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UK Dietitians' views on Communication Skills for Behaviour Change: A 10 year follow up survey.

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Key words

Communication skills, behaviour change, dietetics, cross sectional survey, training,

Conflict of interests, source of funding and authorship.

The authors declare that they have no conflict of interest.

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KW, TP, and Judy Swift revised the survey. TP and KW analysed the data. Both KW and TP wrote the first draft, reviewed, and commented on the subsequent drafts of the manuscript and approved the final version submitted for publication.

Ethical approval

Ethical approval was received from the School of Sociology and Social Policy, University of Nottingham (BIO-1718-0001).

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Abstract

Background

In 2007, a survey of UK dietitians identified that dietitians were positive about the use of Communication Skills for Behaviour Change (CSBC) in practice but barriers to implementation of skills were acknowledged. This follow up survey aimed to explore current perceptions of CSBC and compare with the previous survey.

Methodology

A cross-sectional on-line survey of British Dietetic Association (BDA) members views of CSBC was undertaken. Results for full members are presented. Quantitative data was analysed descriptively. Qualitative data was subject to either content, or inductive thematic analysis.

Results

A 9.4% response rate (n=729) was achieved. Respondents were predominately female (n=684, 95.1%) and worked in the NHS (n=634, 87.4%). They were positive about the importance of CSBC in practice (n=714, 99.5%). Pre-registration training had been completed by 346 respondents (48.7%).

Post-registration training had been undertaken by 520 (74.7%) respondents and 514 of these (99.6%) had implemented training into practice, with few barriers identified. Perception of ability to use skills had increased with 513 (83.6%) respondents rating their skills as excellent/very good, compared to 62% previously. The majority (n=594, 93.7%) reported that post-registration training was necessary, skills should be regularly reviewed (n=456, 74.5%) and 235 (51.9%) respondents suggested this be mandatory. In contrast, some suggested skill review was not a priority, would be difficult to administer and stressful.

Conclusions

Perception of importance of CSBC remains high. Although perceived ability to apply CSBC has increased, perceived need for post-registration training is high, with respondents' favouring mandatory training.

Key words

Communication skills, behaviour change, dietetics, cross sectional survey, training,

Introduction

Patient-centred care has been referred to as a set of skills that activate patient participation, promote shared decision making, seek patient views and opinions, and facilitate a collaborative and supportive approach to care [1-4]. Patient-centred care is essential to support health related behaviour change [5]. Literature remains ambiguous on what specific communication skills are required to support patient-centred care [6-7], however, recently a tool designed to measure patient-centred care in dietetic practice has been developed, based on review of literature as well as patient and dietitian views [8]. Further testing is required but this tool may provide the clarity needed to support training and development ofhese skills in dietitians. A survey of United Kingdom (UK) dietitians conducted in 2007, provided insight into the communication skills for behaviour change (CSBC) dietitians deemed necessary to support patient-centred care [9]. CSBC were defined as including, but not limited to, *'skills which enable clients to make appropriate choices, express their thoughts and feelings, feel heard and understood, feel valued, respected and supported'*. The survey revealed a high level of perceived importance attached to CSBC, but respondents indicated that more training to support skill development was required [9]. Pre-registration education standards and training documents reflect the importance of CSBC as a core competency requirement for dietitians [10-11], however individual Higher Education Institutions (HEIs) may teach these skills differently leading to variation in patient-centred care. The survey also identified barriers to applying skills in practice including lack of time to implement skills, lack of confidence in skill use, and lack of support from colleagues/management [9], suggesting that additional support is required in the workplace.

Patient perceptions of dietetic care support the importance of CSBC and patient-centred care including the adoption of a flexible approach, to allow individual preferences to be considered [12-21]. Lack of CSBC, contributes to patients' perceptions of lack of empathy, resulting in lower agreement on choices made and potentially contributing to poor engagement [6, 21-22]. Dietitians' inability to support patients in making their own decisions appears to have a negative impact on shared decision making [23], creating a power imbalance that requires addressing if patient self-care is to improve [7, 23-4]. In contrast, supportive collaborative approaches result in greater adherence [25], enhanced self-care and improved health outcomes [25-28].

Overall, patient views suggest that there is a range of practice, but that improvements could still be made in the delivery of patient-centred care in dietetics [16-17]. Dietitians' awareness of their communication style and its impact on patient outcomes must therefore be enhanced, from pre-registration education (both at HEIs and on placement) and into practice. How best to support skill development remains

unclear. Some evidence indicates that positive attitudes towards learning communication skills declines as student dietetic training progresses [29] but recently a study has suggested that student attitudes to experiential learning with simulated patients is more positive [30]. There have also been developments in the use of technology to support learning [31] which may impact on skill development, but more data is required to substantiate how best to deliver training to support skill enhancement.
Dietitians perceive their ability to deliver CSBC to be high [9, 32], however perceived skill can vary considerably from true proficiency [33-37] and may contribute to variations seen in patient outcomes [38]. Validated tools to assess CSBC are therefore required to identify skill level, support skill development and application in practice [7, 39]. Cultural norms [6, 40] and time constraints [7, 9,41-42] have been highlighted as potential barriers to the implementation of CSBC in the workplace. This suggests that further training and support is required to establish and develop CSBC skills once qualified.

The literature indicates that patient-centred care remains important to dietitians and patients. Understanding of what patient-centred care means in dietetic <="" span="" style="font-family: "Times New Roman";">Where there is lack of patient-centred care there may be negative impacts on patients, and dietitians have expressed a desire for further training in CSBC to support their delivery of patient-centred care.

Since 2007 there have been many developments in policy, standards, and evidence base, all indicating the importance of improved communication skills and patient-centred approach in healthcare. It is not known how much of this has been implemented into pre- and post-registration training of dietitians or if barriers have changed. This follow up survey therefore, aimed to explore current perceptions of UK dietitians towards CSBC training and use of these skills in practice, and to ascertain if barriers to implementation of skills have changed since 2007 [9]. Identifying what barriers, if any, exist, may help direct future training in CSBC and the development of patient-centred care in practice.

