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Title: Implementation of a national programme to train and support healthcare professionals in brief behavioural interventions: A qualitative study using the Theoretical Domains Framework

Short title: National brief intervention implementation

Abstract:

Objectives

Behaviour change interventions offered opportunistically by healthcare professionals can support patient health behaviour change. The Making Every Contact Count (MECC) programme in Ireland is a national programme to support healthcare professionals to use brief behavioural interventions. The aim of this study was to gain an in-depth understanding of the enablers of, and barriers to, embedding MECC across the healthcare system.

Design

A qualitative interview study.

Methods

We conducted individual semi-structured interviews to understand barriers and enablers to MECC implementation. Our sample was 36 participants (11 health promotion and improvement officers, 9 nurses, 15 allied health professionals and 1 training instructor) who have a direct role in either supporting and/or delivering brief interventions to patients Data was analysed using a Framework Analysis approach guided by the Theoretical Domains Framework (TDF).

Results

Eight theoretical domains influenced MECC implementation: environmental context and resources; intentions/goals; beliefs about the consequences of MECC delivery; knowledge; healthcare professionals' beliefs about their capability to deliver MECC interventions; social and professional role and identity; reinforcement and skills. Environmental context and resources was the most strongly endorsed domain with key influencing factors including: consultation type/setting; making MECC a routine part of clinical practice; a multi-professional approach; access to/visibility of resources/services; management support/expectations; impacts of the COVID-19 pandemic; the salience of the MECC programme and the strategic fit of MECC with other health service initiatives.

Conclusions

While individual factors influence national implementation of behavior change interventions, creating enabling environments for healthcare staff is crucial for widespread adoption across healthcare systems.

Keywords:

Brief behavioural interventions; implementation; health care professionals; qualitative; Theoretical Domains Framework; chronic disease prevention; training

Data availability statement:

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Acknowledgements:

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Statement of Contribution:

What is already known on this subject?

- Rates of chronic disease are rising globally and can contribute to disability and premature mortality.
- Training healthcare professionals to deliver brief behavioural interventions is recommended in international policy to support their patients towards positive health behaviour change.
- International evidence suggests that brief intervention delivery in health services is sub-optimal and that barriers and enablers exist to successful implementation.
- A national programme called Making Every Contact Count (MECC) is being rolled out across Ireland to support brief intervention implementation.
- In Ireland, previous quantitative survey-based research with healthcare professionals has demonstrated that there are missed opportunities for MECC delivery and that interventions to enhance implementation could target healthcare professionals' intentions and goals, barriers to prioritisation, environmental resources, beliefs about capabilities, negative emotions and skills.
- Further contextual information on barriers and enablers experienced by both healthcare professionals delivering brief intervention and staff supporting implementation of brief behaviour change interventions is needed to inform the optimization of the MECC national programme and to inform implementation efforts internationally.

What does this study add?

- Eight theoretical domains influenced MECC implementation as reported by healthcare professionals and those supporting MECC implementation: environmental context and resources; intentions/goals; beliefs about the consequences of MECC delivery; knowledge; health care professionals' beliefs about their capability to deliver MECC interventions; social and professional role and identity; reinforcement and skills.
- Environmental factors and resources was the most endorsed and elaborated on factor by participants in our study and efforts to promote MECC implementation should focus on providing enabling environments in the health services for brief intervention delivery.

Introduction

Rapidly increasing rates of chronic disease are a global societal challenge and are the leading cause of death worldwide (World Health Organization, 2011b). Chronic diseases such as cancer, cardiovascular disease, chronic respiratory disease and Type 2 diabetes share modifiable behavioural risk factors such as alcohol consumption, cigarette smoking, unhealthy diet and physical inactivity, which account for more than two-thirds of these diseases (World Health Organization, 2011a). Health services provide an important setting for health promotion initiatives to support people to change modifiable behavioural risk factors (Bull & Dale, 2021). Ensuring that healthcare professionals (HCPs) integrate prevention of chronic diseases, as well as treatment, is a key part of their role is a public health priority in many countries around the world (Forward, 2017; Vogt et al., 2023).

Behavioural interventions to support lifestyle behaviour change, or behaviour change counselling, delivered opportunistically by health professionals can support people to change their health behaviour and promote overall population health. Evidence suggests that such interventions are effective in promoting healthier behaviours including smoking cessation (Stead et al., 2013), physical activity (Lamming et al., 2017), dietary behaviours (Whatnall et al., 2018) and smoking behaviour (Stead et al., 2013). Evidence-based guidelines recommend the training of all healthcare professionals to deliver brief behaviour change interventions (National Institute for Health and Clinical Excellence, 2014).

