR events registered during the recruitment period and on the average lay-out of the multi-bedded rooms of four to six beds in the wards, it is estimated that during the recruitment period between 50 and 60 patients received the study leaflet following a resuscitation event. Two patients were recruited from surgical speciality wards (for example, cardio-thoracic speciality area) and 14 patients were recruited from mixed medical specialities, including cardiology, gastro-intestinal, endocrinal and respiratory ward areas. Two patients had witnessed more than one CPR of a fellow patient in hospital. One patient was recruited and consented to participate in the study, but subsequently declined to be interviewed and was therefore excluded from the study. The demographic characteristics and the length of hospital admission of the patient participants are presented in Table 7.1.

*Table7.1 Characteristics of the patient participants*

| Characteristics of the patient participants | N |
|---|---|
| Gender | |
| Male | 9 |
| Female | 7 |
| Age (years) | |
| <65 | 5 |
| 65-74 | 6 |
| >75 | 5 |
| Education | |
| Secondary Education | 5 |
| Further Education | 5 |
| Higher Education | 3 |
| None | 2 |
| Not specified | 1 |
| Length of Admission (days) | |
| <10 | 7 |
| 10-20 | 4 |
| >20 | 5 |

Interviews lasted from 6 to 37 minutes. In some cases, repetition and data saturation was reached early in the interview, and no further new data from the participant was achieved. Therefore, interviews were concluded despite their limited duration. Seven interviews were carried out in private rooms on the wards where patients were admitted, and eight were conducted at the patient's bedside in a multi-bedded room, when patients were not able to move. In this case, all the patients agreed to be interviewed in the multi-bedded room. Curtains were pulled around the patient's bed to enhance privacy and reduce interruptions. Local noise in the ward (e.g. machinery) did not impact the quality of audio recordings. No interruptions occurred during the interviews. Interviews were conducted between August 2018 and March 2019.

## 7.3 Characteristics of the healthcare professional sample

The healthcare professionals in the WATCH study comprised of 20 participants involved in CPR during their working activity in a single acute hospital site in the South West of England, UK. Fourteen participants worked in mixed medical specialities, including cardiology, gastrointestinal and liver services, four in the resuscitation and clinical educator's department, and two in acute and intensive care wards. The demographic characteristics, profession, years of experience and number of CPR procedures attended for each participant are presented at Table 7.2.

*Table 7.2 Characteristics of the healthcare professional participants*

| Characteristics of the healthcare professional participants | n |
|---|---|
| Gender | |
| Male | 6 |
| Female | 14 |
| Age (years) | |
| 25-34 | 6 |
| 35-44 | 5 |
| 45-54 | 5 |
| 55-64 | 3 |
| Not specified | 1 |
| Profession | |
| Health Care Assistant (HCA) | 4 |
| Registered Nurse (RN) | 9 |
| Junior Doctor (JD) | 5 |
| Senior Doctor (SD) | 2 |
| Years of experience in that profession | |
| <10 | 9 |
| 10-20 | 7 |
| >20 | 3 |
| Not specified | 1 |
| Number of CPR attended | |
| <10 | 3 |
| 10-20 | 5 |
| 20-30 | 4 |
| >100 | 7 |
| Not specified | 1 |

Of the 20 recruited healthcare professionals, four participated in individual interviews, and 16 took part in focus groups. Three focus groups were carried out in total: one involving five junior doctors and one senior doctor (FG1), one involving three healthcare assistants and three registered nurses working as ward staff (FG2) and one involving four registered nurses working in the resuscitation department (FG3). The individual interviews lasted from 23 to 43 minutes, while the focus groups lasted from 34 to 69 minutes. The three focus groups and two individual interviews were conducted in quiet rooms in the hospital. One individual interview was conducted in one of the hospital cafes, and one was conducted in an office at the university campus. Individual and focus group interviews were conducted between August 2018 and January 2019.

## 7.4 The life-world of resuscitation in hospital

Individual interviews and focus groups conducted with witnessing patients and healthcare professionals provided a substantial body of data regarding their perspectives of the life-world of hospital, in relation to resuscitation. Although not directly responding to the research question and the aim of this study, these data assist with setting the context for the in-depth description of specific themes developed from each participant group. This body of data is reported in the present section with the purpose of providing an overview of the reality of hospital life as perceived by the interviewed patients and healthcare professionals.

Figure 7.1 summarises the overall structure of the study findings. It demonstrates patients' and healthcare professionals' views of the life-world of resuscitation in hospital in order to understand the context within which the phenomenon of patient-witnessed resuscitation is situated.

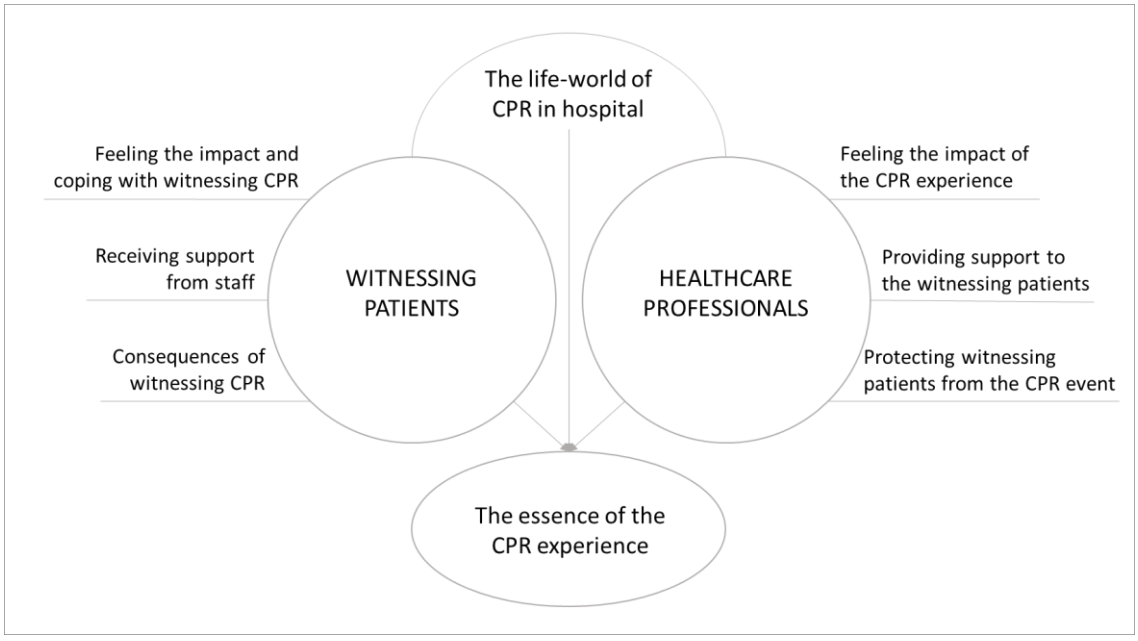


*Figure 7.1 Overview of study findings*

Patients and healthcare professionals held a shared understanding about the reality of a hospital environment. Hospitals were perceived as places where people are ill, where procedures might be invasive, where unpredictable medical emergencies may occur and where patients may die as a result of these emergencies. Therefore, all healthcare participants, and some patients were aware that medical emergencies, including cardiac arrests and resuscitation attempts are events that can occur in hospitals more frequently than out-of-hospital:

> *"At the end of the day, sad fact of life, hospitals are where sick people go. Sometimes those sick people get sicker, get worse and sometimes they die.* (…) *And obviously an event like that is going to happen more frequently in hospital, than it would do in a factory or a shop or in somebody's house."* (Pt4)

> *"I' d like to think that maybe it is a hospital, most people with any sort of common sense know that that's one of the things or the risks that are in hospital, that is kind of one of the reasons we are here is to help maintain and save lives."* (Int1/HCA1)

Although, according to the healthcare professionals, some patients might find this reality difficult to accept:

> *"And they can't believe it, but you have to explain that they're in hospital for a reason... they're not well to start with, you know, when these things happen."* (FG2/HCA10)

However, for some patients, there is a difference between "*being aware*" of the possibility that emergencies as cardiac arrests can occur in hospital and "*experiencing*" it (Pt16), as witnessing resuscitation of a peer patient:

> *"I know that happens because that's what hospitals are there for, at the same time I never experienced that."* (Pt16)

For patients participating in this study, witnessing CPR was part of their hospital experience, and they had clear memories of what they witnessed. Most patients recalled

the scene just before the cardiac arrest clearly. Some of them realised that the medical condition of the fellow patient was deteriorating and described the patient as "*getting uncomfortable*" (Pt4) or "*gradually going down and downhill*" (Pt6), with a general sense of awareness that "*something serious was happening*" (Pt4). Sometimes, this event resulted in ringing the nurse call bell to alert the nurses:

> *"Ehm, she was unwell all day. Her husband came in early, and they tried to get her up to eat some lunch and she was feeling a little weak. And then he went and one of the HCAs was quite insisting to put her on a chair. But she had... she had quite clearly fluid in her chest* (…)*They tried to move her in and out for most of the afternoon, and then for about ten minutes she was just really slammed down in her chair and she got like a beige colour. And I went to find another nurse, and I said: 'Look, she just doesn't look very well' and they came in and put her in her bed, and she was all this while she was saying that she was feeling sick. And then they put her in her bed and she…she fell asleep."* (Pt7)

For others instead, these events were sudden and unexpected:

> *"Everything was perfectly normal, one minute. Then suddenly the emergency alarm went off…"* (Pt1)

The healthcare professionals were also asked to recall their memories of resuscitation events they attended in the past, in relation to their experience of patients who witnessed CPR. However, their views regarded mostly their own experiences of performing CPR, rather than their perceptions of the other patients witnessing the arrest. For example, they spoke about their own reactions discovering that the patient had arrested:

> *"Probably the main example I have was when I was looking after a female patient, attending to some personal care with another registered nurse and we were repositioning her and kind of freshening her up. And a couple of seconds had passed and like, I couldn't really hear any signs of respiratory effort and couldn't like see her moves and I brought her back onto the back and found that she had no pulse. She wasn't breathing and she's in cardiac arrest. It was a little while ago, but I still remember that feeling of: 'Oh my God!' Like, we were repositioning this woman and she's literally died in our arms."* (Int4/RN16)

In other cases, they recalled particularly complicated events:

> *"I don't know if you remember* [referring to other participant]*, we had one in the bathroom, it was on* [name of the bay] *bay and the family was coming in and he was on the bathroom floor, might get him off the bathroom floor, but he passed away by this point and the family was coming and somebody was at the top waiting for them. And it was all public but had to get him out of there, it was sort of tea time…"* (FG2/HCA14)

Some of the healthcare professional participants did hold the perspective of a healthcare professional view and that of a witnessing patient:

> *"It varies; we have had...unfortunately in this ward they tend to be quite catastrophic, ehm so, awful, often very unexpected and usually very very messy. Because airways obstruction is often the main cause, aspiration, so they tend to be very messy. Ehm, so yes, sometimes it works well, at times it hasn't been so great for everybody, for the staff, for other patients, this can be particularly nasty."* (Int1/HCA1)

Whilst others, although avoiding discussing directly the witnessing patients' perspective, provided descriptions of the cardiac arrest scene:

> *"It could be in a second an oasis of peace and calm the next minute everything goes...everything goes to ships. Cardiology is quite dynamic in that way..."* (FG1/SD7)

> *"You know that everybody has done their best, but sometimes it's quite hectic... and everybody's shouting, sometimes it can be really quite calm and sometimes that can be too many people and everybody wants to be…"* (FG2/HCA14)

In general, a common aspect amongst the healthcare professionals' accounts was the negative attributions given to the CPR event, summarised in the following excerpt:

> *"They're all awful. There's no, like, there's never a good cardiac arrest."* (Int4/RN16)

One of the senior professionals pointed out that *"people perspectives are different from what we as healthcare professionals think about this"* (FG1/SD7). Regarding the success of CPR, healthcare professionals were aware that "*CPR is just the last ditch effort to save*

*someone who is dying or who essentially has died"* (FG1/JD3). Due to the clinical background and knowledge they owned, healthcare staff considered the chance of an unsuccessful outcome as a realistic possibility:

> *"Because we've got the sort of background knowledge from us. We know that patient has got critical coronary artery disease and that they're in hospital because they're actually so unwell that if they go home, they might not make it back for their bypass. We know that but...that knowledge to them is not available necessarily."* (FG2/RN9)

Moreover, healthcare professionals reported encountering patients who had unrealistic expectations regarding the outcome of CPR. In these cases, it was important for staff to help patients reframe their expectations, by having frank conversations about resuscitation:

> *"Most people you come across have very unrealistic expectations of what resuscitation is. I have lots of resuscitation discussions with people coming to the front door, people who are barely able to breathe...or can barely walk and they want to be for full resuscitation attempts. I always want to show every member of the public what resuscitation looks like.* (…) *the more you try to educate them the more they back down their views. If you ask gently if they have an idea, they will tell you* [slamming his fist] *"Do everything!" But when you try to explain things to them, they get more entrenched of the idea of doing everything."* (FG1/JD8)

From the perspective of the patients however, when witnessing CPR of a fellow patient, some of them realised that death "*is something you got to be prepared for*" (Pt12) and they felt *"grateful"* towards the witnessing experience for *"the insight and knowledge that can happen to anyone anytime"* (Pt12). The resuscitation event of another patient represented for some, an opportunity to think about their own lives. Realising that something similar could happen to anyone brought patients to reflect on the priorities of their life and on what is most important for them. One patient who witnessed the cardiac arrest of a fellow patient with a similar medical history and personal background disclosed:

> *"I thought there's me whinging about my life, what I've got wrong with me and I've a husband that's dying for a different reason, but it makes you very aware. You're not the only one."* (Pt16)

While other participants, comparing themselves to the patient who suffered the arrest, expressed their own views if something similar was to happen to them:

> *"I know I don't wanna come back, you know what I mean? From there, if I had all the problems he had I wouldn't want to come back, you know? Not a chance. It's not for me, you know? I mean, I've got a lung disease, COPD anyway, I don't wanna come back, I know I sound a bit morbid, but you know? What's left for you really?"* (Pt10)

For healthcare professionals, the cause of patients' unrealistic expectations of CPR were greatly attributed to the media and to the portrayal of CPR in television shows, which created a discrepancy with the reality, both in terms of what CPR looked like and in terms of the outcome:

> *"They usually just watch television and see this one guy kind of going at it and with frustration he tamps his chest with his fist. And he is back to life again. So that's what they think is going to happen."* (FG1/JD3)

> *"People see programs like 'Casualty', 'ER' like all those kinds of hospital based drama programs and I think that really sets unrealistic expectations of what happens in a cardiac arrest. Also the recovery, they relay kind of the chance of return of spontaneous circulation from a cardiac arrest, but this is not high, the chances of surviving a cardiac arrest in hospital is better than it is in the community, but it's still not high. Anything media kind of portray on TV nine times out of ten somebody survives, when actually that's not the case."* (Int4/RN16)

Few patients referred to CPR portrayed on television too. They compared the reality of CPR experienced in hospital to the fiction of emergency dramas and concluded that witnessing a real resuscitation event was *"much different from television, because it sticks with you"* (Pt16):

> *"I've watched all the CPR* [TV]*, all these things for years and you're probably same as me going: 'What a load of rubbish!' What we watch on TV is completely rubbish because TV is there to engage people to watch that particular TV*

> *program. And yes, they use lots of meat, yes, they use lots of props, like a plastic arm or plastic leg or the various bones sticking out and they use those animals when they're doing cuts, the other blood that splattered all over the place is invariably water and red dye. And you can have a very very good arm break. It is realistic, and that's what they need."* (Pt4)

Healthcare professionals clearly differentiated between CPR portrayed in the media and the reality of CPR in hospital. According to their different roles, healthcare professionals described their involvement in the resuscitation, from the activation of the alarm bell, until the post CPR care for the resuscitated patient or in the last offices if the patient did not survive. A junior doctor explained that when they get a resuscitation call, their role was to "*run to the place where the CPR is and then work with the team trying to resuscitate the patient...it works or it doesn't work. And then...it's usually the consultant or the most senior persons to decide when to stop*" (FG1/JD6). Some of the registered nurses explained that after the emergency had been managed, part of the nursing activities involved re-stocking the emergency trolley, cleaning and tidying up the area:

> *"Well, so one way or another the patient either comes back and then we're deciding where we're going to take him, so the team will be involved in the decision-making and in planning what to do next. And then there'll be the tidying up. Yes, packets of stuff everywhere and a bit tidying up, and either move the patient to a side room or to their next place of care and then that bed space it has to be cleaned. And when we stopped all that, and the patient is tied up in the bed, they'll need clean sheets, and you know, wash and everything, because there'll be a mess. The nurses on the ward, it's their responsibility to stock up the resuscitation trolley."* (Int3/RN15)

Eventually, if the arrest was not successful and the patient had died "*you need to kind of do all of that type of kind of last offices"* (Int4/RN16) until "*the trolley comes in to take the body away*" (FG3/RN20). Patients felt uncomfortable regarding the idea of death in the hospital environment. One patient explained that the thought of the sudden death of a patient, and of the dead body in the room, conflicted with the idea that life in the

ward was carrying on as normal. However, the participant also recognised that that event, although sad and dramatic, was part of the reality of hospital life:

> *"Sad day it was. And I noticed that the nurses and staff and things like that they just got to get on with that, but it does seem a bit odd, that that poor girl just died in the corner and next minute everything is going off again, the phone's going off and everything. But then that's life isn't it?"* (Pt14)

Ultimately, returning to a healthcare professional's point of view, one of the senior doctors reflected on the value of resuscitation as a process that can help the people who are witnessing it to face and accept death. The following excerpt illustrates again how the perception of the healthcare professionals shifted from the patients who witnessed CPR, to family members and to the staff witnessing and performing resuscitation:

> *"But when the situation becomes clear that it is not going to be an outcome where the patient lives, and it becomes management of the family, I think paediatric taught me that, because you realise sometimes you are doing resuscitation for the family, so they can deal with that hard time, until death. And somehow with adults it is the same* (…) *and you realise you are helping somebody else dealing with it, not the patient at that stage.* (…) *And it might be that you are helping the staff dealing with it, and sometimes they need to understand that the patient they have cared for 12 hours out of their 24 for the last three-four days, is dying and it is all part of it."* (Int2/SD2)

## 7.5 Chapter Summary

This chapter has set the context of the WATCH study, by providing the characteristics of the study sample of the patient and the healthcare professional participants, and by providing a description of the life-world of resuscitation in hospital. The demographic characteristics of the patient participants highlighted an overall elevated age of the patient sample recruited in the study. The demographic characteristics of the healthcare professional sample, on the other hand, highlighted variation in expertise and role

among the healthcare professional participants recruited in the study. An account of the life-world of resuscitation in hospital was developed, exploring how this is perceived by patients and healthcare professionals. This description has introduced the phenomenon of patient-witnessed resuscitation that is explored in detail from the perspective of patients in Chapter 8, and from the perspective of healthcare professionals in Chapter 9.

# Chapter 8 Findings: Patients

## 8.1 Introduction

In this chapter, findings from the patient participants of the WATCH study are detailed, describing the three themes developed from phenomenological analysis of the patient interviews. The themes and subthemes are supported by direct quotations of the participants. Then, the follow-up interviews with patient participants are explored, concluding this chapter.

## 8.2 The lived experience of the witnessing patients

Three themes were developed from the data analysis of the patient interviews. The first theme, “feeling the impact and coping with witnessing CPR”, describes the emotional perceived impact that witnessing CPR has on patients. The second theme, “receiving support from the staff”, describes the need of support of witnessing patients during and following the CPR event. Finally, the theme, “consequences of witnessing CPR”, describes the consequences patients have experienced following witnessing a CPR event in the short and in the long term.

A summary of the themes and subthemes developed for the patient participants is presented in Table 8.1.

*Table 8.1 Themes and subthemes from the patient participants*

| Themes | Subthemes |
|---|---|
| Feeling the impact and coping with witnessing CPR | Feeling the emotional impact |
| | Adopting coping strategies |
| Receiving support from staff | Needing information and reassurance |
| | Talking about the CPR event |
| Consequences of witnessing CPR | Feeling stuck: an unintended effect |
| | Feeling safe: a positive aftermath |

### 8.2.1 Feeling the impact and coping with witnessing CPR

The theme, "feeling the impact and coping with witnessing CPR", describes how patients perceived their emotional reactions elicited by witnessing CPR on a fellow patient and what coping strategies they use to help themselves manage these reactions. This theme is developed through two subthemes: "feeling the emotional impact" and "adopting coping strategies".

#### *Feeling the emotional impact*

Talking about their own emotions resulting from the witnessing experience was not easy for the interviewed patients. Some patients provided brief answers and limited explanations about how they felt during and after the resuscitation attempt. However, a recurrent theme in most interviews was that witnessing CPR on a fellow patient was a disturbing experience. Several patients described the event using expressions as: *"there was loads of alarm and panic"* (Pt1), *"it is horrible"* (Pt6), *"it was quite upsetting"* (Pt7). Other patients reported that witnessing the other patient having a cardiac arrest was a *"real shock"* (Pt14) for them, and a few patients felt it was a surreal situation, *"almost like dreaming"* (Pt11). Among this range of emotions expressed by patients, one patient reported feeling sad, emotional and overwhelmed by the event:

> *"And I'm afraid it made me very, very emotional* (…) *it just overwhelmed me. It keeps washing over me today. And I know I've got to get over it but, I suppose when you're in hospital, you are not even at your strongest, are you?"* (Pt15)

Another common response among the witnessing patients was the frustration of feeling helpless, as they felt there was nothing they could do to help the patient who had gone into cardiac arrest:

> *"Well, I mean first of all you see all what happened and she* [nurse] *presses the button, you just feel helpless.* (…) *It is a normal thing, you want to help him, it hurts, for how strong the man is, we are all in pain, it's very emotional, but luckily things turned out ok.* (…) *I just wanted to do this thing, really, you want to help really."* (Pt02)

However, not all participants shared this perception regarding the witnessing experience. Some patients reported that witnessing the resuscitation attempt of a fellow patient did not affect them. Patients who had previous hospital admissions pointed out that because they have witnessed other emergencies in hospital in the past, they did not feel affected by the event:

> *"Then, you know if you've ever been in a hospital before, you witnessed what's going on. So if you were at my age you obviously, there would be two or three times when you witnessed it, it doesn't make any difference to, you know, my sense of feeling."* (Pt5)

> *"No, situations like that it's just...never bothered me. Like emergencies, it has never...I've always stayed calm, I don't panic for things like that."* (Pt3)

Others instead, explained that their professional careers brought them to face similar events, which made them accustomed to dramatic situations and fatal outcomes:

> *"No, having spent thirty years in the Royal Navy, I have come across similar situations. So does it affect me? I don't think so. I'm not all of a sudden going to get scared to go to sleep or things like that."* (Pt4)

Among the participants, two of them formerly worked in a hospital, and both agreed that they were not disturbed by witnessing the cardiac arrest, because they *"have seen*

*a lot before"* (Pt11) and *"have dealt with death so many times,* [that] *it does affect you, but didn't affect me to that extent."* (Pt8). Whilst previous exposure to death in a professional context seemed to ease the emotional reaction of witnessing patients, one participant reported that having experienced personal loss in the past did not prevent her from feeling affected by witnessing CPR in hospital:

> *"You know, I've lost my mom and my dad and it's not the first time I might have seen a dead body, but it is still horrible, and it always will be!"* (Pt6)

Another issue for witnessing patients was the relationships developed with other patients during the time of the admission. The patient in the opposite bed could become a friend to spend time with during the hospital days. This was particularly important in the witnessing experience when, after spending several days in the same multi-bedded room and establishing a connection, one of the patients suffered a cardiac arrest:

> *"Yeah, I knew him well, we used to sit here together watching the telly, you know. So, because he has been here so long and I've been here so long, you get to know people, don't you, you know? We just used to sit here and watch TV, yeah."* (Pt10)

Some patients reported that a bond was developed among groups of patients in the same multi-bedded room, even over a short period of time, and this influenced how patients reacted to witnessing CPR:

> *"During that time you fleetingly start to get to know them* (…) *and the three of us seem to get on brilliantly and we had a laugh and then it became like a family.* (…) *But I did have a few tears because we've been chatting. She was a lovely lady"* (Pt16)

Finally, some of the older participants reflected on whether the age of the witnessing patients could also influence the intensity of their reactions, as they might view the possibility of adverse events with more acceptance compared to younger patients, who might feel more involved and scared:

> *"I mean, being 74 I have seen quite a lot. So it's probably not as much as the shock as a young person and obviously I'm aware of CPR and things like that,* (…) *but it doesn't happen to everybody. Younger people are very sensitive to that kind of things, than older people are, generally. The word is hysteria, that might be the wrong word, but that's the word I can think of. I think younger people can see themselves* [there]… *I take that from experience."* (Pt14)

### *Adopting coping strategies*

Regardless of whether patients described their reactions to witnessing CPR on a fellow patient or not, several interviewed patients described different coping strategies that helped them deal with the witnessing experience. Some patients explained that they took some time to reflect on the event, and reassured themselves that they could not have done anything else to help the patient who suffered the cardiac arrest:

> *"Just sort of subtly, lately, just thinking if there was anything we could have seen during the course of that evening, and I don't think there was. At the end of the day, you know that poor man had a cardiac arrest, that's what he had, that's what he has suffered from and that happened."* (Pt4)

One participant expressed that she felt relieved thinking that by alerting the ward staff promptly, she helped her fellow patient to spend the last few hours lying on her bed and not sitting uncomfortably on the chair:

> *"But she was so poorly, I'm glad she was in her bed, I wouldn't have liked to see her going down her chair. She was clearly suffering in her chair, I am glad they put her in her bed. I am glad I saw her and asked to put her in her bed."* (Pt7)

For those patients where resuscitation was unsuccessful, witnessing patients felt that dealing with the death of a fellow patient and processing their own emotions was an important aspect of coping with the experience. Most patients accepted death as something "*unavoidable*" (Pt8) and part of the natural course of life. Some expressed the thought that dying could have even been a relief for that patient who arrested, to end their suffering:

> *"I think, after all, it's probably best for her, well she is in a best place, because she was in such, such pain, so* (…) *These things just happen sometimes!"* (Pt6)

> *"It's one of those things, you know? He might be in the best place for him, not being funny, you know? Because he had so much wrong with him, you know?"* (Pt10)

Another patient explained that initially she felt sad and tearful, because *"death undoubtedly goes to tears, because it is a life lived and a life lived as well as possible and it has given so much"* (Pt8). But then, she felt the need to mindfully process her emotions and move on:

> *"But it is about letting things go as well and moving on* (…) *It's time now to move on. That is something in the past; you bring out happy days and happy memories, rather than the remembrance of the last moments."* (Pt8)

Meanwhile, some other patients found that their religious faith helped them cope with that situation both during and after the resuscitation attempts. One interviewee expressed this saying:

> *"But, I'm a Christian and my first thoughts as she was leaving us was praying for her to be in her body still. And for that that gave me strength* (…) *with the help of the staff and the Lord up there, not everyone's a Christian so I don't want to push it but that's part of who I am… The Lord has not made route for her yet!"* (Pt16)

Sometimes, witnessing the CPR event became an experience only shared with the other patients in the same multi-bedded room, where the patients got close together and tried to look after each other:

> *"So I went over to the bed in the corner. There's* [other patient's name] *there and because I didn't want to see it and to give them room as well and then because there was an elderly lady next to* [CPR patient]*. And we just sat on the bed and then the room just filled with everybody working and so we were obviously chatting about it. But we're trying to distract ourselves and I was getting a bit worried about the lady next to her, the elderly lady.* (…) *She told me she'd already lost a daughter. To be honest, I was more concerned about her, to be honest."* (Pt14)

While, other participants felt a stronger need to reconnect with their loved ones after the event:

> *"So the next day when my wife came here, I gave her a big hug and told her I love her because I don't say that enough* [patient breaks in tears]*, but that was it. That was it."* (Pt12)

Finally, a few patients reported they found it beneficial to detach themselves from the resuscitation situation, thereby preventing themselves from feeling involved in someone else's tragedy. One patient expressed this perspective saying:

> *"Ehm…I haven't ever actually had a conversation with this lady. So I don't think it's seriously affected me because I tried to separate myself from it."* (Pt15)

Nonetheless, the participant still expressed empathy for the family of the patient who passed away after CPR, worrying for her children, showing that is difficult to detach completely from such situations:

> *"I just hope she's got a strong family and I hope someone really helps the children understand what she was like as a person. I don't know what they mean by three young children. Are they old enough to remember her?"* (Pt15)

### 8.2.2 Receiving support from staff

The theme, "receiving support from staff", describes the need of the witnessing patients to understand and to be reassured regarding the witnessed CPR event, and the importance of disclosing the witnessed experience with hospital staff. This is developed through two subthemes: "needing information and reassurance" and "talking about the CPR event".

