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GPs' views on the implementation of combined lifestyle interventions in primary care: a qualitative study.

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Abstract

Objectives

Prevention and lifestyle support is an emerging topic in general practice. Healthcare insurance companies reimburse combined lifestyle interventions (CLIs) in the Netherlands since January 2019. CLIs support people with overweight or obesity to reduce weight in peer groups, supervised by lifestyle coaches. General practitioners (GPs) are key in the successful implementation of new lifestyle interventions in primary care. Therefore, this study explored GPs' experiences and views on their role in lifestyle support and on implementing CLIs in primary care.

Design

Qualitative study using semi-structured interviews among a purposive sample of fifteen GPs. Content analysis consisted of coding and mapping a first stage of predefined- and second stage of iterative evolving set of themes, representing GPs' experiences and views.

Outcomes

Experiences with lifestyle support among GPs ranged from primarily referring patients to other healthcare professionals to taking a proactive role in lifestyle support themselves. Whether or not GPs took an active role in lifestyle support was related to the perceived efficacy of lifestyle interventions. Overall, GPs had little experience with coaches offering CLI in every day practice. Perceived barriers were a lack of visibility and availability of organised CLIs in the region and the potential lack of added value of CLIs on top of existing, reimbursed lifestyle support. Perceived facilitators were coordination of care provision by GP cooperatives and monitoring the CLI implementation and their results. The reimbursement of CLIs without any costs for participants enabled application.

Conclusion

GPs acknowledge the importance of lifestyle support in primary care, but substantially differ in its provision, and have limited awareness of- and experience with CLIs. Successful integration of CLIs with primary care requires a solid promotion and reimbursement policy, a well-coordinated implementation strategy and structural evaluation of long-term effectiveness.

Article summary (strengths and limitations)

- Qualitative analysis of the first experiences and expectations of healthcare interventions at an early stage can provide valuable information on barriers and facilitators to implementation.
- This is the first study to explore to what extent a new policy regarding the combined lifestyle intervention (CLI) in the Netherlands was being leveraged. The study interviewed general practitioners (GPs) among a purposive sample guided by a

framework, which has been proven useful in the implementation of innovations in healthcare.
- Interviews took place in a relatively early phase after the reimbursement policy started, potentially leading to underestimations of its potential developing yield among GPs.
- Only GPs were interviewed and the study results may therefore not be generalisable to perspectives of other health care workers or patients.

Keywords
Implementation, healthcare, primary care, lifestyle support, combined lifestyle intervention, general practitioner

Introduction

Implementation of innovations in healthcare is often challenging (1). Implementation researchers have reported several factors that may positively or negatively influence implementation of innovations in healthcare. These factors can be divided into a number of domains: characteristics of the innovation itself, the organisation, the socio-political context, the available resources and the adopting individual (2–4). Moreover, successful implementation largely depends on the commitment and support of involved healthcare professionals (5,6). More insight into factors influencing the process of implementation can be achieved by studying specific implementation cases (7).

Since January 2019, healthcare insurances in de Netherlands have started to reimburse combined lifestyle interventions (CLIs) for people with overweight or obesity. CLIs are multicomponent interventions, which consists of interactive sessions with care professionals (e.g. a lifestyle coach, practice nurse or a paramedic). The 2-year programme is tailored to the personal needs of the participants and includes group sessions to educate participants on certain topics, share experiences and provide support (8–10). Participants receive coaching on physical activity and healthy nutrition. While in the first year, much emphasis is on guided activities, including exercise, education and sharing experiences, the second year focusses more on self-management. Lifestyle coaches, trained at a certified educational institute, are accredited to deliver CLIs to patients referred by GPs.

General practitioners (GPs) are increasingly confronted with people with unhealthy weight in their daily practice, with approximately a quarter of the world population being overweight and one third of them being obese (11). Unhealthy weight is a major driver for chronic conditions such as diabetes and cardiovascular diseases (12), and contributes to poor quality of life and increased healthcare costs (13). Therefore, there is a growing urgency to address overweight or obesity by offering healthy lifestyle support in primary health care (14). In particular, multicomponent lifestyle interventions appear to be promising in effectively reducing overweight and obesity (15–21). Due to the new reimbursement policy for CLIs, all

Dutch citizens with overweight or obesity became formally eligible for refunded participation in a CLI per January 2019.

One important but often overlooked question is whether healthcare innovations can be successfully implemented and scaled up in practice. This study explored the perceptions, intentions and behaviours on lifestyle support in general and the introduction of the CLIs in particular. Barriers and facilitators at an early stage of implementation were identified. This knowledge may contribute to optimising implementation of CLIs and/or similar healthcare innovations into primary care.

Method

Study design

This qualitative study consisted of semi-structured interviews among a purposive sample of 15 GPs, guided by a topic list. The technology acceptance model (TAM) (22) was used as inspiration and framework for relevant topics for the interview guide (table 1) and coding of the transcripts. The TAM model was chosen as this was originally developed as a framework for the introduction and implementation of innovative interventions (23,24). Several TAM variations have been developed since the introduction of the original TAM, which have been proven useful in different research domains, including implementation research in healthcare (25).

Table 1. Interview topic guide

Topics	
Introduction researcher	Introduction interviewer, research group and sign informed consent
Introduction participant	Characteristics of general practitioner
Prevention	Thoughts on role of GP in prevention
Lifestyle interventions	View on lifestyle interventions
CLIs	Awareness and knowledge of CLIs, view on CLIs
Experiences	Experiences with lifestyle interventions, lifestyle coaches and CLIs
Effectiveness	Belief in effectiveness of CLIs, their added value on current care provision
Intention	Intention of referring to CLI coaches, benefit of reimbursement
Implementation	Facilitators and barriers for implementation, ideal implementation
Feedback on interview	Feedback of participant on topics and questions

Ethics

The medical ethics committee of the Amsterdam UMC (location AMC) granted a waiver for this study (reference number NL68852.018.19). In line with Dutch legislation, this committee ruled that the study did not require extensive ethical review as participants were recruited on a volunteer basis and were not requested to undergo any physical examination or intervention.

Recruitment

Fifteen GPs across a diversity of primary care practices were purposively recruited for semi-structured interviews. Purposive sampling was used to enable balance for the following GP characteristics: gender (M/F), working experience (0-10, >10 years) type of general practice (health care centre: Y/N, part of care group: Y/N). Health care centres were defined as multiple GP practices with additional primary care providers (including practice nurses, physical therapists, dieticians, etc.). Care groups were defined as local or regional GP networks, involved in shared contracts on chronic care delivery with health insurance companies (26). Recruitment of GPs took place through snowballing, covering a large geographical area of the Netherlands to ensure sufficient contrasts. Invitations were sent by email, followed by an information letter after a positive reply. The interviews took place between February and April 2019. Overall, 15 GPs were willing to take part in an interview. In line with the Amsterdam UMC code of good conduct in medical research (27), provisions were made to assure the anonymity of the respondents in data collection, analysis and presentation.

Data collection

All interviews were conducted face to face at the GP practice by WH, a medical student in the final phase of training. The interviews lasted about half an hour on average. The researcher verified whether the participant had read the information letter, before asking for written consent. All interviews were audio recorded with participants' permission. After interim analysis based on half of the interviews, one topic was added to the interview guide, to obtain a deeper understanding what constitutes optimal implementation of CLIs in daily practice. To increase content validity, the GPs were asked for feedback after each interview, about the relevance of the research questions and suggestions for additional questions. The input was used to make further adjustments to wording and sequencing of the topic guide for subsequent interviews. GPs received a small reimbursement (gift voucher) for their participation. Since most of them were relatively unfamiliar with the CLI, two additional GPs who gained clear experience with the CLI were recruited and interviewed. Thematic saturation (28) was verified in consultation with the research team and occurred after 15 interviews.

