Development of a motivation communication training programme to aid diabetes-specialist podiatrists with adherence discussions

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Conflict of interest

The authors have no conflict of interest to disclose in relation to this submission.

Funding

This study/project was funded by the National Institute for Health Research (NIHR) School for Primary Care Research (project reference 399). The views expressed are those of the author(s) and not necessarily those of the NIHR or the Department of Health and Social Care.

ABSTRACT

Diabetic foot ulcers (DFUs) impact a substantial proportion of patients with diabetes, with high recurrence rates, severe complications, and significant financial burden to healthcare systems. Adherence to treatment advice (e.g., limiting weight-bearing activity) is low with patients reporting dissatisfaction with the way in which advice is communicated. This study aimed to address this problem via the systematic development of a motivation communication training programme. The programme was designed to support diabetes-specialist podiatrists in empowering patients' to actively engage with treatment. The development process followed an intervention mapping approach. Needs assessment involved observations of 24 patient-practitioner consultations within a diabetes-specialist foot clinic. This informed specification of a theory of change (Self-Determination Theory) and relevant evidence-based communication strategies (drawing from Motivational Interviewing). The training programme was developed iteratively with changes made following feedback from 5 diabetic foot healthcare professionals. The resulting training programme, consisting of six one-hour face-to-face sessions over an 8-week period, was delivered to a further 6 diabetes specialist podiatrists, with 5 participating in post-programme telephone interviews to assess acceptability. Deductive thematic analysis of interview data revealed positive aspects of the training (e.g., valuable and relevant content), ideas for improvement (e.g., online resources and context specific video examples), the acceptability of motivation strategies and challenges putting the strategies into practice (such as time constraints and breaking old communication habits). This study contributes to our understanding of integrating motivation principles into routine consultations and holds potential for enhancing adherence to treatment recommendations in patients living with diabetic foot ulcers.

Keywords: self-determination theory, communication, training, podiatrist, motivation, diabetes

BACKGROUND

Diabetic Foot Ulcers (DFUs) are a serious complication of diabetes which can lead to lower extremity amputation and premature mortality (Jupiter et al., 2016). The condition is associated with high healthcare costs (Cavanagh et al., 2012; Kerr et al., 2019) and has severe implications for patients' health-related quality of life (Khunkaew et al., 2019). Patients with DFUs often experience limited physical and social functioning and nearly half are reported to experience depression (Jiang et al., 2020).

Patient adherence to treatment advice in the management of DFUs has been reported to be consistently low (Armstrong et al., 2003; Bus et al., 2016; Bus & van Netten, 2016; Tanharo et al., 2018). Adherence to self-care behaviours (e.g., appropriate wound dressing, limiting weight-bearing activity, wearing therapeutic footwear) are crucial in preventing and healing ulcers, with those not adhering presenting with higher rates of ulceration (Bus & van Netten, 2016). Thus, interventions targeting patient adherence in this population are needed (International Working Group of the Diabetic Foot, 2019).

A key factor influencing patient adherence is the communication style of healthcare practitioners (Zolnierek & Dimattero, 2009). Coffey et al. (2019) conducted a qualitative meta-synthesis focusing on the experiences of patients' with DFUs. The results revealed that patients were dissatisfied with the way footcare advice was communicated to them. Patients reported inconsistencies in the advice they received, a lack of rapport and emotional support, and a general lack of understanding regarding how DFUs impacted their daily lives (Coffey et al., 2019). Similarly, a study by Searle et al. (2008) found one-third of interviewed patients felt they were not actively involved in decision-making during consultations and were hesitant to ask questions. Furthermore, Searle and colleagues (2008) interviewed podiatrists who expressed frustration and lack of support in their efforts to empower and establish collaborative partnerships with their patients. More recent research conducted by Hancox et

al. (2023) interviewed patients regarding delivery of treatment advice specifically in relation to limiting weight-bearing activity. Patients reported that often treatment advice is delivered in a directive and generic manner and expressed preference for a more person-centred approach with advice tailored to their specific needs via a process of collaborative problem-solving. Consequently, there is a pressing need for interventions to support health professionals in communicating with patients in a way that empowers them to actively participate in their treatment and adhere to recommendations.