*Needing information and reassurance*

Patients who witnessed CPR spoke about how receiving information from staff about the emergency was an important aspect of support after the event. One participant in particular explained that he would have appreciated if the staff had informed the other patients in the multi-bedded room that a resuscitation attempt was taking place on a fellow patient. This would have helped other patients understand the situation and cope with witnessing a stressful event:

> *"If there is someone from the team, and he's got to be a team leader, they've got to poke their nose around or just to make a note in the ward area, the gentleman or that lady whatever, they've got a serious problem, that is being dealt with. The people around including myself, they could have relaxed."* (Pt13)

After the CPR event, many patients reported that they often asked staff about the condition of the resuscitated patient. Knowing about their condition, even if limited to knowing whether the patient survived or not, was helpful for witnessing patients and partially relieved their concerns. One of the participants, who was concerned for the patient who suffered a cardiac arrest next to her, expressed these feelings in the following excerpt:

> *"I do know because I've asked after her and she's doing well.* (…) *and the nurses that I asked about her said: 'She's doing well.' And that's sufficient, because it's really none of my business. But it was enough to settle me to think she's getting on* (…) *She was very sick, obviously, so I think it would have worried me more if I hadn't stayed where I was and heard on other occasions that she's actually doing fine."* (Pt16)

Other interviewees noted that in their case, this need of information remained unaddressed:

> *"And you know, that poor guy was brought back, I don't know how he is now, but hopefully he's alright."* (Pt1)

Although patients wanted information about the CPR event, they also understood the challenges surrounding patients' confidentiality and respected that staff could only provide limited information:

> *"And they keep it well reserved there, because they don't want to, you know, for confidentiality... so you know, they couldn't say…they can't go into details, there are things that can and can't be done. It's not right."* (Pt5)

Another issue reported by some patients was that there did not appear to be an agreed mechanism nor any guidance for healthcare professionals related to informing and supporting the patients who witnessed resuscitation on fellow patients. One patient focused on the lack of information sharing guidelines:

> *"Because I wanted to know and I try to ask questions. And yeah, the only way you're going to get answered is by asking questions.* (…) *But it didn't appear to be any procedure for passing information to the rest of the people that was around the area."* (Pt13)

In addition, patients who witnessed resuscitation in a multi-bedded room spoke of the need for receiving reassurance by the staff about the witnessing experience. Overall, witnessing patients found it beneficial when the staff reassured them, as exemplified by the following excerpt:

> *"Yes,* [nurse] *did, she was lovely.* [Nurse] *just asked if I was ok, and she comforted me, she had just been nice."* (Pt7)

Participants valued the attention of staff being demonstrated through simple acts of caring, such as acknowledging that other patients had witnessed the event, checking in on them, and explaining what had occurred in the ward, as illustrated in the following excerpt:

> *"Well, it's all a bit surreal really, and eventually when the nursing team were able to come around, they came in and asked if we were okay.* [CPR patient] *was still*

> *very next, I don't know how much was on the floor there, because before that we wouldn't have been able to get in, and then a couple of ladies in the purple tops came and asked if we were ok. I did say I was a bit concerned about that lady, and I was conscious that she was sat with it right up to hear it really, but then they came and they brought some cups of tea. They asked us if we were all right."* (Pt14)

Some patients received immediate attention and reassurance during and after the resuscitation event from the nursing ward staff, who made sure that the witnessing patients were not distressed by the experience and offered them further support if needed:

> *"I had a nurse around the bed, she came across to make sure I was alright."* (Pt11)

> *"She* [nurse] *came in the morning and she said to me 'Oh, I was just thinking everything's all right? If you need me give me just press the bell'."* (Pt5)

Others instead, did not receive any information of reassurance and were not aware of what was going on:

> *"But I haven't had a clue, I have heard everything obviously, but I haven't had a clue of what it was."* (Pt17)

Finally, one participant remarked that it would be beneficial to have a professional person dedicated to look after the safety and wellbeing of the other patients during a CPR event:

> *"There could be someone there who only deals with the* [other] *patients, or at least that makes sure straight away that they are okay, because you can have another issue on the other side of the curtains and you wouldn't know!"* (Pt14)

### *Talking about the CPR event*

The interviewees noted that they appreciated when some of the healthcare professionals could visit them at their bedside and dedicate time to talk with them about the CPR experience, as extensively described by one participant:

> *"Yes, there was an HCA* [health care assistant] *that came and she might even have done that because of the gap in the curtains. And she came with a tea and afterwards, a couple of hours afterwards, one of them came and could see I was upset and she went:* [gesturing] *'Are you okay?' and I went:* [gesturing] *'I am not!' That's all that is upsetting me, it's hearing this, so she stayed with me for some time and she came back the following morning to see me again. And I thought: 'Oh she's an HCA that cares'"* (Pt8)

Most patients believed that if healthcare professionals offered emotional support to witnessing patients after the CPR event, this could help them to deal with the experience. One participant confirmed this view stating that he would have found it beneficial to have the chance to disclose his emotions with some of the healthcare professionals:

> *"Maybe there's a case to note that someone* [of the staff] *could have come around* [to the witnessing patients]*. If they* [the witnessing patients] *want to get anything off their chest. Yeah, I do. I feel better for talking to you, even, you know."* (Pt12)

Like others, this patient did not have the chance to talk with any of the staff:

> *"No, not really. Everybody was in like a state of shock at that hour."* (Pt12)

> *"No one came around to the best of my knowledge none of us have spoken to anyone."* (Pt15)

However, witnessing patients were also aware that the patient who was receiving CPR was the priority for healthcare staff. Some of the witnessing patients in fact, recognised the care priorities of the healthcare professionals and understood the fact that staff could not provide support to them immediately after the CPR event:

> *"They've got more important things to do for what's happening than worrying about the feelings of other patients. So I didn't find that a problem. They've got their job to do, you know. They just went back from where they came from."* (Pt1)

Additionally, some participants pointed out that the witnessing experience *"affects people differently"* (Pt6) and not all witnessing patients might want to receive support or feel comfortable to speak openly with the staff. One patient shared this point of view:

> *"I think it could have been good for quite a few people, yeah. I think there are some things that I probably wouldn't have discussed, you know, wouldn't talk about, you know, I wouldn't like to open my heart you know, but everything is ok. But that's because I don't like to talk too much, you know."* (Pt2)

Other patients felt they did not need further support, but they recognised that emotional support could still be beneficial for others:

> *"Maybe here there are a lot of people they might need it, but I am so used to it now. Yeah, but here there still are other people that probably need reassuring."* (Pt5)

> *"I've been around a bit so specifically for me it probably wouldn't have helped or hindered but I can see that it may help.* (…) *I think it probably would, but not in my particular case."* (Pt4)

They also suggested that healthcare professionals should offer the opportunity to talk about the event, whilst respecting that other patients may not want to discuss it:

> *"I think they will have to know that there is somebody there to talk to if you want it, but not to have it thrust upon you. And if it's not for someone to just keep going, yeah well and if you don't feel to talk about it, you don't talk about it. It's the same as when you deal with grief, but in a different way."* (Pt6)

> *"Yeah, you know, people that come up, say: 'Would you like to have a chat?', and a person then can always say: 'No'. But if you don't go there in the first place to ask you are not going to know. So, it could help."* (Pt4)

Finally, some participants provided suggestions to better support the patients who witness CPR on a fellow patient. One participant in particular pointed out that communication skills are essential for the healthcare professionals taking care of patients, especially when they experience distressing events:

> *"It is observation, communication and action. And if she* [health care professional] *can't do it, she has to pass that observation to somebody else, who has the observation, realisation and then action.* [Someone] *who can go into the situation and say: 'Are you alright?' Because you've got to be a listener, you've got to be someone that stops and listens and says: 'What is going on?'* (…) *It's watching, more than anything else, it's observing, if somebody is you know, tearful, you just go:* [gesturing] *'Are you okay?'"* (Pt8)

The same patient highlighted the importance of enhancing and rehearsing staff's communication skills with continuing training until it is incorporated into their clinical everyday practice:

> *"But I do think it is by training staff, during their HCA training to develop those listening skills, observation, definitely observation skills and communication skills.* (…) *So, it is training the HCAs or even the nurses themselves, but it is an ongoing training. Not once, not twice, but keep doing it until they get it in their head without thinking."* (Pt8)

### 8.2.3 Consequences of witnessing CPR

The theme, "consequences of witnessing CPR", describes the initial feelings of witnessing patients of being stuck behind the curtains around their beds during the CPR event, and how they ultimately feel safe after the prompt response of the staff to the cardiac arrest. This is developed through two subthemes: "feeling stuck: an unintended effect" and "feeling safe: a positive aftermath".

#### *Feeling stuck: an unintended effect*

During a cardiac arrest in a multi-bedded room and following the attempt of resuscitation, all interviewed patients had stayed in their bed space. Some of these patients were not able to walk, and had no alternative other than staying where they were. Other patients could move, but they did not know where to go without interfering with the staff who were responding to the emergency:

> *"At the end of the day it's a worthwhile thought: 'Could I get out?' but if I could have got out would have I been in the way? With the number of people that was coming and going and all the equipment that was here..."* (Pt4)

Therefore, everything they witnessed and heard of the resuscitation was ultimately only filtered by the paper curtains around their beds. If these curtains were not drawn immediately, patients observed the CPR scene, or part of it, and found it disturbing:

> *"The crash* [cardiac arrest team and trolley] *surely was here and it was quite disturbing to actually watch what was going on."* (Pt4)

However, even if curtains were drawn around the bed, some patients could still see through the gaps, or they could see the scene reflected on the window:

> *"There was only a piece of vision from the screening round to the wall. And because I was right opposite I could see just that portion.* (…) *nobody else saw it. They've heard it."* (Pt16)

Other patients, whilst fully screened by the curtains, could still hear what was happening:

> *"All I saw, was a lot of people running around, I reckon it was a doctor running around, and some of the nurses started getting over and closed all the curtains, so I didn't see anything, I couldn't see anything at all, I heard it all, all what was going on."* (Pt17)

> *"And then they pulled all our curtains and yeah, that was very tough to listen to all that for about one hour, I think it was."* (Pt7)

Patients reported accurate descriptions of what they heard, such as hearing the other patient *"still gurgling"* (Pt7), and these sounds gave patients clear understanding of what was going on:

> *"Well, first of all, you hear somebody talking to the patient obviously, and then get no reaction and then they start pressing buttons and you get all the funny noises* (…) *I realised exactly what was going on, first soon as I heard that particular noise. It's like I had an ambulance right on top of me."* (Pt5)

This shows that the curtains did not protect other patients from witnessing the CPR event, because they were still aware of the event by hearing it or partially seeing it

through. In addition, curtains had the unintended effect of making patients feel "*basically stuck"* (Pt4) in their bed space, hearing the events of CPR near them, thereby making patients feel part of events and unable to leave:

> *"Well, it felt a little bit like, I know there wasn't any other place to go, I know once they shut the curtains you kind of have to wait, because you don't know what is out there, what they are trying to stop you to see. But, I don't know, I feel, almost like, if they could evacuate the room, do you know what I mean? I know they can't move her, but if there was just a little spare room just in case, you know, like a side room where everyone could be just put in, that would probably be...that's fair."* (Pt7)

Additionally, in the hours after CPR, if resuscitation had been unsuccessful and the patient had died, the curtains remained closed during the last offices and post-mortem care. At this time, witnessing patients remained in their beds and were aware of the presence of the deceased body and of the post-mortem care being given. Particularly at this time, they did not feel protected by the curtains. One patient explained how she felt exposed during the visit of the family of the deceased patient next to her:

> *"But, it was the hours afterwards, when people would come in, when family came to attend and I felt they were a curtain away from me. I was a paper curtain away, a paper curtain.* (…) *I just felt I was hearing things I should have never heard."* (Pt8)

Finally, the close proximity to death, and to the distress of the bereaved family left witnessing patients feeling a sense of intrusion in other people's grief, as described in the next comment:

> *"And then for some reason I just thought it was wrong to be listening to somebody else's… And of course the family were there and I just tried very hard not to listen, really.* [Participant crying] *I've put the news or whatever it was on the television and I was aware that it was still very busy over there.* (…) *So I'd just laid here for a while pondering it and apparently she was still in there at that time. So I tried not to look. Yeah not to listen not to...feel as if I was intruding."* (Pt15)

*Feeling safe: a positive aftermath*

For the patient participants, witnessing the CPR event was disturbing. However, seeing the response of healthcare professionals to the emergency had a positive effect on them, as it reinforced their confidence in the staff, and reassured them that every effort was made to restore the patient's life.

> *"The emergency alarm went off and everybody just knew where to go, what to do, very well-orchestrated really."* (Pt1)

> *"I credit her, she* [nurse] *reacted very quickly, like, I am not an expert, but I think I've never seen a reaction happening that quickly.* (…) *She pressed the button, and then everybody came in."* (Pt2)

Most of the patients interviewed were astonished by the immediate gathering of ward staff around the bed of the patient who went into cardiac arrest, and by how the ward staff responded to the emergency until the arrival of the cardiac arrest (crash) team:

> *"I don't know everything that was going on, but I knew as soon as I heard certain noises that something was happening to that person and then the flurry started here, there and everywhere and before you knew it was full of doctors and medical people."* (Pt5)

All the interviewed patients agreed that the healthcare professionals did everything they could do, and that nothing could have been done better:

> *"Uhm, no they did absolutely everything they possibly could.* (…) *I can't recall anything that was not done...really cannot."* (Pt6)

> *"They've done an amazing job. Yeah, amazing job."* (Pt3)

Regardless the outcome of CPR, witnessing patients recognised the professionalism and efficiency of the staff, remarking on this:

> *"They were struggling to get him back. But they managed. They do a good job in this hospital, you know, they are good, you know, will say that like, you know, they are good at their job."* (Pt10)

> *"The people were there with the ability, the background, knowledge, the equipment, everything that would allow to take him over the fence basically, to help this young man, this gentleman, that I knew he had a problem. As I said, the people that were necessary to do whatever were there, and they undertook their tasks to do whatever they had to do, and that's it* (…) *and I thought they were doing it in a very, very professional way."* (Pt13)

The prompt and professional response of the healthcare professionals helped strengthen the confidence of patients in the staff. This was particularly evident when patients were asked to describe how they felt after watching the staff managing the emergency:

> *"Uhm, confidence? Yeah, high confidence to all the staff uhm... so yes a lot of confidence and respect for all the people that were there"* (Pt1)

> *"Well, I've got a difficult procedure coming up. I've been told why it's difficult and the procedure of it it's going to take a few hours. Then I'm going into ICU* [Intensive Care Unit] *and I go back on the ward for a few days and I go home. And seeing what happened in those few minutes, I thought: 'No way would I disappear off this earth without them trying to keep me going!' and that did give me confidence."* (Pt16)

Ultimately, irrespective of the outcome, the experience of watching a professional, prompt and efficient response to an unexpected emergency event had the positive aftermath of making patients feel safe:

> *"I would say everything's alright, no problem. We are in safe hands, I think, and in the* [name of location] *particularly, it's really good."* (Pt5)

> *"But with the experience of watching, raw experience, because there was nothing there. And then all of a sudden all that help and I thought: I feel quite safe here."* (Pt16)

And when they thought that a similar adverse event could happen "*to anyone anytime*" (Pt12) including them, they were confident that they would receive from the staff the same high level of care and attention:

> *"I think as I got older and I see somebody like that, It could be me and to see the instant work of what everyone did, they all did their bit of what they know with the NHS and I thought: with the Lord's guidance, I'll be the same they all look after me."* (Pt16)

## 8.3 Follow-up interviews

The study protocol in Chapter 6 stated that, for the patient participants, a follow-up interview was scheduled with each participant four to six weeks after the witnessed resuscitation event to uncover the sustained perceived impact and long-term consequences of witnessing CPR on a fellow patient. In particular, the aim of the follow-up interview was to explore how the participants recollected the experience of witnessing CPR and whether their perception of the perceived impact of the experience on them changed or not. At the design stage of this study, the research team anticipated the possibility that patient participants could withdraw from the study, and therefore the possibility of an incomplete dataset for the follow-up interview. Nevertheless, it was considered important to give patients the opportunity to share their experience of witnessing CPR, regardless of their willingness to be involved in a second interview. Moreover, the decision of not to take part in the follow-up interview was anticipated to constitute meaningful data in itself, and the reasons motivating this decision to provide valuable information to understand participants' experience. All the 16 patients who took part in the first interview were informed of the possibility to participate in a follow-up interview after approximately one month from the first interview, as part of the data collection strategy for the fulfilment of the aim and objectives of the study. However, all participants were reminded of their right to withdraw from the study at any point, and it was made clear that the participation in the follow-up interview was not considered a mandatory condition to participate in the first interview. Of the 16 patient participants,

only two volunteered to be interviewed a second time. Six patients, at the end of the first interview, decided not to participate in the follow-up. Four of them only stated that they preferred not to be contacted again by the researcher, because they considered the episode concluded. One participant did not agree to share the contact details with the researcher for privacy reasons. One participant explained that although witnessing CPR on a fellow patient had been a difficult experience, participating in the first interview and sharing the personal experience with the researcher was helpful to process the event and have closure. Therefore, this participant did not wish to be interviewed again and open a conversation on the experience a second time. Six patients withdrew from the follow-up interview when re-contacted by phone by the researcher. Although they expressed their gratitude to the researcher for contacting them and following up on them, they stated they did not have further thoughts about the witnessed experience, they did not feel affected by it at this stage and did not need any further support. Therefore, none of them expressed the interest in participating in the second interview. Finally, two participants did not respond when re-contacted by the researcher. The two completed interviews were subject to data analysis as described in the study protocol. The findings of these interviews, which include direct quotes from the two patient participants, are provided in the following section.

### 8.3.1 Findings of the follow-up interviews

Limited data could be extracted from the two follow-up interviews conducted with patient participants Pt1 and Pt2. However, all the data relevant to the aim of the study were analysed according to the research protocol, although they were insufficient to develop themes and subthemes. The relevant findings that were identified and

considered worth reporting, are described in this section, supported by direct quotations of the participants.

When recalling the event, both participants Pt1 and Pt2 remembered precisely the healthcare professionals' response to the cardiac arrest, confirming the positive feeling of safety expressed in the first interview:

> *"It looked chaotic from an outsider point of view, but they knew what they were doing. There weren't people that didn't need to be there, everyone had a purpose, had a job, and they just got on with it. So yes, a little bit chaotic, but everyone knew what they were doing. And it didn't matter who they were, there was not stepping in each other way, they just got on with it. It was very good."* (Int2/Pt1)

> *"That nurse was there like a flash, and there was another one, and another one, and she responded very very quickly! She reacted so quickly and in seconds it was about ten of them and then they pulled the curtains across to do resuscitation."* (Int2/Pt2)

However, during the course of the interviews it was notable that some elements had changed in respect to the first interview. In the case of participant Pt1, the memory of the outcome of the event was reported differently: the participant recalled the witnessed resuscitation event as an unsuccessful one, in contrast with the narrative of the first interview, and indeed with the record of that specific CPR event. When asked to explain further on this point, the participant stated that they could not exactly remember what happened in those moments, and pointed out that the unsuccessful event had been somehow positive, because while the arrested patient was so poorly he could not survive, the next patient after him could benefit of that bed space and be looked after:

> *"It sounds awful, but he was so poorly that it was the best for him* [patient suffering cardiac arrest]. *And for the next person after that bed, it was also the best thing. You know, he wasn't a youngster, he was in his late eighties or early nineties, but that space, that bed then was free for someone else who needed, that was younger, and a lady came who had an operation or a test, so in that*

*sense, I think it was beneficial. But I know that a lot of people would disagree with me."* (Int2/Pt1)

In the case of participant Pt2, this patient reported having thought about the witnessed CPR event after the first interview and after hospital discharge. The participant explained that the memories of that event would *"click in every now and then",* bringing back the feeling of being helpless, unable to do anything for the patient gone into cardiac arrest, and feeling *"chained"* to the bed, while connected to various supportive medical devices:

*"A couple of times I thought about it, now and then, that's the trouble, because there is not enough to distract you, and you think about all the different things going through your head, and it clicks in every now and then and you try to push the thought away… I just felt so helpless, and I have only saw him momentarily, and I thought: 'poor guy', but that was the time I had drips, and oxygen, and I just felt chained, you just look and just feel helpless, because you can't help him in any way."* (Int2/Pt2)

On reflection, although knowing that the resuscitation procedure was successful, participant Pt2 stated that the opportunity to disclose about the event with the staff and to receive information regarding the status of the fellow patient would have been appreciated, to help have closure regarding the witnessed experience and move on. This was in contrast to comments of the same participant during the first interview, where the participant stated that they did not wish to speak to the staff about his witnessing experience, showing that over time the participants' coping needs towards the experience might have changed. At the same time, the participant showed awareness that distancing himself from the memories of that event was helpful to cope with the experience and to be able to let it go:

*"Sometimes I think it'd be nice if somebody would come back in and tell you something about it, because you are left wondering, it would be quite nice. Because I didn't see him afterwards, they must have moved him somewhere else afterwards, of course you are left wondering, it'd be quite nice if somebody could*

*say he's ok now, to give closure. But I think there are so many tough things we see, if we dwell too much with them we'd all go down, you don't have to think about it too much… you need to let it go."* (Int2/Pt2)

However, talking about the information provided by the healthcare staff after the event, participant Pt2 considered that there might be possible issues regarding confidentiality and privacy of the arrested patient that healthcare professionals might have to face when disclosing with the other patients. Nevertheless, they recognised that it was helpful to know that the patient was still alive:

*"I don't know whether they* [healthcare professionals] *are allowed to discuss it anyway, after a couple of hours it settled down, the same nurse came back in to ask if I was ok and I said yes. But they* [healthcare professionals] *managed to get him back, and that made me feel a bit happier."* (Int2/Pt2)

Finally, participant Pt1 concluded the follow-up interview reflecting on their view on the reality of life and death in hospital and on the moral dilemma of preserving life despite a compromised quality of life:

*"You are in hospital, people come in, they are very very sick, or very very old, or very very sick and old, and it happens! I understand why they* [healthcare professionals] *have to try* [to perform CPR]*, but sometimes certain things have to be taken into consideration: what is someone's existence? What is someone else's quality of life for the next couple of years if they succeed? I think the quality of life is very important and, from a personal point of view, it comes to a point where it is not good enough. But it is hospital..."* (Int2/Pt1)

The participant also reflected on the importance of having good communication with the healthcare team on the expectations regarding the limits of medical and surgical treatments performed in hospital, and the relative chances of survival and recovery:

*"I think it is very important that people know what they are getting into, and I think it is very important not to be too...fluffy about the outcome, it is better to say, you know, this could happen, things can go wrong. I think the honest approach* [from healthcare professionals] *is better than fluff it up too much and build up people's expectations. It's good to know that it should be fine, but otherwise, I don' want to be a vegetable stuck in the corner, so if things go wrong, fine, thanks for trying. They did their best."* (Int2/Pt1)

In conclusion, despite the lengthy interviews conducted with these participants (on average 60 minutes), it was difficult to guide the participants back to the CPR event, to revive their experience and recall their memories. Both participants brought the focus of the interviews back to themselves, to their own experience of hospital admission, the surgical operation they underwent, the discharge from hospital and the recovery phase, still ongoing at the time of the follow-up interview. Efforts were made to bring their attention back to the event focus of the study, asking them to recall what happened, how they have felt since then, and finally repeating what they reported during the first interview. However, a sense of resistance in opening up about the topic again was perceived through their change of topic and non-verbal expressions as avoiding eye contact and body tension.

## 8.4 Chapter summary

In this chapter, a rich description of the findings from the patient participants of the WATCH study was provided. The rich understanding about the lived experience of witnessing patients described how witnessing resuscitation is a difficult experience for patients, who react and cope differently. Receiving information and reassurance from the staff is an important aspect of the support and talking about the witnessed CPR with healthcare professionals might help patients process their experience. During CPR, whilst patients felt initially stuck in their cubicle, and not shielded by the curtains around their beds, they felt ultimately safe in observing the staff responding to the cardiac arrest and performing CPR. The outcomes of data collection regarding follow-up interviews with patient participants demonstrated challenges in carrying out a longitudinal study to investigate the long-term perceived impact of witnessing

resuscitation of a fellow patient. However, a valuable insight on how patients have processed the witnessed CPR experience over the time was gained from the two follow-up interviews. In the following chapter, findings from healthcare professional participants are reported in detail, and the phenomenological essence of the experience of witnessing patients and healthcare professionals is developed.

# Chapter 9 Findings: Healthcare Professionals

## 9.1 Introduction

In this chapter, findings of the healthcare professionals from the WATCH study are provided, describing the three themes developed from phenomenological analysis of healthcare professionals' individual and focus group interviews. The themes and subthemes are supported by direct quotations from the participants.

## 9.2 The lived experience of the healthcare professionals

Three themes were developed from the data analysis of the healthcare professionals' individual and focus group interviews. Each theme describes in depth one aspect of the lived experience of the healthcare professionals involved in CPR. The first theme, "feeling the impact of the CPR experience", describes the emotional impact of the CPR as perceived by the healthcare professionals on the witnessing patients and on the staff. Secondly, the theme, "providing support to the witnessing patients", explores current practices of healthcare professionals to support the witnessing patients following CPR. Finally, the theme, "protecting the witnessing patients from the CPR event", describes the actions of the staff to shield the patients during the CPR event.

A summary of the themes and subthemes developed for the healthcare professional participants is presented in Table 9.1.

*Table 9.1 Themes and subthemes for the healthcare professional participants*

| Themes | Subthemes |
|---|---|
| Feeling the impact of the CPR experience | Recognising emotional reactions in the witnessing patients |
| | Exploring emotional reactions and coping strategies of the staff |
| Providing support to the witnessing patients | Prioritising care during CPR |
| | Caring for the wellbeing of witnessing patients |
| Protecting the witnessing patients from the CPR event | Shielding witnessing patients behind the curtains |
| | Disclosing information with witnessing patients after CPR |

### 9.2.1 Feeling the impact of the CPR experience

The theme "feeling the impact of the CPR experience" describes the perspective of healthcare professionals about the perceived emotional impact that witnessing CPR has on patients, and that performing CPR has on the staff, including a description of the coping strategies that healthcare professionals adopt. This is developed through two subthemes: "recognising emotional reactions in the witnessing patients" and "exploring emotional reactions and coping strategies of the staff".