Internationally, there have been a range of efforts to train, promote and support health care professionals to deliver behaviour change interventions (e.g. Malan et al., 2015; Varley & Murfin, 2014). The term 'Making Every Contact Count' was first used in the UK, as part of the National Health Service Yorkshire and Humber Prevention and Lifestyle Behaviour Change Competency Framework (NHS Education England, 2010). In Ireland, the term Making Every Contact Count (MECC) was adopted to describe the national programme to train and provide implementation support for all healthcare professionals to use brief behavioural interventions during routine consultations (Health Service Executive, 2016). The model used within the Irish MECC programme involves provision of three levels of brief interventions: brief advice, brief intervention and extended brief intervention. Where these are deemed insufficient to meet the needs of a patient, referral by the health care professional to specialist services is recommended. The MECC approach in Ireland uses the 5As framework of brief interventions which encourages health care professionals to: 1) ask about the health behaviour; 2) advise on the need

for behaviour change; 3) assess readiness to change; 4) assist with exploring benefits and barriers of change and 5) identify options for change and goal setting; and arrange referral to more intensive support if appropriate (The Clinical Practice Guideline Treating Tobacco Use and Dependence 2008 Update Panel, Liaisons, and Staff, 2008). Implementation of MECC in healthcare settings in Ireland is supported by a National MECC Implementation Group, which includes senior representatives from community and hospital services in Ireland and leaders for health policy programmes in Ireland. Health Promotion and Improvement Officers support the implementation of national health programmes within community and acute health services at a local level. The potential of the MECC programme in Ireland to positively impact on health outcomes is dependent on successful implementation. Previous research from the U.K. (Keyworth et al., 2018) and by our team in Ireland [reference removed for peer review] suggests that even where training exists and health care professionals believe that these interventions are important, there are many missed opportunities within consultations to deliver brief interventions.

In an international systematic review of reviews exploring implementation of brief behaviour change interventions, four themes were identified as both barriers and enablers to embedding MECC across the healthcare system: perceptions of knowledge, skills and professional role, beliefs about resources and support required, and healthcare professionals' own health behaviours (Keyworth et al., 2020a). Other barriers included lack of time, a perceived lack of prioritisation of behaviour change interventions and negative attitudes associated with patients' perceptions of risk and motivation. Enablers were training, a suitable workplace environment for MECC delivery and healthcare professionals' positive attitudes towards delivery of such interventions.

Currently, there is little international literature on the implementation of behaviour change programmes at scale such as MECC in Ireland. Implementing any new practice or programme within healthcare requires individual and organisational behaviour change (Atkins et al., 2017). The Theoretical Domains Framework (TDF) is a comprehensive theoretical framework to understand health professional behaviour related to implementation of evidence-based recommendations and systematically develop theory-informed implementation strategies (Cane et al., 2012; Michie, 2005). The TDF contains 14 domains ('knowledge', 'skills', 'social/professional role and identity', 'beliefs about capabilities', 'optimism', 'beliefs about consequences', 'reinforcement', 'intentions', 'goals', 'memory, attention and decision processes; 'environmental context and resources', 'social influences', 'emotions', and 'behavioural regulation') which allow us to understand factors influencing behaviour. In our survey study we used the TDF to develop our survey instrument [reference removed for peer review]. The TDF has also previously

been used in a qualitative study of health care professionals' barriers and enablers to delivering brief behavioural interventions in the UK (Keyworth et al., 2019). The TDF is a useful framework as it is linked to the COM-B (Capability, Opportunity, Motivation) model of behaviour change and the Behaviour Change Wheel approach to intervention development (Michie et al., 2014). Mapping barriers and enablers to MECC delivery using the TDF therefore provides a good basis for future development of implementation interventions or strategies to enhance MECC delivery in future.

We have led a programme of research which seeks to understand and enhance the implementation of MECC in Ireland [reference removed for peer review]. Clearly, understanding factors which impact on health care professionals' delivery of behaviour change interventions is critical to understanding implementation of MECC. In a survey study among a broad range of health care professionals who had completed MECC training, there were many missed opportunities for implementation. A significant minority (21%) reported that they had never delivered a brief behaviour change intervention [reference removed for peer review]. In this same study, we identified several factors which were relevant to health professionals' delivery of brief interventions, including challenges around prioritising brief intervention delivery with many competing demands, environmental resources, beliefs about capabilities, negative emotions associated with discussing lifestyle behaviours with patients and communication skills.

Our previous survey study [reference removed for peer review] focused on healthcare professionals' experiences of barriers/enablers to MECC implementation from a quantitative perspective. In the current study, we sought to extend our contextual understanding of healthcare staff experiences and to triangulate our understanding of implementation barriers/enablers by incorporating the experiences of Health Promotion and Improvement Officers and managers of supporting MECC implementation efforts in Irish healthcare settings. The aim of the current study therefore was to gain an in-depth understanding of the individual-level and organisational-level enablers of, and barriers to, the implementation of MECC in Ireland from the perspective of healthcare professionals and staff responsible for supporting the implementation of the programme.

Methods

Design

A qualitative approach was taken to this study using individual semi-structured interviews conducted with healthcare professionals and those responsible for supporting MECC programme implementation in Ireland. This project was part of the pre-registered Making MECC Work research programme [reference removed for peer review]. This study received ethical approval from the University of Galway Research Ethics Committee (reference number - 2020.08.012). The study is reported in line with COREQ guidelines (Tong et al., 2007) and the completed checklist is available in supplementary file 1.