Self-determination theory (SDT; Deci & Ryan, 1985; Ryan & Deci, 2017) is a framework that can be used to understand how the communication style of healthcare practitioners influences patient adherence to health behaviours. Central to SDT, is the notion that satisfaction of individuals' basic psychological needs for autonomy (choice and volition), competence (able to perform the desired behaviour) and relatedness (sense of belonging) fosters optimal motivation (Deci & Ryan, 2000). Individuals may be motivated to engage in health-behaviours for more autonomous reasons (e.g., enjoyment, valuing benefits) or controlled reasons (avoiding letting oneself down or pressure from significant others) (Deci & Ryan, 2000). Some individuals may be amotivated (a lack of motivation) and have no intention of engaging. Increases in need satisfaction and autonomous motivation (but not controlled or amotivation) have been found to be associated with positive changes in health behaviour (Ntoumanis et al., 2021) and long-term behaviour change (Ng et al., 2012).

The communication style adopted by significant others (e.g., healthcare professionals) can influence the extent to which individuals' basic psychological needs are satisfied, and in turn, the type of motivation underpinning engagement. An autonomy supportive communication style (characterised by offering choice, rationale and empathy) has been found to satisfy individuals' basic psychological needs, promote more self-determined motivations and be effective at increasing adherence to a variety of health-related behaviours: physical activity,

tobacco cessation, medication adherence and dental hygiene (Ng et al., 2012). Despite the potential for supporting adherence, no research has applied SDT in the context of DFUs.

Motivational Interviewing (MI) is "a collaborative conversation style for strengthening a person's own motivation and commitment to change" (Miller & Rollnick, 2012, p.12). MI interventions outperform traditional patient education methods where behaviour change or adherence is the desired outcome for various health behaviours (Rubak et al., 2005).

MI and SDT are viewed as complementary approaches, with SDT serving as a theoretical framework for understanding how and why MI techniques facilitate behaviour change (Deci & Ryan, 2012; Markland et al., 2005; Patrick & Williams, 2012; Vansteenkiste & Sheldon, 2006). Phillips and Guarnaccia (2020) conducted a systematic review of SDT- and/or MI-based interventions for prevention and treatment of type 2 diabetes. The authors identified 23 type 2 diabetes interventions (3 SDT-based, 20 MI-based), none of which focused on diabetes-specialist podiatrists. The effectiveness of the interventions were mixed, primarily due to variations in quality of study design, methods, and treatment fidelity. To address these limitations, Phillips and Guarnaccia (2020) recommend integration of the strong theoretical foundation of SDT with MI's practice-orientated manuals and tools for assessing treatment integrity.

The purpose of this study therefore, was to describe the development and acceptability of an SDT and MI-informed motivation communication training programme for healthcare professionals (i.e., podiatrists) focussed on facilitating discussions around motivation and adherence to treatment recommendations in patients with DFUs.

METHODS AND RESULTS

Intervention design methodology

Aligned with the UK Medical Research Council guidance (Skivington et al., 2021), development of the training programme was a pragmatic, dynamic and iterative process which involved understanding the problem and context, involvement of stakeholders, drawing on existing theories and research-evidence, undertaking of primary data collection (i.e., observation) and pilot testing to assess acceptability. The study was registered (ClinicalTrials.gov: NCT03853941) and approved by the XXXXXX Research Ethics Committee (REC Number 18/EM/0162), July 2018, and written informed consent gained from all participants. The training programme was systematically planned following the first 5 stages of the Intervention Mapping protocol (Bartholomew, Parcel, & Kok, 1998). Table 1 provides an overview of the intervention development process.

[Table 1]

Step 1: Needs assessment

The aim of step 1 was to establish an understanding of what needs to be changed and the specific context for the intervention. As detailed in the introduction, patient-provider communication is an important factor influencing adherence in patients living with DFUs (e.g., Coffey et al., 2019; Gale et al., 2008; Hancox et al., 2023; Searle et al., 2008). Observation was undertaken to gain a detailed understanding of behaviour change conversations in routine DFU consultations and the extent to which such discussions are aligned with SDT and MI approaches.