Methods

This cross-sectional survey of British Dietetic Association (BDA) members utilised the questionnaire from the previous BDA members' survey completed in October 2007 [9]. The survey was divided into sections including demographic information, experiences of both pre- and post-registration training, views on what pre- and post-registration training should include, importance of CSBC and the impact of these skills on practice, barriers to their implementation and personal training needs. Small revisions to the original questionnaire included the creation of more pre-coded responses, based both on previous responses, and recent developments, such as web-based training packages. Most questions required tick box

answers, but there were some open questions requiring respondents to write their views. Although open questions require greater respondent effort, and not all will respond [42], they can provide explanation for closed question responses and deeper insight into respondent views that may not otherwise be captured. The revised questionnaire was converted into a web-based survey, using Survey Monkey https://www.surveymonkey.co.uk/. Skip logic was applied. (Supplementary information 1, survey questions).

Information about the survey, including the link, was sent electronically, with a covering email, in January 2018, via the BDA, to all members (n=9116 all members; n=7743 full members). One reminder was sent, and the survey remained open for one month. Results for full members are presented.

Data was downloaded from Survey Monkey and analysed using SPSS, version 24 (IBM). Quantitative data was checked for errors and any items that could not be validated were removed. Chi square tests were used to look for differences in categorical data. Five-point Likert scales were used to ascertain importance (i.e., 1 was very important, 5 was not at all important) and responses were dichotomised to give an overall positive (1 and 2 combined) or negative (4 and 5 combined) view of importance. Qualitative data was analysed in one of two ways. Content analysis was applied to short responses, for example, when respondents were asked to list skills included in CSBC. Responses to individual open questions encouraging more expansive answers, for example, *'How do you feel personally about having your communication skills for behaviour change assessed?'* were analysed manually, using inductive thematic analysis [43] due to the volume and depth of the data obtained. Answers to each specific question were combined into one document, were read, reread, and coded systematically. Themes were developed, refined and discussed between two researchers (TP and KW) to achieve agreement. Qualitative data for open questions is presented alongside quantitative data relating to the same section of the questionnaire.

Funding for survey administration was received from the BDA General Education Trust (October 2017). Ethical approval was received from the School of Sociology and Social Policy, University of Nottingham (BIO-1718-0001).

Results

This survey was completed by 729/7743 full BDA members, a response rate of 9.4%. As some respondents did not complete every question, pairwise deletion was applied. Percentages refer to the number of respondents who completed that specific question. Numbers in [ ] brackets after quotes are the respondent survey number.

Respondent characteristics

Respondents were from across the UK, most commonly England (n=551, 76.6%), Scotland (n=89, 12.4%), Northern Ireland (n=43, 6.0%), Wales (n=34, 4.7%) and other (n=2, 0.3%) (10 missing data). The majority were female (n=684, 95.1%) with 31 males (4.3%) and 4 (0.6%) preferred not to say (10 missing data).

Respondents' experience ranged from <5 years qualified (n=144, 19.9%) to 40 years or more (n=7, 1.0%) since qualification, the most common group being those who had worked between 10 and 20 years (n=192, 26.5%). Most worked in the National Health Service (NHS) (n=634, 87.4%, 4 missing data). Additional work areas included freelance (n=24, 3.3%), public health (n=19, 2.6%), education (n=14, 1.9%) and industry (n=7, 1.0%). Others (n=27, 3.7%) worked in training, media, nursing homes, private companies, research and third sector organisations.

Of the 632 respondents, most were employed as band 6 (n=263, 41.6%) and band 7 (n=241, 38.1%) dietitians, with fewer band 8 (n=67, 10.6%) and band 5 (n=60, 9.5%). The most common specialisms were paediatrics (n=97, 15.3%), diabetes (n=86, 13.5%) and mental health (n=71, 11.2%) with 82 (12.9%) having a non-specialist caseload. Many (n=453, 63.0%) estimated that they spent between 26-75% of their time with one-to-one client contact, but 55 (7.6%) had none (10 missing data). Most respondents worked 0.81-1 whole time equivalents (n=454, 63.2%) (11 missing data).

Importance of Communication Skills for Behaviour Change

Respondents were positive about the importance of CSBC with 714 (99.5%) rating them as important and no-one rating them as not important (n=3, 0.5% neutral) (12 missing data). They were positive about the importance of CSBC for undertaking an accurate assessment of the client (n=588, 95.3%) and for taking a diet history (n=539, 87.4%).

A few respondents reported that CSBC were not applicable to some parts of practice, however, the majority were positive about the impact of CSBC in many aspects including relationship with clients (n=610, 98.7%), client satisfaction (n=606, 98.7%), ability to cope with challenging clients (n=602, 97.9%), confidence with client interviews (n=588, 95.9%) and in perceiving improvements in client clinical outcomes (n=587, 95.6%) (Table 1). The least positive was 409 (66.6%) respondents believing CSBC to be important for time keeping in client interviews. There were 15 comments relating to concern with time keeping, for example, *"Using communication skills for behaviour change takes significantly longer and does not fit into NHS allocated appointment times"* [465].

Over 96% respondents also reported that CSBC were important for different components of consultations. These included being able to communicate at an appropriate level for individual clients (n=612, 100%), listening attentively (n=613, 100%), recognising and responding appropriately to verbal communication (n=609, 99.8%) and greeting clients appropriately whilst putting them at ease (n= 612, 99.7%). Most respondents were positive regarding their own CSBC skills, with 513 (83.6%) rating them as one or two on

a five-point rating scale (i.e. one is excellent, five is very poor). No-one rated themselves as very poor, but 101 (16.5%) were less confident about their skill level, rating them as three or four.

Pre-registration training undertaken

Dedicated training in CSBC as part of pre-registration education had been received by 346 respondents (48.7%), 268 (37.7%) had not received training, and 97 (13.6%) respondents did not recall (18 missing data). Length of time since qualifying was significantly related to report of pre-registration training in CSBC ($\chi^2(2, n=711) = 56.122$, $p<0.001$), with 76.8% of those graduating <10 years ago indicating that training had been received, compared to 41.7% who trained >10 years ago.