Sampling

Both purposive and snowball sampling were utilised in this study. We recruited healthcare professionals who had previously consented to be contacted about this study when they took part in our previous survey study about barriers/enablers to MECC delivery [reference removed for peer review]. The survey study had originally been circulated to all healthcare professionals who had completed the introductory MECC eLearning programme between June 2018-March 2021 and participants were eligible to take part in the survey regardless of whether they had or had not delivered a brief intervention since conducting the introductory training. Information about MECC training in Ireland is outlined in our survey paper [reference removed for peer review].

When selecting participants from the healthcare professionals survey cohort to invite to this interview study, we sought to maximise variation in our sample in terms of those who had/had not delivered a MECC intervention previously, and in terms of gender, job role, healthcare setting and whether they had participated in the additional 'Enhancing your Brief Intervention Skills' MECC follow-up face-to-face/online training workshops. To increase the sample size, snowball sampling was also employed, where participants were encouraged to forward information to colleagues working in their team. Health Promotion and Improvement staff were recruited via an advert circulated by the National MECC Implementation team to regional teams. Final recruitment figures were determined by examining data adequacy (Vasileiou et al., 2018) and sample sufficiency for maximising variation in participant demographic variables.

In the original protocol [reference removed for peer review], we detailed a site-based approach to recruitment of participants by identifying two hospital services and two community healthcare settings who were at different stages of MECC implementation. Unfortunately, due to the timing of the study (July 2021 – April 2022) during the COVID-19 pandemic, there were serious disruptions to health services

and the systematic implementation of MECC making the identification of sites difficult for this study. We proceeded with the modified approach to recruitment outlined above.

Data Collection

Healthcare professionals who had consented to be contacted for the interview study when they completed the MECC survey were contacted directly by the research team via e-mail with an invitation to participate and an information sheet and consent form. Health Promotion and Improvement Officers received their invitation, information sheet and consent form via the national MECC team. Those who wished to participate returned their consent form via e-mail or post prior to participation in an individual interview. As the study was conducted during the COVID-19 pandemic, all interviews were conducted via phone, or online via Zoom professional depending on participant preferences and were audio-recorded. One-to-one Interviews were conducted by [initials removed for peer review}, an experienced qualitative researcher with expertise in health psychology who did not have any prior knowledge of research participants.

An interview schedule (see supplementary file 2) was developed to explore the participants' perceptions of what influenced their capability, opportunity, and motivation to implement MECC in practice, as per the COM-B model (Michie et al., 2014). The interview schedule was developed with reference to previous literature (Keyworth et al., 2019; Nelson et al., 2013). It was based on the COM-B model rather than the TDF for reasons of simplicity and practicality and, as the TDF domains map neatly onto COM-B components, the frameworks were used in a complementary way. Members of the Study Management Team (academics and knowledge users leading the study) and the Health Psychology Public Involvement Panel (a group of members of the public who supported patient and public involvement in the design and execution of this study) were involved in drafting the interview schedule. Participants were asked about what had enabled or made it difficult to implement MECC in their workplace and any strategies used to overcome implementation barriers. Questions were tailored based on whether the interviewee was a clinician or a Health Promotion and Improvement Officer or Manager. Participants received a €20 shopping voucher as a thank you for their contribution.

Analysis

Interviews recordings were transcribed verbatim. NVivo software was used to manage the data analysis process. The analysis was guided by the Framework Analysis Approach (Gale et al., 2013) in order to map the barriers and enablers of MECC delivery to the domains of the Theoretical Domains Framework (Cane et al., 2012; Michie, 2005). The analysis was underpinned by a critical realist epistemology (Maxwell, 2012).

As an initial phase in the analysis, all interviews were read, re-read and barriers and enablers to MECC delivery were coded initially at the TDF domain level by [Initials removed for peer review], charting all data to the initial framework matrix. Particular attention was made at this stage to examine whether any additional categories needed to be added to the 14 TDF domains or whether any TDF domains could potentially be merged, collapsed, or deleted from the final analysis. [Initials removed for peer review] reviewed all data coded to each domain. Any disagreements were discussed and any amendments to the framework were made through discussion by both coders. A second level of coding then involved an inductive thematic analysis of the data contained within each TDF domain to develop explanatory themes for each TDF domain. To develop explanatory themes both coders inductively coded the data in each domain, generating explanatory themes separately and then discussing, agreeing, and refining potential explanatory themes. Each explanatory theme was also labelled as a barrier or enabler to MECC delivery, or as both a barrier or and enabler if relevant.