#### *Recognising emotional reactions in the witnessing patients*

Healthcare professionals reported their views of the perceived emotional impact on patients who witness a cardiac arrest and CPR of another patient. Participants shared the view that witnessing CPR is a negative experience for the patients, describing it as "*upsetting*" (FG2/RN11) and "*traumatising*" (Int4/RN16). One of the senior doctors reflected on post-traumatic stress for patients as a possible consequence of seeing or hearing a resuscitation attempt on a fellow patient:

> *"I think post-traumatic stress is a real condition, and I think this is also an area that can severely affect people.* (…) *Witnessing something in the street or witnessing something in a hospital, or at least hearing, you know hearing is still*

*a witnessing of something, so yes, there's a potential, particularly for people that understand the whole situation."* (Int2/SD2)

The healthcare professionals reported that the emotional reactions of the patients who witness a cardiac arrest are influenced by different factors. According to their experience, one of the main factors was the outcome of the resuscitation attempt. Participants observed that other patients felt reassured and expressed gratitude for the staff if the resuscitation attempt was successful:

*"*HCA14: *They are very thankful because let's say, oh God, you know, if you have brought them back and they are still there, they've gone home like three days later then again, I would say they're very grateful because… they shouldn't be... it's our job. But yeah there definitely is that sincerity…*

HCA10: *Yes, they're bound to have a different opinion if somebody dies or somebody makes it, aren't they? I think, like you said, if somebody has a successful CPR and they're ok, after then the other patients stop and think: 'We're in the right place'. They will say: 'Oh, how efficient! Yeah, we're safe. We're in the right place."*

(FG2)

On the contrary, they expressed the belief that an unsuccessful outcome of CPR could exacerbate the possible trauma on the witnessing patients, raising the worry that it could happen to them:

*"So I do think it's quite traumatic. Particularly if the patient doesn't survive."* (FG2/RN9)

*"I think most of the patients are frightened after what has happened because they will think it is next to them* (...) *and they don't want to talk about it, that is: 'It could be me next'."* (FG1/SD7)

Healthcare professionals also reported that patients who shared the same multi-bedded room in a clinical ward have a unique opportunity to interact and get to know each other, sometimes establishing a proper bond amongst one another. This factor could also affect their reactions to the witnessing experience. Summarising a shared view

among the participants, one of the registered nurses depicted the patients who spend longer periods in the same multi-bedded room and become friendly as *"comrades in arms"* and *"bay-buddies"* (Int4/RN16). This rapport was felt also when one of the patients had a life-threatening experience, as for example, when one of them suffered a cardiac arrest. One healthcare professional remarked that whilst staying in hospital, patients represent each other's main support network, and witnessing resuscitation would inevitably affect fellow patients and potentially cause them to worry about their own condition:

> *"At the time when they're sick, that's their support network, you know, they've got 'Mildred' in the bed opposite and he's got the same thing that I've got and we're going for coffee afterwards and then he'll just arrest and oh, he's passed away. I've lost a friend and that could happen to me and, yeah…"* (Int3/RN15)

Healthcare professionals believed that patients who have developed a closeness to the patient who suffered the arrest might feel more involved, as if they were also part of the event:

> *"You may get two or three gentlemen that might be waiting for a bypass together. So, they may form quite close bonds* [participants mutter and nod heads in agreement] *and sometimes they don't, but sometimes it's a real camaraderie and you know, they can be there for couple of weeks. So what if something does happen to one of them? It is... it's almost like 'we're all in it together'."* (FG2/RN9)

This point was also echoed by one of the nurses of the resuscitation department, who explained that specific groups of patients are more likely to compare themselves to each other, reporting the example of surgical patients:

> *"The ones where you do get issues, I find, are the ones where you've got post-surgical patients. They are quite an interesting group of patients, because obviously somebody has just had surgery and if they arrest in, amongst the other post-surgical patients, they're all getting very scared. They have potentially the same surgery."* (FG3/RN19)

The same participant argued that other groups of patients, for example older patients, tend to feel less involved in the resuscitation experience:

> *"I went to a call and we had a woman that was beside the other lady who's having a cardiac arrest and she did die, and the woman that was sat beside her afterwards went: 'Well, it was just her time!'* [laughter] *It was just a matter of fact that she, that it was just her time because, again, it was a slightly older woman and an older woman who witnessed it. So again, she just thought that it was just part of it and that she was old anyway."* (FG3/RN19)

### *Exploring emotional reactions and coping strategies of the staff*

Beside their views regarding patients' reactions to witnessing a resuscitation attempt, healthcare professionals also talked extensively about their own emotional responses, both as a witness to a cardiac arrest, and as a member of the team performing CPR. Participants described participating in these lifesaving activities as difficult and stressful experiences, which were not just part of their working life, but also part of the life experience of each professional involved. Whilst not explicitly linking their own experience to that of 'witnessing patients', a senior doctor, with extensive past experience of resuscitation explained that:

> *"They will never go away, each and everyone is so important, but some stick in and stick more, maybe it's something to do with your family or it is a particular emotional time for you and etc."* (Int2/SD2)

Similarly in one focus group, healthcare assistants and registered nurses discussed the difficulties of offloading emotions after responding to a cardiac arrest. All participants of the focus group agreed with the comments below, with vigorous nodding of heads and muttering *"yes"*:

> *"*HCA14: *You can't go home and just offload it all. You're sort of stuck with this in your head and ears. So I find that quite difficult...*
>
> HCA13: *Trying to go to sleep after a night shift. Yeah* [general agreement].

RN11: *You know you have to come back again* [general agreement].*"*

(FG2)

The level of expertise and the confidence in managing emergencies and cardiac arrests was felt by the participants to be an important factor in determining the perceived emotional impact on the healthcare professionals involved in CPR. Confidence and knowledge were not always present for junior staff, and dealing with an unexpected, stressful situation could be overwhelming. The following excerpt is a quotation from a senior member of staff discussing a junior colleague's experience witnessing CPR:

> *"Well, literally at the time I just said to her: 'Stand there and watch' because... it's a shock. She's never seen anything like it before in her life. She had seen a lot of things but that day, it was a shock for her! But all day we talked about it because... she was working with me anyway. So yeah, it's not nice for her either... it was her first time...she knew what to do, but she was like 'Uuugh!'"* (FG2/HCA10)

In their accounts, healthcare professionals described the different coping strategies they adopted to help process the difficult experience of CPR. Among all, they tended to establish a "*professional distance*" (Int4/RN16) from the event to "*stop* [themselves] *from falling apart*" (Int1/HCA1). However, healthcare professionals in one of the focus groups highlighted the difficulty in distancing their personal emotions from the situation:

> *"*RN11: *But it's amazing how we get into like automatic pilot, don't we as a team? As a team, we just do it…*
>
> HCA14: *I get you can do that there, but then if a family member walks in, it's totally different. Yes, you could detach, well, not detach that's probably the wrong word. But then as soon as the family comes in then it's like 'Oh God, they are humans!' Yeah, that's the bit that gets me: they belong to somebody. Yeah, and that's all kind of go until that point."*

(FG2)

Additionally, one participant provided an accurate insight on the importance of sharing their experiences with colleagues, as well as practising self-reflection and self-care outside the healthcare environment, to enhance resilience:

> *"You speak to colleagues, you share experiences, you make sure you've done everything you can, you make sure you get the support from your network in your own way, you make sure you are rested, you are fed, nourished, you are with your family, you speak to your friends and so on, so that you can be balanced to make your decisions and you know you are making the best clinical decisions out of your options."* (Int2/SD2)

Nonetheless, alongside their personal coping strategies, healthcare professionals recognised the importance of supporting colleagues, intended both to provide informal peer support and a more structured debriefing. For healthcare professionals, this was important not just to cope with their own emotions, but also to be able to support their patients:

> *"I think the staff need time for themselves as well to go through in their own head: 'what's happened?' And like I said, they need a lot of support afterwards themselves as well. So, for them then having to go and support the patients, when they're crying and distressed if they think it's their fault, I think would be really hard. Yeah."* (Int3/RN15)

Peer support during and after the management of a cardiac arrest was considered an integral part of their role for the professionals involved in CPR. This was particularly oriented to ensure that the staff were coping with the event and to provide reassurance to less experienced staff. Some participants explained that they found in their colleagues a unique source of understanding and trust, because they shared the same experiences:

> *"You know, we are making sure the staff are alright, because we spend all of our time making sure that the patients are fine and obviously the patient is having the arrest, I think we do forget to look after ourselves as well.* (…) *I know I can only speak for this ward, but we have each other. And I think this is the best support you get, the people that were there with you, who took part in that with*

> *you, are the best support that you are going to get, because they were there in that moment."* (Int1/HCA1)

Participants recognised that debriefing was a valuable method to reflect on the event, a protected time to analyse the performance of the staff and the "*technical aspects*" (Int4/RN16) of CPR, but also to look at the *"wellbeing of the team"* (FG1/SD7) and help them process their own emotions. However, participants were aware that good quality debriefing is an area that still needs to be improved, as this was not always performed in clinical practice and overall lacked any standardised guidance:

> *"Ideally there should be the whole team. You know, and the med reg* [medical registrar] *kind of leading it because they know how to do it. But yeah, it doesn't always happen like that and sometimes it doesn't always happen at all."* (Int3/RN15)

> *"Definitely debriefing space I think it is something we don't do enough."* (Int2/SD2)

Finally, one of the registered nurses remarked that being aware of the perceived impact of the CPR experience on the healthcare professionals, recognising their own emotional reactions and adopting effective coping strategies both individually and as a team, was important to adequately support the witnessing patients:

> *"I feel really strongly that as like healthcare staff we need to look after ourselves to look after our patients and I think by doing like a structured debrief or even an unstructured debrief it would help the staff process what happened, acknowledge it and be able to move on and get back to looking after patients."* (Int4/RN16)

### 9.2.2 Providing support to the witnessing patients

The theme "providing support to witnessing patients" describes the challenges that healthcare professionals encountered in taking care of the other patients during a CPR event, the current practice and the available systems to support witnessing patients.

This is developed through two subthemes: “prioritising care during CPR” and “caring for the wellbeing of witnessing patients”.

*Prioritising care during CPR*

Healthcare professionals reported that taking care of the witnessing patients during a CPR event was not always achievable as healthcare professionals wished, and several challenges could interfere with the delivery of best care. The entire workforce at the time of the emergency was focused on attending to the patient who is receiving CPR, with little chance to give attention to the witnessing patients. One of the main challenges that healthcare professionals have to face when trying to attend to the other patients is the prioritisation of the activities:

> *“I am thinking about what happens during the CPR, and just reflecting on what happened... and on the process itself, that's all... you need to focus on the patient, who's actually dying or dead, but not... the surroundings.* (…) *What could have been done better, have we done everything? That's what I am thinking about, but honestly I don't really think about... I've never thought about the other patients or surrounding it.”* (FG1/JD6)

For the healthcare professionals attending to the cardiac arrest it was “*difficult to take the attention to the other patients, when that patient* [who had arrested] *needs it more*” (Int3/RN15), and the thought of the other patients might “*creep in but your priority at that time is that person*” (Int4/RN16). A registered nurse also explained that “*it's not because people don't care. It's because people get immersed in what's going on around them”* (Int4/RN16). Nonetheless, although they might think the other patients are safe, because “*in the back of your mind you are like: ‘The other four patients are breathing, they're actually, they're okay’*” (Int4/RN16), participants recognised that at that time, witnessing patients were often overlooked:

> *"I really don't know what we can do to make it any better because at the time everyone and the crash* [resuscitation] *team are focusing on that patient* (…)*, but then what I see is a patient sat behind the curtains and sort of looking around maybe on their phone, you know, like texting or something and yeah, sort of just left to their own devices really."* (Int3/RN15)

Time pressure represents another challenge for the healthcare professionals. For the professionals carrying the cardiac arrest bleep, including for junior doctors, visiting the patients who witnessed the arrest in the bay after CPR would not be possible, as they might be called to respond to other emergencies somewhere else in the hospital:

> *"The thing is I don't even think there is even enough time to do it especially the people carrying the crash* [bleep]*."* (FG1/JD6)

> *"And if someone who witness it...the ground reality is the staff themselves don't have time to actually counsel them."* (FG1/JD3)

Moreover, participants reported that sometimes the staffing levels are insufficient to guarantee adequate support to the other patients. The shortage of staff in the clinical wards was reported to be an issue, especially at night, as a healthcare assistant and a registered nurse exemplified:

> *"*HCA10: *I think one of the bad ones we had, was on a night shift on* [bed number] *again. You know, it was only four of us on that shift. But you know you've all got a role to play, haven't you? But when there's only four of you it's really difficult.*
>
> RN11: *It was just me and you, doing sort of chest compressions and airbag wasn't it?*
>
> HCA10: *Yeah.*
>
> RN11: *But there was nobody to actually go around and check on the other patients."*
>
> (FG2)

These issues of time pressures and shortage of staff were shared by the registered nurses in the resuscitation department. Referring to the ward staff, they explained:

*"*RN19: *They haven't got time to actually go* [and ask]*: 'Is there anything you want to talk about?' Because that actually involves sitting* (…) *and you can easily spend an hour just sitting with someone.* (…) *The staff in the unit cannot give an hour and a half and if you're going to do justice to that patient and listen because that's what we're really there to do... I think they find it hard to do that anyway... just having that conversation…*

RN20: *…and listen carefully.*

RN17: *It's the physical issue though, that takes over, that becomes the priority really, the drug rounds, dressing, the list of things that have to be done and the psychological support probably takes a backseat, which is a shame really."*

(FG3)

The same difficulties, however, also affected their own work. Reflecting on their practice of attending cardiac arrests, the nurses working in the resuscitation department described the challenges in supporting witnessing patients:

*"*RN17: *But it's very hard to find the time of doing this, isn't it?*

RN20: *But it's the demand of your daily work* (…) *you know, you can be out of call, you can have just completed it and say: 'Right, last offices, let's just leave this patient, it will take a few minutes', and the team will shoot off and go, the bleep will go off again...*

RN19: *It's also giving the time and justice to it. If you're going to do it, you've got to do it well.*

RN17: *If we had just a team that'd do just the team work, and go to calls and nothing else, we would then be able to have all that lovely time to do that, but that just doesn't happen."*

(FG3)

### *Caring for the wellbeing of witnessing patients*

Participants described their current practice of providing support to the patients who witnessed CPR in a multi-bedded room. Although not specifically addressed in local or general guidelines and not recognised as a standardised practice in the hospital, healthcare professionals in clinical wards considered checking the state of the patients

who witnessed a cardiac arrest part of their role. In particular, all participants agreed that providing support to the witnessing patients mainly fell within the role of the healthcare assistant or the nurse, "*because they know those patients better than any doctoring staff."* (FG1/JD8):

> *"I think the healthcare assistants spend a lot of time talking to patients and building up that relationship and they would be really good people to talk to the patients afterwards."* (Int3/RN15)

> *"Usually it is the nurses who try to do the questions around and try to kind of explain what's happening."* (FG1/JD5)

They recognised the importance of offering comfort and reassurance to the witnessing patients during and after the management of the cardiac arrest. However, they acknowledged that whilst the team is performing CPR, the support and attention they could provide to the other patients in the bay is limited:

> *"*RN9: *So we do try to go and sit with them, somebody sits with them, checks they're okay behind the curtains, but...obviously not initially, being that initially everyone's first thought was there* [with the patient who had arrested]*…*
>
> HCA10:*… Oh, yeah. Well at that time we close the curtains and everyone… so, often somebody will pop their head in and say to them are you all right? Yeah, and that's it. Yeah that's all they get, because I know you can sound concerned of what is going on, and we will talk right now."*
>
> (FG2)

Besides the initial support that healthcare professionals could offer to patients who witnessed CPR, participants were not aware of the existence of any specific service to refer distressed patients who may need further follow up within the hospital:

> *"What I was thinking was that you could talk to a patient, and if you find out that there is a problem and you do need to escalate it for them to have a proper counselling, there is no one to refer them to."* (Int3/RN15)

While specific areas such as the intensive care unit had a counselling service for patients, in the clinical wards the only resource that participants were aware of was the pastoral care provided by the hospital chaplaincy service. This was often offered to patients regardless of their spiritual beliefs as an opportunity to reflect and release anxiety:

> *"I think the chaplaincy team are usually quite a good people. So, I always offer that to people. I usually offer that to people in a way that even if somebody is feeling quite anxious or really upset or worried or nervous about something, they request chaplaincy, they come and see them. Because I think they're really good kind of counsellor type of people that have got, it sounds really awful, but they have time."* (Int4/RN16)

One of the registered nurses recalled that in the past a trained nurse counsellor used to work in the cardiology area with patients who had traumatic experiences or who were going through distressing or invasive procedures, but that this service was no longer available:

> *"*RN9: *We used to have a nurse counsellor that... if a traumatic event happened you would feel quite comfortable to ring her and ask: 'Look, this happened in the bay and they are all here together. Would you come up and spend some time with them?' She's a trained nurse counsellor. I mean we can listen to people and talk to them as well... But that was her role and she would come, but unfortunately that role was...the funding…*
>
> HCA14: (…) *she used to be brilliant. And she used to come and talk to us as well."*
>
> (FG2)

At present on the site, participants described how the only way to seek further support for patients who needed it was to refer them to external resources, through their General Practitioner (GP), or private professional counselling, or community services:

> *"I don't think we offer any service in terms of counselling, it would have to be through a GP if people need it"* (Int2/SD2)

> *"I think depending on how hard they are hit by the event at most they can probably go to a professional counselling outside somewhere to receive help and support they need from the community."* (FG1/JD3)

Finally, some participants provided suggestions to improve the supporting system for the witnessing patients within the hospital. Firstly, the nurses of the resuscitation department pointed out that as part of their clinical educator role, they should clarify with the clinical staff what resources are available to offer to the patients:

> *"It wouldn't hurt to be talking about that in our BLS* [basic life support] *sessions.* (…) *Where we talk about TEP* [treatment escalation plan]*, there is no reason why a sentence can't be in there about 'And if a patient passes away, dies in your clinical area and the other patients are in there, don't forget to check on them!* [All mutter in agreement nodding heads and saying *"yes"*] *And be aware of what you can provide'"* (FG3/RN19)

Another participant suggested having a dedicated person during the CPR to take care of the other patients:

> *"There are lots of people standing around watching, you know, team members, not like random people... you have the student nurse or healthcare assistant or a nurse that's come over from another ward to help out. So it could happen, that you could have somebody available to do that.* (…) *If you're also working in ED* [emergency department]*, people wear tabards with their responsibilities written on the back, like: 'I'm doing my drugs round'. You can have something hanging on the trolley to give to someone and say: 'You are in charge of everybody else'. They've got that on and everyone knows not to ask them to get anything because they're looking after everybody else. Then it makes everybody else aware of everybody else as well."* (Int3/RN15)

Finally, one of the senior doctors recognised the importance of offering the patients the opportunity to talk to the staff and ask questions:

> *"I thought we have to offer the time and options and just say: 'Do you want to talk about something?' Some people may not want to, some people will be fine, and some may need to deal with that at some other stage. So just say something like: 'You have been involved in something potentially quite traumatic and these are the options: you can contact your GP, or this is the service we provide you, or would you like to talk through what's happened or any questions you've got and you want me to answer anything?' Because often it is just information that they need."* (Int2/SD2)

### 9.2.3 Protecting the witnessing patients from the CPR event

The theme "protecting the witnessing patients from the CPR event" describes how the healthcare professionals worked to protect patients from the CPR event, by shielding them behind the curtains around their beds and containing the information disclosed to them about the event. This is developed through two subthemes: "shielding the witnessing patients behind the curtains" and "disclosing information with witnessing patients".

*Shielding the witnessing patients behind the curtains*

Healthcare professionals were aware that witnessing CPR was a stressful and potentially traumatic situation for patients. When a cardiac arrest occurs in a multi-bedded room of a clinical ward, the healthcare professionals considered the curtains around the patients' beds as the only screen to separate the area where the resuscitation is taking place and the rest of the bay. Drawing the curtains had the primary function of protecting the privacy of the patient who was undergoing resuscitation:

> *"Everybody that I have seen has been very good at making sure that the curtains in the beds are shut in the surrounding areas, you know, which is really good for the patient that's having CPR privacy, because it's really difficult to keep that curtain shut, because you've got so much equipment that they're kind of just taking up half the bay."* (Int3/RN15)

Additionally, curtains helped the healthcare professionals shield the other patients in the bay from witnessing CPR. However, for the witnessing patients, paper curtains might not be a very effective shield, and they might instead have an unintended effect:

> *"Usually, we would pull a curtain around the other patients, which may make feel them quite blocked in, but that is all we can do to shield them. Unfortunately, because of the people and the equipment needed, sometimes they are not always*

*shielded from it, we try our best to shield them, with the curtains, that's all we've got, but we don't have anything else."* (Int1/HCA1)

In certain circumstances where the only available staff are attending to the emergency, some of the healthcare professionals recognised that there may not be initial opportunity to draw the curtains, leaving other patients exposed to watching the scene:

*"I've had a patient* (…) *who arrested right in the middle of the bay and it was a pretty awful arrest and there was lots of witnesses of the patients, so they witnessed quite a bit until because I had to keep going whilst everybody else was running around the screen and there's no screen across or anything"* (FG3/RN19)

*"They collapse and they are on the floor, and you know it takes a while for all the curtains to be pulled around, but I guess for the poor patients it's actually hearing what's going on without necessarily seeing what's going on."* (FG3/RN17)

The thought that paper curtains were not effective in blocking the sound was shared also by other participants:

*"We can try to pull the curtains, but they will hear everything, and they will just realise that something is happening, just next to them and uhm..."* (FG1/JD4)

*"I know we don't we don't consciously think that they're sound blockers, but sometimes the way people go on you feel like they don't really appreciate that noise is actually travelling past curtains. So they might hear some aspects of the patient's history or they might hear what's going on or even like, one of the most traumatising things I've seen is intraosseous access, where they drill into someone's bones and imagine being at the other side of the curtain and hearing this drill coming out."* (Int4/RN16)

Healthcare professional participants in fact, considered hearing a particularly powerful sense. One of the nurses reflected on the fact that hearing could be actually worse than seeing, as the imagination may create artificial images and make the sounds even more distressing:

*"That sense, isn't it, is very powerful. Because you can't see but you can hear and it can sound horrendous, but if you actually saw the actions is not as bad…Is it?"* (FG3/RN20)

> *"Sometimes I wonder if actually hearing something happening is almost worse than seeing it as well because I think the imagination of what it is and you don't know you... just hear these counting and lots of noise and machines and shocks, and machine and stuff like that. It's not something that they should see but I thought I should imagine it's even more frightening they can hear just everything."* (FG2/RN12)

Finally, the healthcare professionals recognised that after the cardiac arrest and the resuscitation event, the curtains cannot protect the other patients from hearing visitors of the arrested patients, or the "*wailing*" of the family, as some of the resuscitation officers reported, which might exacerbate the witnesses' distress:

> *"*RN19: *It's not so much about cardiac arrest, once the family come in and start crying*
>
> RN18: *The patients are going to know…*
>
> RN19: *...then that sets the other patients off. I think that does it. So, if we just segregate it out and you just looked at the actual event, I think that's not as disturbing as when the relatives arrive. Then I've had screaming from relatives...*
>
> RN20: *…wailing…*
>
> RN19: *…wailing! It's obvious!"*
>
> (FG3)

### *Disclosing information with witnessing patients after CPR*

It is likely that patients who witnessed CPR might already have an idea of what happened and of the outcome of the event, before the staff explained it to them. For instance, the act of opening and closing the curtains could be perceived by the witnessing patients as an indicator of whether the resuscitation has been successful or not, as one nurse of the resuscitation department pointed out:

> *"So suddenly there's this pandemonium noise. It's obvious: people are running, and curtains, and lots of noise. And then suddenly it goes quiet: all the screens stay around and even worse when the screens were all open and that bed is swept*

*off. And then, a little while after the patient's been certified, the screens all go around again. And then the trolley comes in to take the body away."* (FG3/RN20)

However, the issue of disclosing information with patients after the event was debated among the interviewees, who reported different perspectives. Some healthcare professionals reported that patients who witnessed CPR often asked the staff information about the arrested patients. Professionals appreciated that those patients needed to understand what happened and considered important to know whether the patient survived the arrest or not, in order to have closure:

*"Like I said, there's no closure for them, is there? They are just hanging on, don't they? This person was unwell, he's been taken off somewhere. Is he still alive?"* (FG2/HCP10)

Senior professionals reflected on the importance of being aware that other patients in the room can witness the resuscitation event, and on the importance of addressing their questions with exhaustive and truthful responses:

*"What I would like to see, that the other patients are approached and they discuss the event and so they are aware of what's going on."* (Int2/SD2)

*"What I do and probably you* [referring to colleagues] *do as well, is if a patient says: 'did they make it?' I tell them the truth. So I say: 'Unfortunately they didn't'* (…) *you know, they were very poorly, there's lots of things wrong with them, unfortunately. You know, despite trying they haven't made it.' I think it's important we do tell them the truth."* (FG3/RN20)

However, disclosing information about the CPR event with the witnessing patients was felt to be a challenging task for some of the healthcare professionals involved. One of the reasons was that once the resuscitated patient was moved in another area, the ward staff would not have further information on that patient's situation:

*"This, you know, the balance of wanting to know that but sometimes we don't even know that because they get moved and then we don't know what happens to them. So... you can't tell them because you don't know yourself."* (FG2/HCA10)

In addition, the uncertainty of breaching confidentiality was, for some, a barrier in having open conversations with those patients who needed more information:

> *"I am not sure we can tell too much to other patients, for a matter of confidentiality. You can't start explaining every patient and go through what was happening, because I think that's not right neither."* (FG1/JD5)

Another issue that made staff uncomfortable about talking with witnessing patients was the difficulty of engaging in a sensitive discussion involving death. Comments during the focus group with doctors highlighted that talking about death with patients who witnessed resuscitation was difficult for them:

> *"*JD4: *I think I try not to think about it too much, so they* [patients] *don't have to get worried too much either….*
>
> SD7: *…I think most of the patients are frightened after what is happened, because they will think it is next to them...they don't want, as we said, they don't want to talk to you and you don't want to open up that can of worms…*
>
> JD8: *…it's not just healthcare thing, it's slightly difficult to talk about death."*
>
> (FG1)

This point was also brought up in other accounts. Two registered nurses of the resuscitation department spoke how disclosing information about death is a cultural issue, which is an issue that is wider than the topic of resuscitation:

> *"*RN19: *This is a universal problem that we have especially in the UK about talking about death and dying, there's a big barrier…*
>
> RN20: *…to have those difficult conversations…*
>
> RN19: *….and that's because we are very reserved about talking about people dying. You plan birth literally to the fine point you have your music in your pool, but we don't plan our death. And it's just wrong."*
>
> (FG3)

Finally, some of the junior staff expressed the concern of lacking expertise and confidence in talking to the witnessing patients and in handling patients' emotions that may arise from these conversations:

> *"And there is something else to add. Even if I speak to patients, I don't have the… I don't think I have enough expertise to talk with the emotions of the patients regarding this particular event honestly, so even if he's* [patient] *talking about it I don't really know what...how should I handle it? So that's another thing. It never happened, but I'm assuming that this is the next level they don't really know what to tell them and how to handle it."* (FG1/JD6)

Senior healthcare professionals remarked that developing communication skills was important to be able to hold honest and open conversations with patients. They recognised that in order to undertake such discussions, healthcare staff needed to be confident about the nature of information that can be shared with other patients, and about the emotional reactions that patients might have to witnessing CPR in another patient:

> *"It would be about confidence and knowledge and understanding. And we have buckets of that from a very long time being exposed to very critically unwell patients, because of the type of careers we've all moved in. And also dealing regularly with medical emergencies and cardiac arrests. So most of the staff that are in this hospital, if you ask how many cardiac arrest they've seen, it may be one or two, and some people none in the whole of their careers. So actually that's very difficult... So I've been asked many times about: 'Well, what do I tell the other patients', and I say: "You tell them the truth".* (…) *We have to be truthful, we have to be honest. And it's the way that you portray that to people and that is just learning, and developing those communication skills. And communication is a very difficult thing to learn, isn't it? Until you've got the experience to be able to pass that information across."* (FG3/RN19)

## 9.3 Chapter summary

In this chapter, a rich description of the findings from the healthcare professionals of the WATCH study was provided. The rich understanding about the lived experience of

healthcare professionals described how healthcare professionals are aware of the perceived emotional impact that witnessing CPR has on other patients, but also of their own emotional reactions and coping strategies as emergency responders. Providing support to witnessing patients is considered important and part of the nursing role, although prioritising care for the patient receiving CPR and challenges such as time pressure and staff shortage can hinder it. Finally, although healthcare professionals attempt to protect the patients with the aid of curtains around their beds, and by containing the information they disclose with witnessing patients about the CPR event, they are aware that these strategies have limited effectiveness. In the following chapter, a description of the essence of the phenomenon of patient-witnessed resuscitation drawn from the participants' experiences and a critical discussion of the study findings in light of the literature are provided.

# Chapter 10 Discussion

## 10.1 Introduction

In this chapter, the phenomenological essence of the phenomenon of patient-witnessed resuscitation is provided, drawing together the patients' and healthcare professionals' lived experiences. In continuation, the findings of the WATCH study are discussed with reference to existing literature. The discussion explores three key areas which draw attention to the essential aspects of the lived experience of patients and healthcare professionals in relation to witnessing patients' resuscitation. The first area discussed is resuscitation in the contextual reality of hospital where patient-witnessed resuscitation takes place. The second area examined is the perceived emotional impact that witnessing resuscitation can cause on other patients and healthcare professionals, as well as their psychological reactions associated with the experience. Finally, the third area debated is the coping and support mechanisms that witnessing patients and healthcare professionals adopt and might need. The discussion of the findings presented in this chapter, together with the previous stages of the research, provides a foundation for drawing the conclusions of this thesis in the following chapter.

## 10.2 The phenomenological essence of the participants' experience

In this section, the essence of the phenomenon of patient-witnessed resuscitation is described. The essence was developed to bring the common meaning of the experiences of witnessing patients (sections 8.2 and 8.3) and healthcare professionals (section 9.2)

of witnessing resuscitation of a patient, in the context of the hospital life-world (section 7.4).

