Enhancing the delivery of Making Every Contact Count (MECC) training and delivery for the Third and Social Economy (TSE) sector: a strategic behavioural analysis

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Abstract

Objective: To enhance Making Every Contact Count (MECC, an opportunistic approach to health promotion), training in the Third and Social Economy (TSE, all groups and organisations primarily working towards social justice, outside of the government or household) by examining the degree to which the behavioural content of MECC training tackled significant factors influencing MECC delivery.

Methods and Measures: A strategic behavioural analysis design. Semi-structured interviews with service providers (n = 15) and users (n = 5) were coded for barriers and facilitators of MECC delivery using the Theoretical Domains Framework (TDF). Existing MECC training was coded for behaviour change techniques (BCTs) and intervention functions (IFs). The degree to which BCTs and IFs addressed the key TDF domains of influences on MECC delivery in the TSE were examined using prespecified tools.

Results: Seven key TDF domains of influences in MECC delivery were identified. Overall, only 9/31 linked BCTs were utilised within MECC training, with percentage utilisation of relevant BCTs for each domain ranging from 0% to 66.7%. Training adequately addressed 2/7 key domains.

Conclusion: The TSE and healthcare share many common key TDF domains, although there are differences in how each are relevant. Limitations and recommendations for MECC training are discussed.

Introduction

Noncommunicable diseases including cardiovascular diseases, cancer, diabetes, and mental illness account for around 74% of deaths worldwide (1). Interventions to target tobacco, alcohol, healthy diets, and physical activity are the top four 'best buys' in terms of return on investment (2), with interventions to reduce smoking, alcohol consumption, and sodium intake accounting for almost two-thirds of the predicted health benefits of all interventions to reduce the impact of non-communicable diseases (3). Whilst the statistics around the detrimental impact of noncommunicable diseases are driven by low and middle-income countries (1), all countries independent of income level are proposed to benefit from such 'best buy' policies and interventions (4).

Initially proposed by Public Health England (5), Making Every Contact Count (MECC) is an initiative that aims to address such health behaviours through very brief (delivery of information and or signposting, lasting seconds to a few minutes) or brief (a two-way discussion, lasting up to 30 minutes) opportunistic conversations (5). MECC draws upon behavioural science approaches including the COM-B model (6), which posits that capability, opportunity, and motivation are all necessary to achieve behaviour change, in particular aiming to increase recipients' psychological capability to change (5). Due to its opportunistic nature in that MECC makes use of existing interactions between service providers and users, MECC is a potentially cost-effective approach to health promotion and prevention (5). Although a solid evidence base for the effectiveness of MECC conversations on service user outcomes is sparse (7-10), with available evidence indicating some improvement in sedentary behaviour and dietary quality in pregnant individuals (7), the justification for MECC builds upon the effectiveness of brief interventions to address smoking (11), alcohol (12), physical activity (13), and diet (14). Furthermore, one study published in the Lancet of two opportunistic very brief interventions lasting less than 30 seconds reported significant reduction in weight, particularly when providing support rather than advice alone (15). More recently, MECC has been expanded to incorporate wider topics including mental health and the social determinants of health, described under the umbrella term of MECC plus (5).

It has been demonstrated that MECC delivery within healthcare settings is acceptable to both service providers and users (8, 16-18), facilitated by the perception of MECC as an integral and not additional part of one's role (19-22), support from senior leadership and management (23, 24), and a shift in organisational culture towards health promotion (24-26). However, the most prominent barrier is time (19, 23, 25-28), with MECC delivery further hindered if not perceived as part of service providers' role (23, 26, 29), confidence to deliver MECC is low (23, 26, 27), service users are perceived as not ready to change (25, 26), and little organisational support is received (25, 26).

More recently, MECC funding and training roll-out has supported the implementation of MECC outside of healthcare settings including the Third and Social Economy (TSE) sector (30), which describes all groups and organisations that operate outside of the family and government whose primary aim is social justice (31). The TSE is also described as the voluntary and community sector and encapsulates all formal and informal groups and organisations with a social mission including charities, faith-based settings, food banks or pantries, mutual aid groups, and social enterprises, cooperatives, and mutuals where social justice is prioritised over profit (31). In support of this broader implementation of MECC to include the TSE, a systematic review of brief interventions within the TSE found some evidence for smoking reduction for recipients, with motivational interviewing the most promising mechanism, although evidence to support effectiveness for alcohol, diet, and physical activity is needed (32). Specifically, MECC plus may be particularly relevant for the TSE that addresses a variety of physical, psychological, and social needs. Implementation of MECC within the TSE may be optimal for a number of reasons. Firstly, building rapport and a relationship

with service users is repeatedly reported as a facilitator to MECC delivery (19, 23), and service providers within TSE settings have time to build such relationships through repeated interaction (30). Furthermore, as TSE settings are supported by volunteers and volunteering has been demonstrated to provide a myriad of health and wellbeing benefits for volunteers (33), MECC delivery within the TSE could potentially provide a two-fold benefit to both the recipient and deliverer. Finally, another key barrier within healthcare settings is that health promotion is not perceived as their role, or diagnosis and treatment is at least prioritised (19). In contrast, TSE settings most often incorporate a holistic perspective of health and wellbeing lending itself to MECC delivery, particularly MECC plus. However, to the authors' knowledge, only one evaluation of MECC within the TSE exists (30). Although common barriers to healthcare included time, lack of perceived relevance to one's role, and reluctance of service users to change, unique challenges included funding instability and uncertainty, wider circumstances of service users, and the need for long term support (30). However, no existing literature has explored whether such challenges are addressed by MECC training when considered as an intervention.

A strategic behavioural analysis (SBA) is a methodology that utilises behaviour change science to evaluate existing interventions in terms of whether they appropriately address the target behavioural problem (19). Specifically, the Behaviour Change Wheel (BCW) (34) is a tool used to build interventions in accordance with the target behavioural problem but may also be utilised to assess existing interventions to ensure their optimisation and that they are fit for purpose. Existing interventions can be coded for their active components, using the 93 empirically identified behaviour change techniques (BCTs) (35), and compared against the barriers and facilitators identified to conducting the target behaviour. Barriers and facilitators can be identified using the Theoretical Domain Framework (TDF) (36), which identify 14 domains that are congruent with capability, opportunity, or motivation to perform the target behaviour. The TDF is advantageous for providing more specific guidance on the influences of behaviour than capability, opportunity, and motivation and is widely applied to evaluate the implementation of interventions (37). Existing tools (38) that explore links between individual BCTs (identifying active components of an intervention) and TDF domains (identifying barriers and facilitators to performing a behaviour or engaging in the intervention) can be applied to compare both stages of analysis, to identify whether the existing intervention efficiently addresses the relevant barriers to the target behaviour, or if there are missed opportunities to optimise the efficacy of the intervention.

One existing SBA conducted a systematic review to identify barriers and facilitators to MECC delivery and mapped them onto existing MECC training within healthcare nationally (19). The SBA found that MECC training mostly missed opportunities to address the most relevant TDF domains. Another scoping review coded barriers and facilitators to MECC delivery using the TDF. Within both existing analyses of MECC utilising the TDF as a framework, Environmental Context and Resources was ranked as most relevant (19, 23), particularly as a barrier (19). However, both existing analyses only included healthcare settings. Given the aforementioned differences in the barriers and facilitators of MECC delivery within the TSE, there is a need to assess available MECC training for its suitability within these novel settings, as it is likely that an alternate approach to MECC training is needed. Furthermore, the existing SBA did not include MECC plus training interventions (19), which are increasingly utilised particularly outside of healthcare settings.

Thus, the aim of the current study was to identify the barriers and facilitators to MECC delivery within the TSE and assess whether current training sufficiently addressed them, informing future funding and training in this area. For example, given that most service providers from the TSE do not have a healthcare background, they are potentially lacking in the knowledge and skills related to

health promotion needed to deliver MECC and thus may require more intensive training compared to healthcare professionals. Implementation of MECC outside of healthcare is particularly established in the North East and North Cumbria (NENC) region, including the TSE (30). Although regional approaches vary, within the NENC a blanket approach to MECC training is adopted whereby the MECC training programme offered to service providers across healthcare, local authority, and the TSE is fundamentally the same, although the specific topics and examples may be tailored to the sector (24). For example, MECC training for the TSE sector may focus more on the social determinants of health and show an example of a MECC conversation within a TSE setting. NENC is also a diverse area with services facing challenges relevant to UK overall and beyond including rurality and associated challenges in accessing services (39), widening health inequalities regionally and between other regions (40), and instability of funding (30). Thus, the NENC was identified as an appropriate and comprehensive scope for such an evaluation. Furthermore, it was of particular importance that any evaluation included the service user voice, often excluded from MECC research (23).

Methods

The protocol for the current study was pre-registered prior to recruitment via Open Science Framework (available: https://doi.org/10.17605/OSF.IO/45JYG). Given that research on the application of MECC within the TSE is in its infancy, a qualitative design was selected as the most appropriate for assessment of barriers and facilitators to allow for emergent findings and in-depth understanding. Primary (interviews) and secondary (training resources) data were analysed for TDF domains and BCTs, respectively. Next, existing tools that explore links between TDF domains and BCTs were applied to identify ways to enhance MECC training in the TSE by examining the degree to which the current MECC training tackles the key factors influencing MECC delivery. The study included three distinct stages to achieve this overall aim;

1. Identification of barriers and facilitators to MECC delivery within the TSE using the TDF
2. Identification of active components (BCTs) within current MECC training offered to the TSE
3. Mapping of the most relevant barriers and facilitators against the active components (BCTs) utilised within the current MECC training, to identify suitability and missed or utilised ities

Patient and public involvement

A person and patient involvement (PPI) panel was formed after the research questions were formed to inform on the topic guides and recruitment strategy and consisted of three service providers from different TSE organisations, recruited through existing connections with the primary researcher (BN) and a social media (e.g X) advertisement. As a result of the panel meeting, topic guides were amended to define brief interventions and MECC, specifically prompt about the impact of COVID-19 on health and wellbeing conversations, probe about relevant training received in other roles. Additionally, topic guides were piloted and amended prior to interviews.

Stage one: Identification of barriers and facilitators to MECC delivery within the TSE

Participants

Semi-structured one-to-one interviews were conducted with service providers (n = 15) and users (n = 5) between August 2022 to January 2023. The sampling strategy included purposive, to select a wide breadth of TSE settings, convenience, to optimise existing relationships with service providers from the TSE, and snowball, to gain access to service users. Consequently, the recruitment strategy targeted numerous TSE groups and organisations through social media, advertising via a recruitment

poster on site, word of mouth, and site visits. A comprehensive description of the participants is available elsewhere, within an additional paper describing a reflexive thematic analysis of the data (41). Service users accessed services relating to IT and employment skills (n = 2), parenting groups (n = 2) or charity groups relating to mental health and chronic conditions (n = 1). Service providers were from a variety of TSE groups and organisations including charities (n = 8), youth clubs (n = 2), faith-based settings (n = 3), informal groups (n = 1) and a food bank (n = 1). Service providers were volunteers (n = 7) or paid workers (n = 8), and all participants (8 male, 11 female, and 1 Agender, trans, and non-binary) were from a range of rural (n = 7) and urban (n = 13) settings from across the NENC. The current study aimed to assess a need for MECC training within the TSE including whether health and wellbeing conversations already occur, thus only three service providers had received MECC training (two of which also delivered MECC training). In line with the model of information power (42), the sample size was estimated from the aim, specificity of sample, use of theory, interviews, and analysis strategy. As the aim was relatively broad, sampling mixed, analysis used an established theoretical framework and took a critical realist approach, and rapport was often already established prior to interview although the primary researcher was new to interviewing, the estimated total required sample size was 20.