Using guidance from Atkins et al., (2017), decisions were made about whether domains were retained for the final analysis based on two criteria – the relatively high frequency of specific beliefs or themes and evidence that strong beliefs may affect the target behaviour (MECC delivery). Due to overlap in coded content between TDF domains – 'intentions', 'goals' and 'behavioural regulation', we merged these three domains under a domain category called 'intention and goals' for the purposes of our analysis. Very limited data from a small proportion of participants were coded into the domains – 'optimism', 'emotions', 'social influences' and 'memory, attention and decision processes' and therefore these domains were excluded from the final analysis.

Results

Thirty-six Health Service Executive staff participated in the study (32 women and 4 men). The average length of time for interviews was 45 minutes (range 28 - 68 minutes). Participants came from 9 community health services and 9 hospital settings. The mean age of participants was 43 years (range 25-59 years). A broad range of healthcare professionals took part as well as Health Promotion and Improvement Officers, and managers. Almost all participants (n=35/36) had completed the standardised MECC e-learning training provided by the National MECC team and half of the participants (n=18) had completed further MECC workshops on enhancing brief intervention skills. Among the 23 participants who reported being in clinical patient-facing roles, all had delivered a MECC intervention at least once. Demographic information is summarised in Table 1.

Variable	N	(%)	Mean	Range	SD
Sex					
Female	32	88.89			
Male	4	11.11			
Other					
Age, years	35	97.22	42.8	25-59	8.70
Healthcare Professional Role					
Health Promotion and Improvement Officer	11	30.56			
Nurse	9	25.0			
Physiotherapist	6	16.67			
Dietician	3	8.33			
Occupational Therapist	2	5.56			
Manager	2	5.56			
Dentist	1	2.78			
Midwife	1	2.78			
Training Instructor	1	2.78			
Years working in professional role	36		13.8	1-42	8.99
Health Service Setting					
Acute Hospital Services	10	27.78			
Primary Care Services	10	27.78			
Mental Health Services	4	11.11			
Health and Well-being Services	12	33.33			
Completed MECC E-Learning Training					
Yes	35	97.22			
No	1	2.78			
Attended 'Enhancing Brief Intervention Skills' workshop					
Yes	18	50.0			
No	18	50.0			
Delivered a MECC brief intervention – question only apply to clinical staff (n = 23)	23	100			
Yes	0				

Variable	N	(%)	Mean	Range	SD
No					

Table 1 – Demographic Details

Overview of Findings

Barriers and enablers of MECC delivery were mapped onto eight TDF domains "environmental context and resources", "intentions and goals (encompassing behavioural regulation)", "beliefs about consequences", "knowledge", "social and professional role and identity", "beliefs about capabilities", "reinforcement" and "skills". Twenty-two explanatory themes were developed. These domains and explanatory themes are summarised in Table 2 below. They are presented in order of the domain that was most frequently endorsed as a factor influencing implementation by participants (environmental context and resources), down to the domain that was least frequently endorsed by participants (skills). Detail about whether each explanatory theme was reported as a barrier and or enabler to MECC delivery (or both) is also provided in the table.

Theoretical Domains	**Explanatory themes**	**Barrier/enabler**
1. Environmental Context and Resources	*1.1 Consultation type and setting*	*Barrier/Enabler*
	1.2 Making MECC routine	*Barrier/Enabler*
	1.3 Access to and visibility of resources/follow-on services	*Barrier/Enabler*
	1.4 Management support and expectations	*Barrier/Enabler*
	1.5 Strategic 'fit' of MECC	*Enabler*
	1.6 Salience of MECC	*Barrier/Enabler*
	1.7 Impact of COVID-19	*Barrier/Enabler*
2. Intentions and Goals	*2.1 Personal Motivation*	*Enabler*
	2.2 Piloting, learning and adjusting	*Enabler*
	2.3 Prioritisation: short-term versus long term thinking	*Barrier*
3. Beliefs about Consequences	*3.1 Beliefs about MECC effectiveness in improving health outcomes*	*Enabler*
	3.2 Beliefs about patient readiness and impact on patient-provider relationship	*Barrier/Enabler*
4. Knowledge	*4.1 Training providing factual or procedural knowledge*	*Enabler*
	4.2 Experiential knowledge – knowing 'when and how' to initiate MECC conversations	*Enabler*
5. Social and Professional Role and Identity	*5.1 Clinical Responsibility*	*Enabler*
	5.2 "I think we were probably doing it anyway"	*Enabler*
	5.3 "It's not just nurses that should be doing MECC"	*Barrier*
6. Beliefs about Capabilities	*6.1 "They're a little bit more outside my comfort zone"*	*Barrier*
	6.2 Training enhancing beliefs about capabilities	*Enabler*

7. Reinforcement	*7.1 Tangible results of MECC delivery*	*Barrier/Enabler*
8. Skills	*8.1 Development of conversation skills* *8.2 Importance of skills practice*	*Enabler* *Enabler*

Table 2 – TDF domains and explanatory themes relevant to MECC delivery

1. Environmental Context and Resources

Environmental context and resources was the most frequently endorsed TDF domain and was the most elaborated upon construct in terms of explanatory themes which influenced participant's behaviour in terms of MECC implementation. Seven explanatory themes were developed under this domain which will be presented in turn below.