Patients and healthcare professionals had a shared understanding of the reality of CPR in hospital. They were aware that emergencies and fatalities are part of the reality of hospital and these adverse events can be unpredictable and may potentially involve anyone. Participants of both groups had vivid memories of the CPR events they witnessed or attended to, and they clearly described the deterioration of the patient, the crowded scene where resuscitation took place and sometimes, the outcome of the CPR. However, the different level of knowledge that patients and healthcare professionals have of resuscitation science, influenced the expectations regarding a successful outcome. Healthcare professionals find it sometimes difficult to help patients reframe unrealistic expectations of survival from a cardiac arrest and of successful CPR. They attribute patients' expectations to the portrayal of CPR in TV shows, in contrast with the views of the few patients who mentioned the TV as a source of information on CPR, who were stricken by the differences between fiction and reality. For the healthcare professionals, the reality of resuscitation involves a chain of actions aiming to restore the patient's respiratory and circulatory activity, culminating in either a successful or unsuccessful outcome. In case of survival, the patient would receive follow-up care by the healthcare team; otherwise, the healthcare professionals would complete the last offices and provide to the deceased patient the post-mortem care. Although accepting emergencies and resuscitation as part of the hospital experience, patients found the reality of death of a fellow patient challenging at times and the idea of sharing the same environment with the dead body disturbing.

Healthcare professionals had alternating perspectives from a healthcare professional point of view, as witness and performer of CPR, and from a witnessing patient point of view. This element clearly emerged from their description of the perceived emotional impact of CPR on the other people, where they recognised the perceived emotional impact on the witnessing patients but also explored their own emotional reactions as professionals. Patients who witness CPR felt different emotions during and after the event, from not feeling affected at all, to feeling helpless, shocked, overwhelmed, sad and upset. Healthcare professionals shared patients' view, believing that witnessing CPR is a traumatic experience for patients, and some events could have a serious perceived impact on them. Patients and healthcare professionals agreed that every witnessing patient reacts differently to such events, but factors as age and previous experiences of similar events play a role in influencing the reaction. The interactions among patients in the multi-bedded rooms can also influence the witnessing experience. Some patients became friendly with the patient who arrested, others felt a bond like a family with other fellow patients, and others looked after each other during the arrest. Ward staff also observed these behaviours among patients in the wards. They expressed the worry that witnessing patients who became closer to the patient who suffered the cardiac arrest, might have a worse perceived impact from the witnessing experience. Witnessing patients adopted coping strategies, which helped them deal with this difficult witnessing experience. Some reflected back to the event, reassuring themselves that everything was done for that patient, others felt more connected to their loved ones, while someone detached from the event to limit their involvement and some others turned to religious faith. Patients and healthcare professionals shared the feeling that witnessing CPR is overall a negative experience. Healthcare professionals explored this aspect through their own emotional reactions and through the coping mechanisms they

adopted to help themselves and to support their colleagues. Being involved in CPR could be particularly tough for unexperienced staff who deal with emergencies for the first times. Teamwork and peer support are paramount, as they represent the main form of aid for healthcare professionals. Staff debriefing, although potentially a valid method to help professionals look at their own wellbeing after a difficult experience, is not a standardised practice and it is not practised consistently. Regarding their own coping strategies, healthcare professionals tend to compartmentalise their emotions when facing difficult situations, however they advocated the need for dedicating more space and time to self-reflection, and practising self-care outside the working environment.

During a cardiac arrest, managing the emergency and starting resuscitation is the main priority. Patients shared this understanding and do not expect healthcare professionals to immediately address their needs. However, they feel a necessity to be acknowledged by the staff as witnesses of that situation and of receiving information. Understanding what has happened and being informed about the conditions of the arrested patient would help the witnessing patients deal with the event, although they were aware of confidentiality boundaries and respected the limited information that healthcare professionals were able to provide. Additionally, being reassured and comforted by the staff is important for patients, especially after particularly traumatic CPR events. Some participants benefited from the support offered by the healthcare professionals when they approached the witnessing patients to check their conditions after the emergency. Others, on the other side, found it more difficult to open up about the experience, but recognised that emotional support might be helpful for other patients. For most of the healthcare professionals, supporting the witnessing patients is considered part of their role and it is in their intention to provide them the best care, although this is not always

achievable. Healthcare professionals try to look after the witnessing patients, during or after an emergency. However, the major challenge for this is represented by the prioritisation of the other care activities, which limits the support they can provide to witnessing patients. Time pressure and shortage of staff are also part of those barriers. In addition, although they agree that supporting witnessing patients is a responsibility falling mainly on the ward nurses and healthcare assistants, there is not a standardised guidance for clinical practice. As a result, the support they can offer to patients is sometimes inadequate, and beside the pastoral care of the chaplaincy service, they are not aware of other emotional support systems for patients in the hospital.

Disclosing information to the witnessing patients regarding the CPR event however, resulted to be challenging for healthcare professionals. When asked about the conditions of the patient who received resuscitation, professionals and junior staff in particular, did not know what they could say to the patients, for the lack of information about the arrested patient, and for the fear of breaching confidentiality and of exacerbating the trauma in the witnessing patients. They recognised the importance of meeting patients' need of information and the importance of providing truthful and honest answers to their questions. However, handling these sensitive conversations with the patients, which might involve talking about death, required a level of expertise that sometimes they did not feel equipped with. Additionally, some of them would not feel confident in managing patients' emotions following such conversations. To protect the patients from witnessing CPR on a fellow patient, healthcare professionals try to shield them using the paper curtains around patients' beds. However, even when pulled on time at the onset of the emergency, patients reported that curtains are not so effective to shield them from seeing the ongoing emergency, and they are certainly not

effective to prevent them from hearing it. Healthcare professionals, although aware of these limitations, still considered curtains the best way available to protect the witnessing patients from a potential trauma and to protect the privacy of the arrested patient. In turn, curtains made patients feel stuck and blocked in their cubicle, without the opportunity to leave the room until the CPR was concluded. In addition, patients pointed out that paper curtains would not shield them from witnessing the grieving of the family of the witnessing patient, or from witnessing the last offices, or from the feeling of a dead body next to them. Although some healthcare professionals acknowledged the burden for other patients of witnessing the grieving of the family, they did not explore the issues of the last offices and of the dead body. Despite this initial distress of feeling stuck behind the curtains, witnessing the efforts of the staff who responded promptly and efficiently to the emergency by performing CPR had on patients a positive aftermath. Ultimately, regardless the outcome of CPR, patients in this study were left with a feeling of safety through being in hospital and of increased confidence towards the staff looking after them.

## 10.3 Understanding that cardiac arrest is part of hospital life

Participants of the WATCH study have commonly described the hospital context as an environment populated by people whose compromised status of health might lead to experiencing adverse events, life-threatening emergencies and even death. In order to understand the phenomenon of patient-witnessed resuscitation in hospital and its perceived impact on patients and healthcare professionals, it is first important to understand the meaning of resuscitation for them and what beliefs and expectations

are attached to this procedure in hospital. Since resuscitation and death are intrinsically connected, discussion of the former cannot preclude awareness of the latter.

### 10.3.1 Patients' awareness of resuscitation in hospital

In the WATCH study, most patient participants had a pragmatic perception of resuscitation in hospital and death associated with it. CPR is described in the literature as an invasive medical treatment originally developed to save the lives of people who were dying unexpectedly from primary cardiac arrest (Direkze & Jain, 2012). CPR was never intended to be given to patients who were dying from an irreversible condition (Jude, Kouwenhoven & Knickerbocker, 1961). However, resuscitation is often wrongly considered as a procedure that can restore cardiopulmonary function and prolong life, regardless of the cause of cardiac arrest (Direkze & Jain, 2012). Moreover, according to the framework of modern acute hospitals in Western countries, which are based on a preventative and curative model, death is often perceived as a "failure" of medicine (Backer, 1982), and kept hidden from society (Aries, 1991; Lawton, 2000). Despite this premise, patients in the WATCH study demonstrated an awareness that resuscitation is often unsuccessful and that death is a natural part of life. This contradicts previously explored evidence presented in Chapter 2, which stated that patients tend to have unrealistic expectations about resuscitation. Literature exploring public beliefs towards resuscitation has showed that the public is not accurately informed regarding the effectiveness of resuscitation and highly overestimates survival rates (Jones, Brewer & Garrison, 2000). Surveys have also identified that among hospitalised elderly patients, the beliefs regarding the success of resuscitation are falsely high (Adams & Snedden, 2006; Chliara *et al.*, 2014). A multicentre study conducted in Greece demonstrated that older hospitalised patients have poor knowledge of resuscitation, but in spite of this, the

majority of patients would like to be resuscitated in the event of an in-hospital cardiac arrest (Chliara *et al.*, 2014). In contrast, patients who participated in the WATCH study, had expressed a clear understanding that resuscitation is potentially expected within a hospital environment, and they were prepared to expect such eventualities. Since all patients were interviewed after witnessing a resuscitation attempt on another patient, it could be hypothesised that witnessing the event could have helped patients to better understand the reality of resuscitation in hospital.

Some patients in the WATCH study noted that witnessing resuscitation of a fellow patient made them aware that they could potentially suffer a sudden cardiac arrest too, and be subject to resuscitation. This awareness was brought up by several patients during the interviews and was further reinforced in one of the follow-up interviews. Some patients, after witnessing the resuscitation attempt, stated that they would not wish to have resuscitation. Patient preferences about resuscitation and the factors influencing their choices have gained substantial attention in the literature. In the 1990s, the SUPPORT project in the United States of America investigated the resuscitation preferences of seriously ill patients if they were to have a cardiac arrest (Phillips *et al.*, 1996). This seminal study showed that even among seriously ill patients, most respondents wanted to be resuscitated, and among those who did not want resuscitation, only a minority had discussed their preferences with their physician. The diagnosis and the perception that patients had of their own prognosis were important determinants of their preferences for resuscitation (Phillips *et al.*, 1996). These results shed light on the importance of patients' understanding of resuscitation, including consequences as the impact on their functional status and quality of life after the event. A later qualitative study conducted in Canada highlighted that patients with CPR orders

and patients with DNAR (Do Not Attempt Resuscitation) orders had very different understanding of what these orders meant (Downar *et al.*, 2011). Patients with DNAR orders described resuscitation as a traumatic and violent event, associated with "tubes and machines" and saw DNAR instructions in terms of "comfort care", allowing a "natural" death. Patients with CPR orders instead, had a more abstract idea of resuscitation, associated with the "restoration" of life and felt that DNAR instructions would lead to passive or suboptimal care (Downar *et al.*, 2011, p.584-585). It is notable that some of the facets of resuscitation described by the DNAR patients of the Canadian study are similar to how patients of the WATCH study described CPR events. In general, patients in the DNAR group of the Canadian study were much older than the patients in the CPR group, had a greater familiarity with the subject of resuscitation, including self-realisation prompted by personal experiences, and held a perception of the inevitability of death. Similarly, patients in the WATCH study were mostly of older age, had a direct experience of witnessing resuscitation on a patient, and mostly accepted the witnessed event as part of life. Although patient preferences in the choice of resuscitation were not specifically explored in the WATCH study, it would be informative to investigate further how patients' preferences for resuscitation and DNAR decisions have an impact on their experience of witnessing resuscitation on a fellow patient in hospital.

Doctors participating in the WATCH study reported that, from their clinical experience, patients initially have high preferences for undergoing resuscitation. However, doctors clarified that patients tend to reframe their expectations about resuscitation once they have received information about the treatment and procedure in case of cardiac arrest, the implications of resuscitation and survival rates. Similarly, Downar *et al.* (2011) reported that DNAR patients usually had previous conversations with healthcare

professionals regarding the CPR or DNAR orders. Whilst most of the patients in the CPR group were surprised about having a resuscitation conversation with the physician, and found it disturbing, patients in the DNAR group generally reported a more positive conversation, as it felt necessary and appropriate, although initially shocking (Downar *et al.*, 2011). The findings of the WATCH study, in line with this evidence, highlighted that appropriate patient knowledge and understanding of resuscitation is informed by discussions with the healthcare team. Therefore, open communication should be supported. The role of the healthcare professionals in this case is essential in educating patients about resuscitation, by providing them with adequate knowledge to make informed decisions regarding their medical treatments and choices.

In the United Kingdom, consulting the patients when making and documenting resuscitation decisions is a legal requirement. This is unless the conversation would cause physical or psychological harm to the patient or it would be not practicable or appropriate in which case, this should be conducted with those close to the patient (England and Wales Court of Appeal, 2014). In the WATCH study, healthcare professional participants referred to treatment escalation plans (TEP) when talking about the training for healthcare professionals regarding resuscitation and resuscitation discussions with patients. TEP was introduced as an alternative approach to the classic DNAR model, in an attempt to improve patient involvement in their treatment decisions in hospital and to embrace a wider remit of treatment options other than the DNAR only (Obolensky *et al.*, 2010). In the TEP form, completed by a doctor together with the competent patient or close relative, the most appropriate treatment options if the patient would become critically unwell are documented, including resuscitation (Obolensky *et al.*, 2010). In 2012 the use of TEP spread regionally in England to cover most healthcare providers in

the acute and community sector (Fritz, Slowther & Perkins, 2017). Other approaches used locally in the UK in replacement of isolated resuscitation decisions include the Universal Form of Treatment Option (UFTO), the Unwell and Potentially Deteriorating Patient Plan (UP) and the Deciding Right. All these approaches focus on broader goals of care, encourage earlier conversation with patients and facilitate clear handover (Fritz, Slowther & Perkins, 2017). These approaches are in accordance with the joint national guidance established by the *British Medical Association* (BMA), the *Resuscitation Council (UK)* and the *Royal College of Nursing* (RCN) (British Medical Association, Resuscitation Council & Royal College of Nursing, 2016). Importantly, this revised guidance document recommends introducing and making anticipatory decisions about CPR treatment in the wider context of advanced care planning, discussing realistic goals of care and acceptable health states for the person, in an attempt to make discussions on these topics more acceptable for the patients and the healthcare professionals. A further initiative, the Recommended Summary Plan for Emergency Care and Treatment (ReSPECT), was recently developed in the UK, with the joint collaboration of public and professional stakeholders (Resuscitation Council (UK), 2019). ReSPECT was designed to complement the resuscitation and advance care decision-making process and to standardise its documentation in a single sheet of paper. It provides additional support for conversations about goals of care and incorporates personalised recommendations for realistic care and treatment choices in future emergency situations, when patients are unable to make or express choices (Fritz, Slowther & Perkins, 2017; Resuscitation Council (UK), 2019). Although these are important efforts in tackling barriers to hold meaningful conversations about resuscitation with patients, discrepancies remain across different clinical settings, as well as challenges for healthcare professionals, who are stretched by time and resource pressures and might have limited chances to conduct

these conversations effectively. As identified by healthcare professionals in this study, these issues and the barriers preventing their timely discussion in practice, are worthy of integration into staff education.

### 10.3.2 Importance of communication in resuscitation discussions

Effective communication between healthcare professionals and patients is an important issue that surrounds resuscitation. During the interviews of the WATCH study, the participating patients engaged in discussion regarding resuscitation, showing openness towards the topic. In accordance with these findings, a literature review of resuscitation decision-making conversations in the UK has demonstrated that patients are willing to have a conversation about resuscitation and advanced care planning (Hall *et al.*, 2019). However, evidence demonstrated that patients rarely initiate these conversations (Fritz, Slowther & Perkins, 2017; Sivakumar *et al.*, 2004). According to the literature review conducted by Hall *et al.* (2019), patients considered doctors as best placed to initiate such discussions, although a trusting relationship with healthcare staff and a comfortable care environment are desired. Other studies have revealed that nursing staff can play a key role in initiating or following-up discussions about resuscitation and DNAR decisions (Mockford *et al.*, 2015). In the WATCH study, nurses and healthcare assistants expressed clearly that they consider it part of their role to help patients understand the reasons for their admission to hospital, their condition and prognosis. However, when these discussions with patients focused on aspects related to death, they described a shared feeling of discomfort, also because of cultural barriers in talking about death. Conversely, a Finnish study reported that nurses not only felt responsible for the emotional and physical support of patients, but they also found holding resuscitation discussions with patients rewarding (Hildén *et al.*, 2004). Hall *et al.* (2019)

recommended that discussions regarding resuscitation and end-of-life decisions should be individualised, empathic, honest, straightforward and balanced. Healthcare professionals should take into account the level of education and literacy of the patients, and avoid too vague language or medical jargon, which is often considered frustrating by the patients (Hall *et al.*, 2019). Hence, whilst it is recognised that initiating sensitive discussions around resuscitation can be challenging both for patients and for healthcare professionals, improving the quality of such communication is an important element to involve patients in making valid and informed choices and have a greater understanding of resuscitation.

Communication barriers might be found when discussing resuscitation with patients. Healthcare professionals participating in the WATCH study highlighted the difficulties they often encounter in approaching discussions with patients about resuscitation decisions, especially when patients hold unrealistic expectations of resuscitation success. It is well documented in the literature that healthcare professionals find initiating discussions around resuscitation choices difficult for several reasons, including fear of causing emotional distress to the patients, time constraints, fear of complaints (Hall *et al.*, 2019), and also because they feel uncomfortable to be the bearer of bad news (Chliara *et al.*, 2014; Connors *et al.*, 1995). In the United Kingdom, the responsibility of such discussions in hospital is usually attributed to the senior physicians who are also in charge of making resuscitation decisions with the patient (Mockford *et al.*, 2015). However, junior doctors, who see the majority of new admissions, should also be aware of the issues regarding the assessment of patients' resuscitation status and be able to hold sensitive conversations with them (Direkze & Jain, 2012). One Swiss study on the involvement of patients in resuscitation decisions identified that physicians

experience communication and emotional difficulties when they carry out those conversations with patients (Hurst et al, 2013). Hurst *et al.* (2013) highlighted that these communication barriers might be triggered because physicians anticipate that such discussions can be distressing for themselves and the patient, and therefore they prefer to avoid them. However, even if physicians avoid difficult discussions in an attempt to protect patients from emotional distress, patients have the right to discuss resuscitation issues with their doctor, and physicians' avoiding behaviours might undermine this right (Hurst *et al.*, 2013).

Although difficult, having conversations with patients regarding resuscitation is essential. This is important for the patient, who has the right to be informed of, and be involved in, resuscitation decisions. For the healthcare professionals, this is also crucial, as it serves as an opportunity to assess patient understanding of resuscitation procedure and implications and to provide patients with adequate education when necessary. Patients who have had previous effective discussions with healthcare professionals regarding resuscitation might have an increased awareness of the reality of resuscitation in hospital. Such awareness could prove advantageous for patients in the event of witnessed resuscitation in hospital.

Difficulties in communication between healthcare professionals and patients were also identified in events of patient-witnessed resuscitation. In the WATCH study, some of the doctors made explicit reference to avoiding difficult conversations with witnessing patients about resuscitation events occurred in the ward. These doctors considered these conversations too frightening for patients and difficult to handle for themselves, and therefore they tried to avoid them. Evidence of blocking behaviours adopted by healthcare professionals when communicating with patients is documented in the

literature, with particular reference to difficult conversations held with cancer patients (Lugton, 2002; Maguire, 1985; Wilkinson, 1991). Such behaviours might include distancing or changing of topic, and deliberately avoiding engaging with patients, especially when disclosing about their worries that concern emotional or psychological aspects (Wilkinson, 1991). In literature, Maguire (1985) and Wilkinson (1991) suggested that healthcare professionals might avoid difficult conversations with patients because healthcare professionals might want to protect patients from stressful conversations, or they might anticipate that patients can express strong emotions, and therefore they want to avoid them. These hypotheses are in line with the findings in the study by Hurst *et al.* (2013), as discussed previously.

Alternatively, Maguire (1985) and Wilkinson (1991) argued that healthcare professionals might fear their own emotions and loss of composure in front of the patients, or that healthcare professionals might feel they do not possess the communication skills to address patients' needs (Maguire, 1985; Wilkinson, 1991). The importance of communication skills was pointed out both by witnessing patients and healthcare professionals in the WATCH study. They agreed that good communication skills are necessary to support patients who witnessed cardiac arrest of a fellow patient and are developed through experience in clinical practice and specific training. Although some senior healthcare professional participants in the WATCH study felt they had the confidence and the experience to talk about resuscitation events with patients, the lack of communication skills was a concern for several other healthcare professionals in the study. These findings align with the literature review carried out by Mockford *et al.* (2015) that identified issues surrounding a lack of communication skills, as well as low confidence, inexperience and discomfort, in both physicians and nurses who have

resuscitation discussions with patients. Mockford *et al.* (2015) advocated specialist training in clinical reasoning, as well as in ethics and in communication skills, to help healthcare professionals reach effective communication about resuscitation with their patients and improve their involvement in related decisions. Similarly, Shelvington (2007) advocated that good communication skills are key in enabling nurses to feel confident when dealing with potentially difficult situations, such as informing a patient of another patient's death, and this needs to be done sensitively. Raising the witnessed critical event with a patient may represent an opportunity for the healthcare professional and the patient to discuss any worries and anxieties surrounding the patient's own illness. In the case of witnessed resuscitation, a conversation with a healthcare professional after the event might represent an additional opportunity to further discuss resuscitation issues, including talking through patients' decisions again and reinforce education.

### 10.3.3 Disclosing information and confidentiality issues

The disclosure of information that could potentially breach confidentiality of the resuscitated patient represented a further barrier in effective communication between healthcare professionals and witnessing patients. The WATCH study identified that patients who witnessed the resuscitation attempt needed information to make sense of the event and of their experience. For healthcare professionals this represented a cause of ethical tension. Although acknowledging that witnessing patients needed to understand the resuscitation outcome, healthcare professionals spoke of their moral and legal duty to protect the resuscitation victim's privacy and confidentiality rights. Privacy in healthcare is usually referred to as the protection from the physical presence of or exposure to one's body to unauthorised persons (Allen, 1995; McNamara, 1999),

whilst confidentiality refers to the protection of patients' information from disclosure to unauthorised persons (McNamara, 1999). In the case of resuscitation, both privacy and confidentiality are unavoidably limited. Although healthcare professionals try to protect patients' bodies from any unnecessary contact or exposure, during resuscitation this is not feasible, given the nature of the emergency. Similarly, during life-saving efforts they might discuss patients' information in such a way that an unauthorised person, such as a patient in the next bed, can overhear it. In the WATCH study, use of the curtains around the resuscitation scene was commented by witnessing patients as being ineffective in protecting patient's body and the information shared during resuscitation.

The joint national guidance by the *British Medical Association*, the *Resuscitation Council* and the *Royal College of Nursing* reinforces healthcare professionals' duty of confidentiality to the patient (British Medical Association, Resuscitation Council & Royal College of Nursing, 2016). This complex situation about the ethics of resuscitation is not addressed by current European Resuscitation Guidelines, although honest and truthful communication with the patients and their loved ones is advocated (Bossaert *et al.*, 2015). With the lack of specific guidance, healthcare professionals feel insecure about the information that they can disclose with the witnessing patients regarding the arrested patient, without breaching confidentiality. Members of the resuscitation department in the WATCH study advocated the importance of holding open and honest conversations with patients who ask about resuscitation of another patient and sharing truthful information. Although these findings cannot be generalised, specific guidance tailored to the reality of resuscitation in hospital wards and professional training regarding the ethical and communication aspects of in-hospital resuscitation might

encourage healthcare professionals to discuss these controversies and enhance their confidence in handling ethically critical situations.

## 10.4 Understanding the perceived emotional impact of witnessing resuscitation

Findings of the WATCH study demonstrated that patients and healthcare professionals had a range of emotional reactions in response to resuscitation events witnessed in hospital wards. Whilst the exploration of patients' perceived impact of witnessing resuscitation addressed the aim of this study, the investigation of the perceived impact on healthcare professionals from their involvement in resuscitation activities was an unanticipated aspect of the WATCH study. This is considered worthy of discussion, as it reinforces that resuscitation is psychologically demanding for healthcare professionals and can inform whether the perceived impact on them affects their ability to support patients.

### 10.4.1 Perceived emotional impact on patients

Patients in the WATCH study reported different reactions as a result of witnessing a resuscitation event of a fellow patient, including shock, disbelief and sadness. The impact of witnessing events regarding a fellow patient has been previously investigated in the literature. Few studies have specifically investigated the impact of witnessing a cardiac arrest and cardiopulmonary resuscitation on a fellow patient (Fiori, Latour & Los, 2017), synthesised in Chapter 3. Other studies investigated the impact of witnessing experiences for patients in other situations, such as witnessing stressful procedures performed on fellow patients (Vanson, Katz & Krekeler, 1980), witnessing death

(Honeybun, Johnston & Tookman, 1992; Lawton, 1997; Lawton, 2000; Payne *et al.*, 1996), and witnessing a fellow patient becoming critically ill (Laursen, 2016). Therefore, in comparing the findings of the WATCH study with the existing literature, contextual differences need to be taken into account. A further consideration is that the WATCH study used a qualitative design, whilst other studies used quantitative measures to investigate the impact in witnessing patients through physiological outcomes. Bruhn *et al.* (1970) and Sczekalla (1973) found significant increase of heart rate and blood pressure in the witnessing patients after the resuscitation event. Increased heart rate was also found by Vanson, Katz and Krekeler (1980), who measured the stress reaction in patients who witnessed invasive procedures, such as Swan-Ganz catheter insertion, cardioversion and temporary trans-venous pacemaker in other patients. Although the WATCH study did not measure physiological responses to stress, and a comparison between quantitative and qualitative findings is not possible, this literature supported that witnessing stressful procedures on another patient, including resuscitation, can cause a physical impact demonstrated by temporary alteration of vital signs.

Other studies used quantitative measures to investigate psychological outcomes, such as anxiety, depression and PTSD. Although the qualitative findings of the WATCH study are not suited for direct comparison with these studies, examining this evidence informs the psychological reactions of the witnesses of hospital events, such as resuscitation and death. Bruhn *et al.* (1970) identified increased anxiety in patients the following day after witnessing death following resuscitation, but no significant increase in depression, or in other psychological outcome measures, such as hostility, anger and fear. In the context of family-witnessed resuscitation, a randomised controlled trial found that relatives who witnessed CPR on family members had significantly less frequent symptoms of anxiety

and depression and lower symptoms of PTSD than relatives who did not witness it (Jabre *et al.*, 2013). Similarly, in other contexts, studies conducted on patients who witnessed death on a fellow hospice patient found that witnessing patients were significantly less depressed than those who did not witnessed it (Honeybun, Johnston & Tookman, 1992; Payne *et al.*, 1996). In these studies, patients were recruited nine days (Honeybun, Johnston & Tookman, 1992) and six to seven days (Payne *et al.*, 1996) after admission, and data were collected regarding events of witnessed death occurred in the time interval between admission and recruitment. No significant difference in the level of anxiety in the two groups was demonstrated (Honeybun, Johnston & Tookman, 1992; Payne *et al.*, 1996). These results indicated that witnessing death of a fellow hospice patient was significantly more comforting than distressing, suggesting that witnessing death of a patient in the context of palliative care might be beneficial for fellow patients, compared to not witnessing it (Honeybun, Johnston & Tookman, 1992; Payne *et al.*, 1996). Although the WATCH study measured neither stress, depression nor anxiety scores, it is important to consider that further investigation of psychological outcomes such anxiety, depression and PTSD with quantitative scales constitute a valuable contribution to expanding the understanding of patient-witnessed resuscitation.

Another emotional reaction reported in the narratives of some patients in the WATCH study was the feeling of frustration and helplessness in front of the patient nearby suffering the cardiac arrest, despite a strong desire to do something to help them. This could be related to the passive role of the witnessing patients, in contrast to the active role that the healthcare professionals assume in managing the cardiac arrest. Witnessing certain situations such as medical emergencies, where fellow patients are bystanders to the event and unable to help, can be difficult for them, as a sympathy can develop

amongst fellow patients, especially when they become critically ill (Laursen, 2016). Laursen (2016) argued that fellow patients felt responsible for the care of the critically ill patient. This led to paradoxical feelings where patients felt they were not able to help, but at the same time were unable to withdraw themselves from the situation. Previous literature identified that relationships among fellow patients are characterised by complex interactions and ambiguous feelings (Borregaard & Ludvigsen, 2018; Larsen, Larsen & Birkelund, 2013; Laursen, 2016; Payne *et al.*, 1996). When talking about the perceived impact on witnessing patients, nurses interviewed in the WATCH study recognised the significance of the fellow patients for one another, and observed friendly relationships developed amongst patients in the same multi-bedded room. Whilst positive elements of these interactions such as peer support were identified, healthcare professional participants also noted that these relationships could lead to negative emotions amongst the patients, if one patient's condition was to deteriorate suddenly. Andersen, Larsen and Birkelund (2015) supported this view, and suggested that there is a need for the healthcare professionals to be aware of the social dynamics developed between fellow patients in those circumstances, who are connected by the shared experience of illness. Therefore, whilst interacting with fellow patients during hospitalisation can be of great significance for patients, their complexity has the potential to create both positive and negative experiences amongst them. Awareness of patient interactions is important for healthcare professionals to gain an insight of patients' reactions after witnessing a critical event on a fellow patient and to anticipate their needs of support.