Materials

Topic guides were informed by the Theoretical Domains Framework (TDF) and explored conversations around health and wellbeing and the social determinants more generally, only using the term MECC if participants were already familiar with it. The TDF was originally developed to apply to healthcare professionals to better understand their behaviour (37). However, the TDF is also often applied to all relevant stakeholders including service users to develop and evaluate interventions (43, 44), particularly when the aim is to improve the implementation and delivery of an intervention that ultimately aims to change service user behaviour (43) as in the current study. The semi-structured topic guides (published elsewhere, see Nichol et al. (41)) were tailored for service users or providers, although depending on whether there was a clear distinction between both groups within the organisation or group, the guides were used flexibly and in a less binary way. Topic guides asked explicitly about health conversations around alcohol, diet, physical activity and smoking, and the social determinants of health such as finance and housing. They explored the types of conversations within the TSE, the barriers and facilitators to health and wellbeing conversations, what service users or providers would like to see from the organisation or group in the future, and the identification of training that might facilitate such health and wellbeing conversations.

Procedure

Interviews were conducted online (n = 9) or in-person (n = 11) at the preference of the participants. To encourage recruitment and recognise the time commitment, service users were provided with a £15 Amazon voucher as a reimbursement. Interviews were audio-recorded, transcribed verbatim, and fully anonymised on transcription.

Data analysis

Analysis was conducted via NVivo by the primary researcher (BN). To optimise the distinct advantages of two different data analysis methods, a blended approach to qualitative analysis was adopted (45) whereby transcripts were first coded deductively through content analysis, then inductively using thematic analysis (46). First, a directed content analysis (47) was applied using the TDF (36) as a coding scheme. Coding followed the target behaviour of MECC or ‘MECC-like’ conversations (conversations judged to resemble MECC that occurred in settings that had not

received MECC training), and the target individual of anyone (including conversations between service providers, users, and conversations service providers discussed outside of these parameters). The description of MECC-like conversations was any opportunistic conversation around health and wellbeing or the social determinants. Opportunistic was defined by the authors as either the deliverer initiating the conversation or seizing an opportunity within an existing conversation to discuss health and wellbeing or the social determinants with the recipient. Codes were further sorted into barriers and facilitators within each TDF domain and frequencies calculated accordingly. Next, the codes for each TDF domain were further analysed for subthemes using reflexive thematic analysis (48). Thematic analysis was selected as an additional analysis to promote an in-depth understanding of the challenges and enablers within each domain through incorporating contextual and relational elements of the data. Reflexive notes were kept throughout interviews and content and thematic analysis. Additionally, the nature of MECC or 'MECC-like' conversations within the TSE were also coded and used to complete the Template for Intervention Description and Replication (TIDieR) checklist (49) (Table 1). TDF domains were firstly ranked according to their frequency (number of transcripts), elaboration (number of themes), and conflict within domains (e.g some report an abundance and other report a lack of resources). From this ranking exercise, seven key domains were identified to include within stage two of the mapping analysis.

A second author (AMR) independently coded the TDF domains of 10% of transcripts to check for inter-coder reliability, calculated using a Cohen's Kappa statistic (50) and compared against the conservative parameters by Altman (51). Specifically, presence of coding for each TDF domain within a transcript was noted as 'yes' or 'no' for each reviewer. Furthermore, agreement was assessed qualitatively by ensuring coding occurred at the same area of transcript, with any disagreement resolved through discussion. If the Kappa statistic was initially judged as 'Poor' (under .20), it was defined in the pre-registration that the second rater (AMR) would code a further 10% of transcripts until the Kappa statistic exceeded .20. The inter-rater agreement for coding of TDF domains was poor ($\kappa = .133$, $p = .283$). Thus, the primary researcher (BN) re-evaluated all coding. After re-coding, the second researcher (AMR) coded another 10% of transcripts, which demonstrated inter rater reliability to be good ($\kappa = .632$, $p = <.001$) indicating a dramatic improvement in consistency across raters.

To gain an in-depth understanding of the acceptability of health and wellbeing conversations within the TSE, a completely inductive reflexive thematic analysis was also applied to transcripts, reported elsewhere (41) and following the consolidated criteria for reporting qualitative research (COREQ) checklist (52). In accordance with open science practices, all transcripts are publicly available (53).

Stage two: Identification of active components (BCTs) within current MECC training offered to the TSE

Source of data

Document analysis took place in August 2023 and included coding of all available training materials on the NENC 'NHS Futures' website that related to the TSE (e.g the training module on vaccination and immunisation was not coded). Training materials included power point slides, worksheets, videos, case studies, and group activities.

Materials

The BCT Taxonomy (35) consists of 93 BCTs organised into 19 hierarchically clustered groups and was used to code for BCTs utilised by MECC training. Additionally, IFs (34) were coded using the BCW

which proposes nine approaches to interventions that are not mutually exclusive and can be mapped onto the TDF domains to again identify missed and seized opportunities (34).

Data analysis

The primary author (BN) reviewed and coded each resource for BCTs and IFs. A second author (AMR) independently coded 10% of resources. Both coders have completed training on the BCT Taxonomy V1. Furthermore, coder AMR is a behavioural scientist highly experienced in BCT coding. Inter-rater reliability was calculated using Cohen's Kappa (54). Specifically, coding of each BCT within a resource was noted as 'yes' or 'no' for each reviewer. Any conflicting coding was resolved through discussion. Coding of BCTs again followed the target behaviour of MECC delivery, with the target population as service providers or trainees. Coding of BCTs did not concern frequency of the presence of BCTs within each module, but instead whether each BCT was present or not. Each module and its associated resources were coded separately. The inter-rater agreement for coding of BCTs was good ($\kappa = .646$, $p < .001$). Additionally, the modules were described according to the TIDieR checklist (49).

Stage three: Mapping of the most relevant barriers and facilitators against the active components (BCTs) utilised within the current MECC training, to identify suitability and missed and seized opportunities.

Materials

The Theory and Techniques Tool (https://theoryandtechniquetool.humanbehaviourchange.org/tool) was used to access information on the theoretical congruence between the intervention functions (BCTs and IFs) currently adopted by MECC training. The tool provides the most updated and rigorous available matrix of BCTs as mapped onto TDF domains, triangulating data from a literature review (55) and consensus study (56), and resolving any remaining conflicts through another expert panel (57).

Data analysis

Next, both sets of analyses (stages one and two) were mapped against each other using existing resources that combine both BCTs and the TDF on one matrix (see materials, above). Theoretical congruence was achieved by applying the aforementioned tool to access the extent to which each BCT identified within current training addressed the key TDF domains. When interpreting the tool, only TDF established links were noted, disregarding 'inconclusive' judgements. BCTs were coded as low congruence (no key TDF domains addressed), medium congruence (one key TDF domain addressed) and high congruence (two or more key TDF domains addressed). Additionally, IFs were mapped onto the seven TDF domains, again to identify missed and seized opportunities (BCTs utilised that align with one or more of the key identified TDF domains). The SBA was used to identify missed opportunities (relevant BCTs that were not utilised) and create example deliveries of each theme that was most relevant to the barriers and facilitators and missed IFs identified (46).

Results

Stage one: Behavioural diagnosis and barriers and facilitators to MECC according to TDF domains

Supplementary Material 1 displays a description of MECC or 'MECC-like' conversations within the TSE. Generally, conversations around health, wellbeing, and the social determinants within the TSE do occur, although more frequently for certain topics including mental health, financial concerns, and ill health, and mostly initiated by service users. Rather than encouraging direct health behaviour change, conversations centre more around access, advocacy, and navigation of services that have a

direct or indirect impact on wellbeing, and thus signposting and referral are most common features of conversations. Conversations are person-centred but also influenced by the perceived suitability of the context.

Specific barriers and facilitators and their frequency are displayed in Table 2 alongside the ranking for each TDF domain. Seven TDF domains stood out as key (all were cited in 18 or more transcripts, whereas the next most commonly cited TDF domain was only cited by 12); Beliefs about Capabilities (e.g service users as not willing to change, certain topics as more difficult to raise, a low perceived ability to respond, and professional confidence), Beliefs about Consequences (e.g belief of negative outcomes if not conducted appropriately, positive outcomes for the recipient particularly when empowered, and a belief that every intervention makes a difference), Environmental Context and Resources (e.g lack of service capacity for signposting and referral, conversations triggered by an event, prompt, or wider context, a safe and private space, and time to build rapport), Skills (e.g transferable skills including motivational interviewing techniques, signposting and referral, the ability to be person-centred, and interpersonal skills), Social/Professional Role and Identity (e.g MECC not perceived to be the role of service providers and a holistic view of one's role), Knowledge (e.g knowledge of where to signpost and refer), and Social Influences (e.g trusting relationships). The key TDF domain Skills only acted as a facilitator, whilst the remaining domains acted as both barriers and facilitators to MECC conversations.

The overall coding framework of the thematic analysis within each TDF domain can be found in Supplementary Material 2, although key themes, codes, and quotes are summarised in Table 3. Service providers displayed a myriad of skills that facilitate and resemble MECC delivery, although were less frequently able to proactively initiate health and wellbeing conversations and provide advice around health behaviours. Particularly, service providers were able to judge when it is appropriate and equally not appropriate to intervene and recognised that an individual's priorities should be addressed first before it is appropriate to raise other health and wellbeing topics. However, service providers were most lacking in their perceived ability to translate these skills into health and wellbeing conversations. Indeed, those who had attended MECC training tended to be more confident in seizing opportunities to discuss health and wellbeing and were aware of the boundaries of MECC. The setting was also a key determinant for health and wellbeing conversations, namely a private, safe, and relaxed space, although psychological safety was important too, such that some recipients were reported as more comfortable when engaging in another task. A perception of service users as not wishing to change was a key barrier, as service providers were acutely aware of possible negative consequences if they encouraged the conversation too heavily. For a minority of participants, their extensive knowledge and awareness of health inequalities, gained through their experience within the TSE, acted as a barrier to initiating health and wellbeing conversations, as participants felt that recipients are less able to change their behaviour due to the social determinants of health such as poverty and its psychological burden.