1.1 Consultation type and setting

Healthcare professionals reported that the type of consultation and the consultation setting had a bearing on whether they delivered MECC. Certain settings were often more amenable to offering MECC interventions - such as outpatient clinics where healthcare professionals had time to deliver interventions and had more regular follow-up with patients. There was also a perception from some participants that when patients were not acutely unwell, it was easier to deliver MECC interventions:

> *"MECC kind of I feel fitted in much better with our outpatient cohort because when we have patients in the in-patient setting we know that a lot of the information they get given goes in one ear and out the other and the ability to spend the time is probably needed a little bit more. And we have regular contact with these patients in an outpatient setting" (P1, F, Health Promotion and Improvement Officer)*

1.2 Making MECC routine

Participants described the importance of finding ways to make MECC routine or habitual within clinical practice to support healthcare professionals to support implementation and reduce any added burden of delivering these interventions (such as additional documentation processes). Suggestions included the use of environmental prompts, embedding MECC within routine health checks, making MECC part of routine documentation processes in patient records (paper and/or digital records) and making MECC a mandatory training requirement for new staff. One Health Promotion and Improvement Officer mentioned how she encouraged staff by mentioning that brief interventions aren't new to what staff

normally do, but that MECC provides supports and structures to embed these routine conversations in practice:

> *And again I'd be saying [to healthcare professionals at implementation sites] you know you're doing this every day as part of your job already. We're just putting a wee bit of formal structure to it and there are supports out there to help you to improve all this as well. (P32, F, Health Promotion and Improvement Officer)*

1.3 Access to and visibility of resources/follow-on services

The availability of resources and services to support patients after using a MECC intervention was seen as both a barrier or enabler of MECC delivery. Having knowledge of community resources or clearly accessible clinical referral pathways was an enabler of MECC delivery, but accessing information about supports was challenging:

> *"I think people [healthcare professionals] would be more inclined to open up about these things if they felt there was somewhere to refer on if that's what people needed" (P22, F, Advanced Nurse Practitioner)*

Participant 24 emphasised the importance of having local implementation groups set up at MECC sites, that are multi-disciplinary in nature and that work together on creating a directory of services that staff can use to signpost patients:

> *"You need to have your implementation group in place and a very good implementation group that's representative of all the disciplines that are working on the site. And I suppose they have all of the necessary resources in place that they need for the signposting, that they have the directory of services for the local area in place you know so that makes the signposting piece much easier" (P24, Health Promotion and Improvement Officer)*

1.4 Management support and expectations

Participants reported that management buy-in, support and expectations was critical in terms of encouraging staff engagement in implementing MECC in healthcare sites. Without this support, individuals were attempting to implement MECC in clinical services individually without a systematic and sustained approach. One key way that managers could help was by providing protected time to staff to engage in training and MECC delivery and ensuring MECC was on team meeting agendas. Health Promotion and Improvement staff spoke of the key importance of having buy-in from senior

management such as heads or directors of services in order to approach MECC implementation in relevant sites:

> *And we got great management buy-in there [at a mental health service] which was crucial I found. We needed to have someone I think he was the Director of Nursing there and he was really engaged with it and that kind of filtered down throughout his staff then and he got everyone I suppose doing the e-learning and then really pushed the workshop and gave them time to do the e-learning as part of their work as well which was good (P33, F, Health Promotion and Improvement Officer)*

1.5 Strategic 'fit' of MECC

Participants felt that the implementation of MECC was more likely when its implementation fit with other policy priorities or initiatives in health services (e.g. annual health checks, Stop Smoking Campus initiatives):

> *We would have done a lot of work with the smoke free and tobacco free campuses. So we would be going back into all those places now hopefully and building on that work that they've done on the Tobacco Free Campus and offering the MECC to them (P32, F, Health Promotion and Improvement Officer)*

Similarly, one participant mentioned leveraging the synergies between MECC and the national mandate to improve physical health assessments in mental health services in order to embed MECC into clinical practice in mental health settings:

> *So that was kind of a mandate nationally in mental health that they had to improve physical health assessment. So they were bringing in like a physical health assessment tool. So straight away I was like that's what MECC is (P36, F, Health Promotion and Improvement Officer).*

1.6 Salience of MECC

The more visible the MECC programme was in the HSE, the more participants felt they would implement it in practice and vice versa. Some participants noted that it is difficult to keep momentum up with new initiatives such as MECC. Participants noted that visible cues help with raising/keeping up awareness of the MECC programme (e.g. posters, emails, recording tools). For example, MECC prompts on patient assessment tools were noted as a helpful reminder to engage in MECC conversations or having

posters/videos that could be shared with patients to increase their awareness of MECC and willingness to engage:

> *There are lots of videos that are recorded on MECC and what MECC is but even in waiting rooms to be using those you know TVs for health messages for things like Making Every Contact Count particularly in staff spaces I suppose but also in patient spaces that patients can feel that they can ask their health professional about lifestyle factors that they want to discuss. (P23, F, Health Promotion and Improvement Officer)*