Observation

Design

149 The observational study was conducted in a secondary care, Diabetes Foot Clinic within the
150 East Midlands. A non-participant observer (WJC, a Research Assistant trained in conducting
151 observations) live-coded the communication style of podiatrists during routine DFU
152 consultations between May and August 2019. Prior to the consultation the observer explained
153 they were a researcher interested in understanding more about patient-practitioner
154 communication and were there to observe the consultation. Patient and podiatrist participant
155 demographics (e.g., age, gender, ethnicity) were collected using a short questionnaire.

156 *Participants*

157 Opportunistic sampling was used to recruit patient participants who met the inclusion criteria
158 of adults (aged 18+ years) diagnosed with diabetes, who currently had a DFU. Eligible patients
159 were approached by a member of their usual care team who explained the nature of the study,
160 what participation would involve and provided an information sheet. Patients were given
161 minimum of 24 hours to consider their participation before providing written informed consent.

162 Podiatrists working in the specialist Diabetes Foot Clinic, aged 18 and over, with at least 6
163 months experience working within the NHS were invited to participate in the study. Eligible
164 podiatrists were provided with an information sheet which informed them of all aspects
165 pertaining to participation and given 24 hours or more before written informed consent gained.

166 Twenty-four patient consultations were observed. Participants included 18 males and 6
167 females, mean age 60.8 (SD= 10.8, range:35-81 years, 71% in their fifties or early sixties), all
168 participants were White British with English as their first language.
169 Fifteen podiatrists (12 female, 3 male, mean age = 45.7 years, SD=12.2, range:26-58 years)
170 were observed. Most podiatrist participants were observed once or twice, one was observed
171 five times. Podiatrists selected who was observed, depending on availability at the time of the
172 patients' appointment and clinical need.

Observation Measures

Observations were live-coded using the Behaviour Change Counselling Index (BECCI; Lane, 2002). The BECCI was designed to measure practitioners' use of MI-informed behaviour change counselling techniques and has been found to demonstrate acceptable levels of reliability and validity (Lane et al., 2005). The BECCI uses eleven items, grouped into four domains, representing different MI skill competencies. Domain 1: Agenda Setting & Permission Seeking (items 1 & 2, e.g., The practitioner invites the patient to talk about behaviour change); Domain 2: The Why & How of Change in Behaviour (items 3-7, e.g., Practitioner uses empathic listening statements when patient talks about the topic); Domain 3: Whole Consultation (items 8-10, e.g., Practitioner acknowledges challenges about behaviour change that the patient faces); and Domain 4: Talk about Targets (item 11, Practitioner and patient exchange ideas about how the patient could change current behaviour). Each item was rated on a five-point Likert scale (0=not at all to 4=a great extent). An estimate of the ratio of time spent speaking and the behaviour change topics discussed was noted.

Aligned with SDT, 3 items were used to assess the extent to which the observer perceived the podiatrist to actively communicate with the patient in a need-supportive way (i.e., 'practitioner actively fosters the patient's autonomy by supporting their sense of control over their health behaviour', 'practitioner actively fosters the patients' feelings of competence by supporting the patient's abilities and capabilities to master their health behaviour' and the 'practitioner actively relates to the patient with care and respect and shows an interest in aspects of their lifestyle that are important to them'). Items were rated on a 5-point Likert Scale (0=not at all, 1=minimally, 2=to some extent, 3=a good deal, 4=a great extent).

Consultations were live-coded, audio-recording was not possible in the busy clinic environment due to concerns over privacy of nearby patients. The observer was trained in SDT and MI, read literature about behaviour change in healthcare settings, for example, Rollnick et al. (2008) and completed the online BMJ module 'Motivational interviewing in brief consultations' (https://new-learning.bmj.com/course/10051582). The observer also attended a six-hour MI training session, tailored to the context of the current study and designed and delivered by a Motivational Interviewing Network of Trainers (MINT) trainer. This included fidelity training, whereby BECCI was used to code six video-recordings of consultations using gradually more complex MI consistent techniques. Within this context, fidelity refers to the observer's ability to recognise clinician strategies that were MI-consistent and codable using BECCI. Competency in using the BECCI was assessed by inter-rater reliability with two experienced coders to ensure a level of consistency (i.e., to score within one point of each other), prior to clinic observations. Throughout this process and during the clinic observations, the BECCI Coding Manual (Lane, 2002) was followed to ensure accuracy of interpretation.