Patients in the WATCH study spoke of negative feelings in response to witnessing either successful or unsuccessful resuscitation. Feelings of shock and disbelief were also

identified in a qualitative study on the perceived impact of patients witnessing successful resuscitation events (Badger, 1994), which supports the view that resuscitation is a stressful event, and witnessing it can create distress in the other patients. This view was also supported in narratives of some healthcare professionals of the WATCH study, who believed that witnessing traumatic resuscitation, especially if unsuccessful, influences patients' outlooks negatively, triggering negative thoughts regarding their own death. In a study investigating the perceived impact of witnessing a death on hospice patients, Lawton (2000) observed that witnessing the death of distressed, agitated, or confused patient was considered upsetting for the other patients, as well as witnessing emotional distress or unpleasant symptoms in others. For the witnessing patients of the WATCH study a cause of concern was realising that after the event life in the ward would carry on with all the normal activities, despite the presence of a dead body in the multi-bedded room. This created a feeling of discomfort amongst the patients in the room. Interestingly, Payne *et al.* (1996) also identified similar findings, where two patients who witnessed death of a fellow patient were upset with the idea of having to carry on their activities while a dead body was lying in the next bed behind the curtains for hours. Hearing the grieving of a bereaved family and the consequent feeling of intrusion in their grief was considered an additional cause of distress by witnessing patients in the WATCH study. The WATCH study participants found witnessing the family's grief more distressing than witnessing the death itself, which they generally considered natural and unavoidable. Comparable findings were identified by Payne *et al.* (1996), where some patients felt uncomfortable because they did not want to witness grieving relatives or invade their privacy at such a time. According to these findings from the WATCH study, additional aspects related to the resuscitation event, such as witnessing the presence of a dead body in the bay or

witnessing a grieving family, seemed to accentuate the disturbing feelings associated with witnessing resuscitation in other patients.

Witnessing patients in the WATCH study also expressed that, despite the difficult experience, they felt reassured by observing the healthcare staff responding to the emergency. A similar sense of reassurance following witnessing CPR on a fellow patient, even if unsuccessful, was found in the qualitative study of Hackett, Cassem and Wishnie (1968), due to the efficient response of the staff to the cardiac arrest. This reinforces the finding in the WATCH study that witnessing CPR might have a positive long-lasting effect on witnessing patients in the aftermath of the event. Previous studies in the context of dying patients have found comparable findings. Lawton (1997) reported that patients commonly perceived death as a painful and traumatic event, therefore when these patients witnessed another patient dying peacefully beside them on the ward, they found it often comforting and reassuring.

Several differences need to be considered when comparing witnessing death in a hospice environment with witnessing resuscitation in a hospital ward. Patients in hospice are normally terminally ill and death is considered the expected outcome, while sudden cardiac arrests are mostly unexpected and the outcome of CPR, although related to low survival rates, is to some extent unpredictable. Another consideration is the absence of a peaceful death in the case of death for cardiac arrest with consequent CPR. By definition, cardiopulmonary resuscitation is a prompt and often physically traumatic emergency response to an unexpected life-threatening event and unsuccessful CPR often means that the person has an undignified death (Mockford *et al.*, 2015). However, given these considerations, similarities can be found with the findings of the WATCH study and the way in which patients who witnessed CPR on another patient felt

reassured by the efficiency and professionalism of the staff who responded to the cardiac arrest. Payne *et al.* (1996) in fact, found that witnessing the care and attention given to dying patients by the healthcare staff may be reassuring because patients believe that they will not be neglected if they die themselves. This resonates with findings of the WATCH study, suggesting that patients that witness staff attending to a life-threatening event on a fellow patient may feel reassurance that a similar response would be undertaken if the same were to happen to them.

The WATCH study described how witnessing resuscitation of a patient in the context of hospital clinical wards can provoke negative reactions on the other patients. However, a positive effect was found after the witnessed event, as a consequence of the life-saving efforts of the healthcare team. Although only few other studies have explored this area and limited comparison of the findings was achieved, the explored evidence seems to confirm these findings. Further investigation of the reactions of witnessing patients using comparable measures is needed to expand our understanding of the perceived impact of witnessing resuscitation on another patient.

### 10.4.2 Perceived emotional impact on healthcare professionals

Healthcare professionals' perceived emotional impact from hospital resuscitation events is worth attention, as taking part in resuscitation attempts has shown to be a stressful and emotionally difficult experience for healthcare professionals in the WATCH study. Some described memories and thoughts about resuscitation events that stayed in their minds, suggesting the possibility of long-term stress effects on healthcare staff following resuscitation. The literature review conducted by Vindigni, Lessing and Carlbom (2017) highlighted the dearth of evidence regarding the psychological impact of in-hospital resuscitations on the healthcare professionals involved. Nevertheless,

Flannery and Everly (2000) stated that because resuscitations are often unexpected events, it may be difficult for healthcare professionals to adapt to the sudden change of situation, therefore creating a risk of personal crisis and traumatic stress. Cudmore (1996), exploring the perceived need for nurses of debriefing after performing resuscitation on a patient, anticipated that nurses exposed to emergency events may be subject to a form of PTSD known as prolonged duration stress disorder (PDSD) (Scott & Stradling, 1994). PDSD is not caused by the exposure to a single overwhelming, catastrophic experience as in the case of PTSD, but by the recurrent exposure to a series of distressing stimuli, no one of which, if taken singularly, would be classified as traumatic (Scott & Stradling, 1994). A study conducted among American critical care nurses referred to post-code stress as the presence of heightened level of psychological stress created by repeated participation in unsuccessful resuscitation attempts (McMeekin *et al.*, 2017). This was found to be higher than PTSD in a sample of 490 critical care nurses with experience of resuscitation (McMeekin *et al.*, 2017). Additionally, a recent survey was conducted in the UK with 414 healthcare professionals involved in resuscitation activities, including doctors of all grades, nurses and healthcare assistants working in an emergency department, an acute medical unit and an intensive care unit (Spencer *et al.*, 2019). This study found that nearly 10% of the sample screened positively for PTSD, with healthcare assistants and junior doctors reporting higher scores than senior doctors and nurses, and another 46% presented symptoms of psychological trauma as a consequence of responding to cardiac arrests (Spencer *et al.*, 2019).

This evidence indicates that attention is being given to issues regarding healthcare professionals' mental health and wellbeing in situations of high stress in clinical environments; this is reassuring. However, it is concerning that such high rates of PTSD

and psychological symptoms are detected among healthcare professionals involved in resuscitation activities. Furthermore, it is interesting to note that whilst PTSD was mentioned by one of the senior doctors in the WATCH study as a potential risk for the patients witnessing CPR, none of the healthcare professionals mentioned it as a risk for themselves and their colleagues. Several reasons could be hypothesised to justify this finding. One of the reasons could be the limited awareness of the study participants of such possibility due to repeated intense stress reactions. In this regard, the statement of the Critical Care Societies on burn-out syndrome in healthcare professionals affirmed that burn-out and other psychological disorders, including PTSD, remain relatively under recognised among healthcare professionals in critical care, and urged to raise awareness on this issue (Moss *et al.*, 2016). Another reason is that the healthcare professionals in the WATCH study could have felt uncomfortable discussing psychological and mental health issues regarding themselves in a focus group with colleagues or in an individual interview with the researcher. A professional culture of "cool confidence", where healthcare professionals are reluctant to admit weakness or to talk about feelings (Maloney, 2012) might make these issues particularly difficult to emerge and address. One study found that nurses did not want to discuss their feelings on their own units because did not want to appear vulnerable, and physicians believed they could perform well despite fatigue, even in a medical crisis (Huff, 2006). Alternatively, healthcare professionals of the WATCH study might have genuinely not considered that PTSD could affect them for responding to cardiac arrests, given that none of the interviewees mentioned this possibility.

Previous studies conducted with nurses and doctors are in line with the WATCH findings, suggesting that healthcare staff experience strong reactions related to stress when

performing resuscitation in different clinical contexts (Gamble, 2001; Morgan & Westmoreland, 2002; Ranse & Arbon, 2008; Sjöberg, Schönning & Salzmann-Erikson, 2015). Healthcare professional participants of the WATCH study did report having difficulties in talking about their emotions after the resuscitation events. They experienced unwanted memories and intrusive thoughts after the event and even outside of the working environment. Importantly they reported that returning to work the following day after a cardiac arrest was particularly difficult. This finding is also encountered in the literature. Spencer *et al.* (2019) found that healthcare professionals in their sample resented having to return to work immediately after a cardiac arrest (19.2%), and that staff who never took a break after a cardiac arrest in hospital had higher chances to develop PTSD than staff who rested. According to Spencer *et al.* (2019), taking a break seemed to protect from developing PTSD, whilst avoidant styles of coping with stress are a recognised predictor of PTSD (Wild *et al.*, 2016).

Healthcare professionals in the WATCH study spoke of the necessity to receive support from their own personal network after stressful events, to enable them to be resilient in their working environment and make balanced decisions in the clinical context. Related literature on stress identifies that stress reactions can also provoke physical effects, including headache and chronic pain, as well as impaired decision-making and negative effects both in the working environment and at home (Caine & Ter-Bagdasarian, 2003; Flannery & Everly, 2000). A senior physician and ward healthcare assistant in the WATCH study referred to the resuscitation events as chaotic, explaining that this constitutes a further source of stress for the healthcare professionals involved in the emergency, and potentially for the other patients too. Comparably, Sjöberg, Schönning and Salzmann-Erikson (2015) found similar findings among intensive care

nurses. These nurses advocated for improved leadership and good communication within the clinical team during CPR, to avoid the feelings of chaos considered stressful and counterproductive (Sjöberg, Schönning & Salzmann-Erikson, 2015).

Finally, it was noted in the WATCH study that healthcare professional's level of experience was identified as an important factor that influences their perceived emotional impact when involved in a resuscitation event. Participants reported that junior staff would feel less competent, less confident and less decisive when responding to a cardiac arrest, and consequently can experience high stress reactions. Conversely, experienced staff who had more knowledge, confidence and expertise because of their previous exposure to medical emergencies and cardiac arrests, were able to mitigate stress reactions more effectively and ultimately support less experienced colleagues. Ranse and Arbon (2008) investigated the experience of newly graduated nurses attending a resuscitation, who reported feeling ill prepared, both with regards to clinical and emotional skills. Junior nurses preferred to be involved in resuscitation through secondary tasks, as it provided the opportunity to learn without the responsibility of undertaking unfamiliar clinical tasks. At such times, experienced nurses were considered their first line of support (Ranse & Arbon, 2008). Notably, participants of multiple resuscitation events described participating in their first CPR much more stressful compared to subsequent resuscitation events (Ranse & Arbon, 2008). Gradually moving from a learner role in CPR to a more competent and confident role was also reflected in their diminishing emotional and physical reactions after multiple CPR exposures (Laws, 2001; Ranse & Arbon, 2008).

Exposure is therefore key for healthcare professionals to develop the clinical skills to respond to a cardiac arrest and perform effective resuscitation. Nonetheless, it also

appeared crucial for healthcare professionals to develop the emotional skills to respond to such stress stimuli and be aware of their own reactions, to be able to provide the best care to the patient receiving CPR and to the other patients in the ward. It is important to bear in mind that repeated exposure to critical incidents can elicit acute stress reactions leading to anxiety, hyper-arousal, avoidance, post-traumatic stress symptoms and burn-out (de Boer *et al.*, 2011; Javidi & Yadollahie, 2012). The findings of the WATCH study related to the healthcare professionals' reactions to resuscitation events demonstrated the urgency to understand the psychological impact of such experiences on them. It is evident that healthcare professionals experience repeated stress stimuli that can be difficult to process, and can have consequences on patient care, potentially undermining effective therapeutic relationships, patient satisfaction, and the quality of care. These considerations should not be underestimated, especially in relation to the care of patients who are exposed to additional sources of distress, as when they witness resuscitation in hospital.

## 10.5 Understanding coping strategies and support mechanisms

An appreciation of coping mechanisms and support needs of witnessing patients is important to understand the phenomenon of patient-witnessed resuscitation, to improve care, and to orient future clinical policies. Nonetheless, understanding the coping strategies of the healthcare professionals is also crucial to identify potential areas where they may need to be more supported, and in turn improve their support practice to witnessing patients.

### 10.5.1 Witnessing patients' coping strategies

Some patients participating in the WATCH study reported being in control of their reactions during CPR due to previous exposure to CPR, while others adopted specific coping strategies. These findings help understand the range of patients' coping strategies and resonate with other qualitative studies exploring the perceived impact of patients witnessing CPR on other patients. The views of patients in the WATCH study who stated they did not feel affected by witnessing resuscitation contrast with patients who explicitly expressed reactions of distress. Badger (1994) and Hackett, Cassem and Wishnie (1968) identified that patients who witnessed either successful or unsuccessful resuscitation attempts on other patients denied fear and panic. In the study conducted by Badger (1994) this was observed through the lack of any outward expressions of fear and a calm and unconcerned attitude during patients interviews, after witnessing resuscitation. Patients tended to minimise the significance of the critical event, acting as if nothing had happened at all. In the study conducted by Hackett, Cassem and Wishnie (1968) seven of the 11 patients who witnessed fatal cardiac arrest denied fear, showing instead irritability and annoyance at the affected patients. Badger (1994) argued that the fact that patients denied their reactions did not mean they were not affected by the event or were not experiencing some degree of emotional distress. Instead, it demonstrated an adaptive way of coping with a stressful situation, by controlling fear to relieve their internal tension and restlessness (Badger, 1994).

According to Weisman and Hackett (1961), denial is a defence mechanism consisting of the conscious or unconscious rejection of the meaning of an event to alleviate fear, anxiety or other unpleasant effects. The use of denying behaviours in cardiac patients during life-threatening events is documented in the literature as a coping strategy to

provide patients with a sense of control over a frightening adverse event (Levine *et al.*, 1987; Thompson, 1981). It could be debated that although some witnessing patients stated they were not affected by the event, they might have adopted denying mechanisms to stay in control of a situation they might have found distressing. Therefore, attention should be given to witnessing patients who do not openly express any reaction after a resuscitation event, offering them the option to receive support.

Other witnessing patients in the WATCH study compared themselves to the patients who suffered the cardiac arrest, highlighting that the arrested patient was in a worse condition than they were. In the qualitative studies of Badger (1994) and Hackett, Cassem and Wishnie (1968) on the perceived impact of witnessing successful and unsuccessful resuscitation on a fellow patient, disassociation from the patients undergoing resuscitation was used as a coping strategy. In these studies, witnessing patients tended to compare themselves with the victim of the cardiac arrest, finding ways in which their medical history was different from the victim's, and restoring their own self-confidence through self-enhancing evaluations. These findings resonate with Festinger's social comparison theory, where people use other people rather than objective criteria as a basis for comparison (Festinger, 1954).

Importantly, some of the nurses interviewed in the WATCH study also recognised that specific groups of patients are more subject to social comparison than others, bringing the example of surgical patients. These nurses confirmed that when patients compare themselves to the victim of the witnessed arrest they might become more fearful of a similar outcome for themselves. Evidence of similar comparison behaviours is also observed in oncology and surgical patients' literature (Bennenbroek *et al.*, 2002; Isaksen & Gjengedal, 2000; Larsen, Larsen & Birkelund, 2013). In these contexts, literature

confirmed that patients might use other patients as a reference group and compare themselves with fellow patients in worse status to reassure themselves (Bennenbroek *et al.*, 2002; Isaksen & Gjengedal, 2000; Larsen, Larsen & Birkelund, 2013). Awareness of these comparative behaviours among similar groups of patients will allow healthcare professionals to be able to address witnessing patients' needs of information and reassurance in relation to their specific risk of cardiac arrest and resuscitation.

Despite the use of these coping strategies, most of the patients who witnessed resuscitation in the WATCH study spoke of the need for information about the event and the need of reassurance. It is documented that well-informed patients are likely to be more satisfied with the care they receive, less anxious, and better able to cope with their own illness (Bottomley & Jones, 1997; Manfredi *et al.*, 1993). Patient participants in the WATCH study were interested to know the condition and the prognosis of the patient post resuscitation, in terms of their survival. It could be argued that patients needed that information in order to make an evaluation of the factors that could have caused the arrest, to better understand them. Badger (1994) defined this coping behaviour as attributional searching, where witnessing patients tried to find an external cause for the cardiac arrest of the fellow patient that would not occur to them.

Moreover, another reason for the need of information could be found in the fact that patients in the WATCH study spoke of a duty of care towards the other patients, explaining that their need for information was due to genuine interest and care for the other patient. In this regard, Birkelund and Larsen (2013) argued that the urge to care for others is fundamental to most humans, regardless of own illness, and is a basic condition. This supports why fellow patients appeared to feel a natural obligation of care for their fellow patient in worse condition. On the other hand, this caring nature might

also justify the frustration of witnessing patients when they were left without information about the resuscitation they witnessed.

### 10.5.2 Healthcare professionals' coping strategies

Healthcare professionals in the WATCH study considered it important to dedicate protected space and time to process the emotions of the resuscitation experience, especially to be able to provide care to their patients after a distressing event in the ward. Coping strategies such as structured debriefings, informal peer support among colleagues or individual self-reflection were considered beneficial for healthcare professionals. Debriefing is intended as the structured opportunity for healthcare staff to gain support after a critical event and the chance to reflect so they can improve the performance and the care delivered (Couper *et al.*, 2013; Gardner, 2013). Despite the controversies surrounding its risk and effectiveness (Bledsoe, 2003; Rose *et al.*, 2002; Smith & Roberts, 2003) debriefing is widely recognised in sectors including the military, the aviation industry and education (Gardner, 2013; Wolfe *et al.*, 2014). In the healthcare setting, debriefing staff after critical incidents is increasingly valued (Couper *et al.*, 2013; Mitchell, Sakraida & Kameg, 2003). Debriefing has been successfully used as an educational tool both in simulation CPR training and real-life in-hospital CPR, showing improved CPR performance, patient outcome, and team dynamics (Couper *et al.*, 2015; Dine *et al.*, 2008; Kim *et al.*, 2017). Besides being a valuable educational tool for helping people to learn and develop in difficult circumstances, debriefing can also help supporting the healthcare professionals' wellbeing when subject to high stress stimuli.

Many healthcare professional participants in the WATCH study recognised that debriefing not only represents an opportunity to explore the technical aspects of

resuscitation, but also to explore the emotional aspects and wellbeing of the professionals after a stressful event, both as a team and as individuals. These two distinct requirements for debriefing after cardiac arrest had been previously identified among nurses by Clark and McLean (2018). Interestingly, although the learning opportunity was felt as key to improving practice and to addressing questions and concerns, most comments regarded the needs to cope with the perceived emotional impact of being involved in a cardiac arrest (Clark & McLean, 2018). In particular, this was felt most important when the resuscitation was unsuccessful or when nurses had developed a therapeutic relationship with the patient, as also highlighted by Gamble (2001). In the clinical wards where the WATCH study was conducted however, and in line with the explored literature (Clark & McLean, 2018; Morgan & Westmoreland, 2002; Ranse & Arbon, 2008; Sjöberg, Schönning & Salzmann-Erikson, 2015; Spencer *et al.*, 2019), formal debriefing was rarely practised. Even when provided, debriefing tended to focus either on the technical aspects or on the psychological ones, but rarely on both. Participants in the WATCH study felt that debriefing required substantial improvement and attention to overcome barriers to its implementation, as lack of dedicated time after a cardiac arrest and lack of organisational guidance. These barriers were confirmed in other studies, which also included lack of training, experience or knowledge on leading a debrief after a cardiac arrest, lack of exposure to the practice of debriefing and therefore a lack of awareness of its potential benefits or risks (Clark & McLean, 2018; Spencer *et al.*, 2019). Debriefing after in-hospital cardiac arrest is advocated by the *American Heart Association* (AHA), the *International Liaison Committee on Resuscitation* (ILCOR), the *Resuscitation Council (UK)* and by the *European federation of Critical Care Nursing associations*, the *European Society of Paediatric and Neonatal Intensive Care* and the *European Society of Cardiology Council on Cardiovascular Nursing and Allied*

*Professions* (Bhanji *et al.*, 2010; Carberry, Couper & Yeung, 2017; Fulbrook *et al.*, 2007; Resuscitation Council (UK), 2015). From the findings of the WATCH study, debriefing was considered by healthcare professional participants a valid method to support staff in coping with their own experience of resuscitation and in turn, improving support practice to witnessing patients. However, the rare application of debriefing after cardiac arrest in clinical practice suggests the need of organisational and educational interventions to promote a cultural change to further develop this practice, with benefits for both healthcare professionals' and patients' wellbeing.

In the absence of regular formal debriefing provision, participants of the WATCH study often referred to practices of informal peer support. Talking to colleagues was considered important for participants to look after their own and their colleagues' wellbeing and to exchange feedback and support. A similar engagement in informal group conversations or in one-to-one talks as an alternative to a formal debriefing was observed in a study of intensive care nurses, who found it beneficial for giving and receiving praise and feedback (Sjöberg, Schönning & Salzmann-Erikson, 2015). Those participants found peer support invaluable, as well as the participants in the WATCH study, who referred to colleagues as the best possible support, because they shared the same experience and understood how they felt.

The literature in this area reports how junior doctors and newly graduated nurses adopt similar coping strategies such as talking to colleagues, family and nursing staff, or spending time alone to engage in self-reflection if feeling stressed after a cardiac arrest (Morgan & Westmoreland, 2002; Ranse & Arbon, 2008). Although the participants in the studies conducted by Morgan and Westmoreland (2002) and Ranse and Arbon (2008) considered these coping strategies effective, debriefing sessions after cardiac arrest

were also called for, which align with the findings of the WATCH study. Some of the healthcare professionals in the WATCH study spoke of the paradoxical situation of trying to support patients who witnessed CPR, whilst the staff themselves have not had the opportunity to process and cope with their own reactions. In such cases, providing care to the other patients can be challenging for healthcare professionals who might not feel fully emotionally prepared to help patients and to address their own needs. However, as well as structured debriefing, the allocation of dedicated time and space for the implementation of informal coping strategies and peer support practices was scarcely facilitated in clinical wards after cardiac arrest. It is suggested that not carrying out debriefings, and therefore leaving healthcare professionals' personal needs unaddressed, could have detrimental consequences not only for their personal and occupational health, but it could also affect the delivery of care and patients' outcomes (Maloney, 2012; Newman, 1996). Therefore, supporting healthcare professionals' functional coping strategies, as structured debriefing or informal group or individual strategies, is crucial to maintaining a healthy working environment after critical events. Ultimately, these practices can enable healthcare professionals to improve the quality of the care and support they provide to the patients who witnessed resuscitation in the ward.

### 10.5.3 Challenges of support practices

Witnessing patients in the WATCH study expressed appreciation for the opportunity to receive reassurance and emotional support from healthcare professionals about the witnessed event. Patients and healthcare professionals in the WATCH study suggested the presence of a dedicated healthcare professional to look after the witnessing patients during a resuscitation event. This practice is recommended to support family members

who witness resuscitation of a relative (Davidson *et al.*, 2011; Johnson, 2017; Sak-Dankosky *et al.*, 2017) and it is endorsed by the current *European Resuscitation Guidelines* (Bossaert *et al.*, 2015) and by the joint statement of the *European federation of Critical Care Nursing associations*, the *European Society of Paediatric and Neonatal Intensive Care* and the *European Society of Cardiology Council on Cardiovascular Nursing and Allied Professions* (Fulbrook *et al.*, 2007). However, no recommendations nor evidence of its implementation have been established in the context of patient-witnessed resuscitation. In the WATCH study, a similar approach was suggested by patient and healthcare professional participants when patients witness resuscitation. In family-witnessed resuscitation, registered nurses are usually best placed to undertake this role, as they possess knowledge of resuscitation and are readily available as part of the crash team, or as ward staff (Baskett, Steen & Bossaert, 2005; Royal College of Nursing (RCN), 2002). However, it is argued that in case of low staff numbers in the CPR response, it might be unrealistic that a nurse can undertake this role (Axelsson *et al.*, 2010; Ganz & Yoffe, 2012; Köberich *et al.*, 2010; Sak-Dankosky *et al.*, 2017).

In the US context, the role of family support person during resuscitation is often undertaken by hospital chaplains (Hanson & Strawser, 1992; Meyers *et al.*, 2000; Sanford, Pugh & Warren, 2002). Similarly, one of the nurses who participated in the WATCH study supported the role of the hospital chaplains to provide emotional support for patients who witnessed resuscitation, regardless of their religious beliefs. Chaplains can focus on a more spiritual dimension, enabling feelings and emotions of relatives to be shown in a therapeutic way during times of emotional trauma (Cottle & James, 2008).

In the UK, evidence indicated the chaplain's role has evolved to meet spiritual needs of patients and families, more than religious ones, (Wright, 2001). This also places

chaplains as well suited to offer support after resuscitation to witnessing patients. Nevertheless, challenges were identified in relation to chaplains' support role during CPR. Hanson and Strawser (1992) argued that chaplains require some essential medical knowledge about resuscitation, which is not always provided, while Cottle and James (2008) pointed out that as chaplains are generally not available out of hours, their role is limited to office hours events only. Although referring to family-witnessed resuscitation, these challenges also apply to the context of patient-witnessed resuscitation. However, it can be suggested that if challenges are addressed, chaplains can be a valuable source of emotional support for witnessing patients. Moreover, their involvement in resuscitation events could benefit nurses when they are not able to undertake supporting roles the other patients, due to staff shortages or high workloads.

Patients in the WATCH study also highlighted the importance of empathic communication with nursing staff even through gesturing and unspoken communication. The work of Playfair (2010) is meaningful in this regard, as it discussed a clinical practice example of comforting a frightened patient who overheard resuscitation attempts and the consequent death of a fellow patient. Active listening and therapeutic touch were used to alleviate the patient's fear as well as conveying a positive message of support and empathy, reinforcing the importance of nurses' supporting role and their responsibility to provide care to all patients. Although it is argued that the use of therapeutic touch can be ambiguous, and sometimes inappropriate (Ellis, Gates & Kenworthy, 2003; Porter *et al.*, 1986; Whitcher & Fisher, 1979), it can be suggested that it is a relevant interpersonal skill to use consciously when verbal communication might be too difficult for both patients and professionals (Playfair, 2010).

Whilst most of the healthcare professionals in the WATCH study considered providing support to the witnessing patients part of their role, some of them found it difficult to address emotional needs of these patients. Some of the healthcare professionals explained that they tend to find it difficult to focus on the witnessing patients, because they are immersed in the resuscitation activities, and they consider the other patients to be overall safe. Hence, they struggle to empathise with patients' perspective of CPR and to invite them to talk about their experience. In this regard, Shelvington (2007) recommended healthcare professionals exercise empathy by looking at the event from the witnessing patients' points of view. Reflecting on how patients might perceive witnessing a traumatic event in the ward or witnessing the grief of family members after a cardiac arrest, might help healthcare professionals get an insight of witnessing patients' emotional reactions. These suggestions are pertinent to the context of the WATCH study, and their application in clinical practice can indeed help professionals start a conversation with the witnessing patients and anticipate their emotional needs. Therefore, using empathic communication, supported by a therapeutic touch when appropriate, can help healthcare professionals establish a supportive relationship with witnessing patients and give them the opportunity to express their concerns regarding the resuscitation event. Other valuable suggestions for healthcare professionals include reflecting on their own practice, to identify strengths and weaknesses, and learning by role modelling their peers in the clinical environment (Lugton & McIntyre, 2005). Considering the value of these support techniques and the benefits they can have when implemented with witnessing patients in clinical practice, these techniques can be suggested to facilitate their development among healthcare professionals, through individual self-reflection, post-event group discussions with the team, and clinical supervision to encourage learning from colleagues.

## 10.6 Chapter summary

In this chapter, the essence of the phenomenon of patient-witnessed resuscitation in hospital was developed, capturing the most meaningful elements from the rich narratives of patient and healthcare professional participants. Successively, similarities and contradictions between the findings of the WATCH study and the existing literature were identified and discussed. The pragmatic view of resuscitation that patients expressed in the WATCH study contrasts with literature highlighting patients' unrealistic expectations. Despite the openness of patients toward resuscitation conversations, healthcare professionals encounter challenges in discussing the witnessed experience, requiring further communication skills and awareness of confidentiality boundaries. These challenges are echoed in the literature and reflected in the limited guidance available for healthcare professionals. The findings of the WATCH study were compared to evidence of the impact of witnessing fellow patients' resuscitation, witnessing dying patients, and witnessing critically ill patients. Similarities with other studies were identified as the frustration of feeling helpless, the reassurance from staff response, and the discomfort in witnessing grief. Previous studies confirmed that healthcare professionals exposed to resuscitation experience stress reactions; awareness of their wellbeing, improved debriefing and informal support practice may help to mitigate these effects. Patients' coping strategies such as denial, social comparison and attributional searching were also identified in the consulted literature. Possible patients' support practices were discussed, with particular attention to the role of a dedicated person to support witnessing patients, the importance of empathic communication and learning techniques to improve clinical practice. In the following chapter, the conclusions of this thesis are drawn, explicating the implications and recommendations

for clinical practice, education and research and acknowledging the limitations of the research.