As well as discussing the importance of environmental cues, participants also described the value of having staff advocates promoting the programme to ensure staff don't forget about implementation:

> *"You need somebody to be out there selling it because people do forget" (P21, F, Director of Nursing)*

1.7 Impact of COVID-19

The COVID-19 pandemic was seen by some staff as an opportunity for MECC implementation as patients were reported to be more engaged and interested in making health behavioural changes:

> *There's huge opportunity at the moment because after COVID what I'm noticing is a lot of patients are coming in and they're actually talking about the fact that their eating habits and their physical activity levels and their tobacco use and alcohol use changed a lot during the pandemic. And patients are actually kind of volunteering to us. So I think its actually a huge opportunity. (P12, F, Physiotherapist)*

However, COVID side-lined implementation for some healthcare professionals because they had less time with patients in consultations

> *"We were limited [during COVID] with our time…… in the way we could approach and talk to clients" (P13, F, Occupational Therapist)*

Summary of remaining theoretical domains

Data summarising our findings related to our seven remaining theoretical domains intentions and goals; beliefs about consequences; knowledge; social and professional role and identity; beliefs about capability; reinforcement; and skills and their constituent explanatory themes are contained within table 3.

Theoretical Domain	Explanatory Themes and summaries	Illustrative Quotes
2. Intentions and Goals	*2.1 Personal Motivation is not enough* Personal motivators that enabled staff to implement MECC included a personal belief in the importance of health promotion and an appreciation of the logical and simple approach of MECC. However, they felt that MECC needed to be further embedded in routine care.	"I think clinicians will understand the benefit of this. They understand the importance of exercise and smoking cessation and alcohol and all the rest…… But I think to ensure that clinicians apply that it needs to be its just part of standard practice". (P16, F, Occupational Therapist)
	2.2 Piloting, learning, and adjusting Piloting and learning from different approaches to embedding MECC and adjusting the approach to deal with ongoing challenges was key to successful implementation.	"So I think even just a quarterly update on where we are nationally about KPIs and how different sites are progressing or even lessons learned from sites that are doing well or areas that are doing well, what's working for them that we can learn from" (P25, F, Health Promotion and Improvement Officer)
	2.3 Prioritisation: Short term versus long term thinking While participants were motivated to implement MECC and saw its value in relation to chronic disease prevention, prioritisation of MECC was a challenge recognised by all participants.	"There's the competing KPI of your waiting list versus your oh go on there and do a brief intervention there, its gonna take you two minutes……But overall our waiting lists are gonna get better if they keep doing their brief interventions". (P27, Health Promotion and Improvement Officer)
3. Beliefs about consequences	*3.1 Beliefs about MECC effectiveness in improving health outcomes* Having a belief that MECC would benefit patients' health was a positive driver of MECC implementation	"I think it will have a huge impact on patients actually you know….. sometimes we all need a little push in the right direction". (P20, F, Nurse)
	3.2 Beliefs about patient readiness and impact on patient-provider relationship Having a holistic understanding of a patient's history and circumstances influenced MECC delivery. Beliefs about patient readiness for MECC was important as healthcare professionals worried about damaging the patient-provider relationship.	"I feel if I'm a bit pushy with that sort of thing [MECC conversations] they might never come back to another appointment so you've kind of lost them altogether then". (P11, F, Physiotherapist)
4. Knowledge	*4.1 Training providing factual or procedural knowledge* MECC training equipped participants with sufficient knowledge on how to deliver MECC and information on health behaviours. Those who attended/facilitated the 'Enhance your Brief Intervention Skills' workshops valued the hands-on learning experiences.	"I really enjoyed the practical element of the day and getting the different scenarios and you know doing out the role play whether it be you're the client or the health care professional and then being the observer as well." (P32, F, Health Promotion and Improvement Officer)
	4.2 Experiential knowledge – knowing 'when and how' to initiate MECC conversations Participants felt they learned from experience about 'when to' and 'how to' approach having MECC conversations.	"Some people won't listen to a word you say and that's fine too. You just have to get on with that and don't take it personally. ……. But maybe the next time you could just try again you know" (P20, F, Nurse)