Data Analysis

Quantitative data was entered into SPSS software (v.24). Patient demographics (e.g., age, gender) and descriptive statistics were produced (e.g., mean scores for each BECCI item).

Results: Usual Care Observation

Patient-practitioner speaking ratio

The mean consultation length was 40 minutes (SD=24; range:20-130). The ratio of practitioner to patient speaking is relevant because healthcare professionals are viewed as having more person-centred conversations if they speak less than the patient (Lane et al., 2005). In 6 consultations (25%) the practitioner spoke for more than half the time. In 16

consultations (67%) there was an even split in time talking between the patient and podiatrist. In 2 consultations (8%) the practitioner spoke for less than half the time.

Behaviour change topics discussed in consultations

In eight consultations no behaviour change was discussed. In the remaining consultations, the topics discussed most often were adherence to footwear (n=11), limiting weight-bearing (n=5), medications (n=3) and dressing adherence (n=1).

Use of MI-informed techniques in routine DFU care

BECCI scores are displayed in Table 2. The techniques most used were showing sensitivity to talking of other issues and talking about current behaviour. The least used were summaries, encouraging talk about behaviour change, and empathetic listening statements.

[Table 2]

Need-supportive communication

Need-support from the podiatrists whilst communicating with the patient was perceived to be minimal. The observer noted support for relatedness (Mean = 1.75, SD = 0.85) to be higher than autonomy (Mean = 1.17, SD = 0.76) and competence (Mean = 1.21, SD = 0.88), however, all scores were modest.

Step 2: Theory of change

The needs assessment in Step 1 identified opportunity for improvement in the patient-provider communication style. Based on the findings of step 1, SDT (Deci & Ryan, 1985) was selected as the guiding framework for developing a communication intervention to promote adherence to treatment advice in patients with DFUs. See Figure 1 for a logic model illustrating the theory of change.

[Figure 1]

Step 3: Selection of theory and evidence-based communication strategies

Motivation strategies, relevant to the specific context of a diabetic foot consultation (see Table 3), were selected from those in previous SDT interventions (i.e., Gillison et al., 2019; Ntoumanis et al., 2021). As with other applied SDT research (e.g., Coumans et al., 2020) MI techniques (e.g., open questions, reflections) were included as a means of promoting satisfaction of patients' basic psychological needs. Selection of theory and evidence based SDT strategies and MI techniques was informed by stage 1 needs assessment findings, consultation with a patient and public involvement (PPI) group, healthcare professional advisory group, and guided by a proficient MI practitioner. Examples within the training were focused on discussions regarding patients' limiting weight-bearing activity as this has been highlighted by podiatrists (healthcare professional advisory group) and patients (Hancox et al., 2023) as an area for improvement. However, the motivational strategies can be applied to other adherence-related conversations.

The training content was structured using the four processes of MI: engaging, focusing, evoking and planning (Miller & Rollnick, 2012) to provide podiatrists with a guide as to when certain strategies may be most relevant within the consultation process. The four processes are both sequential and recursive as the practitioner may need to return to prior processes as needed (Miller & Rollnick, 2012). Table 3 details each SDT strategy, the way it maps onto constructs of SDT and the four processes of MI and relevant MI techniques.

[Table 3]

Step 4: Development of training programme

Training content and materials were drafted. The programme covered both theoretical aspects (e.g., importance of satisfying patients' basic psychological needs and promoting self-determined motivation for long-term adherence) and practical need-supportive communication strategies (e.g., acknowledging patients' perspectives). A mix of PowerPoint slides, video examples, small group discussions and role-play activities were included.

The draft training programme was piloted with 5 diabetic foot healthcare professionals (3 podiatrists, 1 Consultant Podiatric Surgeon, 1 Specialist Registrar, mean years of experience = 15.32, range = 5-30). Two researchers, one experienced in delivering SDT interventions (JH) and the other experienced in delivering MI training to healthcare professionals (CH) led the one-day (5-hour) training session at an NHS hospital in the East Midlands. A questionnaire distributed at the end of the training revealed the healthcare professionals to view the training as relevant to their job role (8.6/10) and enjoyable (9.2/10). They described feeling reasonably confident with integrating the skills learned into routine consultations (8.2/10), however, a few noted that they would need more practice time and reminders to support integration into practice. Practical strategies, such as scaling questions to assess patients' importance and/or confidence regarding changing behaviour, were described by healthcare professionals as the most useful aspects of the training. Healthcare professionals valued the chance to practice the communication strategies and discuss how what they say could be re-phrased in a more motivationally supportive way. In terms of improvements, feedback suggested it was "a lot to cover in one-day" and that multiple shorter sessions might be better.