Stage two: IFs and BCTs

The document analysis identified four MECC training modules (Table 1) as relevant to the TSE (Core MECC, MECC and Financial Wellbeing, MECC and Social Isolation, and a 40-minute MECC session plan), three of which (Core MECC, MECC and Financial Wellbeing, MECC and Social Isolation) taught the three A's (Ask, Assist, Act). Analysis of BCTs within MECC training identified a total of twelve BCTs and five IFs (see Supplementary Material 3 for the coding for each module). Modelling was the only IF utilised by all five training modules, followed by Education, Training, and Environmental Restructuring (n = 4 each), then Persuasion (n = 3). The Core MECC module utilised the most BCTs (n = 10), which also utilised the most IFs along with MECC and Social Isolation (n = 5). The only BCT

identified across all modules was Behavioral practice/ rehearsal, although Instruction on how to perform a behaviour, Demonstration of the behaviour, and Adding objects to the environment were also commonly utilised (n = 4).

Stage three: Identifying opportunities for optimisation of MECC within the TSE

The seven key TDF domains were mapped onto the coded BCTs. As shown in Table 4, out of the twelve BCTs identified in the MECC training delivered to the TSE, four were highly congruent to existing barriers and facilitators (Instruction on How to Perform a Behaviour, Information About Health Consequences, Information About Social and Environmental Consequences, and Behavioural Practice/ Rehearsal) five were moderately congruent (Information about Emotional Consequences, Demonstration of the Behaviour, Prompts/Cues, Pros and Cons, and Adding Objects to the Environment) and three were not at all congruent (Goal Setting (outcome), Monitoring of Emotional Consequences, and Credible Source). The former BCT was linked with the TDF domain Goals, whilst the remaining BCTs have not yet been linked to any TDF domains. Behavioural Practice/Rehearsal addressed two key TDF domains and was present in all five modules. Instruction on how to perform a behaviour was the most appropriate BCT utilised, addressing three of the seven key TDF domains. The BCTs that were highly congruent (addressed two TDF domains) with the barriers and facilitators identified but were not present within the modules were Social Support (practical) and Graded Tasks. All key domains were appropriately targeted by at least two BCTs, although not present across all modules, aside from Social/Professional Role and Identity and Social Influences which were not addressed by any appropriate BCTs and thus were missed opportunities.

As shown in Table 5, five IFs appropriately addressed the key TDF domains (Education, Persuasion, Training, Environmental Restructuring, and Modelling). Although the IFs Restriction and Enablement could be utilised to more comprehensively address the key TDF domains, all of the key TDF domains were appropriately addressed by at least one IF.

A total of 31 BCTs were identified to be linked to one or more of the seven TDF domains. The percentage utilisation of BCTs relevant to each key TDF domain was calculated (see Supplementary Material 4), judged according to whether BCTs were utilised to their full potential (50% or more of the relevant BCTs were utilised) or not (19). MECC training adequately addressed Skills (66.7%) and Knowledge (60%), but not Beliefs about consequences (40%), Beliefs about capabilities (37.5%), Environmental context and resources (28.6%), or Social Influences (0%). Table 6 demonstrates how key themes could be addressed by relevant BCTs. Although there are no BCTs that are linked to Social/Professional Role and Identity, BCTs that would be useful to address Social Influences include Social Support (unspecified and practical), Social Comparison, Information about Other's Approval, and Social Reward.

Discussion

Main findings of this study

The current study aimed to enhance MECC training delivered to the TSE by evaluating the extent to which the behavioural content of existing training addresses the key factor that influence the delivery of MECC in the TSE specifically. Seven key TDF domains were identified, with most frequent barriers including the perception that service users are not willing or able to make changes (Beliefs about Capabilities) and MECC not perceived to be part of service providers' role (Social/Professional Role and Identity), and most relevant facilitators including a belief that positive outcomes occur when recipients feel equal, empowered, and supported (Beliefs about Consequences), a safe and private space (Environmental Context and Resources), existing transferable skills (Skills), knowledge

of where to signpost and refer (Knowledge), and relationships with recipients (Social Influences). Existing MECC training adequately addressed two (Knowledge and Skills) of the seven key TDF domains. However, MECC training for the TSE should better utilise BCTs associated with Beliefs about Capabilities, Beliefs about Consequences, Environmental Context and Resources, Social Influences, and explore strategies to ensure MECC becomes part of one's Social/Professional Role and Identity. Current training is focused around education on the need for MECC, demonstration of MECC conversations, the chance to discuss how a MECC conversations could be conducted, and provision of signposting resources. However, individuals from the TSE would benefit from training that builds trainees' confidence to apply MECC (e.g Self-Talk), encourages them to consider service user outcomes if MECC is not applied (e.g Comparative Imagining of Future Outcomes), addresses the need for recipients to feel safe (e.g Restructuring the Physical Environment), reassures them that recipients will not feel judged if conducted appropriately (e.g Information About Others' Approval, and encourages peer support and delivery (e.g Social Support (Practical)). Furthermore, within respective settings, work is needed to alter role expectations. Additionally, training should ensure that the BCTs utilised are consistent across all modules. The intervention function Restriction, which is not associated with any BCTs, could be utilised to address the TDF domains Environmental Context and Resources and Social Influences, for example though altering the TSE environment to encourage health promotion such as removal of foods with low nutritional value and creating alcohol and smoke free spaces. Nonetheless, MECC training does utilise the frequently cited facilitators of existing transferable skills and knowing where to signpost and refer.

What is already known on this topic

Many of the barriers and facilitators as mapped onto TDF domains identified within the current study are similarly most relevant across healthcare settings (encompassing a range healthcare professionals including nurses, physiotherapists, general practitioners, and public health practitioners (23)), namely Beliefs about Consequences, Beliefs about Capabilities, Social/Professional Role and Identity, and Environmental Consequences and Resources (19, 23, 26). For example, common barriers include time (19, 23, 25-28) (Environmental Context and Resources), services users perceived as not receptive (Beliefs about Capabilities) (25, 26), MECC is not perceived to be part of their role (Social/Professional Role and Identity) (23, 26, 29), and a belief in negative or no impacts of MECC conversations (Beliefs about Consequences) (23). Facilitators similar across settings include the need for a safe and private space (26) and resources for signposting (26) (Environmental Context and Resources), and service users expect to talk about certain topics (26) (Social/Professional Role and Identity). Skills (16, 19, 23), Knowledge (19), and Social Influences (23) are also common TDF domains, particularly the facilitator of establishing relationships (19, 23, 26, 28) (Social Influences), although slightly less relevant and consistently identified. With further investigation, the nature of the relevance of some domains differed. For example, Social Influences within healthcare are mainly driven by the need for support from management and leadership (23), whereas equal distribution of power, peer support and delivery, and mutual relationships were more important within the TSE. Overall, the TSE possesses a greater proportion of facilitators within the key domains, for example TSE settings seem to be advantageous for possessing existing knowledge, partnerships, and resources for signposting. It is generally accepted that range and scope of the work of the TSE is typically much broader than the NHS and other public services. In this context the reality for service providers and users is to think about the acceptability of MECC within a broader set of relationships than normally within healthcare settings. This is demonstrated by the diverse relationships of the various participants with MECC creating a readiness to apply a more holistic approach to incorporating the learning from training seen in previous research (30). Particularly, Environmental Context and Resources was less relevant than has previously been reported within

healthcare (19, 23), and acted more as a facilitator than a barrier (19). Additionally, whilst Goals was not included as one of the seven key domains, this domain still acted as a common facilitator within the TSE, more so than within healthcare settings (16, 19, 23). However, the main challenge unique to the TSE is the instability and uncertainty of funding (30).

Also notably, Social/Professional Role and Identity is important to address across settings in different ways. Within healthcare settings, MECC is perceived as adding to workload and a there is a tendency to revert back to a specialised perception of their role as to focus on diagnosis and treatment (23, 26). Contrastingly, whilst service providers within the TSE possess a more holistic view of health and wellbeing, concerns surround overstepping the boundaries of their role and into someone else's role or '*territory*' and not feeling specialised enough to deliver MECC, as some service providers explicitly state that they were not a healthcare professional. Thus, clearly the barrier associated with professional roles is one of perceived appropriateness rather than one role as objectively more appropriate than the other. It is however important to note variability in the perceived role of healthcare professionals, for example physiotherapists (20) and midwives (26) align more towards a holistic view of health similar to that of the TSE. Also, to some extent the ability of service providers within the TSE to recognise the boundaries of their role and when to refer and signpost is considered a facilitator. Nevertheless, the domain of Social/Professional Role and Identity should be addressed across all sectors. However, addressing identity through individual level interventions appears to be difficult, as a review found little quantitative evidence to support interventions to amend social or personal identity (58), and no BCTs have been linked to this domain (57). Therefore, this domain is likely most effectively addressed outside of MECC training sessions, through changes within the group or organisation the trainee operates within. Thus, more effective approaches to address this domain may address social norms and expectations including incorporating MECC into service providers' role specification or communicating to both service providers and users that MECC is expected as part of service providers' role. Additionally, MECC training across all sectors should focus on altering perceptions towards MECC as *'everyone's business'* (59). For example, introspective reflective work during MECC training may help to develop a professional identity that includes MECC delivery (60), such as collaborative reflection with other trainees (61).

Another key shared barrier across settings is if service users are not motivated or willing to change their behaviour (25, 26). Particularly worryingly, findings from the current study indicated that those who show readiness to change are more likely to engage in MECC conversations, whereas those not considering change will avoid, deny, or avert such conversations, indicating that those who would benefit most do not receive any intervention with concerns that MECC could widen rather than reduce health inequalities as proposed (5, 62). The TSE may offer a unique potential solution through its facilitation of trusting, long term relationships that encourage collaborative interventions, as touched upon by Harrison et al. (30). Similarly suggested by participants within the current study, MECC delivery could be optimised through a co-production approach (30), whereby service providers and users shape the MECC approach within their respective TSE setting. For service providers, this may increase shared ownership and thus investment in MECC conversations, and for service users such an involvement approach may further help to consolidate their expectations of service providers.

What this study adds

The current study provides the first analysis of available MECC training provided to the TSE against the specific barrier and facilitators experienced within these settings. Furthermore, an additional theme not identified in the previous study of MECC within the TSE (30) is the idea of not only a safe physical space to enable MECC conversations, but psychological safety too. Specifically, that

different individuals may vary in when they feel most comfortable talking about their health and wellbeing; whilst some feel most at ease in a private one-to-one setting, others feel most comfortable whilst also engaged in an activity, or as part of a group discussion. This finding is comparable to the increasingly popular 'walk and talk' approach to counselling, as recipients of this approach note a comfort in the informality and a facilitation of the development of an equal relationship and rapport (63). Again, the suitable approach for each TSE setting may be best identified through co-production with service providers and users. Also, it is important to acknowledge that although most of the key TDF domains identified are common across settings, domain level analysis that a strategic behavioural analysis allows for does not account for specific barriers and facilitators. Similarly, even if the same BCTs are identified across TSE and healthcare settings, how each BCT could be best enacted may differ. Thus, a tailored approach to training within the TSE is recommended to target common TDF domains across settings.

This study identified that many service providers within the TSE are highly skilled, drawing upon backgrounds including healthcare, counselling, and education. Many of the identified skills were transferable to MECC, and thus such service providers within the TSE likely only require the minimal MECC training (~1.5 hours) as currently applied across settings. However, for service providers without such backgrounds, additional training may be beneficial to ensure the quality of MECC delivery remains consistent across all providers.