5. Social and Professional Role	*5.1 Clinical Responsibility* Participants reported that MECC fits well with their role in terms of how they work with patients to prevent chronic disease.	"We see a lot of chronic disease I suppose so it really applies to us you know because we're in the community and we see these people time and time again. I suppose it really makes sense for us to be involved". (P12, F, Physiotherapist)
	5.2 "I think we were probably doing it anyway" Healthcare professionals spoke about how MECC-type conversations were already part of their role which enabled implementation.	"It probably fitted very well and it was something I think I was doing, I just didn't call it MECC." (P1, F, Health Promotion and Improvement Officer)
	5.3 "It's not just nurses that should be doing MECC" Participants felt that a whole multi-disciplinary systems approach is needed for consistency and maximum impact of MECC.	It's not just nurses that should do MECC. It should be all disciplines" (P14, M, Clinical Nurse Specialist)
6. Beliefs about capabilities	*6.1 "They're a little bit more outside my comfort zone"* Certain health topics (e.g. alcohol and drug use) were seen as slightly outside participants' expertise and some topics were seen as taboo to raise in certain contexts. Some participants spoke about how it was less easy to engage in MECC conversations on topics that impacted them personally, for example if they were smokers or consumed alcohol over recommended amounts.	"So I definitely drink in some weeks over the recommended limit so I would be conscious it's something I do find harder to discuss definitely with people". (P18, F, Dietician)
	6.2 Training enhancing beliefs about capabilities Participants reported that training enhanced their beliefs about their capabilities to delivery MECC interventions.	"It [MECC training] gave me the confidence to know that it wasn't gonna stop with me that there would be more services I could refer to" (P12, F, Physiotherapist)
7. Reinforcement	*7.1 Tangible results of MECC delivery* The outcomes of MECC conversations reinforced MECC delivery either positively or negatively. For example, seeing a patient experience health improvements as a result of MECC conversations was reinforcing and a lack of change could be discouraging. Receiving positive recognition at a service level for high levels of MECC implementation on site was also reinforcing.	"I got a lot out of it [MECC delivery] because when they come back to me they say oh by the way yeah it was great. I got up in the morning and did my walk first or oh I've lost weight or oh I've given up smoking or oh I did the program. So you know yeah it is really worthwhile". (P15, F, Nurse)
8. Skills	*8.1 Development of conversation skills* MECC training allowed participants to develop conversational skills in relation to all MECC topics, including topics they were less familiar/comfortable with raising.	"So it [MECC training] kind of made me think about how I could get more from my interventions with patients. I suppose I think it made me think about my communication style you know. So again, rather than just talking kind of thinking as myself of being more there as like a partner". (P12, F, Physiotherapist)
	8.2 Importance of skills practice Rehearsal of skills was important for MECC delivery. Participants also emphasised the need to practice MECC to maintain skills and the importance of refresher training.	"I don't think you can do MECC once and then you know it. I think like anything you need refreshers every year just to kind of remind yourself of the content" (P27, F, Health Promotion and Improvement Officer)

Table 3 - Summary of remaining theoretical domains, explanatory themes and illustrative quotes

Discussion

Healthcare professionals have an ideal opportunity to discuss health-related behaviours with patients during healthcare consultations and offer support. However, evidence to inform systematic implementation of brief behavioural interventions is lacking. This study explored perspectives of a diverse range of healthcare professionals, Health Promotion and Improvement Officers and managers on individual-level and organisational-level facilitators and barriers to the implementation of a national brief intervention programme in Ireland.

The TDF domain that was most frequently coded in our analysis and had the highest amount of explanatory themes was *environmental context and resources*. In particular, healthcare professionals were more likely to deliver MECC interventions if: MECC was integrated into routine practice; senior management 'bought into' the programme; the programme had high visibility and was integrated into other high-profile initiatives; staff were given protected time to attend training; and there was access to and information about supports and resources to refer patients to following a MECC intervention. Participants spoke about the challenges they experienced promoting and trying to implement MECC as individuals. In contrast, systematic implementation of MECC and a whole-systems approach, were seen as much more effective in promoting MECC delivery. In our study, these challenges were particularly pertinent for Health Promotion and Improvement Officers, who are often directly tasked with promoting MECC training and delivery within the health service in which they work.

The specific nature and context of the consultation was also important in determining MECC delivery; healthcare professionals reported that they were more likely to deliver a MECC intervention when patients were not too ill and where there was continuity of care and planned follow-up with the patient. Previous research has shown that patients perceive behaviour change interventions as appropriate during routine medical consultations, particularly where behaviour change could have a positive effect on long-term condition management (Keyworth et al., 2020b). Healthcare professionals reported that time pressures and practical problems such as availability of specialist follow-up services were deterrents of MECC delivery. Time and resource pressures have frequently been highlighted in previous studies as being an important barrier to delivering behaviour change interventions (Keyworth et al., 2019; Malan et al., 2015).

While participants in our study overwhelmingly spoke about the importance of their work environment and organisational culture, there were also a number of important individual-level factors relevant to MECC implementation and delivery. The knowledge, skills, and confidence that participants gained through attending training were critical to allow them to deliver MECC interventions. These skills were especially valuable to enable discussions about more sensitive or 'taboo' behaviours. There is growing evidence that training healthcare professionals in behaviour change interventions and communication skills is effective in increasing skills, competence, and confidence in delivering opportunistic health behaviour change interventions (Chisholm et al., 2019; Parchment et al., 2023; Vogt et al., 2023). Also, individuals who reported having an inherent interest in health promotion, a strong belief that discussing health-related behaviour was likely to result in a positive outcome for patients, or that brief interventions was an important part of their professional role, were more likely to deliver MECC interventions. This highlights the importance of providing healthcare professionals with evidence on the benefits of brief behaviour change interventions for their patients.