# Chapter 11 Conclusions, recommendations and limitations

## 11.1 Introduction

In this chapter, the thesis is brought to conclusion. This research sought to address a significant gap in the evidence base regarding witnessed resuscitation; this was achieved through an in-depth exploration of the phenomenon of patient-witnessed resuscitation in the hospital setting. The focus of this last chapter is to demonstrate how the findings of this research sought to achieve the aim and objectives of the thesis. Implications of the study findings are presented and, from these, recommendations for clinical practice, education and research are identified. Finally, methodological limitations of the research are reviewed.

## 11.2 Addressing the research question

This doctoral thesis sought to address the following research question:

> *What are the experiences of the patients and of the healthcare professionals regarding patients witnessing resuscitation of another patient in hospital?*

The research question was operationalised into a specific study aim. The study aim was to investigate the perceived impact on patients of the experience of witnessing CPR on another patient, and to identify the best support that can be delivered to patients by healthcare professionals.

This study was informed by a systematic review and a stakeholder consultation. The systematic review drew together the available literature on patient-witnessed resuscitation and formed a new baseline from which to explore the perceived impact of witnessing CPR on hospital patients. The stakeholder consultation provided conceptual, methodological and ethical advice regarding the design of the research study. Within an interpretivist theoretical approach, a descriptive phenomenological study was conducted to achieve the research aim and objectives.

Sixteen patients and 20 healthcare professionals participated in individual and focus group interviews to share their lived experiences of witnessing resuscitation on a hospital patient. Their responses served to identify a number of themes, as expressed in Figure 11.1, the development of which have helped to inform and illuminate the research question. The themes provided an insight into participants' psychological reactions and strategies adopted to cope with the resuscitation events. The need for support and the barriers to its optimal provision were also explored, as well as the controversies relating to the exposure and protection of patients during resuscitation.

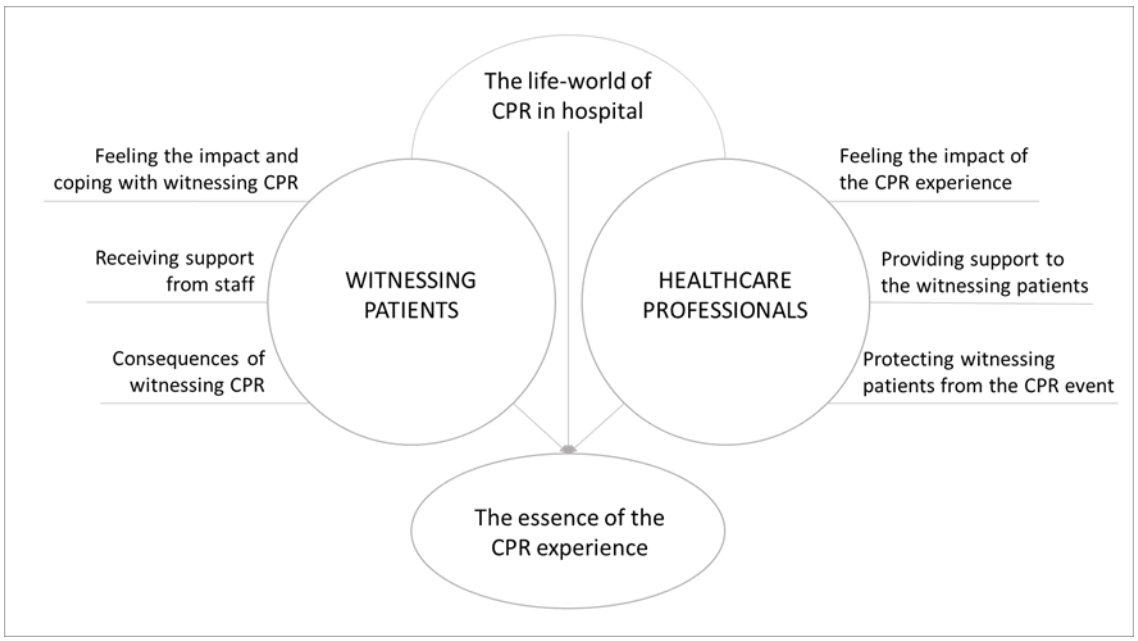


*Figure 11.1 Overview of study findings (replicated from Figure 7.1)*

In accordance with the themes highlighted in Figure 11.1, the WATCH study addressed the research aim through identifying that resuscitation is perceived as an accepted element of the reality of hospital life. Resuscitation of a patient can provoke perceived emotional impact in the witnessing patients and in the healthcare professionals involved, to which both groups respond with a range of coping strategies. For the witnessing patients, this experience can be particularly distressing. Whilst there is a general acceptance that patients might experience distress, it must be also recognised that healthcare professionals responding to cardiac arrests are exposed to a similar perceived emotional impact. They too may require resources and support mechanisms to help them develop personal skills necessary to cope with such events. To assist patients in processing the experience of witnessed resuscitation, opportunities are needed to allow them to speak about the event and to receive comprehensive factual information and valid emotional support. Healthcare professionals already acknowledge the importance of providing emotional support to patients after the resuscitation event

and place this responsibility among the nursing duties of care. However, they advocate for further education on communication skills and providing emotional support, as well as requesting institutional guidance on how to deal with information sharing and confidentiality issues with witnessing patients. The use of curtains to protect the privacy of the arresting patient, and to protect the witnessing patients, was ineffective. Witnessing resuscitation, however, has the potential to provide reassurance to witnessing patients if the cardiac arrest is dealt with efficiently by healthcare staff.

Although aware of the limited generalisability of this study due to its qualitative nature, implications and recommendations that have arisen from the research are highlighted in the following section.

## 11.3 Implications and recommendations

### 11.3.1 Clinical practice

Healthcare professionals in hospital clinical wards should be made aware that it is possible for patients to witness resuscitation on other patients in the same multi-bedded room, and that this experience can have a perceived emotional impact on them. Whilst resuscitation events in hospital cannot be avoided, measures to improve witnessing patients' experiences must be undertaken. The use of protective curtains was demonstrated to be ineffective in limiting the exposure of fellow patients to witnessing resuscitation. An alternative suggestion is to evacuate mobile patients from the area where the resuscitation is taking place. When this is not possible, a dedicated healthcare professional could be made available to support other patients in the multi-bedded room during the resuscitation; this strategy, although limited by workforce resources, was found to have a successful application in the context of family-witnessed

resuscitation. Healthcare professionals caring for patients who have witnessed the resuscitation of a fellow patient should give adequate consideration to the reactions experienced by the witnessing patient in order to limit their distress. From the findings of the WATCH study, nurses and healthcare assistants in the wards were identified as being well placed to respond to witnessing patients' needs, due to the traditional supporting nature of the nursing role and to the trust relationship established with the patients. In providing support, it is recommended that healthcare professionals offer witnessing patients the opportunity to disclose concerns and fears regarding the witnessed resuscitation experience. An empathic communication style should be used to facilitate patients' disclosures, supported by truthful and honest information in response to patients' questions.

The findings of the WATCH study suggested that the involvement of the chaplaincy and pastoral support service of the hospital after resuscitation events is beneficial in that it enables witnessing patients to receive emotional and spiritual support from people with relevant expertise. Opportunity for patients to engage with hospital chaplains after resuscitation events could enhance and reinforce the work of healthcare professionals, serving to alleviate them from workload pressures and workforce constraints. Moreover, referral of patients particularly affected by witnessing resuscitation on other patients to the hospital counselling service should be encouraged, when available.

The WATCH study demonstrated that healthcare professionals experienced stress as a result of their involvement in resuscitation efforts. Unaddressed stress responses have the potential to undermine their personal and occupational wellbeing; this in turn can affect the quality of care and support provided to patients, especially to those witnessing resuscitation events in the hospital wards. Systems should be implemented

to help identify staff at risk of developing abnormal stress reactions as a result of exposure to resuscitation; this is important to prevent the development of PTSD and burnout syndrome and to provide healthcare professionals with appropriate support.

The WATCH study findings have also highlighted the need for further development and improvement in the area of debriefing. The effective implementation of debriefing practices among healthcare professionals after resuscitation requires a cultural change in order to recognise the importance of healthcare professionals' wellbeing, especially when exposed to potentially traumatic situations. Guidance and training to implement effective debriefing practice and to support the adverse psychological aspects arising as a result of resuscitation should be provided to all healthcare professionals in the hospital. In this sense, debriefing sessions should be initiated by resuscitation leaders after the events, involving all the professionals who participated in the resuscitative efforts. The use of evidence-based peer-support programmes such as the Trauma Risk Management (TRiM) and the Psychological First Aid (PFA) is also recommended to limit adverse psychological reactions to the stress of resuscitation.

The WATCH study explored the subject of resuscitation from a novel point of view, giving voice in a way that has not been considered previously to a group of patients who have witnessed resuscitation of a fellow patient. In order to raise awareness in clinical settings of the phenomenon of patient-witnessed resuscitation and to improve clinical practice, the recommendations provided above should be incorporated into local hospital protocols and also into national and international guidelines addressing resuscitation in hospital.

### 11.3.2 Education

Educational needs emerged from the findings of the WATCH study in relation to different aspects of resuscitation. Improving the communication skills of healthcare professionals is recommended; training should aim to enhance their confidence in holding discussions with patients regarding resuscitation issues, and in tackling communication barriers in order to promote effective and meaningful conversations. It is the duty of the healthcare professional to inform and educate patients in regard to resuscitation and to involve them in decisions relating to their own treatments. Establishing early conversations on the subject will be beneficial in helping patients to have an awareness of what to expect in the event of a witnessed resuscitation and to hold realistic expectations as to the outcome; it will further facilitate disclosure about the event with healthcare professionals.

Education on developing awareness of other patients' presence during resuscitation activities, on recognising their reactions to the experience of witnessing resuscitation, and on providing them emotional support, is advocated. This should commence in undergraduate training, and continue in professional training. Clinical mentoring and role-modelling are further learning strategies for healthcare professionals in clinical practice to develop sensitivity in managing emotionally difficult situations involving witnessing patients and to improve empathy in their patient relationship.

Specific education on improving debriefing practice for healthcare professionals involved in resuscitation is also recommended. This should include detailed guidance and training for resuscitation leaders on how to conduct a debrief, and what areas to cover. This also might include psychological aspects of resuscitation for healthcare professionals and patients involved, and how to support colleagues and patients after a

critical event. Resuscitation leaders should then transfer this knowledge to healthcare professionals in the hospital to promote good debriefing practice.

Educational needs and objectives for healthcare professionals regarding patient-witnessed resuscitation should be discussed and established in agreement with relevant professional bodies, such as the Resuscitation Council, the British Medical Association (BMA), and the Royal College of Nursing (RCN). General educational objectives should be transferred to the specific clinical settings and tailored to the needs of the healthcare professionals by the Resuscitation and Education Departments in the hospitals. A first step could be to incorporate educational elements of patient-witnessed resuscitation into the Advance Life Support training for hospital staff, such as guidance in delivering information to witnessing patients, and advice on communicating effectively and giving emotional support.

A further strategy is to encourage simulation training. This has been successfully used to implement and improve the support given to family members during resuscitation of a relative. Standardised actors are used to portray family members, while mannequins serve as the patient undergoing resuscitation. Simulation training could represent an effective learning approach in improving clinical practice in situations of patient-witnessed resuscitation, especially when used in combination with other learning strategies such as case studies, role-play or training videos. The use of these strategies, once established, can help equip staff with the skills needed to support other patients, whilst practising debriefing techniques following a resuscitation exercise can provide a support mechanism for the healthcare professionals themselves. Alternative learning approaches include traditional classroom, or online learning, although further research

is needed to compare different teaching and learning strategies and to determine the optimal approach.

### 11.3.3 Research

This study has provided a rich and detailed insight into the phenomenon of patient-witnessed resuscitation, offering a valid contribution to the conceptual understanding of witnessed resuscitation. However, the findings of this study are context specific and limited to the settings where data were collected. Further research is needed to expand the investigation of this phenomenon into broader contexts, and in particular into other clinical settings, such as emergency or paediatrics. The use of other research designs, both qualitative and quantitative, is also required.

The evidence base on the phenomenon of patient-witnessing resuscitation will benefit from the design and the implementation of further empirical studies looking at the measurement of the psychological impact of witnessing a resuscitation event using quantitative scales. This would allow the comparison of the results with previously conducted studies. Reliable and valid tools to measure psychological outcomes such as anxiety, depression and PTSD are already available for use in a hospital context. Some of these tools, such as the Impact of Event Scale (IES) or the Hospital Anxiety and Depression Scale (HADS), have been previously used in studies measuring the impact on family members of the experience of witnessing the resuscitation of a relative, or the impact of witnessing the death of a fellow patient in palliative care. Measuring quantitative psychological outcomes is recommended both in descriptive studies, in order to clearly define and measure the impact of the experience, and in intervention studies, in order to measure the effectiveness of the implementation of support strategies for witnessing patients.

Consideration should also be given to other qualitative approaches, in order to expand our understanding of the phenomenon of patient-witnessed resuscitation. A valid methodological choice is represented by a case study approach, which would allow investigation into the event of witnessed resuscitation through the dyad of healthcare professional-witnessing patient. Case study research could be used to investigate a specific resuscitation event, exploring how the reactions of both witnessing patients and healthcare professionals involved have an impact on the effectiveness of support mechanisms. In this case, whilst the WATCH study was unable to generate new evidence of a long-term impact, a longitudinal follow-up could be designed with a mixed-method approach to measure the effectiveness of support strategies using quantitative psychological scales and qualitative interviews.

## 11.4 Limitations

Several limitations are acknowledged throughout this research. The first is the limited existing body of evidence regarding patient-witnessed resuscitation. The paucity of evidence drove the direction of this investigation into an initial wide-spectrum explorative study in order to define the experience of patients who witness the resuscitation of other patients. This understanding is necessary to allow a future study to quantify the impact.

Another limitation is in regard to the qualitative nature of this research, which provides context-specific findings with limited generalisability to other settings or populations. This study included data from a small sample consisting of 16 patients and 20 healthcare professionals who voluntarily agreed to take part in individual and focus group interviews. The findings might not therefore be representative of an entire population nor do they represent the views of other individuals who chose not to participate.

However this is not the goal of qualitative research; in order to provide transferrable findings that are applicable to other settings or groups, detailed description of the context of this study was provided.

In order to maintain a value-neutral position throughout the research, adherence to the rule of phenomenological reduction by the bracketing of previous knowledge, prejudgements and beliefs, was applied. This was achieved by means of both critical self-reflection and also through discussion with senior members of the research team with the aim of identifying personal and professional biases. A rigorous audit trail was kept during all the stages of data analysis. However, the feasibility of suspending all prior theoretical knowledge developed through this research, or of putting aside personal beliefs regarding the phenomenon of patient-witnessed resuscitation, is open to question. It must be taken into account therefore, that undetected biases might have influenced the rigour and trustworthiness of this research.

Specific limitations are related to the data collection from patient participants. With regards to the characteristics of the sample, the majority of patient participants were representative of an older population, mostly aged over 65. From the findings of the study, age was considered a factor that could influence the perceived impact of the witnessing experience, with older patients being more likely to accept the reality of resuscitation. Hence, it could be argued that witnessing resuscitation could have a different perceived impact on younger patients, who might have different reactions and needs, which were not explored fully in the study.

Individual interviews conducted with witnessing patients in hospital had a limited duration, lasting from six to 37 minutes. Phenomenological interviews are usually characterised by extensive length, allowing the participant to provide a rich description

of the experience. In some of the interviews however, data saturation, demonstrated by repetition of the main topics, was reached early and no further exploration of the phenomenon was achieved. A few reasons can be hypothesised for this. One of them is the sensitive nature of the topic of resuscitation and how it is linked to people's fears; because of the associations with suffering and death it may have proved too difficult for patients to discuss. Another reason could be the location of the interview, especially if carried out at the bedside in a multi-bedded room. The lack of privacy might have inhibited patients from openly expressing and describing their experience, although no specific concern was expressed in this regard by participants. Although curtains around the bed unit were used to enhance privacy during the interview, curtains are not soundproof and parts of the conversation could have been overheard. An additional reason could be due to the limited experience of the researcher in conducting phenomenological interviews; alternative strategies necessary to prompt the participants to unfold their narratives may have been missed. Despite the limited duration of the interviews however, it was possible to develop three themes that supported the study findings.

A further limitation was that only two interviews were conducted as follow-up from the original interviews, one month after the witnessed resuscitation event. In the design stage, the challenge of not having a complete dataset for the follow-up interviews was anticipated. However, guaranteeing the right of withdrawal for the participants was essential and the follow-up interview was not considered a mandatory requirement. The choice of not participating in the follow-up interview showed participants' reluctance to revisit their experience of witnessing resuscitation. There are a few reasons that could explain this issue. The opportunity to express any concerns in one interview may have

been sufficient, and therefore not considered worthy of further exploration by witnessing patients. Alternatively, personal coping strategies, received support, and possibly the participation in the first interview, were effective in providing closure to the participants who preferred not to discuss it again. On the other hand, it could also have been that the experience had still not been effectively processed, and participants preferred to avoid further discussion.

Other limitations are specific to the data collection from healthcare professional participants. The combined use of individual and focus group interviews with healthcare professionals proved to be a successful method of data collection and helped to illuminate the understanding of the experiences of participants. The use of focus groups in particular helped to stimulate group discussion, enriching participants' descriptions of details and examples when shared among participants. However, the three focus groups were conducted with single-profession participants: one consisted of junior and senior doctors; one of registered nurses and healthcare assistants working in the same ward; and one of registered nurses who were members of the resuscitation department. Conducting a separate focus group with members of the resuscitation department was a deliberate choice; due to their leadership role, their presence could have inhibited open discussion among the other participants in regard to opinions of the resuscitation process and personal experiences. Pragmatic and organisational reasons helped inform the composition of groups for the other focus groups. Therefore, although interaction between different levels of expertise within the same profession was demonstrated, the interaction between different professions was not achieved, thus constituting a possible limitation of the study.

The final limitation is due to the fact that member checking of the data analysis and findings was not performed as stated in the research protocol in Chapter 6. After further review of Giorgi's method, seeking respondent validation through member checking was not considered a suitable approach to enhance credibility of the findings. From a theoretical point of view, Giorgi (2006) defended this choice stating that when participants describe their experiences to the researcher, they do so in their 'natural attitude', from the perspective of how they perceive things in everyday life. The researcher, on the other hand, conducts the data analysis holding a scientific and phenomenological perspective, interpreting the data through the phenomenological lens and looking for the meaning and the essence of participants' experiences. The description of participants' experiences as a result of the phenomenological analysis process will inevitably differ from the original raw data. Although participants should be able to identify their overall experience in the essence of the findings, they might not be able to validate the whole process of analysis and interpretation. Nonetheless, the rigour and trustworthiness of the study was maintained through other measures as described in section 5.8.

## 11.5 Final summary

This study is the first comprehensive investigation of patient-witnessed resuscitation in a hospital setting, providing a deep insight into the phenomenon of witnessing resuscitation from the experience of individuals who have been directly involved, namely witnessing patients and healthcare professionals. The contribution that this research makes is demonstrated in several ways. In the WATCH study, a rich exploration has been made of the perceived emotional impact on patients of witnessing resuscitation of a fellow patient; an exploration of the reaction of these patients has

helped to establish the necessity of providing subsequent emotional support and information about the witnessed event. Exploring the perceived impact that a resuscitation event has on healthcare professionals has revealed that such an event can be stressful for them too, and that their wellbeing is a necessary condition to being able to provide adequate care and support to witnessing patients. Furthermore, in exploring the current practice of managing patient-witnessed resuscitation and how support is provided to other patients, this research has identified barriers and limitations to best practice and made suggestions and recommendations for specific practical, educational and organisational strategies to be implemented. Finally, this study contributes to the understanding of the concept of witnessed resuscitation, providing empirical knowledge from a novel perspective, which is able to inform future investigation.

## 11.6 Final reflections

At the end of my doctoral journey, it is important to reflect on my professional and personal growth. The opportunity to undertake a research study from design to implementation was both a privilege and a challenge. The synthesis of the literature highlighted a paucity of strong and up to date evidence in relation to the topic of patient-witnessed resuscitation in hospital. This gap naturally called for an explorative inductive study. On the one hand, this gap allowed the freedom to choose from a multitude of design options, but on the other hand this gap resulted in a lack of guidance on the best approach. The stakeholder consultations have proven to be extremely beneficial in refining the direction of this research and in reaching the decision of designing a phenomenological study. The stakeholder consultations also represented an invaluable

learning experience of collaborative research, where the tools of research were applied to learn from individuals in the real world.

The design and implementation of the phenomenological study, at the core of the WATCH study, brought ethical and methodological challenges, but it also constituted the most rewarding and satisfying experience. The recruitment strategy for patient participants developed in accordance to the REC ethical requirements, proved not optimal in the reality of fieldwork. Involving different clinical and research roles (i.e. resuscitation team, ward managers, research nurse) in the recruitment chain resulted in missed information and a slow identification of eligible patients. The challenge consisted in adapting the recruitment strategy, whilst maintaining its ethical rigour. This resulted into a closer engagement of myself, as principal investigator, with the clinical teams in the hospital wards involved in the study and recruiting patients personally, from the initial approach to data collection. In doing so, the presence of a member of the clinical team of the patient was always guaranteed in accordance to ethical regulations. This change, although more effective for the recruitment purpose, proved to be more time consuming and resulted in having to renegotiate the right to approach the patients with the clinical team, following a CPR event. On reflection, establishing stronger communication between the hospital site and the university when conducting projects involving research students could facilitate a more effective recruitment of participants and optimise data collection.

Longitudinal data collection is addressed in this thesis as a methodological challenge. However, the limited follow-up interviews with patients represented a significant point of learning, reinforcing my belief that witnessing resuscitation has a higher perceived impact when patients are in hospital and they are most vulnerable. At this time,

supporting strategies will likely be most effective. The process of data analysis proved to be more time consuming and academically challenging than expected. Abstracting and interpreting data, whilst maintaining a descriptive phenomenological lens and bracketing personal views required focus, self-awareness and several trials. Nonetheless, it was a creative process that I particularly enjoyed.

Despite being often a solitary journey, some of the most significant learnings of this doctoral experience derived as a result of constructive feedback and academic debates. In this regard, discussions with peer research students, supervisory meetings and peer review of research outputs have been exceptionally stimulating in developing my academic reasoning. As part of my future career goals, I can foresee the application of the research toolkit acquired through this doctoral degree to advance best nursing practices and improve patient outcomes.

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# Appendices

## Appendix I: Electronic Supplement Material 1, PRISMA 2009 Checklist

| Section/topic | # | Checklist item | Reported on page # |
|---|---|---|---|
| **TITLE** | | | |
| Title | 1 | Identify the report as a systematic review, meta-analysis, or both. | 1 |
| **ABSTRACT** | | | |
| Structured summary | 2 | Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number. | 3-4 |
| **INTRODUCTION** | | | |
| Rationale | 3 | Describe the rationale for the review in the context of what is already known. | 5-6 |
| Objectives | 4 | Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS). | 5-6 |
| **METHODS** | | | |
| Protocol and registration | 5 | Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number. | n.a. |
| Eligibility criteria | 6 | Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale. | 6-7 |
| Information sources | 7 | Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched. | 7 |
| Search | 8 | Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated. | 7 |
| Study selection | 9 | State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis). | 7-8 |
| Data collection process | 10 | Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators. | 7-8 |
| Data items | 11 | List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions | 7-8 |

| | | | |
|---|---|---|---|
| | | and simplifications made. | |
| Risk of bias in individual studies | 12 | Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis. | 7-8 |
| Summary measures | 13 | State the principal summary measures (e.g., risk ratio, difference in means). | 8-9 |
| Synthesis of results | 14 | Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., $I^2$) for each meta-analysis. | |

# Appendix II: Electronic Supplement Material 2, Search strategy

## MEDLINE

| Line | Database | Search Term | View Results |
|---|---|---|---|
| 1 | Medline | patient*.ti,ab | 5002378 |
| 2 | Medline | inpatient*.ti,ab | 72130 |
| 3 | Medline | "in patient*".ti,ab | 1252971 |
| 4 | Medline | INPATIENTS/ | 14822 |
| 5 | Medline | 1 OR 2 OR 3 OR 4 | 5023896 |
| 6 | Medline | witness*.ti,ab | 17489 |
| 7 | Medline | cpr.ti,ab | 8579 |
| 8 | Medline | "cardiopulmonary resuscitation".ti,ab | 10145 |
| 9 | Medline | resuscitat*.ti,ab | 47715 |
| 10 | Medline | CARDIOPULMONARY RESUSCITATION/ OR RESUSCITATION/ | 35364 |
| 11 | Medline | 7 OR 8 OR 9 OR 10 | 62427 |
| 12 | Medline | 5 AND 6 AND 11 | 933 |
| 13 | Medline | famil*.ti,ab | 809308 |
| 14 | Medline | relative*.ti,ab | 1059913 |
| 15 | Medline | FAMILY/ | 65014 |
| 16 | Medline | 13 OR 14 OR 15 | 1826160 |
| 17 | Medline | 12 NOT 16 | 780 |
| 18 | Medline | "out of hospital".ti,ab | 6106 |
| 19 | Medline | 17 NOT 18 | 290 |

# Appendix III: Patient Interview Guide I

**The WATCH study: Witnessing an ATtempt of CPR in Hospital.**

A qualitative study on the impact and support of hospital patients witnessing resuscitation on other patients.

**Patients - Interview I: Guide and Questions**

Chief Investigator: Martina Fiori

Academic Supervisor: Professor Jos Latour

**Participant Demographics**

Participant Name: …… Initials: ……

Participant Id. Number: …….

Interview Setting: …… Interview Date: ……/……../……

Gender: …… Age: …… Highest education level: …….

Reason for hospital admission:

……

N days hospitalisation: ……..... N of CPR events witnessed: ……

**Interview Guide**

Before the interview

☐ Introduce yourself with name and position.

☐ Try to relax the participant for the interview.

☐ Make sure the interview is in a quiet place and privacy is guaranteed as much as possible.

☐ If a third person is present, ask the participant whether he/she would like the person to stay during the interview, otherwise kindly invite him/her to leave the room.

Introduction to the interview

☐ Thank the participant for participating.

☐ Explain the project in brief.

☐ Explain the aim of the interview.

☐ Explain the recording device that you use.

☐ Explain what will be done with the data.

- Anonymity and use of pseudonyms.
- The recording files will be stored in a locked cabinet for 10 years.
- The findings will be published.
  - Ask contact details to arrange second interview and to send further information or study findings.

☐ Explain the interview time (approximately 60 minutes).

☐ Explain the support mechanism in place to safeguard the participant.

☐ Explain participant's right to withdraw before, during and after the interview.

☐ Ask if all information is clear and if there are any questions before starting the interview.

☐ Review the consent form with the participant and collect it once signed.

Test the recording device (voice recorder or you mobile)

**Pre-Interview Check**

*Dear ……..,*

*you agreed to take part to this research study about patients' experience on witnessed CPR. Do you still feel comfortable to talk to me about your experience?*

**Interview Questions**

The interview style consists of one or few general questions, with prompt questions used to ask the participant to recall a little bit more about their experiences. For example, the interviewer may say "You just told me that you heard the family of the patient crying; can you tell me a bit more about how you felt?"

**Aim**: to explore the lived experience of patients who witnessed CPR of other patients.

**Main question:**

***I know a patient in this ward had CPR (resuscitation) in the last few days. Would you like to share your experience about it with me?***

**Prompt questions:**

- *Could you please tell me a little bit more about this from your point of view?*
- *How did you feel during the CPR (resuscitation)? And after? Did you share your feelings to anyone?*
- *How did you find talking about the experience?*

End of the interview

☐ Stop the recorder

☐ Re-check demographics to arrange the second interview and send further information and study findings

- Name:

  ……

- Email:

  ……

- Phone:

  ……

- Address:

  ……

  ……

  ……

☐ Question for the participant: *May I contact you in case I have questions regarding the interview? How would you prefer to be contacted?*

……

☐ *In case you would like to contact the research team, you can always contact myself or prof Latour; our contact details are included in the information sheet.*

☐ Thank the participant for participating.