Following the pilot-training, researchers met with three podiatrists working within the specialist diabetes unit in which the final training programme would be delivered. Views

were sought on practical aspects of training delivery (e.g., when, where, how long). There was a preference for short training sessions delivered over multiple weeks. Thus, the final intervention consisted of 6 x 1-hour face-to-face training sessions delivered 8-9am in a seminar room within the hospital where the podiatrists work. The training was delivered by two researchers (JH & CH) and over an 8-week period (with the first 4 sessions delivered weekly, and the last 2 fortnightly) to enable podiatrists' time to practice the motivation strategies between sessions. Participants were provided with a written summary of the practical strategies and audio recordings of key points covered in each training session. The focus of each training session is briefly outlined in Table 4.

[Table 4]

Step 5: Acceptability of the training programme

The training was delivered to 6 diabetes specialist podiatrists (1 male, 5 female; mean age = 35.83, SD = 11.41, all White British) working in a specialist Diabetes Foot Clinic in the East Midlands, UK (a different NHS Trust to the pilot training) from August 16th-October 4th 2019. Inclusion criteria were aged 18 and over and having at least 6 months experience working within the NHS. On average podiatrists had worked in the NHS for 9 years (range = 4-17 years) and had been in their current role for 5 and half years (range = 1-17 years). Three podiatrists attended all six training sessions (100%). One podiatrist attended 5/6 sessions (83%) and two attended 4/6 sessions (67%). Reasons for missing sessions included holidays and illness. Those missing sessions were encouraged to listen to the provided audio recorded summary.

Semi-structured interviews were conducted within 2 months of the end of the training to explore podiatrists' views on acceptability of the training programme and motivation strategies. All 6 podiatrists who took part in the training were invited to be interviewed. Interviews were conducted via telephone by an independent consultant researcher not involved in delivering the training programme, to reduce risk of social desirability bias. An interview guide (see supplementary material A), developed by CH and JH, was used to explore podiatrists' thoughts on and experiences of receiving the training, implementation of strategies in practice and suggestions for improvements. Interviews lasted approximately 30 minutes, were audio-recorded, transcribed verbatim and anonymised. Data were analysed in NVivo (version 12) using a deductive thematic analysis (Braun & Clarke, 2006) based on the content of the interview guide and motivation strategies (see Table 3). Analysis was conducted by JH (researcher trained in qualitative analysis). Although JH was involved in delivering the training programme, when analysing the data JH took a neutral stance, taking into consideration the range of opinions expressed by interview participants and using supporting quotes to illustrate interpretation of the data and support confirmability. Following familiarisation with the data through 'active reading' of transcripts, initial codes were generated. Codes were then collated into potential themes which were discussed with all authors. Detailed field notes and a clear audit trail of analytic decisions were kept to maximise transparency and ensure credibility and quality.

Five out of 6 podiatrists agreed to participate in a semi-structured interview. Four main themes were identified: positive aspects of the training, ideas for improvement, acceptability of motivation strategies and challenges putting the strategies into practice. A brief outline of each theme is provided below, further details including subthemes and illustrative quotes are provided in supplementary material B.

345

346 ***Positive aspects of the training***

347 Podiatrists liked that the training was delivered over multiple sessions enabling time to
348 practice between sessions. However, it was suggested that longer sessions (e.g., 1.5 hours)
349 would be preferable. The small group format was described as supportive, enabling
350 participants to feel involved and contribute. Trainers were viewed as approachable and
351 sharing of 'real life' examples valued. Podiatrists liked the mix of activities (e.g., videos,
352 role-play) and learning resources (e.g., handouts). Those missing sessions found the audio-
353 recorded summary helpful for catching-up on the content. The podiatrists valued the
354 opportunity to reflect on their approach to motivating patients and found the specific
355 strategies helpful. Overall, the training was viewed as valuable and relevant for a wide range
356 of healthcare professionals.