The predominant methods of teaching experienced at university were lectures, observation of a skill demonstration and role-play, including those observed by peers or tutors, with feedback (Table 2). On clinical placement, teaching methods were mostly consultations with real patients, with some observations of skill demonstration.

Preferences for pre-registration training

Pre-registration preferences varied (Table 3). Consultations with real patients were thought more appropriate for placement (n=370, 57.7%, 88 missing data). Apart from role-play with a real patient, other methods were thought more appropriate in university, or for both settings, rather than placement only. Some respondents stated that the training methods indicated were inappropriate in either setting, most commonly role-play with a real patient (n=109, 17.4%), role-play with formal assessment (OSCE) (n=59, 9.6%), audio-recorded role-play with playback (n=53, 8.4%) and online training packages such as DIET-COMMS [31] (n=44, 7.6%). There were 42 other highly variable comments, which included reference to using a variety of methods in both locations; for example, *"Currently I think a number of techniques can be employed but practice and feedback to provide guidance is essential. Some lectures are needed to help set the scene"* [264]. Additionally, responses suggested ensuring that tutors are skilled before assessing students, for example, *"Perhaps tutors need peer assessing in their delivery of feedback on role-play/communications skills courses?"* [568], and some respondents were unaware of online training packages such as DIET-COMMS (n=6) for example, *"I can't comment on DIET COMMS training package I haven't seen it"* [600]. Most respondents (n=386, 60.7%) conveyed that the responsibility for teaching CSBC in pre-registration educatio should be 50:50 between HEI and placement.

Dietitians were asked to identify, in their own words, the core communication skills that should be included in pre-registration education (558 comments). Three themes were identified. Firstly, the majority of responses related to naming specific communication skills important for building relationships with patients, such as active listening, reflections,

paraphrasing, open questions and empathy, for example *"Reflective listening/paraphrasing to allow build-up of rapport with the patient"* [673] (Supplementary information 2, terms included and counts of skills identified). Secondly, approaches, techniques and strategies which can be used to support behaviour change were identified, such as confidence scaling, readiness to change and working with resistance, for example, *"…assessing readiness to change, exploring and explaining skills, compare ideal with actual, rolling with resistance and negotiation."* [559]. Thirdly, personal attributes and interpersonal skills were highlighted, for example *"Qualities including being non-judgemental, accepting, empathic, compassionate"* [606].

Post-registration training undertaken

When asked about post-registration training undertaken in CSBC, 520 (74.7%) had received training, 162 (23.3%) had not and 14 (2.0%) had no recollection. Those who trained >10 years ago were significantly more likely to have had post-registration (84.1%) than those who had trained within the last 10 years (37.0%) ($\chi^2(2, n=696) = 141.696$, $p<0.001$). The types of training received were predominantly attending a formal training session or course (n=497), self-directed learning (n=228), observing/shadowing colleagues (n=226), and having a consultation observed by peers with informal feedback (n=181). Fewer people had audio-/video-recorded consultations for self-reflection (n=90), consultations observed by tutors with informal feedback (n=89) or used any kind of online training programme (n=9).

Of those who had accessed post-registration training (n=520), the majority (n=514, 99.6%), stated they had applied some of their learning into practice and two (0.4%) said they had not (4 missing data). There was no difference between those qualified <10 years (98.8%) and those <10 years ago (100%) (Fishers exact, p=0.112). The only reason identified for being unable to implement training (n=1) was that the training undertaken did not equip the dietitian to change practice. The perceived impacts of post-registration training on practice (Table 4) were positive although some respondents stated that post-registration training in CSBC was inapplicable to specific aspects of practice.

Recommendations for post-registration training

Most respondents (n=594, 93.7%) stated that post-registration training in CSBC was needed (95 missing data). Those who trained <10 years ago were significantly less likely to state that most dietitians needed post-registration (89.7%) than those who had trained >10 years ago (94.7%) ($\chi^2(1, n=634) = 4.274$, $p=0.039$). A range of advanced skills and strategies were deemed appropriate for post-registration training, including motivational interviewing (MI) (n=495), cognitive behavioural strategies (CBS) (n=421) and mindfulness (n=346). Work-based learning was highly rated (n=416) and training incorporating both theory and

skills (n=433) was more highly rated than either theory-based (n=58) or skills-based (n=283) learning.

Half of the respondents (n=318, 50.9%) stated that CSBC were more relevant to specific dietetic roles than others and 307 (49.1%) disagreed. Those who had trained <10 years ago were more likely to believe that these skills were more relevant to some roles than others (58.9%) in comparison to those who trained >10 years ago (48.9%) (χ^2(1, n=625) =3.952, p=0.047). When asked to explain their answers, three themes were identified (56 comments). Firstly, that individual training needs differ, for example, *"The type of post-registration training required is dependent on the individual and the amount of training received pre-registration as well as the area of work i.e. oncology requires highly specialised communication skills where CBT, mindfulness and motivational interviewing is key whereas CBT may be less relevant to paediatrics"* [476]. Secondly, these skills were described as so important that they should be incorporated into all post-registration training, for example, *"Ibelieve that communication skills should be weaved through every aspect of post-graduate training to increase client adherence to therapeutic nutritional diets."* [73]. Thirdly, the need for constant review or refresher sessions was highlighted, with some suggesting these should be formal or mandatory, for example, *"I think that it should be mandatory that updates/refreshers are undertaken every few years to ensure "competency" and sharpening of skills as it is easy to slip into bad habits. The refreshers would re-focus peoples' attention on their communication skills"* [226], and *"I think there should be a baseline level of skill that should be maintained permanently post registration with the option to increase skill level as job role requires but alongside support to maintain these higher level skills year on year"* [55].