Data analysis

The framework method for qualitative research was followed for a systematic approach of data analysis (29). This comprised the stages of transcription, familiarisation, coding, applying the framework and interpretation. All but one of the interviews were transcribed verbatim. One audio recording failed due to a technical error. Instead of being transcribed, WH summarised the conversation immediately after the interview. Familiarisation with the data took place during transcription and by reading the transcripts in detail. In parallel, the interview guide was discussed and refined by the research team. Transcripts were coded using both an inductive and deductive approach with supporting qualitative data analysis software ATLAS.ti 8 (30). Two separate researchers (WH & JL) coded the transcripts, starting with an

inductive open coding phase, identifying categories and applying a code to a line or paragraph. After the first three transcripts, these open codes were deductively mapped onto the categories of the TAM model (22), creating a coding scheme. When a code did not fit the model, a new category was created, capturing the essence of the code. After the full research team agreed on the identified categories and codes, the final coding scheme emerged, which then was applied on all transcripts. The research team read all (WH & JL) or a subset of the coded transcripts (EMvC & EB), discussed them among the team members and established the level of data saturation. The Standards for Reporting Qualitative Research (SRQR) were used as guideline for appropriate reporting (31).

Results

Sample of GPs

An overview of the characteristics of the 15 GPs in the purposive sample is presented in table 2. During analysis, the experience with referring patients to CLIs emerged, to substantially influence GPs' view on lifestyle interventions and potential barriers and facilitators. Therefore, the study team decided to include this characteristic as an additional sampling criterion.

Table 2. GP characteristics

Characteristics	N	%
Gender		
Male	6	40%
Female	9	60%
Age		
30-40	6	40%
40-50	5	33%
50-65	4	27%
Years of working experience		
0-10	8	53%
>10	7	47%
General practice in health centre		
Yes	7	47%
No	8	53%
Practice part of a care group		
Yes	7	47%
No	8	53%
Experience with CLIs		
Hardly any experience	11	73%
Little experience	2	13%
Experienced	2	13%

Perceptions, intentions and behaviour of GPs

Three major themes that describe the perceptions, intentions and behaviour of GPs related to the implementation of CLIs in primary care emerged from the interview analysis: 1) Relevance and use of lifestyle interventions in general, 2) Relevance and use of CLIs, and 3) Barriers and facilitators to implementation of CLIs. Each theme included various subthemes, as summarised in table 3.

Table 3. Themes and subthemes in results

Themes	Subthemes
Relevance and use of lifestyle interventions in general	GPs' role in lifestyle modification interventions
	Perceived effectiveness of lifestyle interventions
Relevance and use of combined lifestyle interventions	Awareness of CLI
	Perceived effectiveness of CLI
	Experiences with CLI
Barriers and facilitators to implementation of CLIs	Barriers
	Facilitators

Relevance and use of lifestyle interventions in general

GPs' views on the relevance of lifestyle interventions and their current use in daily practice was influenced by their opinion about the role a GP should play in lifestyle support as well as the perceived effectiveness of lifestyle interventions.

GPs' role in lifestyle modification interventions

Prevention through lifestyle interventions was considered important by all GPs, although there was substantial variation on perceived relevance and the role of the GP in lifestyle interventions (table 4, quote 1). From the interviews, two main approaches of lifestyle support by GPs emerged. The first one focused on referral of eligible patients to qualified professionals for further lifestyle coaching (table 4, quote 2). The second approach was followed by GPs taking an active role in guidance on healthy lifestyles themselves (table 4, quote 3). One of the interviewees believed achieving a healthy lifestyle was a responsibility that primarily lied with patients themselves, without the need to provide large-scale support and coaching (table 4, quote 4). Next to their own role, GPs felt that the national government plays an important role in prevention, mainly through policies and regulations promoting a healthy lifestyle, e.g. raising taxes on unhealthy food products (table 4, quote 5). GPs' own experiences with lifestyle support appeared to have a positive effect on their judgement of this type of care provision, due to the stimulating effect of ample positive feedback from their patients and the health results that were achieved. (e.g. on quit smoking, lost weight, increased exercise or reduced or stopped medication) (table 4, quote 6).

Perceived effectiveness of lifestyle interventions

One of the main factors driving the judgement on lifestyle programs was the GP's perceived effectiveness of these interventions. Quality of the coaches in the lifestyle interventions and intensity (duration and number of sessions) of the programs substantially influenced the perceived effectiveness (table 4, quote 7). Patient's motivation also was an important prerequisite for effectiveness of lifestyle interventions. Most GPs considered it their responsibility to motivate participants, but some felt that without a certain motivation level any attempt would be useless. GPs only considered coaching or referring patients who clearly demonstrated commitment to actively work on their lifestyle (table 4, quote 8).

Relevance and use of combined lifestyle interventions

Only few GPs were well aware of the recently introduced CLI-programs and almost no one had experience with referring patients to a CLI. The perceived effectiveness of CLIs varied.

Awareness of CLI

Only few GPs appeared to be well informed on the concept of a certified coach and lifestyle groups for weight reduction for obese patients with high cardiovascular risk profile. GPs indicated that more understanding of the proposed multi-component interventions was necessary to facilitate their referral of patients to such programs (table 4, quote 9). For GPs it was not always clear which patients were eligible for participation in CLIs. The interviews revealed that GPs had a more positive attitude towards the program when they had an unequivocal understanding for which of their patients CLI was intended (table 4, quote 10).

Perceived effectiveness of CLI

GPs believed CLIs to be effective. However, they were sceptical about the added value of such interventions above and beyond the already well-established support offered by existing qualified paramedical health care professionals, such as physiotherapists, dieticians or practice nurses. GPs without prior experience with CLI felt that the introduction of a lifestyle coach might even complicate referral procedures (table 4, quote 11). Finally, GPs often expressed doubts on the long-term effect of CLIs, despite a potential beneficial short-term effect in behavioural change. (table 4, quote 12).

Experiences with CLI

The four GPs who had gained some experience with CLIs and lifestyle coaches worked within care groups which had contracted this type of care (table 4, quote 13). All of them were positive on the group sessions being part of the CLIs and were convinced of the added value of these group sessions on current lifestyle care (table 4, quote 14).

Barriers and facilitators to implementation of CLIs

The interviews revealed several factors that may affect successful implementation of CLI.

Barriers

Most GPs indicated already providing lifestyle advice on a daily basis and therefore were not always convinced that CLIs would have an additional value (table 4, quote 15). The limited budget health insurance companies received from the government was seen as a major barrier for CLI implementation, yielding insufficient room to cover the eligible high-risk population within their practice population (table 4, quote 16). Lack of convincing scientific evidence on effectiveness was also mentioned as a barrier to implementation. Therefore, GPs proposed to test CLIs in a trial first, before the government would take a final decision on large-scale funding of such programs in the health care landscape. Finally, lack of visibility of CLI-offering organisations in the close vicinity of the practice, as well as shortage of certified lifestyle coaches were mentioned as barriers to make use of CLIs.

Facilitators

GPs indicated that successful implementation of CLIs would mainly depend on long-term financial and organisational support (table 4, quote 17). Other prerequisites for a successful program were adequate, centralised coordination of the implementation, and continuous monitoring and evaluation of the program with key stakeholders, including GPs (table 4, quote 18). This preference was emphasised by the GPs who had already worked with CLIs (table 4, quote 19).