Another unique finding was that for a minority of highly skilled participants (~10%), their awareness of health inequalities acted as a barrier to MECC conversations, as participants noted that it felt unfair or even unproductive to discuss health with service users of low socioeconomic status, given the impact of the social determinants of health. Clearly, the relation of MECC to health inequalities appears to be double-edged, as both the MECC consensus statement (5) and a policy position report on health inequalities from the Association for Directors of Public Health (62) posit that MECC should be applied to help tackle health inequalities. Thus, to help address this barrier, MECC training should address differences in the characteristics of service users and inform on how to respond to these, as literature suggests a resulting increase in service user satisfaction not only though improved understanding from service providers, but also through encouraging organisations to address structural barriers that make it more difficult for certain communities to engage (64).

Strengths and limitations of this study

One strength of the current study in comparison to the previously published SBA of MECC delivery was the use of the Theory and Techniques Tool which triangulates the findings from a literature synthesis and consensus study, as opposed to the consensus study only (34). Thus, the findings of the current study reflect the more rigorous standards applied to link TDF domains and BCTs. Whilst the use of the BCT taxonomy as opposed to the updated BCT ontology (an elaborated, updated, and 'living' version of the original taxonomy) (65) may be perceived to be a limitation of the current study, the theory and techniques tool used to map BCTs onto TDF domains is not yet available for the ontology (65), thus the BCT taxonomy was most appropriate for the SBA methodology. Nonetheless, some limitations must be acknowledged. Firstly, given the constantly evolving MECC training within the NENC in response to feedback from trainees, the current analysis of included BCTs offers only a snapshot of the training (as of August 2023). However, accreditation from the Royal Society of Public Health of the core MECC modules ensures some stability as the training is limited in how much can be amended whilst retaining the accreditation. Secondly, given that MECC implementation in the NENC adopts a train the trainer model whereby individuals are trained to deliver MECC training, it is possible that subsequent training as delivered within the TSE varies from that which was coded as the training can be tailored to better fit the setting and organisation.

However, any tailoring is more likely to be in terms of the topics and area-specific information rather than the mechanisms of training. Thirdly, whilst coding it was often difficult to tease apart participants' everyday role versus barriers and facilitators to MECC or MECC-like conversations in particular. For example, a needs assessment was often integral to participants' role, although the required skills and process of the conversations often closely resembled MECC.

An important limitation to consider regarding the strategic behavioural analysis method using the available mapping tool is that many links have yet to be investigated. For example, the BCTs Monitoring of Emotional Consequences and Credible Source utilised by one or more MECC modules emerged as having low congruence with the seven key TDF domains, although the links between some of those and each BCT are yet to be investigated. Thus, it is possible that as the tool evolves in response to new evidence, their congruence with the most relevant barriers and facilitators may increase. Similarly, although no BCTs are currently linked to Social/Professional Role and Identity, 31% of BCTs have yet to be tested in relation to their links with this domain. Indeed, of the three IFs that map onto Social/Professional Role and Identity, of the corresponding BCTs according to an expert consensus that may be useful to address this domain but are yet to be investigated in terms of their links, potentially relevant BCTs include Information about Social and Environmental Consequences (already utilised by two MECC modules), Identification of the Self as a Role Model, Feedback on the Behaviour, and Information about Others' Approval. Thus, future work should investigate the links between Social/Professional Role and Identity and the possibly relevant BCTs.

Conclusions

Existing MECC training delivered to the TSE appropriately focuses on building the skills and knowledge needed to deliver MECC. Generally, service providers from the TSE possess most of the skills required for MECC but lack confidence in their ability to apply them. Thus, training should focus on the assurance that you do not need to be an expert in health promotion, all that is required is the ability to listen, ask questions, and signpost and refer to more specialist support, which service providers from the TSE are already capable of. Furthermore, training would benefit from encouraging reflection on professional identity, communicating that service users will react positively and will not feel judged if conducted in the right way, and highlighting the existing resources, partnerships, and knowledge of signposting within the TSE. Finally, work is required within respective groups and organisations across all sectors to communicate that MECC is an expected and integral part of service delivery. Although it is known that MECC training Health Conversation Skills (HCS) significantly improves scores within TDF domains Beliefs about Capabilities, Skills, and Goals (16), to the authors' knowledge no existing research has measured the impact of other approaches to MECC training. Thus, future research would benefit from evaluating the impact of MECC training outside of HCS on the perceived capability, opportunity, and motivation of attendees.

Ethical approval

This study received full ethical approval from the Faculty of Health and Life Sciences at Northumbria University (reference: 49176) and data collection took place between August 2022 to January 2023.

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Conflict of interest

The authors have no conflict of interest to declare.

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Tables

Table 1: Description of MECC modules.

TIDieR checklist item	**Description of intervention:**
Name of the intervention	MECC essential (Core MECC) and additional (the remaining) modules for NENC regional offer
Why	Modules generally set out the justification for MECC (e.g health inequalities, theories of behaviour change) before explaining how MECC can be delivered
What	Core MECC: Background of policy context of MECC, health inequalities, and behaviour change theories, description of MECC as a brief or very brief approach and its benefits, and talks through the five core health behaviours (alcohol, smoking, diet, physical activity, and mental health) and health risks and conversation starters for each. Acknowledges barriers to MECC conversations. Works through the 3 As (Ask, Assist, Act) approach and provides examples for each. Provides details of signposting resources (e.g MECC gateway). A slide asks attendees to identify recent opportunities to apply MECC. Additional resources: video of a MECC conversation and written case studies, asking attendees how they might respond. MECC and Financial Wellbeing: Bolt on training the above Core MECC training. Bitesize training that includes information around financial wellbeing and the link between money and mental health, benefits of discussing money, conversation starters and guidance on discussing money, a case study, and links to Money Helper and other signposting resources (e.g MECC gateway). Works through the 3 As (Ask, Assist, Act) approach and provides examples for each. Additional resources: case study MECC and Social Isolation: Bolt on training the above Core MECC training. Background of policy context of MECC, health inequalities, and behaviour change theories, description of MECC as a brief or very brief approach and its benefits, provides videos of a MECC conversation around social isolation. Acknowledges barriers to MECC conversations. Works through the 3 As (Ask, Assist, Act) approach and provides examples for each. A slide asks attendees to identify recent opportunities to apply MECC. Signposts to MECC gateway. Additional resources: case study of a MECC conversation around loneliness 40-minute MECC session plan: Shown two videos; in one an opportunity for MECC arises but is missed, in the other the opportunity for MECC is taken. Prompts attendees to identify the opportunity and provide their reflections on the MECC conversation e.g barriers, facilitators, and consequences.
Who provided	Core MECC: Provided by the NENC regional MECC team, endorsed by the RSPH. Delivered by anyone that has completed the MECC train the trainer programme. MECC and Financial Wellbeing: Provided by Money and Pensions Service. Delivered by trainers (completed the above train the trainer programme) who have watched the webinar on delivering the module. MECC and Social Isolation: Yorkshire and the Humber regional MECC team. Delivered by ant trainer (completed the above train the trainer programme) 40-minute MECC session plan: Information not available
How	Core MECC: Face to face or online, groups of the same or mixed professions and organisations. MECC and Financial Wellbeing: Face to face or online. MECC and Social Isolation: Face to face or online. 40-minute MECC session plan: Face to face.
Where	Core MECC: Setting depends on location of attendees within the region. Remaining modules: Same as above.

When and how much	Core MECC: 1.5 hours MECC and Financial Wellbeing: ~30 minutes MECC and Social Isolation: ~30 minutes 40-minute MECC session plan: Core MECC condensed into 40 minutes
Tailoring	Core MECC: Adapted by trainers to suit their style, setting, and organisation. Health inequalities slide adapted to be local to attendees. Focuses further on one of the core behaviours of MECC most relevant to audience. Case studies and example videos can be selected dependent on attendees (e.g primary care examples). MECC and Financial Wellbeing: Signposting slide to MECC gateway is local to attendees.
Modification	Core MECC: Training is continually adapted according to attendees' feedback by NENC regional MECC team. MECC and Financial Wellbeing: Reviewed annually with Money and Pensions Services MECC and Social Isolation: Reviewed by Yorkshire and the Humber regional MECC team

Table 2: Prioritisation of TDF domains in terms of the number of transcripts they were identified in (No. transcripts), the number of themes within them (No. themes), and whether the domain can be both a barrier and facilitator to MECC conversations (Conflict within domain). Barriers and facilitators are displayed within each domain in order of the number of transcripts they were identified within (exact number in brackets).

Ranking	**TDF domain**	**No. transcripts**	**No. themes**	**Conflict within domain**	**Barriers**	**Facilitators**
Joint 1st and 2nd	Beliefs about Capabilities	20	4	Yes	Recipient is not willing or able to make changes (11) Certain topics more difficult to raise (9) View of 'I'm not a qualified professional' (7) Low confidence in the topics (7) Power differentials (2) Low confidence to deliver advice (2) Belief that others would be more capable (2)	Confidence in professional role (11) Belief in abilities required for MECC conversations (e.g active listening, initiating, and interpersonal skills) (7) Recognition that you don't need to be an expert to deliver MECC (i.e MECC is not safeguarding or specialised help) (6) Service user believes you can help (5) Belief in ability to change behaviour (3) Healthcare background increases confidence (2) Ability to communicate boundaries of role (1) Service user believes they could talk to service providers about anything (1)
	Beliefs about Consequences	20	4	Yes	Belief of negative consequences if not conducted appropriately (7) Safeguarding and liability concerns (4) Belief that delivering MECC conversations will significantly increase burdens of time and responsibility (3) Fleeting nature means it is difficult to observe (any) outcomes (3) Belief of no effect of MECC conversations (2)	Belief in positive outcomes for the recipient (health and wellbeing, confidence and empowerment, navigation of services, circumstance, motivation, confidence, behaviour change) (14) Belief that positive outcomes occur when recipients feel equal, empowered, and supported (12) Belief that every intervention makes a difference- no harm in trying (9) Fulfilling for the deliverer (and encourages them to reflect on themselves) (6) Positive prediction of MECC conversations (goes well, results in signposting) (5) Belief that health behaviours are central to wellbeing (2)

Joint 3rd and 4th	Environmental Context and Resources	20	3	Yes	Lack of and low capacity of services for signposting (6) Time (4) COVID prevented interactions (3) Lack of funding for MECC training (3) Suspicion of motive towards faith-based groups and organisations (2) Move to online (2) Some topics viewed as less relevant to the setting than others (2) Healthcare settings more suitable for health promotion (1) Service users have limited resources to change (1) Turnover of volunteers (1) Small community limits confidentiality (1)	Private and safe space (12) Triggered by the wider context, a prompt, or event (12) Prompts, partnerships, and in-house services for signposting (11) Time to build rapport and for flexible conversations (10) COVID amplified need (7) Setting perceived as a community hub (3) COVID facilitated new interactions (3) Psychological safety of talking whilst doing something else (2) Need for an intervention (2) COVID encouraged MECC conversations (2) Funding for signposted services (2) Service users perceive health promotion to be relevant to the service (2) Adversity makes health more relevant for individuals (1) Standardised training (1) Templates for MECC conversations (1)
	Skills	19	3	No	Belief that MECC training may formalise a natural conversation (1) Online training as less engaging (3) Problem of staff turnover (1)	**Existing transferable skills:** Interpersonal skills (17) Ability to provide signposting and referral (14) Person-centred (12) Select appropriate moments (11) Seize the opportunity (11) Ability to initiate (9) Advice without judgement (6) Motivational interviewing (5) Selection of appropriate approach Ability to pick up on cues (5) Boundaries of when to refer (4)