Respondents who stated that dietitians do not need post-registration training in CSBC were asked to explain their reasoning. Two key themes were identified (40 comments). Firstly, that it should be covered in pre-registration education, for example, *"This should be part of the dietetic training at university."* [548] and secondly, that skills are learned on the job and by experience, rather than by going on courses, for example *"Because we learn the basic skills during pre-registration and then these skills are developed through experience and practice, not formal training"* [133].

Respondents (n=513, 83.6%) reported they would personally benefit from further training, particularly in more advanced skills such as CBS (n=417), MI (n=402) and mindfulness (n=362). Those who had trained >10 years ago were less likely to feel that they would benefit from further training (81.12%) than those who trained <10 years ago (93.4%) (χ^2(1, n=614) =10.612, p=0.001). The most popular type of training desired (in line with what they stated post-registration training should include) was mixed (theory with opportunities for skill practice) (n=332) as opposed to solely skills-based (n=211) or theory-based (n=52) learning. The most popular options for training delivery methods were external

courses (n=365) and work-based learning (n=347), followed by online training packages (n=299) and self-directed learning (n=190). Comments (n=16) were variable and included personal preferences for options, but the main theme was being unable to secure time or funding for external courses, even though face-to-face training was preferred, for example, *"Difficult to get external courses funded and agreed to but better if it could be that route. Just have to be realistic in the current NHS financial situation".* [516].

When asked if individual practitioners should have their CSBC reviewed regularly post-registration, the majority 456 (74.5%) agreed they should (117 missing data). There was no significant difference in views depending on when respondents qualified (p=0.755). Of those who supported skill review, 218 (48.1%) stated it should be voluntary and 235 (51.9%) that it should be mandatory (3 missing data). Those more recently qualified were more likely to support voluntary (62.9%) than those qualified >10 years ago (44.5%) ($\chi 2(1, n=453) = 9.715$, p=0.002). The most popular timeframes for skill review were every 2 (n=145, 32.0%), 3 (n=133, 29.4%) or 5 (n=109. 24.1%) years (276 missing data).ing this method in research and practice. This survey was not designed to assess skills but has shown mixed views as to whether assessment of CSBC should be considered in practice or not. Although over half of respondents indicated that it should be mandatory, there were almost as many resistant to the idea, which may be a barrier to its implementation. Video recording, although facilitating objective assessment and reflection, may lead to a higher level of anxiety for some dietitians, however there is little evidence to say that video recording has a detrimental impact on consultations, with patients reporting positive attitudes if the goal is improved healthcare communication [55]. Importantly, video recording enables fidelity checking, to assess whether training received has led to the desired changes in skill use in practice [56-7]. With concerns being raised about cost of training, both financial and with time, further evaluation of training options to ascertain the most effective, and cost-effective options is needed.

Future studies could ascertain the most effective and acceptable training methods, both pre- and post-registration, that are practical, affordable, and supportive. Understanding the graduate skill level, across HEIs with different teaching methods and course structures, would provide an insight into the effectiveness of pre-registration CSBC training. To provide robust data, validated tools should be used to measure CSBC and/or patient-centred care alongside patient outcomes such as satisfaction, adherence to agreed goals and clinical outcomes. Research in settings, including secondary care, telehealth, group education and non-NHS areas of practice, to reflect the broadening scope of dietetics, is needed.

Strengths and Limitations

The survey targeted all BDA members and many responded, but the response rate was only 9.4%. Respondents may have been interested in CSBC, therefore biasing the sample. It was not possible, however, to make further contacts to increase response rate. Cross-sectional surveys are also subject to recall bias, but they enable large numbers of people to be accessed and are relatively economical in relation to time and resource [42].

A paper survey may have achieved a greater response, but online surveys are less costly, easier to administer, accessible, decrease time required for data entry and decrease the risk of data entry error by researchers.

Missing data may also have affected results obtained. Why some respondents failed to answer all questions is unknown, but the questionnaire took 15-20 minutes to complete, which may have caused fatigue towards the end [58]. As the aim was to repeat the previous survey, shortening the questionnaire was inappropriate.

Both authors have undertaken teaching and research in the area of CSBC which will have impacted on the interpretation of the qualitative data [59]. To reduce this, authors reviewed qualitative data independently before discussing, and reaching agreement on identified themes. Reflexivity, however, must be acknowledged.

Statistical analysis between the two surveys was not attempted due to the cross-sectional survey design and resultant differences in the survey population. However, as a proxy, comparisons were made between those qualified since the previous survey (<10 years) and those who would have been qualified when the previous survey was undertaken (>10 years ago). Comparisons, although less robust, do provide some insight into trends over the ten-year period.

This survey has only considered dietitians views and is therefore not providing a true picture of skill level or, importantly, patient views [60]. Patient views would provide greater insight into how skills should be delivered in practice and their impact on outcomes [27-28] and further research is needed in this area.

Conclusions

This survey has identified that dietitians continue to view CSBC as important in dietetic practice. There appears to have been a shift since the previous survey with perceived ability to apply CSBC increasing, alongside reported increased in pre-registration training in CSBC. Fewer barriers to implementation of skills were identified. There is support for mandatory skill review post-registration. However, financial constraints and time barriers continue to be perceived as barriers to post-registration training. Questions regarding the best way to implement evidence-based pre- and post-registration training in CSBC remain, and cost effective, pragmatic methods that enhance dietitians' skill development in a supportive way, are required.

Transparency Declaration.

The lead author affirms that this manuscript is an honest, accurate, and transparent account of the study being reported. The reporting of this work is compliant with STROBE guidelines. The lead author affirms that no important aspects of the study have been omitted and that any discrepancies from the study as planned have been explained.

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Table 1. Importance of CSBC for different aspects of practice.