Table 4. Quotes by general practitioners

Quotes per theme with characteristics of the GP	
Theme	**Relevance and use of lifestyle interventions in general**
Subtheme	GPs' role in lifestyle modification interventions
1	*I think it is our job* (as GPs) *to ensure that people become as healthy as possible, function as well as possible, but also remain as healthy as possible.* **- GP 2, Male**
2	*When you want to do something with lifestyle, you often refer to the dietician or physical therapist for example. Nowadays, it's often embedded in a chronic care program, such as the one for diabetes.* **- GP 7, Male**
3	*I actually experiment with lifestyle support myself, for example by doing a one-hour lifestyle consultation, to discuss all kinds of lifestyle-related issues in more detail. I am busy with all kinds of projects, together with social work, physiotherapists, dieticians and lifestyle coach-like people, from which a nice network has emerged.* **- GP 2, Male**
4	*I think the best thing is if patients take control themselves. Without the help of other care providers* (besides GPs), *becoming more independent and stronger and taking it into their own hands.* **- GP 3, Male**
5	*I think the government has a big role in imposing taxes and other smart things. How products are displayed in the supermarket, the locations of snack bars... instead of leaving it up to the medical care.* **- GP 13, Male**

6	*You see that people can get rid of their medication, that HbA1c has gone down, that blood pressure is improving, that people are losing weight, that kind of things. That shows me that it is effective.* **- GP 2, Male**
Subtheme	Perceived effectiveness of lifestyle interventions
7	*It obviously depends on the intervention, how many contact moments there are for communication and weighing. Besides that, when such a program ends, are people left to themselves again or do they still have follow-up meetings regularly? Of course, we know from research that behaviour change takes time. If it is a very short intervention without any follow-up, it is not going to be effective.* **- GP 1, Female**
8	*Lifestyle interventions can be extremely effective in risk reduction. However, that definitely requires patient's motivation. Unfortunately, many think it will be arranged for them if they start with something like that* (CLI). *Of course, that's not the case. You get information, you get advice, you get a helping hand, but in the end, you have to do it yourself.* **- GP 15, Female**
Theme	**Relevance and use of combined lifestyle interventions**
Subtheme	Awareness of CLI
9	*I need to know more about it* (CLI) *and have clearer and more specific information about it… I think if I know more about it, someone explains me more clearly what will be reimbursed or not, what the investment is for the patient, what happens if they drop out, then I might be able to do something with it.* **- GP 10, Male**
10	*I do have a number of patients in mind who are overweight or obese and if the CLI might be a solution for them, that would be great.* **- GP 7, Male**
Subtheme	Perceived effectiveness of CLI
11	*Whatever they are going to do, lifestyle coaches must refer too. They are not dietitians, physiotherapists, nor psychologists themselves.* **- GP 4, Female**
12	*I'm always a little afraid of a temporary effect only. After 2 years, that* (CLI) *is stopped and then people can easily fall back into old behavioural patterns. That is the problem with groups, as long as they are together, it is going well, but I think it is very difficult to maintain the lifestyle changes afterwards.* **- GP 4, Female**
Subtheme	Experiences with CLI
13	*We refer people with cardiovascular diseases to lifestyle groups and recently we have also started referring overweight people to the combined lifestyle intervention.* **- GP 15, Female**
14	*It's nice to hear the experiences of other people, to hear that others struggle with the same problems. Sometimes people get to know each other, pick things up together, have each other's support. So, I think it is certainly not for everyone, but it is very useful for quite a lot of people.* **- GP 14, Female**
Theme	**Barriers and facilitators to implementation of CLIs**
Subtheme	Barriers
15	*In all honesty, I think prevention is always a complicated issue in general practice. We're busy with prevention all day long, giving lifestyle advice throughout the day. That is what I also think with this CLI, it is what we are already doing all the time, isn't it? What more can we offer?* **- GP 5, Female**
16	*It* (CLI) *will not get off the ground, because they have deliberately limited the budget.* **- GP 13, Male**

Subtheme	Facilitators
17	*I hope that when health insurance companies say we will reimburse it, they will do so for at least 5 years or so. That there is the opportunity to build something and have success with it. Because I think, it takes around 2-3 years before such a new measure is picked up a bit.* **- GP 1, Female**
18	*Actually, you would like to have a step-by-step plan that we need to go through, but also someone who coordinates that a bit. An external person might be practical… who will consciously implement it… I think that would be a kind of ideal picture.* **- GP 2, Male**
19	*You need someone who takes care of the organisation. A GP cooperative is quite an appropriate organisation for that, I think. Someone who examines: do we have lifestyle coaches in the region, how are we going to get more, how are we going to arrange referrals from general practitioners to lifestyle coaches and how do we ensure that they become known to general practitioners?* **- GP 14, Female**

Discussion

Main findings

In this study, we explored GPs' views on the implementation of combined lifestyle interventions (CLIs) in primary care, from an early moment of the introduction of the reimbursement policy in the Netherlands. Most GPs acknowledge the relevance and importance of lifestyle support across a broad spectrum of patients. GPs' views on lifestyle support programmes were influenced by their belief in its effectiveness and their perceived professional role in preventive care. In addition, this appeared to be closely related to the way they put personal lifestyle guidance into practice, or to referrals to health care professionals to deliver such care, including CLI coaches. According to GPs, the implementation of CLIs fell short on several levels. First, the communication from the providers about the content of the CLIs, and on its effectiveness was not entirely clear. GPs were not always convinced of the added value of such programs above and beyond the existing lifestyle support already offered by paramedical professionals (e.g. physiotherapists, dieticians). Second, the amount of available budget for CLI reimbursement was perceived to be insufficient to cover the costs of the large group of eligible patients. The CLI reimbursement policy was also perceived as a potential threat to other, already established, health care professions and lifestyle interventions. Third, limited capacity of CLI coaches in the proximity of the GP practice, as well as a lack of coordination of the implementation of CLI programmes was regarded as a potential barrier to their adoption. According to the GPs, a well-coordinated introduction of

CLIs for GP practices would facilitate early adoption and implementation. GPs indicated that continuous monitoring and evaluation of the programme should be available, to create an evidence base on the long-term effectiveness. This is needed to justify and facilitate the allocation of sufficient budget for reimbursement of CLIs for all potentially eligible participants.

Related work

In line with our findings, previous research on the implementation of lifestyle support in primary care by GPs has shown that GPs vary in the way they engage in providing lifestyle support, ranging from actively providing lifestyle support themselves to signalling need for lifestyle support and referring to other healthcare professionals (31–33). Several barriers in providing lifestyle support by GPs have been described in earlier studies. First, GPs experience high workload, lack of time and lack of finances (31–34). Second, in the current literature, overall (long-term) effectiveness of lifestyle interventions appears to be limited (15,31,33,35–38). This was expressed by several GPs in our study.

This study also identified a lack of awareness among GPs about the CLI and its reimbursement policy. Previous studies showed that sufficient awareness and knowledge among GPs of both the content and the effectiveness of new programs is important for a positive attitude towards- and successful adoption of healthcare innovations (31,34,39,40). Education and early involvement of key stakeholders (e.g. those needed for the implementation of the innovation) has shown to enhance adoption (34,41–44). Thus, increasing awareness and knowledge about CLIs among GPs is crucial to support its implementation. As such, active involvement of GPs in the implementation of the CLI might have improved early adoption of the subject of this study, i.e. the new CLI policy. Finally, the availability of sufficient resources to provide the newly introduced interventions in the care provision context, has also been shown to be crucial for successful adoption (41,45).

Strengths and limitations

The timing of this study was at an opportune moment, as an intervention for primary care became available in real life, in order to observe to what extent a new policy was being leveraged. This made it possible to explore and understand facilitators and barriers for adoption in an early stage of implementation. These first experiences and expectations can inform the guidance of the further development of its implementation. However, this may also be a limitation, as this could potentially have led to an underestimation of its still developing application by GPs in this early stage. Another limitation of our study is that it focused on GP's perspectives only, while the views of other stakeholders, including patients, health insurance companies or lifestyle coaches, could have led to more comprehensive insights on the dynamics of CLI implementation.

Conclusion and implications

This study showed that the early adoption and implementation of CLIs in primary care in the Netherlands is challenging. Although GPs acknowledged the importance of lifestyle support in general, the awareness of CLIs was still limited. At the same time, doubts about their effectiveness, their added value on top of already existing lifestyle support interventions and the lack of resources to realise the CLI in practice, hindered their adoption. Policy makers, together with the developers of the CLIs, should pay attention to the adequate promotion of new CLIs and the early involvement of key stakeholders. In addition, the available financial and professional resources to realise the CLI in practice for the large group of potentially

eligible people must also be considered. Finally, attention should also be paid to the alignment with existing programs for lifestyle support and preventive services in primary care. Proper monitoring and evaluation of CLIs may elucidate its long-term effectiveness and room for improvement.