NOTES

# Appendix IV: Patient Interview Guide II

**The WATCH study: Witnessing an ATtempt of CPR in Hospital.**

A qualitative study on the impact and support of hospital patients witnessing resuscitation on other patients.

**Patients - Interview II: Guide and Questions**

Chief Investigator: Martina Fiori

Academic Supervisor: Professor Jos Latour

**Participant Demographics**

Participant Name: …… Initials: ……

Participant Id. Number: …….

Interview Setting: …… Interview Date: ……/……../……

Gender: …… Age: ……. Highest education level: …….

Reason for hospital admission:

……

N days hospitalisation: ……..... N of CPR events witnessed: ……

**Interview Guide**

Before the interview

☐ Introduce yourself with name and position.

☐ Try to relax the participant for the interview.

☐ Make sure the interview is in a quiet place and privacy is guaranteed as much as possible.

☐ If a third person is present, ask the participant whether he/she would like the person to stay during the interview, otherwise kindly invite him/her to leave the room.

Introduction to the interview

☐ Thank the participant for participating.

☐ Explain the project in brief.

☐ Explain the aim of the interview.

☐ Explain the recording device that you use.

☐ Explain what will be done with the data.

- Anonymity and use of pseudonyms.
- The recording files will be stored in a locked cabinet for 10 years.
- The findings will be published.
  - Ask contact details to send further information or study findings.

☐ Explain the interview time (approximately 60 minutes).

☐ Explain the support mechanism in place to safeguard the participant.

☐ Explain participant's right to withdraw before, during and after the interview.

☐ Ask if all information is clear and if there are any questions before starting the interview.

☐ Review the consent form with the participant and collect it once signed.

Test the recording device (voice recorder or you mobile)

**Pre-Interview Check**

*Dear ……..,*

*you agreed to take part to this research study about patients' experience on witnessed CPR. Do you still feel comfortable to talk to me about your experience?*

**Interview Questions**

The interview style consists of one or few general questions, with prompt questions used to ask the participant to recall a little bit more about their experiences. For example, the interviewer may say "You just told me that you heard the family of the patient crying; can you tell me a bit more about how you felt?"

**Aim**: to explore the lived experience of patients who witnessed CPR of other patients.

**Main question:**

***You witnessed a patient having CPR (resuscitation) while you were admitted into hospital, about one month ago. Would you like to tell me how you feel now about that experience?***

**Prompt questions:**

- *Could you please explain me a little bit more about this?*
- *Have you shared your feelings about your experience with somebody? How was it?*

End of the interview

☐ Stop the recorder

☐ Re-check demographics to send further information and study findings

- Name:

  ……

- Email:

  ……

- Phone:

  ……

- Address:

  ……

  ……

  ……

☐ Question for the participant: *May I contact you in case I have questions regarding the interview? How would you prefer to be contacted?*

……

☐ *In case you would like to contact the research team, you can always contact myself or Prof Latour; our contact details are included in the information sheet.*

☐ Thank the participant for participating.

NOTES

# Appendix V: HCP Interview Guide

**The WATCH study: Witnessing an ATtempt of CPR in Hospital.**

A qualitative study on the impact and support of hospital patients witnessing resuscitation on other patients.

**Healthcare Professionals – Individual Interview Guide and Questions**

Chief Investigator: Martina Fiori

Academic Supervisor: Professor Jos Latour

**Participant Demographics**

Participant Name: …… Initials: ……

Participant Id. Number: ……

Interview Setting: …… Interview Date: ……/……../……

Gender: …… Age: …… Profession: ……..

N years of work in that profession: …….. N of CPR events attended: …….

**Interview Guide**

Before the interview

☐ Introduce yourself with name and position.

☐ Try to relax the participant for the interview.

☐ Make sure the interview is in a quiet place and privacy is guaranteed as much as possible.

Introduction to the interview

☐ Thank the participant for participating.

☐ Explain the project in brief.

☐ Explain the aim of the interview.

☐ Explain the recording device that you use.

☐ Explain what will be done with the data.

- Anonymity and use of pseudonyms.
- The recording files will be stored in a locked cabinet for 10 years.
- The findings will be published.
  - Ask contact details to send further information or study findings.

☐ Explain the interview time (approximately 60 minutes).

☐ Explain participant's right to withdraw before, during and after the interview.

☐ Ask if all information is clear and if there are any questions before starting the interview.

☐ Review the consent form with the participant and collect it once signed.

Test the recording device (voice recorder or you mobile)

**Interview Questions**

The interview style consists of one or few general questions, with prompt questions used to ask the participant to recall a little bit more about their experiences. For example, the interviewer may say "You just told me that you heard the patient in the next bed crying; can you tell me a bit more about what you did and how you felt?"

**Aim**: to explore healthcare professionals' experiences and attitudes on supporting patients who witnessed CPR on other patients.

**Main questions:**

***I would like to know a little bit about your past experiences of CPR events that you attended in your ward. Would you like to share your experience with me?***

- Experiences
  - *Thinking about the last events, could you describe what happened during the CPR in your ward?*
  - *Have you had any experience of a patient witnessing CPR on another patient?*
- General attitudes
  - *What do you normally do when a patient in your ward witnesses CPR on a patient nearby?*
  - *How do you approach the other patients on the ward when they witness CPR?*

- Presence of policies
  - *What principles do you follow when you approach a patient who witnessed CPR on a fellow patient? Is there any policy in your ward to support patients exposed to CPR of another patient?*
  - *What do you think of having guidelines to provide support to patients witnessing CPR?*
- Needs, benefits and risks
  - *How do you think you could help patients witnessing CPR to cope with their experience?*
  - *What other kind of support do you think these patients may need?*
  - *What other skills would be helpful for healthcare professional to support patients who witness CPR?*
  - *In your opinion, what are the potential benefits and risks for patients receiving support after they witness CPR?*
  - *In your opinion, what are the potential benefits and risks for healthcare professionals of providing support to patients after witnessing CPR?*

**Prompt questions:**

- *Could you please explain me a bit more about this?*
- *What thoughts did you have about it?*
- *How did/do you feel about it?*

End of the interview

☐ Stop the recorder

☐ Re-check demographics to arrange the second interview and send further information and study findings

  - Name:

    ……

  - Email:

    ……

  - Phone:

    ……

  - Address:

    ……

……

……

☐ Question for the participant: *May I contact you in case I have questions regarding the interview? How would you prefer to be contacted?*

……

☐ *In case you would like to contact the research team, you can always contact myself or Prof Latour; our contact details are included in the information sheet.*

☐ Thank the participant for participating.

NOTES

# Appendix VI: HCP Focus Group Guide

**The WATCH study: Witnessing an ATtempt of CPR in Hospital.**

A qualitative study on the impact and support of hospital patients witnessing resuscitation on other patients.

**Healthcare Professionals – Focus Group Interview Guide and Questions**

Chief Investigator: Martina Fiori

Academic Supervisor: Professor Jos Latour

**Participant Demographics**

Participant Name: …… Initials: ……

Participant Id. Number: ……

Interview Setting: …… Interview Date: ……/……../……

Gender: …… Age: …… Profession: ……..

N years of work in that profession: …….... N of CPR events attended: ……

**Focus Group Interview Guide**

Before the focus group

☐ Introduce yourself with name and position.

☐ Confirm participants name, position, profession and area of work.

☐ Try to relax the participants for the focus group.

☐ Make sure the focus group is in a quiet place.

Introduction to the focus group

☐ Thank the participants for participating.

☐ Explain the project in brief.

☐ Explain the aim of the focus group.

☐ Explain the recording device that you use.

☐ Explain what will be done with the data.

- Anonymity and use of pseudonyms.
- The recording files will be stored in a locked cabinet for 10 years.
  - The findings will be published with direct quotations, however these will be anonymised, ensuring your confidentiality.
  - Ask contact details to send further information or study findings.

☐ Explain the focus group time (approximately 60 minutes).

☐ Explain participants' right to withdraw from the study.

☐ Ask if all information is clear and if there are any questions before starting the focus group.

☐ Review the consent form with the participant and collect it once signed.

Test the recording device (voice recorder or you mobile)

**Interview Questions**

This sections outlines the focus group interview guide. The guide consists of one general question to open the discussion and four main topics, each with few main questions. Some prompt questions are also provided in case the group discussion needs assistance uncovering key points. Questions may change slightly depending on the development of the discussion with participants.

**Aim**: to explore healthcare professionals' experiences and attitudes on supporting patients who witnessed CPR on other patients.

***I would like to know a little bit about your past experiences of CPR events that you attended in your ward. Would you like to share your experience with me?***

**Main questions:**

- Experiences
  - *Thinking about the last events, could you describe what happened during the CPR in your ward?*
  - *Have you had any experience of a patient witnessing CPR on another patient?*
- General attitudes

- *What do you normally do when a patient in your ward witnesses CPR on a patient nearby?*
- *How do you approach the other patients on the ward when they witness CPR?*

- Presence of policies
  - *What principles do you follow when you approach a patient who witnessed CPR on a fellow patient? Is there any policy in your ward to support patients exposed to CPR of another patient?*
  - *What do you think of having guidelines to provide support to patients witnessing CPR?*
- Needs, benefits and risks
  - *How do you think you could help patients witnessing CPR to cope with their experience?*
  - *What other kind of support do you think these patients may need?*
  - *What other skills would be helpful for healthcare professional to support patients who witness CPR?*
  - *In your opinion, what are the potential benefits and risks for patients receiving support after they witness CPR?*
  - *In your opinion, what are the potential benefits and risks for healthcare professionals of providing support to patients after witnessing CPR?*

**Prompt questions:**

- *Could you please explain me a bit more about this?*
- *What thoughts did you have about it?*
- *How did/do you feel about it?*

End of the interview

☐ Stop the recorder

☐ Re-check demographics with participants.

☐ *In case you would like to contact the research team, you can always contact myself or Prof Latour; our contact details are included in the information sheet.*

☐ Thank the participants for participating.

NOTES

# Appendix VII: Coding Framework Extract

The following table illustrates the process of data analysis following Giorgi's phenomenological method, as described in Chapter 6 (Giorgi, 1985; Giorgi, 1997; Giorgi & Giorgi, 2003). This extract of the coding framework serves as a working example to illustrate the development of one main theme from the patient participants' interviews.

Theme 1: Feeling the impact and coping with witnessing CPR

| Subtheme 1: Feeling the emotional impact | | |
|---|---|---|
| **Meaning units (Raw Data)** | **Phenomenological Transformation** | **Nvivo Codes** |
| And I'd become quite good friend with this lady opposite. And I said: "What happened?" and they said "She died". (…)I just, it is just hard to imagine. (...) And it just overwhelmed me. But it keeps washing over me today. And I know I got to get over it but, I suppose when you're in hospital, you are not even at your strongest, are you? (...)I just felt so sad, for her children, her family. Oh goodness me, this is so horrible. (Pt15) | Pt15 describes her reaction to finding out from a fellow patient that the patient who received CPR has died. Pt15 expresses her disbelief in hearing the news.<br>Pt15 feels overwhelmed, experiencing intruding thoughts still in the days following the event. Pt15 reflects on the vulnerable state of patients when they are in hospital and on the difficulty in staying in control of their own emotions.<br>Pt15 expresses sadness and empathy for the patient's family and children. | Feeling distressed |
| Well, I mean first of all you see all what happened and she [nurse] presses the button, you just feel helpless. (…) It is a normal thing, you want to help him, it hurts, for how strong the man is, we are all in pain, it's very emotional, but luckily things turned out ok. (…) I just wanted to do this thing, really, you want to help really. (Pt2) | Pt2 describes the action of the nurse activating the emergency alarm. In witnessing this, Pt2 feels unable to help the patient undergoing cardiac arrest. He describes feeling helpless as a painful emotion, and he feels connected with his fellow patient. Pt2 is relieved that CPR is successful. He ultimately expresses an instinctive drive of wanting to help his fellow patient. | Feeling helpless |
| No, situations like that it's just...never bothered me. Like emergencies, it has never...I've always stayed calm, I don't panic for things like that. (Pt3) | Pt3 describes not feeling affected by witnessing CPR of a fellow patient, or by similar situations.<br>Pt3 explains that she is able to keep control over her emotional responses. | Feeling unaffected |

| | | |
|---|---|---|
| I am an ex-nurse. So for me, unfortunately I was opposite the lady concerned. And I could see what it was going on, because the glass was there. So, I could see all that was happening. (...) but that didn't bother me because I dealt with death so many times, it does affect you, but didn't affect me to that extent. (Pt8) | Pt8 has a past professional career in nursing. She witnessed most of the resuscitative efforts carried out on her fellow patient.<br>Pt8 explained that her nursing background and her previous exposure to emergencies and critical events in her professional life made her resilient from feeling particularly affected by the witnessing experience. | Previous exposure (influencing factor) |
| During that time you fleetingly start to get to know them (…) and the three of us seem to get on brilliantly and we had a laugh and then it became like a family. Yeah, even though it was for a couple days and then when she went the new lady that's come in, she told us her own story about herself and her background (…) But I did have a few tears because we've been chatting. She was a lovely lady. (Pt16) | Pt16 describes how during hospital admission she has social contact with other fellow patients. She explains that a close bond is established among them, although over a short period of time, reinforced by sharing their personal story. Because of their bond, when the fellow patients suffers a cardiac arrest, Pt16 feels particularly sad. | Patients' interactions (influencing factor) |
| I mean, being 74 I have seen quite a lot. So it's probably not as much as the shock as a young person and obviously I'm aware of CPR and things like that, (…) but it doesn't happen to everybody. Younger people are very sensitive to that kind of things, than older people are, generally. The word is hysteria, that might be the wrong word, but that's the word I can think of. I think younger people can see themselves [there]… I take that from experience." (Pt14) | Pt14 has had previous experience of witnessing critical events, because of her age. She explains that her experience and her awareness of fatalities influenced her reaction when witnessing CPR on a fellow patient.<br>She believes that in general young people might be more likely to experience panic and hysterical reactions from witnessing a CPR event, due to having had less exposure to stressful events and they might reflect the event on themselves. | Age (influencing factor) |
| Subtheme 2: Adopting coping strategies | | |
| Meaning units (Raw Data) | Phenomenological Transformation | Nvivo Codes |
| Just sort of subtly, lately, just thinking if there was anything we could have seen during the course of that evening, and I don't think there was. At the end of the day, you know that poor man had a cardiac arrest, that's what he had, that's what he has suffered from and that happened. (Pt4) | Going through the witnessed CPR experience retrospectively, Pt4 reflects on whether he and the other patients could have identified early signs that could have prevented their fellow patient from suffering a cardiac arrest. Pt4 reassures himself that nothing else could have been done to save the patient, as the cardiac arrest was an unpredicted fatality. | Self-reassurance |

| | | |
|---|---|---|
| I think, after all, it's probably best for her, well she is in a best place, because she was in such, such pain, so (…) These things just happen sometimes! (Pt6) | Pt6 expresses her acceptance of death as part of life by reflecting on the fact that her fellow patient was in such a painful and poorly health state that death would be welcomed as a relief from suffering. | Accepting death |
| But I'm a Christian and my first thoughts as she was leaving us was praying for her to be in her body still. And for that that gave me strength (…) with the help of the staff and the Lord up there, not everyone's a Christian so I don't want to push it, but that's part of who I am… The Lord has not made route for her yet! (Pt16) | Pt16 describes how turning into religious faith helped her to go through the experience of witnessing CPR of a fellow patient she had become close to. Pt16 felt comforted whilst praying for her fellow patient. Pt16 is ultimately relieved in knowing that her fellow patient survived the cardiac arrest. | Religious faith |
| So I went over to the bed in the corner. There's [other patient's name] there and because I didn't want to see it and to give them room as well and then because there was an elderly lady next to [CPR patient]. And we just sat on the bed and then the room just filled with everybody working and so we were obviously chatting about it. But we're trying to distract ourselves and I was getting a bit worried about the lady next to her, the elderly lady. (…) She told me she'd already lost a daughter. To be honest, I was more concerned about her, to be honest. (Pt14) | Pt14 describes how she shared the experience of witnessing CPR with other fellow patients in the bay. Pt14 gathered with another fellow patient in one of the beds of the bay, and they supported each other by distracting themselves from the event. During CPR, Pt14 was particularly concerned about the perceived impact that witnessing CPR had on another patient in the room, who previously experienced the loss of a relative. | Supporting each other |
| The wife and lot of the family came to see him thinking he was alright and at sort of evening meal time they went away. We all wished each other bye-bye. And of course the next time I saw them they were being rushed in here. So the next day when my wife came here, I gave her a big hug and told her I love her because I don't say that enough [patient breaks in tears], but that was it. That was it. (Pt12) | Pt12 recalls the visit of his fellow patient's relatives the evening before the fellow patient suffered cardiac arrest and received CPR. Pt12 then compares this episode to the visit of the same relatives on the following day, after the fellow patient has died. As a reaction, Pt12 felt the urge to reconnect with his loved ones, by showing affection to his wife, both verbally and physically. | Reconnecting with loved ones |
| Ehm…I haven't ever actually had a conversation with this lady. So I don't think it's seriously affected me because I tried to separate myself from it. (Pt15) | Pt15 describes her lack of social involvement with the fellow patient that underwent CPR, which meant she did not perceive being impacted by witnessing the CPR event. She describes her effort to detach from the witnessed CPR event. | Detachment |

# Appendix VIII: REC Favourable Opinion

Health Research Authority

**South West - Cornwall & Plymouth Research Ethics Committee**
Level 3
Block B
Whitefriars
Lewins Mead
Bristol
BS1 2NT

Telephone: 0207 104 8241

**Please note: This is the favourable opinion of the REC only and does not allow you to start your study at NHS sites in England until you receive HRA Approval**

02 May 2018

Miss Martina Fiori
PhD student in Applied Health Studies, University of Plymouth
University of Plymouth
School of Nursing and Midwifery, University of Plymouth
Room 104, 8 Kirkby Place, Drake Circus
Plymouth
PL4 6DT

Dear Miss Fiori

| | |
|---|---|
| **Study title:** | **The WATCH study: Witnessing an Attempt of CPR in Hospital.A qualitative study on the impact and support of hospital patients witnessing resuscitation on other patients.** |
| **REC reference:** | **18/SW/0069** |
| **Protocol number:** | **FHHS-218744-MF-202** |
| **IRAS project ID:** | **218744** |

Thank you for your letter of 24 April 2018, responding to the Committee's request for further information on the above research and submitting revised documentation.

The further information has been considered on behalf of the Committee by the Chair.

We plan to publish your research summary wording for the above study on the HRA website, together with your contact details. Publication will be no earlier than three months from the date of this opinion letter. Should you wish to provide a substitute contact point, require further

information, or wish to make a request to postpone publication, please contact hra.studyregistration@nhs.net outlining the reasons for your request.

**Confirmation of ethical opinion**

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised, subject to the conditions specified below.

**Conditions of the favourable opinion**

The REC favourable opinion is subject to the following conditions being met prior to the start of the study.

Management permission must be obtained from each host organisation prior to the start of the study at the site concerned.

*Management permission should be sought from all NHS organisations involved in the study in accordance with NHS research governance arrangements. Each NHS organisation must confirm through the signing of agreements and/or other documents that it has given permission for the research to proceed (except where explicitly specified otherwise).*

*Guidance on applying for HRA and HCRW Approval (England and Wales)/ NHS permission for research is available in the Integrated Research Application System, at www.hra.nhs.uk or at http://www.rdforum.nhs.uk.*

*Where a NHS organisation's role in the study is limited to identifying and referring potential participants to research sites ("participant identification centre"), guidance should be sought from the R&D office on the information it requires to give permission for this activity.*

*For non-NHS sites, site management permission should be obtained in accordance with the procedures of the relevant host organisation.*

*Sponsors are not required to notify the Committee of management permissions from host organisations*

Registration of Clinical Trials

All clinical trials (defined as the first four categories on the IRAS filter page) must be registered on a publically accessible database within 6 weeks of recruitment of the first participant (for medical device studies, within the timeline determined by the current registration and publication trees).

There is no requirement to separately notify the REC but you should do so at the earliest opportunity e.g. when submitting an amendment. We will audit the registration details as part of the annual progress reporting process.

To ensure transparency in research, we strongly recommend that all research is registered but for non-clinical trials this is not currently mandatory.

If a sponsor wishes to request a deferral for study registration within the required timeframe, they should contact hra.studyregistration@nhs.net. The expectation is that all clinical trials will be registered, however, in exceptional circumstances non registration may be permissible with prior agreement from the HRA. Guidance on where to register is provided on the HRA website.

**It is the responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).**

**Ethical review of research sites**

NHS sites

The favourable opinion applies to all NHS sites taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see "Conditions of the favourable opinion" below).

Non-NHS sites

**Approved documents**

The final list of documents reviewed and approved by the Committee is as follows:

| *Document* | *Version* | *Date* |
|---|---|---|
| Copies of advertisement materials for research participants [Patients-Recruitment Flyer] | 1.0 | 30 January 2018 |
| Copies of advertisement materials for research participants [Staff Bulletin Advertisement] | 1.0 | 16 February 2018 |
| Covering letter on headed paper [Covering Letter] | 1.0 | 30 January 2018 |
| Covering letter on headed paper [20180420_REC18SW0069_Covering Letter] | | 20 April 2018 |
| Evidence of Sponsor insurance or indemnity (non NHS Sponsors only) [Evidence of Sponsor Insurance] | | 04 July 2017 |
| GP/consultant information sheets or letters [GP Notification Letter-Recruitment] | 1.0 | 30 January 2018 |
| GP/consultant information sheets or letters [GP Notification Letter-Support] | 1.0 | 30 January 2018 |
| Interview schedules or topic guides for participants [218744_WATCH_11_Patients_I Interview Guide v.2] | 2.0 | 20 April 2018 |
| Interview schedules or topic guides for participants [12_Patients_II Interview Guide v.2.pdf] | 2.0 | 20 April 2018 |
| Interview schedules or topic guides for participants [218744_WATCH_14_HCP_Interview Guide v.2] | 2.0 | 20 April 2018 |
| Interview schedules or topic guides for participants [218744_WATCH_15_HCP_Focus Group Guide v.2] | 2.0 | 20 April 2018 |
| IRAS Application Form [IRAS_Form_15022018] | | 15 February 2018 |
| IRAS Checklist XML [Checklist_19022018] | | 19 February 2018 |
| Letters of invitation to participant [Patients-Invitation Letter] | 1.0 | 30 January 2018 |
| Letters of invitation to participant [Healthcare Professionals-Invitation Letter] | 1.0 | 30 January 2018 |
| Letters of invitation to participant [218744_WATCH_3_Patients_Invitation letter v.2] | 2.0 | 20 April 2018 |

| | | |
|---|---|---|
| Letters of invitation to participant [218744_WATCH_7_Ward Managers_Gatekeeper Letter v.2] | 2.0 | 20 April 2018 |
| Other [218744_WATCH_1_Patients_Recruitment Flowchart v.2] | 2.0 | 20 April 2018 |
| Participant consent form [Patients-Consent Form] | 1.0 | 30 January 2018 |
| Participant consent form [Healthcare Professionals-Consent Form] | 1.0 | 30 January 2018 |
| Participant information sheet (PIS) [Healthcare Professionals-PIS] | 1.0 | 30 January 2018 |
| Participant information sheet (PIS) [218744_WATCH_4_Patients_PIS v.2] | 2.0 | 20 April 2018 |
| Participant information sheet (PIS) [218744_WATCH_9_HCP_PIS v.2] | 2.0 | 20 April 2018 |
| Research protocol or project proposal [218744_WATCH_Study Protocol v.2] | 2.0 | 20 April 2018 |
| Summary CV for Chief Investigator (CI) [CV Martina Fiori] | | 29 January 2018 |
| Summary CV for student [CV Martina Fiori] | | 29 January 2018 |
| Summary CV for supervisor (student research) [CV Ruth Endacott] | | |
| Summary CV for supervisor (student research) [CV Jos Latour] | | |

**Statement of compliance**

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

**After ethical review**

Reporting requirements

The attached document *"After ethical review – guidance for researchers"* gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Adding new sites and investigators
- Notification of serious breaches of the protocol
- Progress and safety reports
- Notifying the end of the study

The HRA website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

**User Feedback**

The Health Research Authority is continually striving to provide a high quality service to all applicants and sponsors. You are invited to give your view of the service you have received and the application procedure. If you wish to make your views known please use the feedback form available on the HRA website:
http://www.hra.nhs.uk/about-the-hra/governance/quality-assurance/

**HRA Training**

We are pleased to welcome researchers and R&D staff at our training days – see details at http://www.hra.nhs.uk/hra-training/

| 18/SW/0069 | Please quote this number on all correspondence |
|---|---|

With the Committee's best wishes for the success of this project.

Yours sincerely

PP
**Canon Ian Ainsworth-Smith**
**Chair**

Email:nrescommittee.southwest-cornwall-plymouth@nhs.net

*Copy to:* *Prof Jonathan Marsden*
[redacted]

A Research Ethics Committee established by the Health Research Authority

# Appendix IX: HRA Approval Letter

Ymchwil Iechyd a Gofal Cymru
Health and Care Research Wales

NHS
Health Research Authority

Miss Martina Fiori
PhD student in Applied Health Studies, University of Plymouth
University of Plymouth
School of Nursing and Midwifery, University of Plymouth
Room 104, 8 Kirkby Place, Drake Circus
Plymouth
PL4 6DT

Email: hra.approval@nhs.net
Research-permissions@wales.nhs.uk

02 May 2018

Dear Miss Fiori

**HRA and Health and Care Research Wales (HCRW) Approval Letter**

| | |
|---|---|
| **Study title:** | **The WATCH study: Witnessing an Attempt of CPR in Hospital.A qualitative study on the impact and support of hospital patients witnessing resuscitation on other patients.** |
| **IRAS project ID:** | **218744** |
| **Protocol number:** | **FHHS-218744-MF-202** |
| **REC reference:** | **18/SW/0069** |
| **Sponsor** | **Univeristy of Plymouth** |

I am pleased to confirm that **HRA and Health and Care Research Wales (HCRW) Approval** has been given for the above referenced study, on the basis described in the application form, protocol, supporting documentation and any clarifications received. You should not expect to receive anything further relating to this application.

**How should I continue to work with participating NHS organisations in England and Wales?**
You should now provide a copy of this letter to all participating NHS organisations in England and Wales*, as well as any documentation that has been updated as a result of the assessment.

*'In flight studies' which have already started an SSI (Site Specific Information) application for NHS organisations in Wales will continue to use this route. Until 10 June 2018, applications on either documentation will be accepted in Wales, but after this date all local information packs should be shared with NHS organisations in Wales using the Statement of Activities/Schedule of Events for non-commercial studies and template agreement/ Industry costing template for commercial studies.

Following the arranging of capacity and capability, participating NHS organisations should **formally confirm** their capacity and capability to undertake the study. How this will be confirmed is detailed in the "*summary of assessment*" section towards the end of this letter.

You should provide, if you have not already done so, detailed instructions to each organisation as to how you will notify them that research activities may commence at site following their confirmation of capacity and capability (e.g. provision by you of a 'green light' email, formal notification following a site initiation visit, activities may commence immediately following confirmation by participating organisation, etc.).

It is important that you involve both the research management function (e.g. R&D office) supporting each organisation and the local research team (where there is one) in setting up your study. Contact details of the research management function for each organisation can be accessed here.

**How should I work with participating NHS/HSC organisations in Northern Ireland and Scotland?**
HRA and HCRW Approval does not apply to NHS/HSC organisations within the devolved administrations of Northern Ireland and Scotland.

If you indicated in your IRAS form that you do have participating organisations in either of these devolved administrations, the final document set and the study wide governance report (including this letter) has been sent to the coordinating centre of each participating nation. You should work with the relevant national coordinating functions to ensure any nation specific checks are complete, and with each site so that they are able to give management permission for the study to begin.

Please see IRAS Help for information on working with NHS/HSC organisations in Northern Ireland and Scotland.

**How should I work with participating non-NHS organisations?**
HRA and HCRW Approval does not apply to non-NHS organisations. You should work with your non-NHS organisations to obtain local agreement in accordance with their procedures.

**What are my notification responsibilities during the study?**
The document "*After Ethical Review – guidance for sponsors and investigators*", issued with your REC favourable opinion, gives detailed guidance on reporting expectations for studies, including:

- Registration of research
- Notifying amendments
- Notifying the end of the study

The HRA website also provides guidance on these topics, and is updated in the light of changes in reporting expectations or procedures.