						Advice provision (3) Problem solving (3) Efficiency (3) Needs evaluation (2) Delineate MECC from safeguarding (2) Address social determinants (2) Sharing to encourage sharing (1) Receipt of similar training (5) Shared learning during training (3) Interactive training (2) Don't know what you don't know until you attend training (2) Refresher training (2) Visuals and examples during training (1) Comprehensive training (1)
5	Social/Professional Role and Identity	19	3	Yes	Not my role (11) Volunteer role limits depth of response (4) Lack of integration with healthcare (1) Uneven power dynamics (1)	Holistic view of role (10) Role as to empower and inspire change (4) Role to help and make an impact (4) Role to support (4) Going above and beyond specified role (4) Active listening as part of role (3) Catching a gap (3) Service users expect to discuss certain topics (2) Healthcare role (2) Faith-based role (particularly for mental health) (2) MECC as part of and not separate to role (1) Signposted as expected (1) Service providers' perspective as valued (1) Strong sense of pride as a volunteer (1)
Joint 6th and 7th	Knowledge	18	2	Yes	Conflicting messaging (1) Knowledge of health inequalities (1) MECC conflated with safeguarding (1)	Knowing where to signpost and refer (9) Knowledge increases capability to respond (9) Knowledge of the context and individual (8)

					No awareness of available training (1)	Awareness of the links between mental health, physical health, and social determinants (6) Learning from service users (1) Lived experience (1)
	Social Influences	18	2	Yes	Reluctance to make judgements about the behaviours of others (4) Social norms of pride and denial (1)	Relationships (13) Peer support (11) Common experiences (8) Service users sharing information (4) MECC implementation done with rather than done to (2) Service providers sharing learning (2) Social norms of openly talking about health and wellbeing (2) Endorsement from a prominent person (1) Group setting provides psychological safety (1)
8	Goals	12	2	No	-	**Aims to:** Achieve holistic health and wellbeing promotion (5) Help (5) Receive training (3) Achieve a shared purpose of social justice (2) Conduct health promotion conversations (2) Build confidence and empowerment (2) Be a place where people can ask (1) Be a community hub (1) Latch onto different topics (1)
9	Emotion	10	2	Yes	Dependent on the mood of the recipient (4) Apprehension towards eliciting guilt and shame in recipients (3) Sense of frustration and unjustness around health inequalities (2) Fear and anxiety of recipients towards opening up (2) Pride and denial of recipients (1)	Passion towards helping others (2) Empathy (1) Feeling of privilege towards discussing health and wellbeing with recipients (1)

					Feelings of hypocrisy (1)	
10	Behavioural Regulation	5	1	No	-	Reflect on and refine MECC conversations (2) Assign time to MECC conversations (2) Top-down targets for health promotion (1)
11	Reinforcement	5	1	Yes	Single interactions don't allow for positive reinforcement of seeing benefits (1) Negative outcomes break trust and reduce probability of future conversations (1)	Reinforcement of positive outcomes of conversations (4)
12	Intentions	3	1	No	-	Service user that intends to change (2) Intention to talk to the people who need it (1)
13	Memory, Attention, and Decision processes	2	1	No	-	Ensure service users expect conversations (2)
14	Optimism	0	-	-	-	-

Table 3: Summary of the key themes, codes, and quotes for the seven key TDF domains from the overall coding framework (Supplementary Material 2).

TDF Domain	Key themes	Key codes	Key quotes
Beliefs about capabilities	Capability dependent on the recipient as willing and empowered to help themselves	• Depends on whether the recipient wants to change • Some topics more difficult to raise (e,g finance, weight) • Less able to change behaviour in the face of health inequalities • More confident in motivational interviewing than advice delivery	SP5: *'I think with everything, if you, as a person are willing to look at change, whether it's through health or finances or whatever it happens to be, then you're more likely to change. If you don't want to change, you're not gonna change'*
	Belief that MECC delivery is specialist	• Belief that other organisations are better able to address health promotion • Not a qualified professional • Confidence in helping only through signposting and referral	SP11: *'Should we do that with things like smoking? Well, we've never done it with smoking, we've never done it with other things, but that's, you know, I think that other organisations do that better than we would do it…. And similarly, we have, I do deal, and have over the years, quite a lot with alcohol abuse… but I would always signpost them to Alcoholics Anonymous, they're the experts'*
Beliefs about consequences	Negative consequences if the conversation is not conducted appropriately	• Potential damaging consequences (e.g offense, incorrect information) • Need to approach the conversation appropriately	SP4: *'I've got to assess whether or not that is going to be a useful conversation. And going to have the effect that I want it to have. Because if you're not careful it can have the opposite effect. You know, you could turn people away. 'Oh, I'm not going to go there to get lectured at out about this or that or the other''*
	Positive consequences come from equality	• Positive consequences of conversations occur when trust and relationships are built • Positive consequences through empowerment and equality • Support with no judgement	SP3: *'people that you would never have expected to go along and do gym work, or go out for walks, were buddying and up and going along, but they all said 'had my GP said, to go along. I wouldn't have done it'. But it, because it was this nice long process, and they got to know ya, they trusted ya, they did it'*
Environmental context and resources	Contextual cues trigger heath conversations	• Cues in the environment • Wider sociopolitical context (e.g increased acceptability of discussing mental health) • Events within the service both as a trigger and a reaction	SP4: *'you can't just, pick a, a moment when you know, you can't, you can't just start a conversation about nutrition. It's, it, mebbies we'll have a cup of tea. We always, during the courses or during what we do, it'll be a cup of tea or a cup of coffee, you know, and we might have a debate about sugar'*

	Context of physical and psychological safety	• Importance of a safe and private space • Conversations whilst doing something else increase psychological safety	SP6: *'you have to be really mindful of where somebody's gonna be more able to share, where they're going to be better presented and sometimes it's not sitting in that corner, in an open forum, sometimes you have to take them to one side or arrange a one to one type of meeting'*
	Infrastructure and resources needed for MECC conversations	• Partnerships for signposting, referral, and further support • Time for a flexible conversation	SP3: *'I think third sector are probably best placed to do it. Because they've got the time. And, the NHS is only going to get worse'*
Knowledge	Knowledge determines capability to respond	• Knowledge needed to signpost • Background knowledge of the recipient • MECC conflated with safeguarding	SP8: *'We're not constituted to do that, we're not structured to be able to deliver.. to be able to reconcile those problems those individuals have, because we're not the right group. It would come under mental health support services for children, or the safety team at Northumberland County Council'*
Skills	Transferable skills to conduct an appropriate contact	• Similar training (not MECC e.g guided conversations, mental health first aider, Sage and Thyme) • Interpersonal skills (respectful, non-judgemental, active listener, tactful and subtle, asking twice) • Ability to pick up on cues • Seize the opportunity for health promotion	SP11: 'I d*idn't know the person that well. But I felt I could ask questions. You know, what is it about? What is it about that job which you find attractive? What of it appeals? And get them to think about, whether it's just a kind of, ah it sounds good, or whether it was something they could really explore, so I help them to explore the darker side of that new job, or could they still cope with X or Y'*
Social influences	Relational influences	• Relationship facilitates capability to initiate conversations and improves outcomes • Reluctance to pass judgements on health behaviours of others • Bouncing off common ground • Peer delivery of MECC conversations	SP4*: 'when you've got the relationship with people, and it becomes a very easy going friendship if you like, you've got more opportunities to influence them in different ways'* SP14: *'and because you've got something in common, they tend to talk to you and open a little bit more'*
Social/ professional role and identity	Not my role	• Health promotion not their role • Role as to address one area	SP1: *'I'm just here to do this specific thing'*
	Holistic view of professional role	• TSE as catching a gap in services • Mental health as relevant for faith-based settings	SP11: *'I did a Diploma in counselling. So that was because I felt I needed those skills and the skill sets, and all the knock ons which came with it. And I think part of the core training of clergy, it doesn't really address a lot of the real issues around wellbeing that we actually encounter'*

Table 4: Seized and missed opportunities according to the congruence between BCTs utilised within MECC training and the key TDF domains identified. TDF domains highlighted in bold are the key seven domains identified from content analysis of barriers and facilitators. If TDF domains were ranked equally, both have been provided with the higher ranking (e.g 1 if joint first and second). *The integrated matrix maps BCTs onto TDF domains for links between them which can be accessed here: https://theoryandtechniquetool.humanbehaviourchange.org/tool. **Judgement of congruence is according to the number of key TDF domains that are linked with the BCT: low = none, medium = one, high = two or more.

BCT	Number of modules	TDF domains (from integrated matrix*)	Domain Importance ranking	Theoretical congruence with TDF domains**
1.3 Goal setting (outcome)	1	Goals Intentions	8 12	Low
4.1 Instruction on how to perform a behaviour	3	**Beliefs about capabilities** **Skills** **Knowledge**	1 3 6	High
5.1 Information about health consequences	2	**Beliefs about consequences** **Knowledge** Intentions	1 6 12	High
5.3 Information about social and environmental consequences	2	**Beliefs about consequences** **Knowledge**	1 6	High
5.4 Monitoring of emotional consequences	1	None	-	Low
5.6 Information about emotional consequences	2	**Beliefs about consequences**	1	Medium
6.1 Demonstration of the behaviour	4	**Beliefs about capabilities**	1	Medium
7.1 Prompts/cues	1	**Environmental context and resources** Memory, attention, and decision processes	3	Medium
8.1 Behavioral practice/ rehearsal	4	**Beliefs about capabilities** **Skills**	1 3	High
9.1 Credible source	1	None	-	Low
9.2 Pros and cons	2	**Beliefs about consequences**	1	Medium
12.5 Adding objects to the environment	3	**Environmental context and resources**	3	Medium

Table 5: Opportunities missed and seized in terms of IFs against the key seven TDF domains, using mapping of links between TDF domains and IFs from Michie et al. (34). IFs define the columns and the number of modules they were included in are in brackets. Black = seized opportunity, light grey = missed opportunity.

TDF domains	Education (n = 3)	Persuasion (n = 2)	Incentivisation (n = 0)	Coercion (n = 0)	Training (n = 4)	Restriction (n = 0)	Environmental restructuring (n = 3)	Modelling (n = 4)	Enablement (n = 0)
Knowledge									
Skills									
Social/ professional role and identity									
Beliefs about capabilities									
Beliefs about consequences									
Environmental context and resources									
Social influences									

Table 6: Recommendations for future training and refinement of current training in light of the missed opportunities identified.