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Author contributions

- WH designed the study in collaboration with the research team, created the interview guide, led the qualitative data collection and conducted and transcribed the interviews, then coded all transcripts and has analysed the data in collaboration with the research team.
- JL assisted in the study design, recruited participants, finetuned the interview guide, coded transcripts and contributed to the interpretation of data and editing of the article.
- EMvC assisted in the study design, recruited participants, coded transcripts and contributed to the interpretation of data and editing of the article.
- EB assisted in the study design, recruited participants, coded transcripts and contributed to the interpretation of data and editing of the article.
- All authors provided feedback on the manuscript and approval to the publishing of this manuscript.

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Competing interests

The authors have no competing interests to declare.

Data availability statement

The data is stored in a secure environment of the Amsterdam UMC. If necessary, data can be requested from E.J.A.J. Beune (Department of Public and Occupational Health, Amsterdam UMC location AMC, Meibergdreef 15, 1105 AZ Amsterdam, e.j.beune@amc.uva.nl).

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Standards for Reporting Qualitative Research (SRQR)

O'Brien B.C., Harris, I.B., Beckman, T.J., Reed, D.A., & Cook, D.A. (2014). Standards for reporting qualitative research: a synthesis of recommendations. *Academic Medicine, 89(9)*, 1245-1251.

No. Topic	Item	Page
Title and abstract		
S1 Title	Concise description of the nature and topic of the study identifying the study as qualitative or indicating the approach (e.g., ethnography, grounded theory) or data collection methods (e.g., interview, focus group) is recommended	1
S2 Abstract	Summary of key elements of the study using the abstract format of the intended publication; typically includes objective, methods, results, and conclusions	2
Introduction		
S3 Problem formulation	Description and significance of the problem/phenomenon studied; review of relevant theory and empirical work; problem statement	3
S4 Purpose or research question	Purpose of the study and specific objectives or questions	3
Methods		
S5 Qualitative approach and research paradigm	Qualitative approach (e.g., ethnography, grounded theory, case study, phenomenology, narrative research) and guiding theory if appropriate; identifying the research paradigm (e.g., positivist, constructivist/interpretivist) is also recommended	4
S6 Researcher characteristics and reflexivity	Researchers' characteristics that may influence the research, including personal attributes, qualifications/experience, relationship with participants, assumptions, or presuppositions; potential or actual interaction between researchers' characteristics and the research questions, approach, methods, results, or transferability	4
S7 Context	Setting/site and salient contextual factors; rationale[a]	4
S8 Sampling strategy	How and why research participants, documents, or events were selected; criteria for deciding when no further sampling was necessary (e.g., sampling saturation); rationale[a]	4
S9 Ethical issues pertaining to human subjects	Documentation of approval by an appropriate ethics review board and participant consent, or explanation for lack thereof; other confidentiality and data security issues	4
S10 Data collection methods	Types of data collected; details of data collection procedures including (as appropriate) start and stop	4-5

	dates of data collection and analysis, iterative process, triangulation of sources/methods, and modification of procedures in response to evolving study findings; rationale[a]	
S11 Data collection instruments and technologies	Description of instruments (e.g., interview guides, questionnaires) and devices (e.g., audio recorders) used for data collection; if/how the instrument(s) changed over the course of the study	4-5
S12 Units of study	Number and relevant characteristics of participants, documents, or events included in the study; level of participation (could be reported in results)	4
S13 Data processing	Methods for processing data prior to and during analysis, including transcription, data entry, data management and security, verification of data integrity, data coding, and anonymization/deidentification of excerpts	5
S14 Data analysis	Process by which inferences, themes, etc., were identified and developed, including researchers involved in data analysis; usually references a specific paradigm or approach; rationale[a]	5
S15 Techniques to enhance trustworthiness	Techniques to enhance trustworthiness and credibility of data analysis (e.g., member checking, audit trail, triangulation); rationale[a]	4-5
Results/Findings		
S16 Synthesis and interpretation	Main findings (e.g., interpretations, inferences, and themes); might include development of a theory or model, or integration with prior research or theory	10
S17 Links to empirical data	Evidence (e.g., quotes, field notes, text excerpts, photographs) to substantiate analytic findings	8-9
Discussion		
S18 Integration with prior work, implications, transferability, and contribution(s) to the field	Short summary of main findings; explanation of how findings and conclusions connect to, support, elaborate on, or challenge conclusions of earlier scholarship; discussion of scope of application/generalizability; identification of unique contribution(s) to scholarship in a discipline or field	10
S19 Limitations	Trustworthiness and limitations of findings	10-11
Other		
S20 Conflicts of interest	Potential sources of influence or perceived influence on study conduct and conclusions; how these were managed	12
S21 Funding	Sources of funding and other support; role of funders in data collection, interpretation, and reporting	12

[a]The rationale should briefly discuss the justification for choosing that theory, approach, method, or technique rather than other options available, the assumptions and limitations implicit in those choices, and how those choices influence study conclusions and transferability. As appropriate, the rationale for several items might be discussed together.

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GPs' views on the implementation of combined lifestyle interventions in primary care in the Netherlands: a qualitative study.

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Abstract

Objectives
Prevention and lifestyle support are emerging topics in general practice. Healthcare insurance companies reimburse combined lifestyle interventions (CLIs) in the Netherlands since January 2019. CLIs support people with overweight (BMI 25-30) or obesity (BMI >30) to reduce weight in peer groups. General practitioners (GPs) are key in the successful implementation of lifestyle interventions in primary care. This study explored GPs' experiences and views on the implementation of CLIs to identify barriers and facilitators to the successful implementation in primary care.

Design
Qualitative study using semi-structured interviews. Content analysis consisted of thematic coding and mapping a first stage of predefined- and second stage of iterative evolving set of themes.

Setting
GPs were interviewed in a variety of primary care practices between February and April 2019.

Participants
Fifteen GPs were purposively recruited for semi-structured interviews through snowballing.

Results
Experiences with lifestyle support among GPs ranged from referring patients to other healthcare professionals to taking a proactive role in lifestyle support themselves. Whether or not GPs took an active role in lifestyle support was related to their belief in the effect of lifestyle interventions. Overall, GPs had little experience with CLI in every day practice. Perceived barriers were a lack of availability of CLIs in the region and the potential lack of added value of CLIs on top of existing lifestyle support. Perceived facilitators were coordination of care provision by GP cooperatives and monitoring of the CLI implementation and their results. Reimbursement of CLIs without any costs for participants enabled application.

Conclusion
The importance of lifestyle interventions in primary care was acknowledged by all GPs, but they differed in their level of experience with providing lifestyle support and awareness of CLIs. Successful integration of CLIs with primary care requires a solid promotion, a well-coordinated implementation strategy and structural evaluation of long-term effectiveness.

Strengths and limitations

- Qualitative analysis of the first experiences and expectations of healthcare interventions at an early stage can provide valuable information on barriers and facilitators to implementation.

- This is the first study to explore how general practice initially responded to a new policy regarding the combined lifestyle intervention (CLI) in the Netherlands.
- Interviews took place in a relatively early phase after the reimbursement policy started which allowed us to study initial responses to the introduction of the policy, even though overall perceptions of the GPs may have changed over time due to more experience and more public discussion related to the CLIs.
- Only GPs were interviewed and the study results may therefore not be generalisable to perspectives of other health care workers or patients.

Keywords
Implementation, healthcare, primary care, lifestyle support, combined lifestyle intervention, general practitioner

Introduction

Implementation of innovations in healthcare is often challenging (1). Even when evidence for a new intervention is present, the implementation takes years to be implemented (2). Implementation researchers have reported several factors that may positively or negatively influence implementation of

innovations in healthcare. These factors can be divided into a number of domains: characteristics of the innovation itself, the organisation, the socio-political context, the available resources and the adopting individual (3–5). Moreover, successful implementation largely depends on the commitment and support of involved healthcare professionals (6,7). More insight into factors influencing the process of implementation can be achieved by studying specific implementation cases (8).