357

358 ***Suggestions for improvements***

359 It was suggested that online resources for easy access would be beneficial. Podiatrists
360 explained a tailored handout for patients with a summary of what was discussed regarding
361 behaviour change, and video examples of strategies in the specific context of DFUs would
362 also be helpful.

363

364 ***Acceptability of motivation strategies***

365 The only technique that was considered as not appropriate for the patient population was the
366 'no change' version of the two possible futures strategy which invites patients to imagine
367 what their life might be like in six months' time if their ulcer did not heal. Podiatrists
368 explained that for patients who have had the ulcer for years the technique appeared to
369 reinforce their negative view that no matter what they do their ulcer will not heal. Instead,

asking patients the 'change has occurred' version of this strategy, whereby patients are invited to think about what it would mean for them if their ulcer healed, was viewed more favourably.

Challenges of putting the strategies into practice

Challenges experienced putting the strategies into practice included: time pressures and competing demands during consultations, other healthcare professionals using a more directive communication style, avoiding the righting reflex (i.e., wanting to tell the patient what to do), breaking the habit of asking closed questions, confidence using the strategies and perception that some patients will not change no matter what healthcare professionals say.

DISCUSSION

The aim of this study was to describe the development and acceptability of a motivation communication training programme for diabetes-specialist podiatrists focussed on supporting adherence discussions. The training programme was theory and evidence-based and developed in a systematic way considering the specific context. Observation was undertaken to gain understanding of the communication style currently used by podiatrists during routine consultations. Findings suggest that whilst some MI-consistent techniques are used, there is opportunity for improvement in quality and consistency. These findings reinforced the need for the development of a communication training programme for this population. Observation highlighted areas for improvement (e.g., use of summaries, reflective listening statements and satisfaction of patients' basic psychological needs) which informed training development.

The training programme was positively received by podiatrists. Suggestions for improvements (e.g., longer sessions, online resources) will be explored and if feasible

incorporated in future iterations of the training programme. A particular challenge noted by podiatrists was other practitioners entering the consultation and using a more directive communication style. Podiatrists expressed the training would be relevant for a wide range of healthcare professionals. Widening the scope of the training to include all healthcare professionals within the multidisciplinary team may address support a more consistent and cohesive motivational approach with patients.

The only motivation technique considered not appropriate was the 'no change' version of two possible futures. Wagner and Ingersoll (2008) have cautioned this MI technique, which aims to develop discrepancy, is consistent with a negative reinforcement model (e.g., change is needed in order to escape a negative future). Such an approach may evoke introjected motivations, characterised by pressure to act to resolve negative emotions (e.g., shame or fear), which are not considered conducive to long-term behaviour change. Moreover, podiatrists in this study noted the technique to be particularly problematic with those who had been a patient for a long-time as it reinforced their already negative emotions. It has been suggested (Wagner & Ingersoll, 2008; Neipp et al., 2021) that instead the focus should be on moving towards a positive future state (such as is imagined in the 'change has occurred' version of the two possible futures). This approach is more aligned with SDT and promotion of autonomous motivation with the emphasis on how individuals can proactively seek a better future.

Time pressures and the competing demands was described by podiatrists as a further challenge to integrating the strategies routinely into practice. Many of the podiatrists interviewed worked in both clinic (hospital out-patient) and community settings and explained strategies were easier to implement in community settings. Often community visits

are longer, with more consistency in which practitioner visits and less distractions. Podiatrists typically engage in casual rapport-building conversation whilst treating the ulcer and replacing dressings and therefore are uniquely placed with the opportunity to have all-important behaviour change conversations with patients (Gabbay et al., 2011). However, they typically do not receive formal training in motivation communication approaches. To address this gap in training provision, future research could explore implementation of the training programme within community settings.

Strengths and Limitations

A key strength of the study was the systematic and rigorous approach to intervention development with a key focus on tailoring to the specific context. Observation of the current motivation communication style used by podiatrists enabled identification of key areas for improvement and maximised the likelihood that intervention would be relevant and enhance current practice. Furthermore, involvement of stakeholders throughout the development process aided refinement of content, format and delivery of the training to optimise acceptability (Skivington et al., 2021).