Aspect of practice	Important		3 (Neutral)		Not important		Not applicable		Missing data
	n	%	n	%	n	%	n	%	n
Relationship with clients	610	98.7	6	1	1	0.2	1	0.2	111
Relationship with colleagues	498	81.4	85	13.9	19	3.1	10	1.6	117
Job satisfaction	544	88.8	60	9.8	4	0.7	5	0.8	116
Client satisfaction	606	98.7	6	1.0	1	0.2	1	0.2	115
Client DNA* rates	439	71.7	120	19.6	33	5.3	20	3.3	117
Client clinical outcomes	587	95.6	24	3.9	2	0.3	1	0.2	115
Confidence in client interviews	588	95.9	21	3.4	0	0	4	0.7	116
Time keeping in client interviews	409	66.6	148	24.1	43	7.0	14	2.3	115
Ability to cope with challenging clients	602	97.9	9	1.5	2	0.4	2	0.3	114

*Did not attend

Table 2. Methods of teaching CSBC experienced pre-registration.

Method	A lot		Some		None		Missing data
	n	%	n	%	n	%	N
At university							
Lectures	47	14.5	267	82.2	11	3.4	21
Observing a demonstration of skill (either by video or live)	36	11.1	253	78.3	34	10.5	23
DIET-COMMS online training package	3	1.0	19	6.1	289	92.9	35
Role-play (an opportunity to practice skills)	84	25.9	226	69.8	14	4.3	22
Role-play: audio-recorded and listened back	13	4.1	88	27.8	215	68	30
Role-play: video-recorded and watched back	11	3.5	145	45.6	162	50.9	28
Role-play: observed by peers, followed by information feedback	61	18.9	210	65.2	51	15.8	24
Role-play: observed by tutor, followed by informal feedback	39	12.4	222	70.5	54	17.1	31
Role-play with formal assessment (e.g. Objective Structured Clinical Examination (OSCE))	23	7.3	133	42.1	160	50.6	30
On clinical placement							
	n	%	n	%	n	%	n
Lectures/tutorials	8	2.6	83	26.9	217	70.5	38
Observing a demonstration of skill (either a video or live)	76	24.5	91	29.4	143	46.1	36
Consultations with real patients	228	70.6	80	24.8	15	4.6	23
DIET-COMMS online training package	0	0	7	2.3	303	97.7	36
Role-play (an opportunity to practice skills)	21	6.8	110	35.4	180	57.9	35
Role-play: audio-recorded and listened back	1	0.3	6	1.9	301	97.7	38
Role-play: video-recorded and watched back	0	0	6	1.9	303	98.1	37
Role-play: observed by peers, followed by informal feedback	17	5.5	53	17.0	241	77.5	35

Role-play: observed by tutor, followed by informal feedback	30	9.7	59	19.0	221	71.3	36
Role-play with formal assessment (e.g. OSCE)	8	2.6	14	4.6	285	92.8	39

Table 3. Respondents' views on teaching methods to use in pre-registration education.

Teaching Method	Setting for delivery of teaching						Teaching method inappropriate		Missing data
	Both		University		Placement				
	n	(%)	n	(%)	n	(%)	n	(%)	n
Lectures	166	26.2	431	69.1	3	0.5	33	5.2	96
Consultations with real patients	256	39.9	2	0.3	370	57.7	13	2.0	88
Observing a demonstration of skill (video or live)	477	74.1	151	23.4	15	2.3	1	0.2	85
Online training packages (e.g. DIET-COMMS)	360	62.0	165	28.4	12	2.1	44	7.6	148
Role-play (an opportunity to practice skills)	468	73.0	161	25.1	7	1.1	5	0.7	88
Role-play: with a real patient	241	38.4	85	13.5	193	30.7	109	17.4	101
Role-play: audio-recorded and listened back	258	41.0	306	48.6	12	1.9	53	8.4	100
Role-play: video-recorded and watched back	253	39.9	357	56.3	13	2.1	11	1.7	95
Role-play: observed by peers, followed by informal feedback	349	55.6	222	35.4	33	5.3	24	3.8	101
Role-play: observed by tutor, followed by informal feedback	336	52.8	276	43.4	16	2.5	8	1.3	93
Role-play with formal assessment (e.g. OSCE)	177	28.7	366	59.4	14	2.3	59	9.6	113

Table 4. Impact of post-registration training on practice.

Aspect of practice	Improved		No change		Got worse		Not applicable		Missing data
	n	%	n	%	n	%	n	%	
Your relationship with clients	475	95.0	20	4.0	0	0	5	1.0	14
Your relationship with colleagues	322	64.4	171	34.2	1	0.2	6	1.2	14
Your job satisfaction	421	84.2	77	15.4	0	0	2	0.4	14
Client satisfaction	457	92.4	26	5.3	0	0	12	2.4	19
Client DNA* rates	168	34.0	219	44.3	2	0.4	105	21.3	20
Client clinical outcomes	397	80.7	62	12.6	0	0	33	6.7	22
Your confidence in client interviews	459	92.0	34	6.8	1	0.2	5	1.0	15
Your time keeping in client interviews	226	45.4	178	35.7	82	16.5	12	2.4	16
Your ability to cope with challenging clients	466	93.4	28	5.6	0	0	5	1.0	15

*Did not attend

Supplementary information 1

Survey questions

Question	Response format
Which type of BDA membership do you have?	Pre-coded, used to check that the respondent had clicked on the right link for their type of membership.
How many years have you been qualified as a dietitian?	Pre-coded, tick box. Less than 5 years, 5 years or more but less than 10, 10 years or more but less than 20, 20 years or more but less than 30, 30 years or more but less than 40, 40 years or more.