Since January 2019, healthcare insurances in de Netherlands have started to reimburse combined lifestyle interventions (CLIs) for people with overweight or obesity. The CLI is reimbursed from basic health insurance when people have a body mass index (BMI) of: 1) 25-30 and have an increased risk of cardiovascular disease or type 2 diabetes, or 2) 30 or above (9). CLIs are multicomponent interventions, which consists of interactive sessions with care professionals (e.g., a lifestyle coach, practice nurse or a paramedic). The programme is tailored to the personal needs of the participants and includes group sessions to educate participants on certain topics, share experiences and provide support (10–12). Participants receive coaching on physical activity and healthy nutrition to achieve weight reduction (13,14). The intervention takes two years, because previous research has shown that a shorter intervention is often ineffective (15,16). While in the first year, much emphasis is on guided activities, including exercise, education and sharing experiences, the second year focusses more on self-management and sustaining lifestyle changes. Lifestyle coaches, trained at a certified educational institute, are accredited to deliver CLIs to patients referred by GPs.

General practitioners (GPs) are increasingly confronted with people with unhealthy weight in their daily practice, with approximately a quarter of the world population being overweight and one third of them being obese (17). Unhealthy weight is a major driver for chronic conditions such as diabetes and cardiovascular diseases (18), and contributes to poor quality of life and increased healthcare costs (19). Therefore, there is a growing urgency to address overweight or obesity by offering healthy lifestyle support in primary health care (20). In particular, multicomponent lifestyle interventions appear to be promising in effectively reducing overweight and obesity (21–27). Due to the new reimbursement policy for CLIs, all Dutch citizens with overweight or obesity became formally eligible for refunded participation in a CLI per January 2019.

One important but often overlooked question is whether healthcare innovations can be successfully implemented and scaled up in practice. This study explored GPs' experiences and views on the implementation of CLIs in primary care to identify barriers and facilitators to the successful implementation and scaling of healthcare innovations in primary care. Barriers and facilitators at an early stage of implementation were identified. This knowledge may contribute to optimising implementation of CLIs and/or similar healthcare innovations into primary care.

Method

Study design

This qualitative study consisted of semi-structured interviews among a purposive sample of 15 GPs, guided by a topic list. The technology acceptance model (TAM) (28) was used as inspiration and framework for relevant topics for the interview guide (table 1) and coding of the transcripts. The TAM model was chosen as this was originally developed as a framework for the introduction and implementation of innovative interventions (29,30). Several TAM variations have been developed since

the introduction of the original TAM, which have been proven useful in different research domains, including implementation research in healthcare (31).

Table 1. Interview topic guide

Topics	
Introduction researcher	Introduction interviewer, research group and sign informed consent
Introduction participant	Characteristics of general practitioner
Prevention	Thoughts on role of GP in prevention
Lifestyle interventions	View on lifestyle interventions
CLIs	Awareness and knowledge of CLIs, view on CLIs
Experiences	Experiences with lifestyle interventions, lifestyle coaches and CLIs
Effectiveness	Belief in effectiveness of CLIs, their added value on current care provision
Intention	Intention of referring to CLI coaches, benefit of reimbursement
Implementation	Facilitators and barriers for implementation, ideal implementation
Feedback on interview	Feedback of participant on topics and questions

Ethics

The medical ethics committee of the Amsterdam UMC (location AMC) granted a waiver for this study (reference number NL68852.018.19). In line with Dutch legislation, this committee ruled that the study did not require extensive ethical review as participants were recruited on a volunteer basis and were not requested to undergo any physical examination or intervention.

Setting

In the Netherlands, more than eighty percent of GPs share a practice with other GPs (32). Most GPs work closely with practice nurses, who support them with the care for patients with a chronic condition within the general practice, for example diabetes and cardiovascular diseases. Some of the general practices are part of a health center, which are defined as multidisciplinary primary care practices with additional primary care providers (including practice nurses, physical therapists, dieticians, etc.). In addition, general practices and/or health centres can be part of a care group, which are defined as local or regional GP networks, involved in shared contracts on chronic care delivery with health insurance companies (32).

Recruitment

Fifteen GPs across a diversity of primary care practices were purposively recruited for semi- structured interviews. Purposive sampling was used to enable balance for the following GP characteristics: gender (M/F), working experience (0-10, >10 years) type of general practice (health care centre: Y/N, part of care group: Y/N). Recruitment of GPs took place through snowballing, covering a large geographical area of the Netherlands to ensure sufficient contrasts. Invitations were sent by email, followed by an information letter after a positive reply. The interviews took place between February and April 2019. Overall, 15 GPs took part in an interview. In line with the Amsterdam UMC code of good conduct in medical research (33), provisions were made to assure the anonymity of the respondents in data collection, analysis and presentation.

Data collection

All interviews were conducted face to face at the GP practice by WH, a medical student in the final phase of training. The interviews lasted about half an hour on average. The researcher verified whether the participant had read the information letter, before asking for written consent. All interviews were audio recorded with participants' permission. After interim analysis based on half of the interviews, one topic was added to the interview guide, to obtain a deeper understanding what constitutes optimal implementation of CLIs in daily practice. To increase content validity, the GPs were asked for feedback after each interview, about the relevance of the research questions and suggestions for additional questions. The input was used to make further adjustments to wording and sequencing of the topic guide for subsequent interviews. GPs received a small reimbursement (gift voucher) for their participation. Since most of them were relatively unfamiliar with the CLI, two additional GPs who gained clear experience with the CLI were recruited and interviewed. The research team read all (WH & JL) or a

subset of the coded transcripts (EMvC & EB), discussed them among the team members and established the level of data saturation, based on the results of new interviews in relation to the previous findings. Thematic saturation (34) occurred after 15 interviews.

Data analysis

The framework method for qualitative research was followed for a systematic approach of data analysis (35). This comprised the stages of transcription, familiarisation, coding, applying the framework and interpretation. All but one of the interviews were transcribed verbatim. One audio recording failed due to a technical error. Instead of being transcribed, WH summarised the conversation immediately after the interview. Familiarisation with the data took place during transcription and by reading the transcripts in detail. In parallel, the interview guide was discussed and refined by the research team. Transcripts were coded using both an inductive and deductive approach with supporting qualitative data analysis software ATLAS.ti 8 (36). Two separate researchers (WH & JL) coded the transcripts, starting with an inductive open coding phase, identifying categories and applying a code to a line or paragraph. After the first three transcripts, these open codes were deductively assigned to the categories of the TAM model (28). Applied categories were perceived utility, perceived ease of use and intention to use, including their subcategories, creating a coding scheme. When a code did not fit TAM the model, a new category was created, capturing the essence of the code. After the full research team agreed on the identified categories and codes, the final coding scheme emerged, which then was applied on all transcripts. The Standards for Reporting Qualitative Research (SRQR) were used as guideline for appropriate reporting (37).

Patient and Public Involvement

There was no patient or public involvement in the study.

Results

Sample of GPs

The purposive sample of GPs contained a balance in the characteristics (Appendix 1): gender (M/F), work experience (0-10, >10 years), type of general practice (health centre: Y/N, part of care group: Y/N). The experience with referring patients to CLIs (hardly any experience/little experience/experienced) emerged during data analysis, to be clearly related with GPs' view on lifestyle interventions and potential barriers and facilitators. Therefore, the research team decided to include this characteristic as an additional sampling criterion.

Perceptions, intentions and behaviour of GPs

The perception, intentions and behaviour of GPs regarding the implementation of CLIs in primary care could be categorized into three main themes: 1) Relevance and use of lifestyle interventions in general, 2) Relevance and use of CLIs, and 3) Barriers and facilitators to the implementation of CLIs. Each theme will be discussed below, with the corresponding sub-themes, as summarized in Table 2.