Theme	Recommended BCT	Example of the BCT in practice
Beliefs about capabilities		
Capability dependent on the recipient as willing and empowered to help themselves	Problem solving	Prompt trainees to identity the reasons why the recipient may be reluctant to discuss their health and wellbeing (e.g fear, uncertainty, social determinants) and discuss ways in which these could be handled using the MECC approach (e.g just plant the seed by signposting, apply motivational interviewing techniques, provide advice on navigation of services for the social determinants).
Belief that MECC delivery is specialist	Focus on past success	Prompt trainees to come up with examples when they have discussed health, wellbeing, or the social determinants, and emphasise that without knowing it they have already conducted MECC conversations and that they are already capable.
	Verbal persuasion about capability	Highlight to trainees that you need not be an expert in any of the topics that MECC discusses, and that anyone who completes the training can deliver MECC. Acknowledge that even though other groups, organisations, and individuals may be more specialist in certain topics, trainees are still capable of motivating, offering support, and providing information.
	Self-talk	Display some of the transferable skills service providers already demonstrate within their current roles and encourage further suggestions. Ask trainees to remind themselves of these skills they possess every day within their interactions with service users.
Low confidence in capabilities of service providers to respond	Graded tasks	Initially, ask trainees to only discuss topics they are confident in and signpost otherwise. Then, advise trainees to gradually pick up on topics they are less comfortable with, building up to a topic they find most difficult to discuss (e.g finance or weight).
Beliefs about consequences		
Negative consequences if the conversation is not conducted appropriately	Anticipated regret	Bring attention to the care service providers have for the health and wellbeing of the service users who attend. Prompt trainees to imagine the outcome if they do not take advantage of opportunities they may have to empower service users to improve their health and discuss how regretful they may feel.
Belief in no or negative impacts	Comparative imagining of future outcomes	Prompt attendees to write down the possible outcomes from a) not intervening and b) conducting a MECC conversation. Emphasise that not intervening will most likely mean that person will not change their behaviour and their health could deteriorate. At least if intervening, behaviour change and health promotion is possible.
Environmental context and resources		
Context of physical and psychological safety	Restructuring the physical environment	If possible, ask attendees to identity or arrange a private space at their group or organisation that recipients can be taken to during a MECC conversation.
	Restructuring the social environment	Prompt trainees to discuss where and when they would feel comfortable to talk about health and wellbeing and discuss how they might change their approach to fit different preferences (e.g one to one for people who prefer to talk privately, whilst doing an activity or within a group for those who feel that one to one is too intense).

Infrastructure and resources needed for MECC conversations	Social support (practical)	Set up a regular forum for attendees from the TSE and wider services to create partnerships and connections, to facilitate signposting and referral, and share knowledge of which services are available.
	Restructuring the physical environment	Provide funding to allow TSE services to roll-out MECC training and delivery and create a long-term plan alongside their existing commitments.
Contextual cues trigger heath conversations	Prompts/cues	Encourage attendees to display posters of services related to health, wellbeing, and the social determinants within their respective TSE settings as reminders to opportunistically conduct MECC conversations.
Social influences		
Relational influences	Information about others' approval	Present videos of service users providing their experience and feedback as a recipient of MECC conversations (e.g did they know they received MECC, how did they feel, did they make any changes to their behaviour afterwards) to show that their experience was positive, and they did not feel judged.
	Social support (practical)	Ensure MECC service users as well as providers are aware of and able to attend MECC training to encourage peer delivery.
	Social comparison	Present a video of a MECC conversation and encourage trainees to role play a MECC conversation, providing feedback. Specifically, encourage trainees to reflect on how the conversation came across (e.g was it judgemental or caring?) and which approach provided the most empowerment.
Collective learning and development	Social support (practical)	Encourage trainees to talk to their service users to see whether discussing health and wellbeing more is something they would be interested in, gather information about how they might like to talk about it, and what they might like to discuss (e.g informally, through an online survey or social media post, or hold a forum).

Supplementary Material

Supplementary Material 1: Description of existing MECC (received MECC training) and 'MECClike' (no recipient of MECC training) conversations within the TSE, according to the TIDieR checklist.

TIDieR checklist item	**Description of behaviour:**
Name of the behaviour	Intentional, opportunistic health and wellbeing conversations (including the social determinants)
Why	Every intervention makes a difference: plant seeds for behaviour change or to seek further support, improved navigation of services and thus an individual's circumstance, signposted or referred to further support, boosting self-esteem and confidence, recipient feels heard and valued, empowerment to self-manage
What	**Materials:** Prompts for conversations (e.g event, resources, wider context), services for signposting and referral. **Procedures:** Topic: varies in scale, most commonly mental wellbeing (particularly isolation and loneliness, but also include social inclusion, stress, climate anxiety, LGBTQIA+ related concerns, domestic abuse, bereavement, and psychological barriers to health behaviours e.g barriers of accessing healthcare, difficulties managing illness), and the social determinants (most commonly financial concerns and queries around ill health such as peer support groups, accessing relevant services, and mobility needs, but also accessing food parcels and cost of living). Less commonly around physical health (e.g smoking, breastfeeding, caffeine, cancer screening). Personal financial situations and weight can be more difficult to raise, although general finance conversations (e.g cost of living) are acceptable. Conversations centre around topics that are considered to be the most relevant current issues (e.g loneliness, mental health, cost of living, chronic illness management). Process: conversations are *'organic'*, unstructured, and informal rather than prescriptive and done *to*, most often triggered by a cue in the environment between individuals with an established relationship and/or rapport. The approach is generally holistic, with a common attitude of '*talk to us about anything- if we don't know we'll find out for you*'. Conversations most frequently involve advocacy and navigation of services (e.g navigating visiting a GP, education on how to access services, *'hand holding'*, advocating for their rights) through advice and/or signposting or referral, either within or between organisations (e.g schemes, funding, or entitlements). A general reluctance to provide health promotion advice or in-depth support, but a willingness to apply active listening and refer and signpost if needed. Thus, health promotion is generally through signposting to relevant services and provisions, similar to social prescribing (e.g men's shed, walking groups, or support groups). Less frequently, a motivational interviewing/ counselling approach is applied (asking questions to incite new perspectives, goal setting, graded tasks, small changes). On the rare occasion health promotion advice is provided, it is done in a non-judgemental way.
Who provided	Service providers to service users, peers (service users in or who have been in similar situations), sometimes reciprocal and equal dialogue between service providers and users
How	Mainly facilitated by face-to-face, one-to-one interaction (although a minority prefer group interaction, see below).
Where	A safe space, both physically (somewhere familiar and confidential) and psychologically (perceived threat is minimised e.g within a group or whilst engaging in another task). Both

	recipients and deliverer must be comfortable that there is sufficient time for the conversation.
When and how much	Flexibly and opportunistically applied. Repeated interactions are preferred to build rapport and allow reinforcing effect of deliverer being able to view the impact.
Tailoring	Conversations are person centred: topic as guided by the recipient and multiple needs are addressed in order of what is important to the individual at that specific time. Topics may vary depending on the setting (e.g faith-based settings focus mostly on mental health) or the population (e.g new parents are more likely to discuss weight, relevant topics for young people include interpersonal relationships and mental health including body image, isolation, and school related stress). Affected by individual differences in willingness to discuss their behaviour.

Supplementary Material 2: Coding framework according to content analysis of the TDF, and reflexive thematic analysis within each domain.

TDF Domain	**Barrier/ facilitator /mix**	**Theme**	**Examples code**	**Example quote**
Behavioural regulation	Facilitator	Encourage and improve MECC or MECC-like conversations	Learning from mistakes and refining behaviour	SP12: *'You begin to realise, because when start looking through your own mistakes, and your thinking ah I shouldn't have said that, I shouldn't have done that, I shouldn't, okay, next time I won't do that. You develop like that. Constant analysis of yourself, which is unfortunately very rare these days, but when you do that, only then you can fix it'*
Beliefs about capabilities	Mix	Capability dependent on the recipient as willing and empowered to help themselves	Helping people to help themselves Depends on whether the recipient wants to change Some topics more difficult to raise (e,g finance, weight) Less able to change behaviour in the face of health inequalities More confident in motivational interviewing than advice delivery	SP7: *'It can be an imposition on people if you force it. So it has to come from them'* SP5: *'I think with everything, if you, as a person are willing to look at change, whether it's through health or finances or whatever it happens to be, then you're more likely to change. If you don't want to change, you're not gonna change'* SP11: *'I think people struggle probably talk about money in a church as much as they struggle to talk about money outside of church. And it's just one of those topics people struggle to talk about'* SP4: *'that's a difficult subject. Because, like I say, it's easy to say. And it's easy for me. It's probably easy for you. But it ain't easy for them to eat well and get exercise. What do they do? What do you do?'* SP11: '*I wouldn't want to give advice about things. I mean they sometimes ask me for advice, but I mean I normally try and help them to think it through... So that would be, rather than saying, well no I think you should stay where you are. I would never do that. I would always try and help them to, well make their mind up'*
	Facilitator	Assurance of appropriately handling conversations	Professional confidence Service user has to believe you can help	SP4: *'all sorts of things that help. You know, people come in, and they've got a problem. We help them with it.'* SU4: *'Maybe citizens advice is a more appropriate way to talk about that, like rather than here because I wouldn't talk about that here.. I think because that's what they do and they might, although Citizen's Advice do a lot of electric, they were good with that with*

				me. With the electric they helped me with that. In fact they did, they helped me with the electric bills, the water.. Yeah they were good for that'
			Recognition that you don't need to be an expert for MECC	SP14: *'you can have some quite interesting conversations, and we do not have all the answers but we can signpost people'*
			Healthcare background	SP3: *'this is a nursey thing. So they'll go, 'eee, do you know, I had an extra one last night'. And then you explore. And then they'll go so what do you mean an extra one, and I'll say well how much do you normally drink? You know, and then they'll go 'oh well, I have a glass of wine every night'. Well, well do you realise you should be having a couple of alcohol free days, and then, they'll just open up and tell you 'well, actually, I'm having a bottle of wine a night', and, well, actually, that's not good. And then you can have, it really does open the conversation. It's picking up the cues, isn't it?'*
			Confidence in dealing with safeguarding concerns	SP13: *'we might spend the first appointment talking about safeguarding, if they've got a safeguarding concern, and what we need to do around that, or their health needs, or their drug and alcohol issue or whatever. And then after that we do coaching'*
			Confidence in ability to listen, be kind, and empathise	SP6: *'So when I'm chatting to this person, I can be, well, have you this, and have you that, and I can be prompting the conversation, but not leading it. So it's all about the listening'*
	Barrier	Belief that MECC delivery is specialist	Belief that other organisations are better able to address health promotion	SP11: *'Should we do that with things like smoking? Well, we've never done it with smoking, we've never done it with other things, but that's, you know, I think that other organisations do that better than we would do it…. And similarly, we have, I do deal, and have over the years, quite a lot with alcohol abuse… but I would always signpost them to Alcoholics Anonymous, they're the experts'*
			Not a qualified professional	SP15: *'sometimes people maybe don't want to have them conversations, because they think oh I'm not a specialist, or I'm not this qualified'*
			Capable of helping only through signposting and referral	SP11: *'quite common for somebody to come into the (name of location) here and say 'I just need to talk to somebody, I've got real challenges financially, what can I do about it?' I can't help you directly, but I can point, I can signpost you. You need to go and see so and so, so that would be a way in which that would be done I think'*