**I am a participating NHS organisation in England or Wales. What should I do once I receive this letter?**
You should work with the applicant and sponsor to complete any outstanding arrangements so you are able to confirm capacity and capability in line with the information provided in this letter.

The sponsor contact for this application is as follows:

Name: Martina Fiori
Tel: 01752 586596
Email: martina.fiori@plymouth.ac.uk

**Who should I contact for further information?**
Please do not hesitate to contact me for assistance with this application. My contact details are below.

Your IRAS project ID is **218744**. Please quote this on all correspondence.

Yours sincerely

Natalie Wilson,
Assessor

Email: hra.approval@nhs.net

*Copy to:* *Prof Jos M Latour, University of Plymouth, Sponsor contact*
[redacted] *Lead NHS R&D contact*

**List of Documents**

The final document set assessed and approved by HRA and HCRW Approval is listed below.

| *Document* | *Version* | *Date* |
|---|---|---|
| Copies of advertisement materials for research participants [Patients-Recruitment Flyer] | 1.0 | 30 January 2018 |
| Copies of advertisement materials for research participants [Staff Bulletin Advertisement] | 1.0 | 16 February 2018 |
| Covering letter on headed paper [Covering Letter] | 1.0 | 30 January 2018 |
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| Evidence of Sponsor insurance or indemnity (non NHS Sponsors only) | | 04 July 2017 |
| GP/consultant information sheets or letters [GP Notification Letter-Recruitment] | 1.0 | 30 January 2018 |
| GP/consultant information sheets or letters [GP Notification Letter-Support] | 1.0 | 30 January 2018 |
| HRA Schedule of Events | 1 | 27 March 2018 |
| HRA Statement of Activities | 1 | 27 March 2018 |
| Interview schedules or topic guides for participants [218744_WATCH_11_Patients_I Interview Guide v.2] | 2.0 | 20 April 2018 |
| Interview schedules or topic guides for participants [12_Patients_II Interview Guide v.2.pdf] | 2.0 | 20 April 2018 |
| Interview schedules or topic guides for participants [218744_WATCH_14_HCP_Interview Guide v.2] | 2.0 | 20 April 2018 |
| Interview schedules or topic guides for participants [218744_WATCH_15_HCP_Focus Group Guide v.2] | 2.0 | 20 April 2018 |
| IRAS Application Form [IRAS_Form_15022018] | | 15 February 2018 |
| IRAS Checklist XML [Checklist_19022018] | | 19 February 2018 |
| Letter from funder [Letter of Funding-Resuscitation Council] | | 18 December 2017 |
| Letters of invitation to participant [218744_WATCH_7_Ward Managers_Gatekeeper Letter v.2] | 2.0 | 20 April 2018 |
| Letters of invitation to participant [Patients-Invitation Letter] | 1.0 | 30 January 2018 |
| Letters of invitation to participant [Healthcare Professionals-Invitation Letter] | 1.0 | 30 January 2018 |
| Letters of invitation to participant [218744_WATCH_3_Patients_Invitation letter v.2] | 2.0 | 20 April 2018 |
| Other [218744_WATCH_1_Patients_Recruitment Flowchart v.2] | 2.0 | 20 April 2018 |
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| Participant information sheet (PIS) [218744_WATCH_9_HCP_PIS v.2] | 2.0 | 20 April 2018 |
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| Summary CV for Chief Investigator (CI) [CV Martina Fiori] | | 29 January 2018 |

| | | |
|---|---|---|
| Summary CV for student [CV Martina Fiori] | | 29 January 2018 |
| Summary CV for supervisor (student research) [CV Ruth Endacott] | | |
| Summary CV for supervisor (student research) [CV Jos Latour] | | |

### Summary of assessment

The following information provides assurance to you, the sponsor and the NHS in England and Wales that the study, as assessed for HRA and HCRW Approval, is compliant with relevant standards. It also provides information and clarification, where appropriate, to participating NHS organisations in England and Wales to assist in assessing, arranging and confirming capacity and capability.

### Assessment criteria

| Section | Assessment Criteria | Compliant with Standards | Comments |
|---|---|---|---|
| 1.1 | IRAS application completed correctly | Yes | No comments |
| | | | |
| 2.1 | Participant information/consent documents and consent process | Yes | No comments |
| | | | |
| 3.1 | Protocol assessment | Yes | No comments |
| | | | |
| 4.1 | Allocation of responsibilities and rights are agreed and documented | Yes | This is a non-commercial, single site study taking place in the NHS.<br><br>A Statement of Activities has been submitted. This will act as the agreement between sponsor and participating NHS organisations. No other agreements are expected. |
| 4.2 | Insurance/indemnity arrangements assessed | Yes | No comments |
| 4.3 | Financial arrangements assessed | Yes | Sponsor is not providing funding to participating NHS organisations. |
| | | | |
| 5.1 | Compliance with the Data Protection Act and data security issues assessed | Yes | No comments |
| 5.2 | CTIMPS – Arrangements for compliance with the Clinical Trials Regulations assessed | Not Applicable | |
| 5.3 | Compliance with any applicable laws or regulations | Yes | No comments |
| | | | |

| Section | Assessment Criteria | Compliant with Standards | Comments |
|---|---|---|---|
| 6.1 | NHS Research Ethics Committee favourable opinion received for applicable studies | Yes | No comments |
| 6.2 | CTIMPS – Clinical Trials Authorisation (CTA) letter received | Not Applicable | |
| 6.3 | Devices – MHRA notice of no objection received | Not Applicable | |
| 6.4 | Other regulatory approvals and authorisations received | Not Applicable | |

### Participating NHS Organisations in England and Wales

| *This provides detail on the types of participating NHS organisations in the study and a statement as to whether the activities at all organisations are the same or different.* |
|---|
| This is a non-commercial, single site study. There is one site-type involved in the research. Activities and procedures as detailed in the protocol will take place at participating NHS organisations.<br><br>The Chief Investigator or sponsor should share relevant study documents with participating NHS organisations in England and Wales in order to put arrangements in place to deliver the study. The documents should be sent to both the local study team, where applicable, and the office providing the research management function at the participating organisation. Where applicable, the local LCRN contact should also be copied into this correspondence.<br><br>If chief investigators, sponsors or principal investigators are asked to complete site level forms for participating NHS organisations in England and Wales which are not provided in IRAS, the HRA or HCRW websites, the chief investigator, sponsor or principal investigator should notify the HRA immediately at hra.approval@nhs.net or HCRW at Research-permissions@wales.nhs.uk. We will work with these organisations to achieve a consistent approach to information provision. |

### Principal Investigator Suitability

| *This confirms whether the sponsor position on whether a PI, LC or neither should be in place is correct for each type of participating NHS organisation in England and Wales, and the minimum expectations for education, training and experience that PIs should meet (where applicable).* |
|---|
| A Principal Investigator (PI) is expected at participating NHS organisations. Sponsor does not expect research staff to undertake any specific or additional training.<br><br>GCP training is not a generic training expectation, in line with the HRA/MHRA statement on training expectations. |

| IRAS project ID | 218744 |
|---|---|

### HR Good Practice Resource Pack Expectations

| *This confirms the HR Good Practice Resource Pack expectations for the study and the pre-engagement checks that should and should not be undertaken* |
|---|
| No Honorary Research Contracts, Letters of Access or pre-engagement checks are expected for local staff employed by the participating NHS organisations. Where arrangements are not already in place, research staff not employed by the NHS host organisation undertaking any of the research activities listed in the research application would be expected to obtain an honorary research contract. This would be on the basis of a Research Passport (if university employed) or an NHS to NHS confirmation of pre-engagement checks letter (if NHS employed). These should confirm enhanced DBS checks, including appropriate barred list checks, and occupational health clearance. For research team members only administering questionnaires or surveys, a Letter of Access based on standard DBS checks and occupational health clearance would be appropriate. |

### Other Information to Aid Study Set-up

| *This details any other information that may be helpful to sponsors and participating NHS organisations in England and Wales to aid study set-up.* |
|---|
| The applicant has indicated that they intend to apply for inclusion on the NIHR CRN Portfolio. |

# Appendix X: Faculty Research Ethics and Integrity Committee Approval

RESEARCH WITH PLYMOUTH UNIVERSITY

18th May 2018

**CONFIDENTIAL**

Martina Fiori
School of Nursing and Midwifery
University of Plymouth
Room 104, 8 Kirkby Place
Drake Circus
Plymouth PL4 6DU

Dear Martina,

**Application for Approval by Faculty Research Ethics and Integrity Committee**

***Reference Number:*** **17/18-807**
***Application Title:*** **The WATCH study: Witnessing an ATtempt of CPR in Hospital. A qualitative study on the impact and support of hospital patients witnessing resuscitation on other patients.**

I am pleased to inform you that the Committee has granted approval to you to conduct this research.

Please note that this approval is for one year as requested on your application form (i.e. until 17th May 2019), after which you will be required to seek extension of existing approval.

Please note that should any MAJOR changes to your research design occur which effect the ethics of procedures involved you must inform the Committee. Please contact Maurice Bottomley (email hhsethics@plymouth.ac.uk ).

Yours sincerely

pp. M. A. Bottomley

**Professor Paul H Artes, PhD MCOptom**
Professor of Eye and Vision Sciences
Co-Chair, Research Ethics Committee -
Faculty of Health & Human Sciences and
Peninsula Schools of Medicine & Dentistry

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W www.plymouth.ac.uk

Professor Paul H Artes, PhD
Co-Chair, Faculty HHS REB

# Appendix XI: Patient Invitation Letter

**The WATCH study: Witnessing an ATtempt of CPR in Hospital.**

A qualitative study on the impact and support of hospital patients witnessing resuscitation on other patients.

**Patients - Invitation Letter**

Name……

Date……

Dear ……

My name is Martina Fiori and I am a PhD student in Applied Health Studies at the University of Plymouth. I am conducting a research project with the aim of exploring the experience of patients who witnessed a resuscitation attempt on other patients in the hospital wards and I would like to invite you to participate in my research.

Cardiopulmonary resuscitation (CPR) is an emergency lifesaving procedure done when someone's heartbeat and breathing has stopped and involves chest compressions and/or defibrillation. I am interested to understand whether patients who may have witnessed an attempt of resuscitation on a nearby fellow patient may require additional support during their continuing treatment. This study involves conducting two interviews with patients after witnessing resuscitation in hospital, the first one in few days after the event, and a second interview in one month.

These interviews are being conducted by myself and will help to understand the experiences and perceptions of patients and their need for support after witnessing another patient being resuscitated. Each interview will last around one hour. The information gathered from your and other participants' interviews will be used to tailor clinical guidelines and educational interventions to improve the quality of care provided to patients.

Your participation in this research is entirely voluntary and you would be able to withdraw from the research at any time, without giving any reason and without any detriment to you or to your care. All information you provide in the interviews is confidential, all data collected will be kept anonymous and all identifying information

will be changed, using a pseudonym, for the publication of the results arising from this research.

If you wish to participate in the study and to be interviewed, please let me or a member of your care team know and I will visit you again. At that time, I will invite you to read the Participant Information Sheet and the Consent Form and together we will schedule your first interview.

If you would like to receive more information you can contact me, Martina Fiori, or my supervisor, Professor Jos Latour, by emailing or phoning the contacts given below, or you can ask a member of your care team to contact us.

Thank you very much for your time and for considering taking part in this study.

Yours Sincerely,

**Martina Fiori**

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# Appendix XII: Patient Participant Information Sheet

**The WATCH study: Witnessing an ATtempt of CPR in Hospital.**

A qualitative study on the impact and support of hospital patients witnessing resuscitation on other patients.

**Patients - Participant Information Sheet**

**Introduction**

Thank you for taking the time to read through this information sheet.

I would like to invite you to take part in the WATCH research study. Before you decide, I would like to explain you why this research is being done and what it would involve for you. Please, take time to read the following information carefully. Ask me or a member of the care team if you have any questions, if anything you read is not clear or if you would like more information. Participation is entirely voluntary. Please, take time to decide whether or not to take part.

**What is the purpose of the study?**

The aim of this study is to explore the experience of patients witnessing resuscitation on another patient in hospital and the impact of this event on them. This will provide valuable information about the best way healthcare professionals can support these patients. In this part of the study, a small number of participants will be invited to share with the researcher their recent experience of witnessing a resuscitation attempt on a nearby fellow patient. The study will consist of two interviews: the first interview will be conducted a few days after the resuscitation event, and it aims to capture your initial feelings about the experience. The second interview will be conducted four to six weeks after the event, and will explore how you feel about the event at that time. This project is being undertaken as part of my PhD program in Applied Health Studies with the University of Plymouth and is supervised by Professor Jos Latour and Professor Ruth Endacott.

**Why have I been invited?**

You have been invited to take part because it has been highlighted that you have witnessed a resuscitation attempt on another patient during your stay in hospital. It is our intention to explore the experiences of participants such as you, so that we can hopefully understand what witnessing resuscitation means for the patients and help healthcare professionals to appropriately support those patients in the future.

Whilst the topic of witnessed resuscitation has been explored extensively in the past, this has mostly been from the perspective of relatives and healthcare professionals. To our knowledge, the effect of a witnessed resuscitation on fellow patients has not been studied and patient witnesses may require appropriate support after such an event.

**Do I have to take part?**

It is completely up to you whether or not you decide to take part. If you do decide to take part, you will be asked to sign a consent form. Even if you decide to participate, you can withdraw from the study at any time, before, after and during the interviews, without giving a reason and without any detriment to you or your care.

**What will participation involve?**

If you decide to participate in the research, you will take part in two face-to-face interviews. Each interview should take around 60 minutes. You will be invited to share with me your perspective, thoughts and feelings about the resuscitation event you witnessed. To complete the study, you will need to attend the two interviews. After that, I may contact you by phone or e-mail to help me in the follow-up to verify the accuracy of the notes taken from the interviews that you took part in. For the purposes of the research I may also need to access to some personal information including:

- your name, which will be anonymised for the research, although is required to arrange the interviews;
- your gender;
- your age;
- the highest level of your educational qualification;
- the reason of your admission in hospital;
- the number of days you have been admitted in this hospital ward;
- the number of resuscitation events you witnessed.

If you consent to take part in the study, the interviews will be audio-recorded. The content will be transcribed and your name will be kept anonymous so that any personal or identifiable information will remain strictly confidential. These data will be stored in and analysed using a computer provided by the University of Plymouth. All electronic devices used to collect, analyse and store the data are password protected. I will analyse the data generated from the interviews to identify the main themes and common patterns that will emerge from patients' experiences. If you decide to take part, with your permission, I will also notify your GP of your participation in the study. Any discussion of unsafe practice or unethical conduct disclosed during the interview will be discussed with my academic supervisors and reported to the ward managers in the hospital. If you wish to report any unsafe or unethical practice, you can contact the NHS patient advisory liaison service (PALS) who will be able to advise and help you: [redacted]

**Are there any expenses?**

To prevent any costs being incurred for you as a participant, I will travel to your hospital ward at a time that is mutually convenient, if you are still admitted in the hospital at the time of the first interview. I will also travel to your house or to a mutually agreed place (e.g. University of Plymouth) for the follow-up interview. Your travel expenses will be refunded, should you need to travel for the interview.

**What are the possible benefits of taking part?**

You will have the opportunity to take part in a research study and to express your views, thoughts and concerns about an important issue that may affect many patients in hospitals. This will also give you the chance to participate to an interesting discussion, where you can openly share your experience and reflect on it. Finally, although you might not see any direct benefit to you from taking part in this study, I hope that the valuable information retrieved from your participation in the interviews will contribute to recommend professional guidance, thereby improving the care of patients witnessing resuscitation.

**What are the possible disadvantages or risks of taking part?**

Although I hope you will enjoy taking part in the interviews and you will find sharing your experience beneficial for you, I acknowledge the resuscitation that you witnessed may be a difficult topic for you to talk about, and there may be the slight chance that you might find it upsetting in some way. Emotional upset is a completely understandable response and it is important to us that you feel supported at all times. If this should occur, you can withdraw from participation at any time without detriment. Before starting, I will check on your emotional status asking whether you feel still comfortable to be interviewed, and only if you agree to proceed we will begin the interview. If at the end of the interview, you feel that any sensitive issues have arisen with you from your participation, then please let me know. I will inform your clinical care team and your consultant, and I will help you to seek appropriate follow-up by consulting the Pastoral and Spiritual Care (Chaplaincy) service. We will repeat the same procedure also for the second interview, and if you feel you may need additional emotional support, I will contact your GP.

**Who can I contact if I have any questions?**

If you have any questions about taking part in the study or would like any further information about the research, please get in touch with me, by phoning or emailing the contacts below. If you wish to talk to my supervisor, you will also find the contact details of Professor Jos Latour, at the end of this document.

**Will my taking part in the study be kept confidential?**

We will protect your privacy at all times. The steps taken to ensure confidentiality are in line with the Data Protection Act (1998) and are detailed below.

- At the beginning of your interview your consent to take part in the study will be recorded on a form that will containing your name. Some demographic data will be collected including your name, address and phone number. These forms will be stored in a secure cabinet at the University of Plymouth and separately from the study data.

- All electronic files, including personal data of participants, audio recordings and verbatim written transcriptions will be encrypted on a password protected computer. All hard copies of data and audio equipment will be locked inside a secure cabinet.

- All participants will be given a unique code upon commencement of the study to protect confidentiality and anonymity.

- Only the researcher and the academic supervisors will have access to personal data, anonymised audio recordings and anonymised verbatim written transcriptions. The information will be stored securely at the University of Plymouth for ten years before being disposed of in confidential shredded waste systems supported by the University of Plymouth.

**What will happen if I don't carry on with the study?**

If you chose to withdraw from the study during the interviews, then it is entirely your decision and you may do so without consequence.

**What will happen to the results of the research study?**

The results of the research will be written up as part of my PhD thesis and will be disseminated locally and through publication as appropriate. You will not be identified in any report or publication of results and only anonymised extracts of your and other participants' stories will be quoted in publications or presentations. A summary of the findings will be made available for you if you wish to know about it.

**Who has reviewed the study?**

The study has been assessed by the Health Research Authority (HRA) Assessment team to secure HRA Approval and reviewed and approved by the University Faculty Ethics Committee. The participating NHS Trust has also been notified of the study and has approved it via the HRA approval mechanisms.

**Who is organising or sponsoring the research?**

This research is being organised in collaboration with the University of Plymouth and sponsored by the UK Resuscitation Council (www.resus.org.uk).

**What if there is a problem?**

In the unlikely event you are harmed by taking part in this study, there are no special compensation arrangements. However, neglectful harm will be covered by the

University's insurance scheme. If you are harmed due to someone's negligence, you may have grounds for a legal action but you may have to pay for it.

**Who can I contact if I want to make any complaints?**

We hope it is not the case, but should you have reason to complain about the way you have been treated at any stage during the study you can access the NHS patient advisory liaison service (PALS) who will be able to advise and help you [redacted]

**Further information and contact details:**

If you have any concerns about any aspect of the research study, please contact myself, Martina Fiori, or my Academic Supervisor, Professor Jos Latour. Our contact details are given below.


**Martina Fiori**
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Thank you for taking the time to read the information sheet and for considering participation.

# Appendix XIII: HCP Invitation Letter

**The WATCH study: Witnessing an ATtempt of CPR in Hospital.**

A qualitative study on the impact and support of hospital patients witnessing resuscitation on other patients.

**Healthcare Professionals - Invitation Letter**

Name……

Date……

Dear ……

I would like to let you know about the opportunity to take part in a research study.

My name is Martina Fiori and I am a PhD student in Applied Health Studies at the University of Plymouth. I am conducting a research project with the aim of exploring the experience of patients who witnessed a cardio-pulmonary resuscitation (CPR) attempt on other patients in the hospital wards and identifying best practices for healthcare professionals to support these patients.

In this phase of the study, I am interested to understand the current practices of the healthcare professionals in the care of patients who witness CPR on other patients. The study involves conducting individual or focus group interviews with the healthcare professionals who had experiences of CPR and who would like to share their experience with me.

Both individual and focus group interviews would last around 40 minutes and would be conducted during your working time. These will identify current practice and what could be done to support patients after witnessing CPR. The information gathered from your and other participants' interviews will be used to inform clinical guidelines and educational interventions to optimise the quality of care provided to patients.

Your participation in this research is entirely voluntary and you would be able to withdraw from the research at any time, without giving any reason. All information you provide in the interviews is confidential, all data collected will be kept anonymous and all identifying information will be changed, using a pseudonym, for the publication of the results arising from this research.

If you wish to participate in the study and to be interviewed, please let me or your line manager know and I will contact you again. At that time, I will invite you to read the

Participant Information Sheet and the Consent Form and together we will schedule your interview or the focus group together with other healthcare professionals.

If you would like to receive more information you can contact me, Martina Fiori, or my supervisor, Professor Jos Latour, by emailing or phoning the contacts given below.

Thank you very much for your time and for considering taking part in this study.

Yours Sincerely,

**Martina Fiori**

PhD Student in Applied Health Studies
School of Nursing and Midwifery
Faculty of Health and Human Sciences
University of Plymouth
01752 586596
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**Professor Jos Latour**

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# Appendix XIV: HCP Participant Information Sheet

**The WATCH study: Witnessing an ATtempt of CPR in Hospital.**

A qualitative study on the impact and support of hospital patients witnessing resuscitation on other patients.

**Healthcare Professionals - Participant Information Sheet**

**Introduction**

Thank you for taking the time to read through this information sheet.

I would like to invite you to take part in the WATCH research study. Before you decide, I would like to explain you why this research is being done and what it would involve for you. Please, take time to read the following information carefully. Ask me or my supervisor if you have any questions, if anything you read is not clear or if you would like more information. Participation is entirely voluntary. Please, take time to decide whether or not to take part.

**What is the purpose of the study?**

The aim of this study is to explore the impact of patients witnessing a cardio-pulmonary resuscitation (CPR) attempt on another patient and to identify the best support that healthcare professionals can provide them. In this phase of the study, I am interested in exploring the experiences of healthcare professionals involved in CPR and the current practices in supporting other patients. This study will involve individual and focus group interviews with healthcare professionals who recently had experience of CPR on a patient in their ward. This project is being undertaken as part of my PhD program in Applied Health Studies with the University of Plymouth and is supervised by Professor Jos Latour and Professor Ruth Endacott.

**Why have I been invited?**

You have been invited to take part because you are a healthcare professional that had experiences of CPR in your ward in the last six months. It is our intention to explore the experiences of participants such as you, so that we can hopefully understand what is and could be done by healthcare professionals to support patients who witness CPR.

I believe that your experience, knowledge and practices in caring for patients witnessing resuscitation are important and I am interested in listening to your views and opinions. It is hoped that the data collected from the research will prove to be valuable in designing clinical guidelines to indicate best practice on supporting patients-witnessed resuscitation.

**Do I have to take part?**

It is completely up to you whether or not you decide to take part. If you do decide to take part, you will be asked to sign a consent form. Even if you decide to participate, you can withdraw from the study at any time, before and during the interview, without giving a reason and without any detriment to you or your employment.

**What will participation involve?**

If you decide to take part in the research, you will take part in an individual or focus-group interview. The individual or the focus group interview should take around 40 minutes. You will be invited to share your past experiences of CPR in your ward. A few questions will drive the discussion. There are no right or wrong answers, I am interested in listening to your story and your honest and open considerations about your experiences.

If you take part in a focus group, this will include four to eight participants among nurses, doctors, healthcare assistants, and other healthcare professionals who had similar experiences. A focus group is simply a group discussion 'focused' on a particular topic or theme, in this instance, your experience of CPR and with patients who witness the event.

For the purposes of the research I would like your honest and constructive opinions of the current professional practice of supporting patients when they witness CPR. You will need to attend one individual interview or one focus-group interview. After that, I may email you to help me in the follow-up to verify the accuracy of the notes taken during the interview. For the purposes of the research I may also need access to some personal information including:

- your name, which will be anonymised for the research, although is required to arrange the interview;
- your gender;
- the highest level of educational qualification;
- your profession;
- your position/band;
- the number of years you have worked in your profession;
- the number of resuscitation events attended.

If you consent to take part in the study, the interviews will be audio-recorded. The content will be transcribed and your name will be kept anonymous so that any personal or identifiable information will remain strictly confidential. These data will be stored in and analysed using a computer provided by the University of Plymouth. All electronic devices used to collect, analyse and store the data are password protected. I will analyse the data generated from the individual and focus group interviews to identify the main themes and common patterns that will emerge from healthcare professionals'

experiences. Any discussion of unsafe practice or unethical conduct disclosed during the interview or focus group will be discussed with my academic supervisors and will be reported to the ward managers.

**Are there any expenses?**

To prevent any costs being incurred for you as a participant, I will travel to your work environment at a time that is mutually convenient.

**What are the possible benefits of taking part?**

You will have the opportunity to take part in a research study and to express your views, thoughts and concerns about an important issue that may affect many patients in hospitals and therefore involve many healthcare professionals. This will also give you the chance to participate to an interesting discussion, where you can openly share your experience and reflect on it. Finally, although you might not see any direct benefit to you from taking part in this study, I hope that the valuable information retrieved from your participation in the interview will contribute to provide additional knowledge to recommend professional guidance, thereby improving the care of patients witnessing resuscitation.

**What are the possible disadvantages or risks of taking part?**

There should not be any disadvantages in participating in the research. I hope you will enjoy taking part in the interviews and you will find sharing your experience beneficial for you. However, I acknowledge that discussing about past experiences of CPR can evoke emotive thoughts. If this should occur, you can withdraw from participation at any time without detriment. If at the end of the focus group or individual interview you feel that any sensitive issues have arisen with you from your participation, then please let me know and I will inform your line manager. You can also seek appropriate support consulting the Occupational Health & Wellbeing: [redacted]

**Who can I contact if I have any questions?**

If you have any questions about taking part in the study or would like any further information about the research, please get in touch with me, by phoning or emailing the contacts below. If you wish to talk to my supervisor, you will also find the contact details of Professor Jos Latour, at the end of this document.

**Will my taking part in the study be kept confidential?**

We will protect your privacy at all times. The steps taken to ensure confidentiality are in line with the Data Protection Act (1998) and are detailed below.

- At the beginning of the individual or focus group interview your consent to take part in the study will be recorded on a form that will containing your name. Some demographic data will be collected including your name, address and phone number.

These forms will be stored in a secure cabinet at the University of Plymouth and separately from the study data.

- All electronic files, including personal data of participants, audio recordings and verbatim written transcriptions will be encrypted on a password protected computer at the University of Plymouth. All hard copies of data and audio equipment will be locked inside a secure cabinet.

- All participants will be given a unique code upon commencement of the study to protect confidentiality and anonymity and any direct extract of the transcripts quoted in future publications will be anonymised.

- Only the researcher and the academic supervisors will have access to personal data, anonymised audio recordings and anonymised verbatim written transcriptions. The information will be stored securely at the University of Plymouth for ten years before being disposed of in confidential shredded waste systems supported by the University of Plymouth.

If you decide to take part in a focus group, you may be able to identify other participants you know and they may be able to identify you. Nonetheless, all information shared during the focus group will be confidential and all data will be anonymised. It is important that you understand that by taking part in the focus group you agree to maintain the confidentiality of the information disclosed by you and other participants before and after the focus group.

**What will happen if I don't carry on with the study?**

If you chose to withdraw from the study during the individual or focus group interview, then it is entirely your decision and you may do so without consequence.

**What will happen to the results of the research study?**

The results of the research will be written up as part of my PhD thesis and will be disseminated locally and through publication as appropriate. You will not be identified in any report or publication of results and a summary of the findings will be made available for you if you wish to know about it.

**Who has reviewed the study?**

The study has been assessed by the Health Research Authority (HRA) Assessment team to obtain HRA Approval and reviewed and approved by the University Faculty Ethics Committee. The participating NHS Trust has also been notified of the study and has approved it via the HRA approval mechanisms.

**Who is organising or sponsoring the research?**

This research is being organised in collaboration with the University of Plymouth and sponsored by the UK Resuscitation Council (www.resus.org.uk).

**Who can I contact if I want to make any complaints?**

I hope it is not the case, but should you have reason to complain about the way you have been treated at any stage during the study, you can get in contact with the Faculty Research Ethics Committee of the University of Plymouth for Health and Human Sciences who will be able to advise and help you. Contact details: [redacted]

**Further information and contact details:**

If you have any concerns about any aspect of the research study, please contact myself, Martina Fiori, or my Academic Supervisor, Professor Jos Latour. Our contact details are given below.


**Martina Fiori**
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Thank you for taking the time to read the information sheet and for considering participation.