What is your main area of work? Other, please specify	Pre-coded, tick which applies e.g. NHS, Freelance, Public health, education, industry, Free text
Which Band are you currently employed on?	Pre-coded, bands 4 -8.
What is your main specialist area of work?	Pre-coded, tick which applies e.g. Paediatrics, Diabetes, Mental health, nutrition support, Non-specialist etc.
What percentage of your current working hours would you estimate to be one-to one client contact?	Pre-coded, tick box. 0, 0-25%, 25-50%, 50-75%, 75-100%
How many hours (in whole time equivalents) do you normally work each week?	Pre-coded, tick box 0-0.2, 0.21-0.4, 0.41-0.6, 0.61-0.8, 0.81-1.
What is your gender?	Pre-coded, tick box, Male, Female, non-binary, prefer not to say
In which country to you work? England, Scotland, Northern Ireland, Wales, Republic of Ireland, Other, please specify	Pre-coded, tick box
Did you have any dedicated training in 'communication skills for behaviour change' as part of your pre-registration training?	Pre-coded, tick box Yes, no, do not recall
At University, did this include… Lectures Observing a demonstration of skills (either a video or live) DIET-COMMS online training package Role play (an opportunity to practice skills) Role play that was audio recorded and listened back Role play that was video recorded and watched back Role play that was observed by peers, followed by informal feedback Role play that was observed by tutor, followed by informal feedback Role play with formal assessment (e.g. OSCE) Other activities, including other online training packages.	Pre-coded, a lot, some, none. Space for comments
On placement did this include… Lecture/tutorial Observing a demonstration of skills (either a video or live) Consultations with real patients DIET-COMMS online training package Role play (an opportunity to practice skills) Role play that was audio recorded and listened back Role play that was video recorded and watched back Role play that was observed by peers, followed by informal feedback Role play that was observed by tutor, followed by informal feedback	Pre-coded, a lot, some, none.

Role play with formal assessment (e.g. OSCE) Other activities, including other online training packages.	Space for comments
Have you had any dedicated training in 'communication skills for behaviour change' as part of your post-registration training?	Pre-coded, tick box, Yes, no, do not recall
Which of the following did this include? (Please select all that apply) Attending a formal training session or course Observing/shadowing colleagues DIET-COMMS online training package Self-directed learning (e.g. extensive reading, online research) Other activities including other online training packages Consultation that was audio/video recorded, and watch back for self-assessment/reflection Consultation that was observed by peers, followed by informal feedback Consultation that was observed by tutor, followed by informal feedback.	Pre-coded
Have you been able to put some of your learning into practice?	Pre-coded, Yes, No
What effect do you think this has had on your work? Your relationship with clients Your relationship with colleagues Your job satisfaction Client satisfaction Client DNA rates Client clinical outcomes Your confidence in client interviews Your time-keeping in client interviews Your ability to cope with challenging clients	Pre-coded responses Improved a lot, Improved a little, No change, A bit worse, A lot worse, N/A
Why were you unable to put your training into practice? (please select all that apply) Lack of support from colleagues/management Lack of time The training did not equip me to change my practice Frightened of clients' responses Don't think these skills are relevant for my practice Don't find the approach helpful Wasn't confident with my skills Other, please specify,	Pre-coded, tick box Free text
Which teaching methods do you think we should be using to teach pre-registration dietetic students communication skills for behaviour change? Lectures Consultations with real patients Observing a demonstration of skills (either a video or live) Online training package (such as DIET-COMMS)	Pre-coded, select either, University, Placement or Both

Role play (an opportunity to practice skills) Role play with a real patient Role play that was audio recorded, and listened back Role play that was video recorded, and watched back Role play that was observed by peers, followed by informal feedback Role play that was observed by tutor, followed by informal feedback Role play with formal assessment (e.g. OSCE) Other activities, including other online training packages.	
Overall, what proportion of responsibility do you think should be given for teaching communication skills for behaviour change in pre-registration training?	University: Placement 0:100, 25:75, 50:50, 75:25, 100:0
What do you consider are the core communication skills for behaviour change that a graduate dietitian should have in order to be fit for practice? Please describe.	Free text
Do you feel that most dietitians need post-registration training on communication skills for behaviour change?	Pre-coded, tick box, Yes, No
Which of these training opportunities do you feel most post-registration dietitians need? Please select all that apply Theory based (not including opportunities for skill practice) Skills based (minimal theory, focus on skill practice) Work-based (e.g. departmental updates) Informal peer review with colleagues Formal assessment of core communication skills in the work place to further identify training needs Advanced application: Motivational Interviewing techniques Advance application: Cognitive Behavioural Strategies Advanced application: Mindfulness Other, please specify	Pre-coded, tick box Free text
Please explain why you feel that most dietitians DO NOT need post-registration training on communication skills for behaviour change.	Free text
Do you think that communication skills for behaviour change are more relevant for some dietetic roles than others? Please explain	Pre-coded, tick box, Yes, No Free text.
How important do you think it is for dietitians to use good communication skills for behaviour change when working with clients? Please rate	5-point Likert scale from 'very important' to 'not at all important'. N/A.
Which of the following do you think communication skills for behaviour change are important for? Relationship with clients Relationship with colleagues Job satisfaction	5-point Likert scale from 'very important' to 'not at all important'. N/A.

Client satisfaction Client DNA rates Client clinical outcomes Confidence in client interviews Time-keeping in client interviews Ability to cope with challenging clients Other, please specify	Free text.
How important do you think good communication skills for behaviour change are in obtaining an accurate diet history?	5-point Likert scale from 'very important' to 'not at all important'.
How important do you think good communication skills for behaviour change are in obtaining an accurate dietetic assessment of the client?	5-point Likert scale from 'very important' to 'not at all important'.
How would you rate you own communication skills for behaviour change?	5-point Likert scale from 'Excellent' to 'Very poor'.
The following is a list of skills which may be part of successful client interviews. Please rate how important these aspects are to you in client interviews. Greeting a client appropriately and putting them at their ease Communicate at an appropriate level for individual client Listening attentively Appropriate non-verbal communication Paraphrasing the client's story Recognising and responding appropriately to verbal communication	5-point Likert scale from 'very important' to 'not at all important'. N/A.
Do you feel you would benefit from training in communication skills for behaviour change? (Please select all that apply) Theory based (not including opportunities for skill practice) Skills based (minimal theory, focus on skill practice) Mixed (theory with opportunities for skill practice) Work-based (e.g. departmental updates) Informal peer review with colleagues Formal assessment of core communication skills in the workplace to further identify training needs Other please specify	Pre-coded, tick box. Free text
Do you feel you would benefit from training in advanced application of communication skills? (Please select all that apply) Motivational Interviewing techniques Cognitive Behavioural Strategies Mindfulness Other (Please specify)	Pre-coded, tick box. Free text
How would you like further training to be delivered (Please select all that apply) External courses Work-based Self-directed	Pre-coded, tick box.