Our findings are in line with previous research on challenges to brief behaviour change intervention delivery. In a qualitative study by Keyworth et al. (2019), four prominent TDF domains influenced brief intervention delivery: Environmental context and resources; beliefs about consequences; beliefs about capabilities and social/professional role and identity. Similarly, Haighton et al., (2021) found the most common barriers associated with delivery of MECC for healthcare professionals were environmental context and resources, and beliefs about capabilities and knowledge. The findings from our study add to the growing body of evidence for the importance of environmental context and resources as critical factors in supporting MECC implementation.

Our findings build on and extend our previous work, in which we conducted a survey, also framed within the TDF, of 357 healthcare professionals who had completed MECC training [reference removed for peer review]. In that study, we found that six TDF domains emerged as important to MECC delivery, including intentions and goals, beliefs about capabilities, negative emotions, environmental resources, skills and barriers to prioritisation. Most of these factors also featured in the current qualitative study. Negative emotions and barriers to prioritisation were new domains that were developed in our survey factor analysis and were therefore not were not included as TDF domains in the framework analysis for this study. However, barriers to prioritisation did feature as an explanatory theme under the "Intentions and

goals" domain and participants spoke about the role of emotions in relation to the "Beliefs about Consequences" domain and the "Reinforcement" domain in the current analysis.

Implications for practice/implementation

Our findings suggest that steps to promote enabling environments and resources are essential to promote MECC delivery. A number of practical suggestions emerged from this study. These included suggestions to make MECC delivery as habitual and easy as possible, for example embedding MECC delivery and documentation into routine health check systems and removing any unnecessary burdens, such as additional documentation processes. One of the challenges reported by health professionals was the lack of resources and services to refer patients to following a MECC consultation. The availability of more information about such services, perhaps in the form of a directory of services that staff can use to signpost patients, could increase the likelihood of MECC delivery. A critical factor which emerged within this study was the importance of having a systematic and sustained approach to MECC embedded within the health services. An important aspect of this is the critical role of senior management who can promote MECC by encouraging and supporting their staff to attend MECC training and deliver MECC. Related to this, the presence of staff advocates for MECC, or champions, is likely to encourage MECC delivery within services. Efforts to mainstream MECC and make MECC visible within the health services, for example with posters, or meetings dedicated to discussing MECC within services, are likely to increase awareness of the programme and enhance implementation. Our findings suggest that MECC delivery should be the responsibility of all members of multi-disciplinary teams and should not be limited only to certain health professional roles, even when some roles seem to have a better fit than others for health promotion. Finally, the importance of MECC training, with opportunities to practice communication skills, especially focusing on more sensitive or challenging behaviours, is critically important.

The next step of this research programme was to use the evidence gathered from this qualitative study and our previous survey study [reference removed for peer review] to seek consensus from key stakeholders on priority strategy options to enhance MECC implementation in Ireland. This consensus study is complete and will be published separately.

Strengths

Strengths of the current study are the inclusion of both frontline healthcare professionals & Health Promotion and Improvement staff from all community health services and acute hospital services across Ireland. This approach has allowed us to view implementation challenges from both the healthcare professionals' perspectives and from those charged with supporting implementation in their local areas. Our study included a large sample size with a wide mix of healthcare professionals and MECC change agents represented. The use of the TDF across both our previous survey study and current qualitative study has allowed us to expand on our findings from our quantitative survey and explain in more detail why certain domains were key to MECC implementation.

Limitations

Limitations of the current study include the relatively small proportion of male interviewees. However, this is reflective of the gender profile of the current health services workforce in Ireland which is 78% female (Health Service Executive, 2023). In addition, our sample does not claim to be representative of the health care professional workforce in the health services; some professional groups are over- or under-represented in our sample. However, our study includes health care professionals from across all health care service settings, including acute hospital, primary care, mental health and health and wellbeing services. The interviews were conducted during the Covid-19 pandemic, at a time where there was a lot of disruption to health services and to the implementation of the MECC programme. This is likely to have impacted on our findings as we were unable to take a site-based approach to recruitment and to clearly identify sites that had excelled at MECC implementation and those who had struggled with implementation. Finally, as the sample in the current study included only those who had already completed the MECC training, the barriers and facilitators reported do not represent those who have not completed the training.

Conclusions

The results of our study, which includes health care professionals who have already completed MECC training, suggest that a range of factors are relevant to understanding MECC implementation and delivery, including environmental context and resources, practitioners' beliefs about the consequences of MECC, practitioners' personal beliefs around the importance of health promotion, practitioners' MECC-related skills, knowledge and capabilities and their perceptions around the fit of MECC with their professional role. Environmental context and resources emerged as the dominant factor and efforts to

promote MECC implementation should focus on supporting enabling environments and resources in the health services for brief intervention delivery.

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[References to the protocol paper and survey paper from the authors removed for peer review process]

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