Table 2. Themes and subthemes in results

Themes	Subthemes
Relevance and use of lifestyle interventions in general	GPs' role in lifestyle modification interventions
	Perceived effectiveness of lifestyle interventions
Relevance and use of combined lifestyle interventions	Awareness of CLI
	Perceived effectiveness of CLI
	Experiences with CLI
Barriers and facilitators to implementation of CLIs	Barriers
	Facilitators

Relevance and use of lifestyle interventions in general

GPs' views on the relevance of lifestyle interventions and their current use in daily practice was influenced by their opinion about the role a GP should play in lifestyle support as well as the perceived effectiveness of lifestyle interventions.

GPs' role in lifestyle modification interventions

Prevention through lifestyle interventions was considered important by all GPs, although there was substantial variation on perceived relevance and the role of the GP in lifestyle interventions.

I think it is our job (as GPs) *to ensure that people become as healthy as possible, function as well as possible, but also remain as healthy as possible.* **- GP 2, Male**

From the interviews, two main approaches of lifestyle support by GPs emerged. The first one focused on referral of eligible patients to qualified professionals for further lifestyle coaching.

When you want to do something with lifestyle, you often refer to the dietician or physical therapist for example. Nowadays, it's often embedded in a chronic care program, such as the one for diabetes. **- GP 7, Male**

The second approach was followed by GPs taking an active role in guidance on healthy lifestyles themselves.

I actually experiment with lifestyle support myself, for example by doing a one-hour lifestyle consultation, to discuss all kinds of lifestyle-related issues in more detail. I am busy with all kinds of projects, together with social work, physiotherapists, dieticians and lifestyle coach-like people, from which a nice network has emerged. **- GP 2, Male**

One of the interviewees believed achieving a healthy lifestyle was a responsibility that primarily lied with patients themselves, without the need to provide large-scale support and coaching.

I think the best thing is if patients take control themselves. Without the help of other care providers (besides GPs)*, becoming more independent and stronger and taking it into their own hands.* **- GP 3, Male**

Next to their own role, GPs felt that the national government plays an important role in prevention, mainly through policies and regulations promoting a healthy lifestyle, e.g. raising taxes on unhealthy food products.

I think the government has a big role in imposing taxes and other smart things. How products are displayed in the supermarket, the locations of snack bars... instead of leaving it up to the medical care. **- GP 13, Male**

GPs' own experiences with providing or referring their patients for lifestyle support appeared to have a positive effect on their judgement of this type of care provision, due to the stimulating effect of ample positive feedback from their patients and the health results that were achieved.

You see that people can get rid of their medication, that HbA1c has gone down, that blood pressure is improving, that people are losing weight, that kind of things. That shows me that it is effective. **- GP 2, Male**

Perceived effectiveness of lifestyle interventions

One of the main factors driving the judgement on lifestyle programs was the GP's perceived effectiveness of these interventions with quality of the lifestyle coaches and intensity (duration and number of sessions) playing a big role.

It obviously depends on the intervention, how many contact moments there are for communication and weighing. Besides that, when such a program ends, are people left to themselves again or do they still have follow-up meetings regularly? Of course, we know from research that behaviour change takes time. If it is a very short intervention without any follow-up, it is not going to be effective. **- GP 1, Female**

Patient's motivation also was an important prerequisite for effectiveness of lifestyle interventions. Most GPs considered it their responsibility to motivate participants, but some felt that without a certain motivation level any attempt would be useless.

Lifestyle interventions can be extremely effective in risk reduction. However, that definitely requires patient's motivation. Unfortunately, many think it will be arranged for them if they start with something like that (CLI)*. Of course, that's not the case. You get information, you get advice, you get a helping hand, but in the end, you have to do it yourself.* **- GP 15, Female**

Relevance and use of combined lifestyle interventions

Only few GPs were well aware of the recently introduced CLI-programs and almost no one had experience with referring patients to a CLI. The perceived effectiveness of CLIs varied.

Awareness of CLI

Only few GPs appeared to be well informed on the concept of a certified coach and lifestyle groups for weight reduction for obese patients with high cardiovascular risk profile. GPs indicated that more understanding of the proposed multi-component interventions was necessary to facilitate their referral of patients to such programs.

I need to know more about it (CLI) *and have clearer and more specific information about it… I think if I know more about it, someone explains me more clearly what will be reimbursed or not, what the investment is for the patient, what happens if they drop out, then I might be able to do something with it.* **- GP 10, Male**

The interviews revealed that GPs had a more positive attitude towards the program when they had an unequivocal understanding for which of their patients CLI was intended, as it was not always clear which patients were eligible for participation in CLIs.

I do have a number of patients in mind who are overweight or obese and if the CLI might be a solution for them, that would be great. **- GP 7, Male**

Perceived effectiveness of CLI

GPs believed CLIs could be effective in the prevention of chronic diseases.

I think something like that (CLI) *is much better than all those pills we prescribe. These are the things that have been proven to be good for you, if you exercise it is good for the prevention of cardiovascular disease, for diabetes, it is good for everything.* **- GP 9, Female**

However, they were sceptical about the added value of such interventions above and beyond the already well-established support offered by existing qualified paramedical health care professionals, such as physiotherapists, dieticians or practice nurses. GPs without prior experience with CLI felt that the introduction of a lifestyle coach might even complicate referral procedures.

Do I believe in it (lifestyle coach)*? Well, I am not convinced yet. A lifestyle coach is a new profession in healthcare. What is their background, what can they do? I think you can easily call yourself a lifestyle coach. When I will co-operate with someone, I need to have a little bit of faith in someone. I want to know that someone can actually do what is asked.* **- GP 4, Female**

Finally, GPs often expressed doubts on the long-term effect of CLIs, despite a potential beneficial short-term effect in behavioural change.

I'm always a little afraid of a temporary effect only. After 2 years, that (CLI) *is stopped and then people can easily fall back into old behavioural patterns. That is the problem with groups, as long as they are together, it is going well, but I think it is very difficult to maintain the lifestyle changes afterwards.* **- GP 4, Female**

Experiences with CLI

The four GPs who had gained some experience with CLIs and lifestyle coaches worked within care groups which had contracted this type of care.

We refer people with cardiovascular diseases to lifestyle groups and recently we have also started referring overweight people to the combined lifestyle intervention. **- GP 15, Female**

All of them were positive on the group sessions being part of the CLIs and were convinced of the added value of these group sessions on current lifestyle care.

It's nice to hear the experiences of other people, to hear those others struggle with the same problems. Sometimes people get to know each other, pick things up together, have each other's support. So, I think it is certainly not for everyone, but it is very useful for quite a lot of people. **- GP 14, Female**

Barriers and facilitators to implementation of CLIs

The interviews revealed several factors that may affect successful implementation of CLI.

Barriers

Most GPs indicated already providing lifestyle advice on a daily basis and therefore were not always convinced that CLIs would have an additional value.

In all honesty, I think prevention is always a complicated issue in general practice. We're busy with prevention all day long, giving lifestyle advice throughout the day. That is what I also think with this CLI, it is what we are already doing all the time, isn't it? What more can we offer? **- GP 5, Female**

The limited budget health insurance companies received from the government was seen as a major barrier for CLI implementation, yielding insufficient room to cover the eligible high-risk population within their practice population.

It (CLI) *will not get off the ground, because they have deliberately limited the budget.* **- GP 13, Male**

Lack of convincing scientific evidence on the effectiveness of the CLI for the patient was also mentioned as a barrier to implementation. Therefore, GPs proposed to test CLIs in a trial first, before the government would take a final decision on large-scale funding of such programs in the health care landscape. Finally, lack of visibility of CLI-offering organisations in the close vicinity of the practice, as well as shortage of certified lifestyle coaches were mentioned as barriers to make use of CLIs.