Online training packages Other, please specify.	 Free text
It has been suggested that individual practitioners should have their communication skills for behaviour change reviewed regularly post-registration. Do you agree with this suggestion?	Pre-coded, tick box, Yes, No.
Should the regular post-registration review of communication skills for behaviour change be voluntary or mandatory? Please explain	Pre-coded, tick box, voluntary, mandatory. Free text
How often would you recommend review to occur?	Pre-coded, tick box, every 2, 3, 4, 5 years
Why do you disagree with regular post-registration review of communication skills for behaviour change?	Free text
How do you feel personally about having your communication skills for behaviour change assessed?	Free text
In your opinion, is the culture within the dietetic profession likely to be supportive of formal assessment of communication skills for behaviour change?	Free text
And finally, is there anything you would like to say about communication skills for behaviour change in the dietetic profession?	Free text.

Supplementary information 2.
Terms included and counts of skills identified

Summary table for themes identified indicating which terms were part of which theme. Percentages indicated in the table are the number of times a theme was identified divided by responses N= 1831. This indicates how significant a part of the feedback that theme was.

Specific skills/behaviours identified (S)	**Specific techniques (T)** **21% (387/1831)**	**Specific behaviours (B)**	**Behaviour change approaches, models,**	**Process (P)**

55% (1012/1831)		**8% (138/1831)**	**strategies suggested (theory) 9% (166/1831)**	**7% (122/1831)**
Listening Active listening Reflection /picking up cues / verbal feedback Summarising paraphrasing Questions open and closed, non-leading, clarifying, probing and reflective Minimal encouragers Eye contact Silence Acknowledgement Non-verbal communication /body language Listen for change talk Affirmations	Conflict resolution Dealing with challenging patients/families Ambiguity/ resistance Motivate and explore motivation to change Explore readiness to change Confidence scaling Importance Negotiate change Check understanding Rapport building-interpersonal skills-putting patient at ease Barriers to change (difficult behaviours) Support relapse Self-management Avoid jargon – simple explanations clarity concise information communication appropriate level, clear and understandable Strategies for non-compliance Problem solving Goal setting Agreed goals-SMART – realistic SMART action plans Clear goals and intentions Patient goals and strategies Shared information Involved in decision collaborative support and guidance personalised advice tailored advice	Empathy (dealing with emotions) Unconditional positive regard Non-judgemental Equal power base Genuineness compassion acceptance respect good attitude patience dignity Supportive engagement Demonstrate understanding Supportive encouragement – confidence to achieve /reassurance Self-awareness Demonstrate understanding Facilitating Responds to needs of patient – hears their voice Not just advice (recognise belief systems and values of	Basic counselling skills therapeutic alliance, advanced counselling skills working with complex behaviours health coaching empowerment mindfulness MI Patient focused/patient centred Solution focused therapy NLP CBT Stages of change Behaviour change theory/psychological underpinnings	Set clear boundaries Agenda setting – eliciting patient topic and cues Addressing patient. issues Introduce consultation expectations (assumptions) Fact finding written letters communication treatment lanes Diet history (typical day) Time and time management – effective communication under pressure Consent Knowledge Structure of consultation Maintain structure and flow of consultation Be able to open and close consultation Consult with basic patients, weight

	relevant advice information exchange Choice Breaking bad news, discussing difficult topics Appropriate information Advice giving Guided options(CHOICE) Teach and teach back skills	patient perspective, follow pt. story habit) Patience Manage patient-negotiate persuasion Assessing Resilience ego deal with emotionally challenging topics (difficult patients) / non-compliance Confidence in skill use		management and type 2 diabetes Telephone skills Refer onto others Factual Speaking and reading Professionalism Awareness soft limitations
These were mentioned as things not to do, 6 responses in total (although sympathy as listed as a skill)				
		sympathy	Prescriptive advice Exchange ideas, don't offer Skills needed for groups and individuals Help Recall Don't interrogate	

Supplementary information 3.

Why do dietitians disagree with regular post-registration review of communication skills for behaviour change?"

Theme	Subthemes	Nodes	Respondent numbers	Example quotes
How it should happen	Either is or should be	Manager should assess	9	*"Already should be addressed within work*

	done in reviews	Done as part of work supervision	13, 50 67 156 373 402 518 568	*supervision/PADRs and CPD and there is a limit to the number of hoops we should be asked to jump through" (13)* *"In a well worked department it should be recognised if you are struggling with these skills without having to formally review them" (96)* *"should be part of supervision, self devel opment, CPD etc" (156)* *"Very experienced in this and get feedback from colleagues, patients via evaluations, verbal" (250)* *"Part of HCPC standards/professional practice which are already monitored" (639)*
		Done via PDPR/appraisals	13, 41, 67, 85, 89 208 393 469 488 632656	
		Done as CPD	13 96 156 199 207 208 224 287 504	
		Provide evidence of development	24 156	
		Do it through HCPC audit	99 209 224 366 639 696	
		Teams/departments recognise training needs	163 511 530 634	
		Work based support	204	
		Good departments should recognise those struggling with skills	96	
		Already assessed within PR	464	
		Might become an additional tool for performance review	546	
		Positive about being assessed by other HCPs	223	
		Should be part of interview process	626	
		Already monitored through HCPC	639	
		Experienced in being reviewed.	250	
	Individuals are responsible for identifying their training needs	Self-moderation/regulatio n	106 243 287 377 523	*"Each professional should be responsible for their own learning and level of training required" (243)* *"I think most people are able to spot their own deficiencies." (379)* *"All areas in dietetic practice need to be up to date but professionals registered with the HCPC should be trusted to*
		Individual responsibility to develop/maintain skills-professionalism/auto nomous practitioners	106 243 400 504 528 530 531 568 707 722	
		Reflection/self-review	377 454	
		Most people can spot their own deficiencies	379	
		Trust people to comply with needs of their role	414	