A limitation of the study is acceptability of the training being tested with a small sample (n=6) of podiatrists, limiting generalisability of findings to more diverse populations. The observed patient sample also lacked diversity (mainly male, white ethnicity, aged over 65). Although this sample is representative of the wider patient population living with DFUs (Public Health England, 2022), recruitment of a more heterogeneous sample (e.g., inclusion of ethnic minority patients) should be explored in future research. Another limitation of the present study is the lack of exploration of patients' views on receiving care from podiatrists who have undergone the training, a noteworthy avenue for future research. The present study

focused on healthcare communication, other barriers to patient treatment adherence (e.g., lack of pain, depression; Hancox et al., 2023) could be addressed in future research.

A proof-of-concept study, using a non-randomised, controlled before-and-after design, to assess the training's impact on podiatrists' communication and patient behaviour has been submitted elsewhere (Hancox et al., forthcoming). Furthermore, we intend to address the limitations identified in a larger cluster randomised controlled trial which will aim to establish the feasibility and effectiveness of the intervention more widely.

Conclusion

Patient adherence to treatment recommendations is crucial in both preventing and treating DFUs. However, patients encounter challenges in this regard, expressing dissatisfaction with the patient-practitioner relationship and the way treatment advice is conveyed, which serves as a significant barrier. To our knowledge, this is first study to test the acceptability of an SDT-based and MI-informed training programme with this population. This research makes an important contribution to the literature by advancing understanding of the practicalities of translating motivational principles in routine consultations with patients living with DFUs. Findings relating to the challenges experienced by podiatrists when integrating the motivation strategies into practice can be used to improve future training.

Disclosure Statement

The authors declare no conflict of interest.

Data Availability

Data is available from the corresponding author upon reasonable request.

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Table 1.

Intervention development process informed by Intervention Mapping protocol (Bartholomew, Parcel, & Kok, 1998)

Step	Aims	Methods
1. Needs assessment	• Understand the specific context in which the intervention will be delivered and what type of communication style is currently delivered by podiatrists during routine consultations	Observation of routine consultations
2. Theory of change	• Clarify objectives (what change is needed?) and determinants (what are the mechanisms of change?)	Logic model
3. Selection of theory-based communication strategies	• Select theoretical methods and practical applications	Review and selection of relevant SDT-based strategies and MI techniques
4. Development of training programme	• Draft training content and materials • Pilot test of training content and materials	Stakeholder consultation (pilot test of training)
5. Evaluation of acceptability	• Explore podiatrists' views on the acceptability of the training and motivation strategies	Semi-structured interviews with podiatrists

Table 2.

Mean scores for BECCI items

Domain	Item	Item Score Mean (SD)
1. Agenda setting and permission seeking	1. The patient invites the practitioner to talk about behaviour change	0.65 (0.41)
	2. The practitioner demonstrates sensitivity to talking about other issues	1.17 (0.64)
2. The why and how of change in behaviour	3. Practitioner encourages patient to talk about current behaviour or status quo	1.17 (0.87)
	4. Practitioner encourages patient to talk about behaviour change	0.38 (0.58)
	5. Practitioner asks questions to elicit how patient thinks and feels about the topic	0.63 (0.71)
	6. Practitioner uses empathic listening statements when patient talks about the topic	0.46 (0.51)
	7. Practitioner uses summaries to bring together what the patient says about the topic	0.17 (0.48)
3. The whole conversation	8. Practitioner acknowledges challenges about behaviour change that the patient faces	1.13 (0.85)
	9. When practitioner provides information, it is sensitive to patient concerns and understanding	1.15 (0.64)
	10. Practitioner actively conveys respect for patient choice about behaviour change.	0.79 (0.78)
4. Talk about targets	11. Practitioner and patient exchange ideas about how the patient could change current behaviour	0.77 (0.53)

413 *Note.* Each item was rated on a five-point Likert scale (0=not at all to 4=a great extent)

Table 3.

Motivation strategies organised by MI process.