	Barrier	Low confidence in capabilities of service providers to respond	Limited ability to deliver advice	SU3: *'while I think they should be mindful of people's health and wellbeing and ask about it, and be aware of all of these things that impacts on it. At the same time, they shouldn't be giving unsolicited advice'*
			Low confidence in topics	SP2: *'do we feel like we've got enough awareness of what's going on to be able to raise the subject and talk about it and hear about it'*
Beliefs about consequences	Mix	Negative consequences if the conversation is not conducted appropriately	Potential damaging consequences (e.g offense, incorrect information, trauma, denial and withdrawal)	SP2: *'I think we've got to be really mindful about what we say to young people. And I think that we've got to really, you know, because every intervention does make a difference. And I think we need to be aware of that'*
			Need to approach the conversation appropriately	SP4: *'I've got to assess whether or not that is going to be a useful conversation. And going to have the effect that I want it to have. Because if you're not careful it can have the opposite effect. You know, you could turn people away. 'Oh, I'm not going to go there to get lectured at out about this or that or the other''*
			Safeguarding and liability concerns	SP11: '*I've been physically attacked in my working life. And one of those was probably when I made a mistake around someone's mental health and didn't really spot the signs maybe'*
	Facilitator	Positive consequences come from equality	Positive consequences of conversations occur when trust and relationships are built	SP3: *'people that you would never have expected to go along and do gym work, or go out for walks, were buddying and up and going along, but they all said 'had my GP said, to go along. I wouldn't have done it'. But it, because it was this nice long process, and they got to know ya, they trusted ya, they did it'*
			Positive consequences through empowerment and equality	SP10: *'increasingly I feel like, the places where I see people flourishing is when there's mutual relationship and empowerment, as opposed to power differentials'*
			Support with no judgement	SU3: *'it's fairly good already because I know there's going to be no judgement… there's no well, I'm right you're wrong. It's just like oh, it's really interesting to hear that perspective, thank you for sharing and that's it. There's no judgments at all about anything'*
	Facilitator	Belief in positive impacts of MECC conversations	Every interaction can make a difference	SP3: *'And just the importance of that like, just that interaction, how you can actually make a difference'*

			Reduced risk of or severity of disease	SP14: *'We've had so many lovely stories where people have had concerns and worries, after we've had the chats, and they've come and spoke to us and they have gone to the GP, and something has been found'*
			Knock on effects	SP14: *'it's like that pebble effect, you know when you drop a pebble into a pool and it ripples out, this is what it's like in the community, if you talk to one person, they talk to one person, and then all of a sudden you do get the ripple effect and people are starting to talk about it'*
			More likely to talk about health and wellbeing if service users feel there will be positive outcomes	SU4: *'I pay by direct debit, me bills and sometimes I do struggle with them, but I haven't talked about it much here. I didn't think that's why I was here to talk about me bills, I sometimes go to citizens advice for that. And they like put us right in where to get it off me mind things, how to ring me electric company and things'*
			Conversations reduce loneliness	SP3: *'it's that community aspect in knowing that you're helping with isolation'*
			Improved ability to navigate services	SP6: *'I'd be talking to them about like the priority services register for your utilities companies. So, if I've got a number of veterans who've got mobility issues or health concerns, I would be saying to them, politely and privately, do you know about the priority services register that northern gas, operate? 'No, no', it's free…. So, all of these different conversations, help to inform them of stuff that they may already know, but some of them won't know'*
			Power of listening	SP11: *'it just helps them to have voiced it'*
	Barrier	Belief in no or negative impacts	Little effect of conversations on health inequalities	SP10: *'I don't think it is black and white at all, and it felt like some of those things were just like finding a neat solution to something that was really complicated'*
			Fear of time and responsibility burden	SU3: *'these people are volunteers and they can't be expected to bend over backwards and donate their whole life to other people'*
Emotion	Barrier	Pre-empting emotion on receipt of MECC conversations (I	Hypocrisy	SP12: *'I want to be very careful what I tell people in case I'm not doing it myself first. Because the feeling of inner hypocrisy, I mean people can be hypocritically openly, and you will see them all the time right? Yeah, but the inner feeling of hypocrisy bothers me.*

		know I/they will feel…)		*So that's why I don't, this is one of the reasons why I don't really initiate those conversations'*
			Guilt and shame	SP10: *'I think people often receive that as guilt, and almost like condemnation rather than empowerment'*
	Mix	Emotion as precursors (I engage/don't engage in a MECC conversation if they/I feel…)	Mood	SP6: *'it depends on their fettle on the day. Sometimes we talk about the weather and nondescript rubbish. But sometimes, they'll tell you about their concerns'*
			Passion and interest	SP3: *'I would be really interested if there was that there, I think it would be a great thing, because I would send my trustees to it and yeah, it would be great, absolutely great'*
Environmental context and resources	Mix	Contextual cues trigger heath conversations	Cues in the environment	SP4: *'you can't just, pick a, a moment when you know, you can't, you can't just start a conversation about nutrition. It's, it, mebbies we'll have a cup of tea. We always, during the courses or during what we do, it'll be a cup of tea or a cup of coffee, you know, and we might have a debate about sugar'*
			Wider sociopolitical context (e.g increased acceptability of discussing mental health)	SP6: *'the conversations trend, depending on what's happening at the time. I mean, we've had some horrendous conversations obviously you know with like COVID and now the cost of living crisis and the energy cap information that's being coming out, so the numbers of conversations, and the numbers of enquiries, they've massively increased'*
			Events within the service both as a trigger and a reaction	SP14: *'and we'll say to (name), ah we're running group, erm, a few of them have said they're interested in, about further information from the jobs, would you come in? So you're not specifically targeting a person… and we've got energy action to come in and do a group talk. And then we've introduced them quietly to that person. And then they've picked up that and helped them sorts their problems out'*
			COVID facilitated or prevented MECC interactions	SP4: *'it wasn't something that we regularly would have conversations with people about because of the amount of time that we couldn't see people'*
	Mix	Context of physical and	Importance of a safe and private space	SP6: *'you have to be really mindful of where somebody's gonna be more able to share, where they're going to be better presented and sometimes it's not sitting in that corner, in*

		psychological safety		*an open forum, sometimes you have to take them to one side or arrange a one to one type of meeting'*
			Conversations whilst doing something else increase psychological safety	SP14: *'And sometimes that person does really, once they feel comfortable and confident, so say like if you're cooking, you often find if you're doing a cooking group, people will chat to you about what's happening at home. Or when I was link worker we used to do walking groups, people used to tell you everything when you went on a walking group because they were more relaxed and at ease and they would open up about things. And that's when you're able to say well, you've opened up, have you thought about doing this? Have you been there? That's supposed to be really good, do you want me to get you the information?'*
			Setting seen as a community hub	SU5: *'it just had such a good reputation in the community and I needed the service. So I thought I would try it…. And it was local, because it was at the bottom end of (name of location). Everybody knew where it was, it had a good reputation it always has'*
			Suspicion of motive towards faith-based contexts	SP11: '*because some others are suspicious of us because they think we're just about trying to convert or trying to, or basically kind of like a cult, trying to sort of change, warp people's minds which of course we're not, but those who do understand what we're about that we're just, we're there to try and speak about care and love and generosity'*
	Mix	Infrastructure and resources needed for MECC conversations	Partnerships for signposting, referral, and further support	SP11: *'I'm involved in a charity which the church kind of helps to stimulate, which is looking to try and partner, help the churches to partner with organisations like Citizens Advice or, that we can then point people in the direction of'*
			Lack of services/service capacity for signposting and referral (particularly in rural areas)	SP8 *'And it is a problem, that is a problem when you pass them over. You can't always do it, and you can't always access those services'*
			Time for a flexible conversation	SP3: *'I think third sector are probably best placed to do it. Because they've got the time. And, the NHS is only going to get worse'*

			Prompts for signposting	SU2: 'they just plant the seed, that's all they do, plant the seed, don't put any pressure on anyone, really kind of sell what they're doing, and then you will find that the parents that are interested in it will start asking more. There's often like leaflets you can get'
Goals	Facilitator	Holistic health promotion	Sustainable and holistic health promotion Empowerment for service users	SP6: *'more likely than not, they'll stay with us throughout that journey as they do age, and their circumstances change. So it's a long term goal really to support them through changes in their life'* SP14: *'it's just trying to build their confidence up, and encourage them'*
	Facilitator	Help to the people that need it most	Aim to help Shared purpose of social justice	SP12: *'So I don't like leave them in the lurch, I try my best to help them as much as I can, up to whatever I can'* SP7: *'we were all fighters for (name of location) at the time, all like minded people'*
Intentions	Facilitator	Intentional conversations as more successful	Intention to talk to the people who need it Recipient already intends to change	SP8: *'when the family broke up, and that I talked to, still talk to him regularly, and he used to kick the wall at the bus stop, he was in fights all the time. So I used to make like a special point to talk to him. So he had a conversation, not about me, just so he could talk'* SU4: *'I would need more exercise. If I did more exercise maybe that would bring it up a bit'*
Knowledge	Mix	Knowledge of the links between health and wellbeing and their social determinants	Awareness of health inequalities as a barrier to health and wellbeing conversations Link between mental and physical health and the social determinants	SP10: *'and that was a really like a big space of learning for me really, about some of the complexity of, well we can't just, if someone's not making healthy eating choices it's probably not just because they don't know what they should be eating, that's probably like a factor in it, could be a factor in it, but actually more often, it's because of all that other wide, complicated ranged issues'* SP14: *'and his asthmas really bad and you keep giving him steroids, and keep giving him steroids, but actually, what's your living conditions like? Have you got central heating? Are you putting your central heating on? And things like that, and finding out the bigger picture, because it could be what's happening around them, that probably might be the main cause, rather than just giving them a tablet and a drug, it could be the stress, it could be his environment, it could be money worries, and all of those things implant, impact on that person's health and wellbeing'*

	Mix	Knowledge determines capability to respond	Knowledge increases capability to respond	SP2: *'are we learning from the young people, erm, you know, do we feel like we've got enough awareness of what's going on to be able to raise the subject and talk about it and hear about it'*
			Knowledge needed to signpost	SP3: *'the knowledge that we acquired was just phenomenal, and people would come to us who would say like, 'yous are walking encyclopaedias''*
			Background knowledge of the recipient	SP13: *'if you tell me, if it's not a safeguarding issue, tell is your issues, because until I know exactly what you're struggling with, I can't give you the proper advice'*
			MECC conflated with safeguarding	SP8: *'We're not constituted to do that, we're not structured to be able to deliver.. to be able to reconcile those problems those individuals have, because we're not the right group. It would come under mental health support services for children, or the safety team at Northumberland County Council'*
Memory, attention, and decision processes	Facilitator	Expectation of MECC conversations	Ensure service users expect to talk about their health and wellbeing	SU2: *'I think as long as you're sort of made aware of it, and you can attend the groups with this informed knowledge that they're not just gonna leave you be and let you sort of play. That there's going to be elements in sort of supporting your health'*
Reinforcement	Mix	Past experience of MECC conversations determines future behavior	Reinforcement of positive outcome of conversations	SP13: *'it's a bit about making those connections with them, knowing that they're safe and they're seeing positive changes, even from us knowing they've got a meeting with one of our workers who is gonna come and meet them and take them to the GP'*
			Negative outcomes break trust and reduce probability of future conversations	SU3: *'I often come away from a conversation with her feeling like she thinks that I should be doing more, but like I can't, that's why I'm asking for help. So I come away feeling quite upset and angry, and I don't want to feel like that. And I know that that's what's going to happen. So I guess the anticipation of like I know I'm going to feel bad at the end of this'*
Skills	Facilitator	Ability to identify and seize an appropriate opportunity	Ability to initiate	SU2: *'I can imagine as professionals they would be quite, I mean it's starting that dialogue isn't it? How do you start it without it insulting someone'*
			Knowing when it's appropriate to intervene	SP10: *'I don't really know how you develop a system where people know the right moment to sort of intervene'*