		Should be doing it already	280	*comply with the needs for their role." (414)*
	Outcome based indicated need for training	Use CARE documentation	397	*"I think you pick this up at annual reviews with staff as how they communicate is reflected in outcomes, complaints and compliments" (89)* *"I think when you reach certain level in your career you do not need review unless there has been complaints against you" (562)*
		Let the patients decide	88	
		When a concern has been raised	435 480 562	
		CSBC performance reflected in outcomes, complaints and compliments	89	
		Should be dependent on skills	292	
		Should be outcome focused	672	
Considerations for practicalities: Time and money, how to build in training and review, how to make it supportive and objective.	How to build in training and/or review?	Not formal/regular review	163 207 243 287 373 468 500 530	*"It should not be a formal review but there should be formal education offered" (207)* *"These skills can be reviewed as part of supervision or peer support to reduce anxiety around assessment and promote healthy discussion about how to further improve skills." (50)* *"I do think post registration training should be available, but no formal assessment" (468)* *"If we need it to qualify then it shouldn't need to be reassessed. Though it may be helpful to support best practice." (470)*
		Not blanket review for everyone	292 488 632	
		Provide training before assessing	432 570 702	
		regular	413 686	
		Regular review useful for some	626	
		Make part of regular training/updates	41 199, 243	
		Make it peer support/review	50 447 669	
		Promote healthy discussions	50	
		Refresher courses/regular updates	98 122 199 207 311 373 468 683	
		Regular feedback is important	289	
		One off after set time	686	
		Have a best practice approach	377 470	
		MI and CBT	556	
		Not realistic to continuously assess	297	
	Time and money for training are in short supply therefore	Difficult to access training	289	*"Further reviews of skills would be too burdensome on busy NHS staff." (366)*
		cost	570	
		Too much else to do/busy/additional work	13 322 366 570	

	this needs to be considered.	Time commitment	237 277 298 413	*"I think as we all have busy workloads time may also be an issue." (570)* *"There are so many post registration reviews and so little CPD time available to Dietitians I feel it would mean more Dietitians would leave the profession" (609)*
		Need cost effective methods of training	570	
		Online module would be helpful-mandatory	707	
		Too little time for CPD	609	
		Another thing to do/be checked on/box ticking	197 308	
		Departments will not have the capacity	522	
	Must be supportive and objective	Not necessarily supportive	136	*"Very difficult to measure, how would you deem someone as incompetent?" (145)* *"I would like to know how this would be assessed before agreeing" (508)* *"I think it would be difficult to assess against a standard, and also problematic identifying assessors" (632)* *"We don't have a consistent basis for assessment for students so feel it would be even more difficult to apply to qualified staff." (717)*
		How would you decide on incompetence?	145	
		Too subjective	182 527	
		Unlikely to happen	179	
		What is regular review?	196 570	
		lone worker/freelance	233	
		How would it be reviewed	251 461 508 721	
		Depends in format and regularity	299 413	
		How you do this effects whether should happen or not?	363	
		Difficult to manage	448 641	
		Difficult to assess against a standard	632	
		Impractical	717	
		Who would do review	19 316 520 570 632	
		Undertaking regular review would be impossible	67	
		Difficult to assess	124 145 527	
		Currently inadequate support for training	702	
		No consistent basis for assessment	717	
Teaching and learning of CSBC post-registration is not a priority	Training and review of CSBC should be covered	Undergraduate should be/is enough	24 108 287 569 635 648 656	*"You should be competent before registration" (108)* *"Expect a certain level of ability on qualification*
		More emphasis on undergraduate	296 414 432	

Should be covered at undergraduate levels once learnt don't need reviewing Why should this be reviewed over and above other skills and knowledge would cause stress and anxiety as suggesting no good	at the undergraduate level			*and would not expect this to deteriorate significantly… "(569)*
	Review of CSBC is not necessary or appropriate	No-one likely to fail	461	*"For some roles would not be appropriate or necessary. For example, specialist ITU dietitians who would rarely need to use those skills." (119)* *"It's not really a skill you lose, just something you can improve on I think" (307)* *"It would seem like a lot of hassle for something that I can't imagine anyone failing" (461)* *"It would depend on the relevance of the role" (687)* *"have been practising for several years with good rapport with my clients" (728)*
		Don't lose skills	307	
		Wouldn't make any difference	311 347	
		Not always applicable or necessary	12, 96, 114, 164 374 483 562 683 698 713	
		Way of being, not a skill that becomes unlearnt	475	
		I don't need it	728	
		Should be assessing other skills	366	
		Depends on individual roles	48 119 124 159 223 281, 284 325 354 422 432 626 687	
		Not appropriate for all settings	119, 159	
		Sounds like a test	429	
		We should naturally progress with experience	88 447 480	
		Skills are always there once learnt	651	
		You develop if you practice	107 374	
		Each to their own. Everyone has their own way	98 511	
	Review of CSBC would be too stressful.	Additional pressure/stress	48 50 98 136 149 209 265 298 266 373 379 465 511 684	*"…I don't think dietitians will like it…there is already too much pressure on staying up to date, CPD, mandatory training etc and we do not need more pressures in the current climate." (511)* *"If implementing skills daily and experienced clinicians, why put the extra pressure on members of staff." (684)*
		Hassle	461	
		Need to manage anxiety	50	
		Poor retention rates/people would leave the profession	465 609	
		They won't like it	511	
		Insulting	24	

	Why should review of CSBC be prioritised over other skills and knowledge which are not assessed.	Nothing else regularly assessed/reviewed	20 213 393 648	*"We don't review any other part of our skills or knowledge base, so why single out this skill" (213)*
		Too many other hoops to jump through/not a priority	13 511 518 569	
		More important things to spend time on/not more important than other things	169 286 477	*"There are more important things to spend time auditing such as overall professionalism and knowledge appropriate to role" (169)*
		Other elements of CPD should be prioritised/assessed as well	322 414 706	*"We currently don't review any of our skills e.g. calculating nutritional requirements so I don't feel this should be any different." (706)*