MI process	Aim of process	SDT-based strategy	Description of strategy	Basic need(s) targeted
Engaging (to be maintained throughout the consult)	Develop rapport, empathy and take time to listen to and understand the patient's perspective	Use non-controlling language	Use language that emphasises the patient's right to choose and avoid the '*righting reflex*' (i.e., telling patients what they should do).	Autonomy
		Develop involvement by demonstrating warmth and empathy	Express a personal interest in the patient and take time to develop a rapport. Use *open-ended questions* and *reflective listening* statements.	Relatedness
		Acknowledge patient's perspectives	Take time to understand the patient's perspective and recognise their challenges. Use *summaries* and *affirmations* that acknowledge the patient's difficulties, efforts and self-worth.	Autonomy
Focusing (What?)	Establish personal context and factors relevant to the patient's experience of their DFU and limiting weight-bearing	Offer choices	Acknowledge the patient's ability for choice and self-determination. Ask about the patient's concerns and priorities and what they would like to focus on (shared *agenda setting*).	Autonomy
		Take time to understand the patient's personal context and factors relevant to the target behaviour	Invite the patient to talk about their day-to-day life and how relevant and practical limiting weight-bearing is for them. Use the *typical day* technique (e.g., "Talk me through a typical day for you but with a focus upon when you might be at your most active").	Autonomy & relatedness
Evoking (Why?)	Explore the patients' personal interest and motivation to limit activity & weight-bearing	Explore patient's reasons for changing behaviour	Explore the patient's reasons for limiting weight-bearing or not. Use *scaling questions to assess importance* (e.g., "On a scale of 1-10, how important is it for you to limit your activity and weight-bearing?" and *open-ended questions* that seek to elicit *change talk* (e.g., "Why are you a 5 and not a 3?", "What needs to happen for you to get to a 6?").	Autonomy

		Explore patient's values relating to the target behaviour	Explore patient's values and how they relate to target behaviour. Use the *'two possible futures'* technique and invite patients to imagine what their life might be like if their ulcer did or did not heal in the future and describe what that might mean for them.	Autonomy
		Support the patient with barrier identification and problem solving	Work with the patient to identify barriers to behaviour change. This may include the use of *scaling questions to assess confidence* to limit-weight-bearing (e.g., "On a scale of 1-10, how confident are you that you can limit your activity and weight-bearing?", "Why are you a 5 and not a 3?", "What needs to happen for you to get to a 6?") and problem solving.	Competence
		Provide information and rationales	Provide information and rationales relevant to the patient's needs and situation (e.g., about antecedents or health consequences of the behaviour). Use the technique '*Elicit-Provide-Elicit*' to: 1) Elicit what the patient knows or would like to know or if it's okay if you offer them information, 2) Provide the information in a neutral, non-judgmental way, and 3) Elicit the patient's interpretation/relevance for them.	Autonomy
Planning (How?)	Develop a plan to limit weight-bearing that is specific, detailed & individualised	Provide structure	Set parameters within which choice and agency can take place and provide support to initiate action. This may involve developing an appropriate individualised plan according to the patient's specific context and needs. Techniques may include: jointly agreeing SMART goals, action planning (e.g., if…then plans) and *summaries* (e.g., verbally summarise the conversation and provide a written summary for the patient to take home with them).	Autonomy & Competence

Note. MI techniques are provided in italic

Table 4.

Training content

Session	Key content covered
1	• MI 'spirit' (i.e., collaborative, person-centred approach) vs the 'righting reflex' (i.e., temptation to instruct people what they should or could do) • How Self Determination Theory can help us to understand motivation and behaviour (i.e., importance of satisfying patients' basic psychological needs and promoting more self-determined motivation).
2	• Developing rapport, empathy and taking time to listen to and understand the patient's perspective • Practical techniques: *open-ended questions* and *reflective listening* statements
3	• Taking time to understand the patient's perspective and recognising their challenges. • Practical techniques: *summaries* and *affirmations.*
4	• Establishing personal context and factors relevant to the patient's experience of their DFU and limiting weight-bearing • Practical techniques: shared *agenda setting* and *typical day*
5	• Exploring the patients' personal interest and motivation to limit activity & weight-bearing • Practical techniques: *scaling questions, two possible futures, Elicit-Provide-Elicit*
6	• Developing a plan to limit weight-bearing that is specific, detailed & individualised • Practical techniques: goal setting and *summaries*

Figure 1.

Logic model illustrating the theory of change based on self-determination theory (Deci & Ryan, 1985).