	Facilitator	Transferable skills to conduct an appropriate contact	Similar training (not MECC e.g guided conversations, mental health first aider, Sage and Thyme)	SP6: *'The guided conversation, is like an exploration exercise. Like I keep using this bloody holistic word, which gets banged about an awful lot, but that is genuinely what it's about for us. Whereas the making every conversation count, to me, almost sounds as though it could be a one hit, that you don't get to necessarily replicate'*
			Interpersonal skills (respectful, empathic, patient, non-judgemental, active listener, tactful and subtle, open body language, soft tone of voice, asking twice, care and understanding)	SP1: *'So by being consistent, by you being like trustworthy, by you being honest, and open, and transparent, allows them to, er trust you more and allows them to open more'* SP6: *'you have to be quite sensitive to that persons needs and watch their body language, listen to them intently. Listening, like I said, is the important thing. Not telling, not judging. And not everyone can do that. It's not an easy skill to learn'*
			Problem solving	SP13: *'are they the same people who are causing you problems with your tenancy that's lost it, so how are we going to then find you another social group, find out what your interests are and try and get you away from them, or reduce your time with them, and do some more positive things for you'*
			Ability to be person centred and address priorities first	SP13: *'we can work with them, so like relationship issues, domestic violence, we talk about, at their pace, it's all at their pace. So, out of the things you've told us, some things you're not going to, we don't need to discuss today. What are the things you're wanting to work on long term, and what are the things you wanna work on from now, the next four weeks'*
			Motivational interviewing	SP11: 'I d*idn't know the person that well. But I felt I could ask questions. You know, what is it about? What is it about that job which you find attractive? What of it appeals? And get them to think about, whether it's just a kind of, ah it sounds good, or whether it was something they could really explore, so I help them to explore the darker side of that new job, or could they still cope with X or Y'*
			Ability to follow up with signposting and referral to further support	SU1: *'because I had some like little personal things going on so I think she thought maybe it might help me. And it's just basically mentioned, there's this and go along to if you want to, again no pressure, which I love'*

			Advice without judgement Judging which approach is most appropriate (e.g advice versus active listening) Ability to pick up on cues Seize the opportunity for health promotion	SP7: *'I learned to just try and give them advice without bullying them into it… Saying well you'll make of that what you like and this is just things you can do'* SP12: *'Or if it's appropriate for them to listen to, I want to say appropriate I mean, are they mentally in the right frame of mind to be able to hear what I've got to say. So I would judge that based on how the conversation went'* SP1: *'sometimes they don't look healthy at all, so you ask them, ah, have you been eating like, have you been drinking water… And then you encourage that advice of like, this is what you should eat, healthy foods'* SP2: *'Because we don't have a lot of time in a youth club setting, we've got an hour and a quarter, or an hour and a half, and we've got, anywhere between 10 and 30 young people. So you're not really having quality conversations anyway, that isn't where the good work happens in those little settings, so you have to learn how to, kind of really draw out those really pertinent points'*
	Facilitator	Interactive and engaging MECC training	Shared learning during training More difficult to engage in training online	SP14: *'it's good to see how other people think. And, and plus you get other people's point of view, because we're looking at this point of view, whereas if somebody's looking in from a different angle, it's totally different'* SP2: *'I think that made it more difficult, erm, and I think in person might have been able to go off and do a little bit of role play type work'*
Social influences	Mix	Relational influences	Relationship facilitates capability to initiate conversations and improves outcomes Reluctance to pass judgements on health behaviours of others Bouncing off common ground	SP4*: 'when you've got the relationship with people, and it becomes a very easy going friendship if you like, you've got more opportunities to influence them in different ways'* SP11: *'I wouldn't want to make a judgment about smokers in that sense, I don't think it's good for you but, it's a very different world to safeguarding'* SP14: *'and because you've got something in common, they tend to talk to you and open a little bit more'*

			Peer delivery of MECC conversations	SP14: *'we were empowering people to share those key messages. Eat well, move more, live longer, and they were sharing it with their friends in the local playgrounds when you're waiting for your kids to go into school, and they were having some lovely conversations with mums, and other mums in the playground, that those mums potentially wouldn't have had with a professional… because it was on that level, they were saying to people, to their friends, or to some of the team, I really am a little bit worried about me weight, but I don't want to make a fuss of it. So you were able to give them that information in a very Low level'*
	Facilitator	Collective learning and development	Shared learning to facilitate delivery of MECC conversations	SP13: *'we share everything we've got. It's a bit of knowledge, it's not like a case of knowledge is power and I'm keeping it to myself. It's literally, knowledge is power as a team, and we'll share it with everybody'*
			MECC done *with* as opposed to done *to*	SU1: *'I don't think they'd necessarily be enforce, I think they'd say to the mums like do you think this is something that you'd want to do. Do it like that, just double check I think, more like grassroots from the bottom'*
Social/ professional role and identity	Barrier	Not my role	Health promotion not their role	SP8: *'we're there to provide a local service for local children, to provide a bit of fun, a bit of entertainment, and then the last ten, fifteen years, that has now developed into being like a free, non-governmental wellbeing place where people's wellbeing, well let me get this wording right. A place where people with wellbeing problems can come and talk. That's not what youth clubs were set up for, that's social services, that's psychological support, mental health team work. So I don't see the role of youth clubs as being one to carry on with that'*
			Role as to address one area	SP1: *'I'm just here to do this specific thing'*
			Voluntary role limits level of response	SP7: *'you can't be too deep. And if it's something, that's more serious, I would then have to go to the paid employee… because quite often there would be someone, a worker there with you. And then they would take it'*
	Facilitator	Holistic view of professional role	Going above and beyond their formal remit	SP6: *'So we like to sort of push the boat out, try to delight the customers, give them more than they asked for'*
			Holistic view of role	SP4: *'we try and look at things in a more holistic way, not just concentrate, well myself personally, I don't just concentrate on IT'*

			Catching a gap in services Mental health as relevant for faith-based settings	SP13: *'we have the conversation and we'll discuss with them the things that people might feel uncomfortable with, because if they don't discuss it with us, who are they going to discuss it with, they might be barred from loads of services'* SP11: *'I did a Diploma in counselling. So that was because I felt I needed those skills and the skill sets, and all the knock ons which came with it. And I think part of the core training of clergy, it doesn't really address a lot of the real issues around wellbeing that we actually encounter'*
	Facilitator	Expectations of role is congruent to MECC	Active listening as part of role Role is to empower and inspire change Recognising the boundaries of one's role	SP8: *'one of the roles we've got is giving children a space perhaps to talk to somebody, an adult who isn't a parent'* SP13: *'get them the encouragement, the confidence, boosting their confidence. Get them linked in with other services, and then slowly just say well, actually, this is a good sign. You've moved on'* SP11: *'I can't be their psychologist or their psychiatrist. But I can just check in on them'*

Supplementary Material 3: Description of MECC module and the BCTs and IFs that were coded for each.

Module	**Description**	**BCTs**	**IFs**
Core MECC	Addresses the 'core 5' behaviours (physical activity, diet, alcohol, smoking, and mental health). As delivered as part of the MECC train the trainer model.	1.3 Goal setting (outcome) 4.1 Instruction on how to perform a behaviour 5.1 Information about health consequences 5.3 Information about social and environmental consequences 5.6 Information about emotional consequences 6.1 Demonstration of the behaviour 8.1 Behavioural practice/ rehearsal 9.1 Credible source 9.2 Pros and cons 12.5 Adding objects to the environment	Education Persuasion Training Environmental restructuring Modelling
MECC and Financial Wellbeing	Bitesize training that applies the MECC approach to talking about money	4.1 Instruction on how to perform a behaviour 6.1 Demonstration of the behaviour 7.1 Prompts/cues 8.1 Behavioural practice/ rehearsal 12.5 Adding objects to the environment	Education Training Environmental restructuring Modelling
MECC and Social Isolation	Applies the MECC approach to social isolation and loneliness	4.1 Instruction on how to perform a behaviour 5.1 Information about health consequences 5.3 Information about social and environmental consequences 5.4 Monitoring of emotional consequences 5.6 Information about emotional consequences 6.1 Demonstration of the behaviour 8.1 Behavioural practice/ rehearsal 9.2 Pros and cons 12.5 Adding objects to the environment	Education Persuasion Training Environmental restructuring Modelling
40 minute MECC session plan	Condensed session using only video/ case study examples and prompts for discussion	6.1 Demonstration of the behaviour 8.1 Behavioural practice/ rehearsal	Training Modelling

Supplementary Material 4: The utilisation of relevant BCTs to the seven key TDF domains. All relevant BCTs for each domain (aside from Social/ professional role and identity, of which there are no linked BCTs) are listed alongside whether they are utilised by the MECC training modules.

BCT paired with key TDF domains	**Number of modules**	**Proportion of BCTs utilised by at least one module (%)**
Knowledge		60
Biofeedback	0	
Instruction on how to perform behaviour	3	
Information about antecedents	0	
Information about health consequences	2	
Information and social and environmental consequences	2	
Skills		66.7
Instruction on how to perform behaviour	3	
Behavioural practice/rehearsal	4	
Graded tasks	0	
Beliefs about capabilities		37.5
Problem solving	0	
Instruction on how to perform behaviour	3	
Demonstration of the behaviour	4	
Behavioural practice/rehearsal	4	
Graded tasks	0	
Verbal persuasion about capability	0	
Focus on past success	0	
Self-talk	0	
Beliefs about consequences		40
Information about health consequences	2	
Salience of consequences	0	
Information and social and environmental consequences	2	
Anticipated regret	0	
Information about emotional consequences	2	
Pros and cons	2	
Comparative imagining of future outcomes	0	
Material incentive (behaviour)	0	
Incentive (outcome)	0	
Reward (outcome)	0	
Environmental context and resources		28.6
Social support (practical)	0	
Prompts/cues	1	
Remove aversive stimulus	0	
Restructuring the physical environment	0	
Restructuring the social environment	0	
Avoidance/reducing exposure to cues for the behaviour	0	
Adding objects to the environment	3	
Social influences		0
Social support (unspecified)	0	
Social support (practical)	0	
Social comparison	0	
Information about others' approval	0	
Social reward	0	