Facilitators

GPs indicated that successful implementation of CLIs would mainly depend on long-term financial and organisational support.

I hope that when health insurance companies say we will reimburse it, they will do so for at least 5 years or so. That there is the opportunity to build something and have success with it. Because I think, it takes around 2-3 years before such a new measure is picked up a bit. **- GP 1, Female**

Other prerequisites for a successful program were adequate, centralised coordination of the implementation, and continuous monitoring and evaluation of the program with key stakeholders, including GPs.

We have a regional primary care organization for the entire region, so to speak. Almost all general practitioners are affiliated with it. They are responsible for the organisation of chronic care, people

with cardiovascular disease, diabetes and COPD for example. This (CLIs) *is actually part of it, so the organization will pick it up and inform us* (GPs) *on it.* **- GP 12, Female**

This preference was emphasised by the GPs who had already worked with CLIs.

You need someone who takes care of the organisation. A GP cooperative is quite an appropriate organisation for that, I think. Someone who examines: do we have lifestyle coaches in the region, how are we going to get more, how are we going to arrange referrals from general practitioners to lifestyle coaches and how do we ensure that they become known to general practitioners? **- GP 14, Female**

Discussion

Main findings

In this study, we explored GPs' views on the implementation of combined lifestyle interventions (CLIs) in primary care, from an early moment of the introduction of the reimbursement policy in the Netherlands. Most GPs acknowledge the relevance and importance of lifestyle support across a broad spectrum of patients. GPs' views on lifestyle support programmes were influenced by their belief in its effectiveness and their perceived professional role in preventive care. In addition, this appeared to be closely related to the way they put personal lifestyle guidance into practice, or to referrals to health care professionals to deliver such care, including CLI coaches. According to GPs, the implementation of CLIs fell short on several levels. First, there was limited information provided about the content of the CLIs, and its effectiveness compared to existing lifestyle support. GPs were not always convinced of the added value of such programs above and beyond the existing lifestyle support already offered by paramedical professionals (e.g., physiotherapists, dieticians). Second, the amount of available budget for CLI reimbursement was perceived to be insufficient to cover the costs of the entire group of eligible patients. The CLI reimbursement policy was also perceived as a potential threat to other, already established, health care professions and lifestyle interventions. Third, limited capacity of CLI coaches in the proximity of the GP practice, as well as a lack of coordination of the implementation of CLI programmes was regarded as a potential barrier to their adoption. According to the GPs, a well-coordinated introduction of CLIs for GP practices would facilitate early adoption and implementation.

GPs also indicated that continuous monitoring and evaluation of the CLI programme should be available, to create an evidence base on the long-term effectiveness. This is needed to justify and facilitate the allocation of sufficient budget for reimbursement of CLIs for all potentially eligible participants.

Related work

Below we discuss how the main findings relate to earlier work in this domain.

Previous implementation research has shown that GPs have different perceptions on whether lifestyle support is part of their core tasks (38–40). This is in line with our findings, showing a broad range of preferred strategies, from provision of personalised, active lifestyle support to referral of patients to other health care professionals. A crucial prerequisite for adopting preventive interventions, including lifestyle guidance, appears GPs' belief in their effectiveness (38,41). Conversely, the perceived lack of scientific evidence for their (long-term) effectiveness, or belief that health care authorities are better equipped to provide preventive care withholds GPs to implement interventions in practice (21,38,40,42–45).

Our study demonstrated a lack of awareness among GPs on the CLI and the reimbursement policy. Sufficient awareness and knowledge among GPs on content and effectiveness of new programs appear to be important requirements for a positive attitude towards healthcare innovations (38,46–48). The visibility and sustained provision of behavioural lifestyle interventions is an additional factor that affects GPs' willingness to utilize them in their daily care (49). This appears to be strengthened by GPs' mention of their unfamiliarity with the CLI-program's content and lifestyle coaches' new and unknown role as important barriers to its implementation. There is some evidence that education and early involvement of key stakeholders (e.g., those needed to implement the innovation) increase the adoption of healthcare innovations (43,46,50–53). Facilitating increased awareness and knowledge on CLIs among GPs through actively involving GPs in an early phase could therefore contribute to their overall implementation.

Other factors that may impede implementation of behavioural lifestyle support programs are high workload, lack of time and lack of finances (38–40,43,46). In our study, burden of work or time constraints were hardly mentioned, possibly since the intervention mostly lay outside GPs' care provision. Nevertheless, they did raise concerns about potential limitations in funding and professional resources, which have been shown important factors for successful adoption (50,54). On the other hand, it was emphasized that coordination at the GP cooperative level was a clear potential facilitator for early adoption and implementation of the CLI.

Strengths and limitations

The timing of this study was at an opportune moment, as an intervention for primary care became available in real life, in order to observe to what extent a new policy was being leveraged. This made it possible to explore and understand facilitators and barriers for adoption in an early stage of implementation. These first experiences and expectations can inform the guidance of the further development of its implementation. However, this may also be a limitation, as overall perceptions of the GPs may have changed over time due to more experience and more public discussion related to the CLIs. Another limitation of our study is that it focused on GP's perspectives only, while the views of other stakeholders, including patients, health insurance companies or lifestyle coaches, could have led to more comprehensive insights on the dynamics of CLI implementation.

Conclusion and implications

This study showed that the early adoption and implementation of CLIs in primary care in the Netherlands is challenging. Although GPs acknowledged the importance of lifestyle support in general, the awareness of CLIs was still limited. At the same time, doubts about their effectiveness for participants, their added value on top of already existing lifestyle support interventions and the lack of resources for GPs to realise the CLI in practice, hindered their adoption. Policy makers, together with the developers of the CLIs, should pay attention to the adequate promotion of new CLIs and the early involvement of key stakeholders in the regional implementation. In addition, the available financial and professional resources to realise the CLI in practice for the entire group of potentially eligible people and coordination at a GP cooperative level must also be considered. Finally, attention should also be paid to the alignment

with existing programs for lifestyle support and preventive services in primary care and the feedback to the GPs on achieved results by participants. Proper monitoring and evaluation of the implementation of CLIs and their effectiveness may elucidate opportunities for improvement.

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Author contributions

- WH designed the study in collaboration with the research team, created the interview guide, led the qualitative data collection and conducted and transcribed the interviews, then coded all transcripts and has analysed the data in collaboration with the research team.
- JL assisted in the study design, recruited participants, finetuned the interview guide, coded transcripts and contributed to the interpretation of data and editing of the article.
- EMvC assisted in the study design, recruited participants, coded transcripts and contributed to the interpretation of data and editing of the article.
- EB assisted in the study design, recruited participants, coded transcripts and contributed to the interpretation of data and editing of the article.
- All authors provided feedback on the manuscript and approval to the publishing of this manuscript.

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The data is stored in a secure environment of the Amsterdam UMC. If necessary, data can be requested from E.J.A.J. Beune (Department of Public and Occupational Health, Amsterdam UMC location AMC, Meibergdreef 15, 1105 AZ Amsterdam, e.j.beune@amc.uva.nl).

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Appendix 1

GP characteristics

Characteristics	N	%
Gender		
Male	6	40%
Female	9	60%
Age		
30-40	6	40%
40-50	5	33%
50-65	4	27%
Years of working experience		
0-10	8	53%
>10	7	47%
General practice in health centre		
Yes	7	47%
No	8	53%
Practice part of a care group		
Yes	7	47%
No	8	53%
Socioeconomic status of practice's population		
Low	6	40%
Middle	6	40%
High	3	20%
Experience with CLIs		
No experience	11	73%
Little experience	2	13%
Experienced	2	13%

Standards for Reporting Qualitative Research (SRQR)

O'Brien B.C., Harris, I.B., Beckman, T.J., Reed, D.A., & Cook, D.A. (2014). Standards for reporting qualitative research: a synthesis of recommendations. *Academic Medicine, 89(9)*, 1245-1251.

No. Topic	Item	Page
Title and abstract		
S1 Title	Concise description of the nature and topic of the study identifying the study as qualitative or indicating the approach (e.g., ethnography, grounded theory) or data collection methods (e.g., interview, focus group) is recommended	1
S2 Abstract	Summary of key elements of the study using the abstract format of the intended publication; typically includes objective, methods, results, and conclusions	2
Introduction		
S3 Problem formulation	Description and significance of the problem/phenomenon studied; review of relevant theory and empirical work; problem statement	3
S4 Purpose or research question	Purpose of the study and specific objectives or questions	3
Methods		
S5 Qualitative approach and research paradigm	Qualitative approach (e.g., ethnography, grounded theory, case study, phenomenology, narrative research) and guiding theory if appropriate; identifying the research paradigm (e.g., positivist, constructivist/interpretivist) is also recommended	4
S6 Researcher characteristics and reflexivity	Researchers' characteristics that may influence the research, including personal attributes, qualifications/experience, relationship with participants, assumptions, or presuppositions; potential or actual interaction between researchers' characteristics and the research questions, approach, methods, results, or transferability	4
S7 Context	Setting/site and salient contextual factors; rationale[a]	4
S8 Sampling strategy	How and why research participants, documents, or events were selected; criteria for deciding when no further sampling was necessary (e.g., sampling saturation); rationale[a]	4
S9 Ethical issues pertaining to human subjects	Documentation of approval by an appropriate ethics review board and participant consent, or explanation for lack thereof; other confidentiality and data security issues	4
S10 Data collection methods	Types of data collected; details of data collection procedures including (as appropriate) start and stop	4-5

	dates of data collection and analysis, iterative process, triangulation of sources/methods, and modification of procedures in response to evolving study findings; rationale[a]	
S11 Data collection instruments and technologies	Description of instruments (e.g., interview guides, questionnaires) and devices (e.g., audio recorders) used for data collection; if/how the instrument(s) changed over the course of the study	4-5
S12 Units of study	Number and relevant characteristics of participants, documents, or events included in the study; level of participation (could be reported in results)	4
S13 Data processing	Methods for processing data prior to and during analysis, including transcription, data entry, data management and security, verification of data integrity, data coding, and anonymization/deidentification of excerpts	5
S14 Data analysis	Process by which inferences, themes, etc., were identified and developed, including researchers involved in data analysis; usually references a specific paradigm or approach; rationale[a]	5
S15 Techniques to enhance trustworthiness	Techniques to enhance trustworthiness and credibility of data analysis (e.g., member checking, audit trail, triangulation); rationale[a]	4-5
Results/Findings		
S16 Synthesis and interpretation	Main findings (e.g., interpretations, inferences, and themes); might include development of a theory or model, or integration with prior research or theory	10
S17 Links to empirical data	Evidence (e.g., quotes, field notes, text excerpts, photographs) to substantiate analytic findings	8-9
Discussion		
S18 Integration with prior work, implications, transferability, and contribution(s) to the field	Short summary of main findings; explanation of how findings and conclusions connect to, support, elaborate on, or challenge conclusions of earlier scholarship; discussion of scope of application/generalizability; identification of unique contribution(s) to scholarship in a discipline or field	10
S19 Limitations	Trustworthiness and limitations of findings	10-11
Other		
S20 Conflicts of interest	Potential sources of influence or perceived influence on study conduct and conclusions; how these were managed	12
S21 Funding	Sources of funding and other support; role of funders in data collection, interpretation, and reporting	12

[a]The rationale should briefly discuss the justification for choosing that theory, approach, method, or technique rather than other options available, the assumptions and limitations implicit in those choices, and how those choices influence study conclusions and transferability. As appropriate, the rationale for several items might be discussed together.

BMJ Open

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GPs' views on the implementation of combined lifestyle interventions in primary care in the Netherlands: a qualitative study.

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Abstract

Objectives
Prevention and lifestyle support are emerging topics in general practice. Healthcare insurance companies reimburse combined lifestyle interventions (CLIs) in the Netherlands since January 2019. CLIs support people with overweight (BMI 25-30) or obesity (BMI >30) to reduce weight in peer groups. General practitioners (GPs) are key in the successful implementation of lifestyle interventions in primary care. This study explored GPs' experiences and views on the implementation of CLIs to identify barriers and facilitators to the successful implementation in primary care.

Design
Qualitative study using semi-structured interviews. Content analysis consisted of thematic coding and mapping a first stage of predefined- and second stage of iterative evolving set of themes.

Setting
GPs were interviewed in a variety of primary care practices between February and April 2019.

Participants
Fifteen GPs were purposively recruited for semi-structured interviews through snowballing.

Results
Experiences with lifestyle support among GPs ranged from referring patients to other healthcare professionals to taking a proactive role in lifestyle support themselves. Whether or not GPs took an active role in lifestyle support was related to their belief in the effect of lifestyle interventions. Overall, GPs had little experience with CLI in every day practice. Perceived barriers were a lack of availability of CLIs in the region and the potential lack of added value of CLIs on top of existing lifestyle support. Perceived facilitators were coordination of care provision by GP cooperatives and monitoring of the CLI implementation and their results. Reimbursement of CLIs without any costs for participants enabled application.

Conclusion
The importance of lifestyle interventions in primary care was acknowledged by all GPs, but they differed in their level of experience with providing lifestyle support and awareness of CLIs. Successful integration of CLIs with primary care requires a solid promotion, a well-coordinated implementation strategy and structural evaluation of long-term effectiveness.

Strengths and limitations

- Qualitative analysis of the first experiences and expectations of healthcare interventions at an early stage can provide valuable information on barriers and facilitators to implementation.
- This is the first study to explore how general practice initially responded to a new reimbursement policy regarding the combined lifestyle intervention (CLI) in the Netherlands.
- Interviews took place in a relatively early phase after the reimbursement policy started which allowed us to study initial responses to the introduction of the policy, even though overall perceptions of the GPs may have changed over time due to more experience and more public discussion related to the CLIs.
- Only GPs were interviewed and the study results may therefore not be generalisable to perspectives of other health care workers or patients.

Keywords
Implementation, healthcare, primary care, lifestyle support, combined lifestyle intervention, general practitioner

Introduction

Implementation of innovations in healthcare is often challenging (1). Even when evidence for a new intervention is present, the implementation takes years to be implemented (2). Implementation researchers have reported several factors that may positively or negatively influence implementation of innovations in healthcare. These factors can be divided into a number of domains: characteristics of the innovation itself, the organisation, the socio-political context, the available resources and the adopting individual (3–5). Moreover, successful implementation largely depends on the commitment and support of involved healthcare professionals (6,7). More insight into factors influencing the process of implementation can be achieved by studying specific implementation cases (8).

Since January 2019, healthcare insurances in de Netherlands have started to reimburse combined lifestyle interventions (CLIs) for people with overweight or obesity. The CLI is reimbursed from basic health insurance when people have a body mass index (BMI) of: 1) 25-30 and have an increased risk of cardiovascular disease or type 2 diabetes, or 2) 30 or above (9). CLIs are multicomponent interventions, which consists of interactive sessions with care professionals (e.g., a lifestyle coach, practice nurse or a paramedic). The programme is tailored to the personal needs of the participants and includes group sessions to educate participants on certain topics, share experiences and provide support (10–12). Participants receive coaching on physical activity and healthy nutrition to achieve weight reduction (13,14). The intervention takes two years, because previous research has shown that a shorter intervention is often ineffective (15,16). While in the first year, much emphasis is on guided activities, including exercise, education and sharing experiences, the second year focusses more on self-management and sustaining lifestyle changes. Lifestyle coaches, trained at a certified educational institute, are accredited to deliver CLIs to patients referred by GPs.

General practitioners (GPs) are increasingly confronted with people with unhealthy weight in their daily practice, with approximately a quarter of the world population being overweight and one third of them being obese (17). Unhealthy weight is a major driver for chronic conditions such as diabetes and cardiovascular diseases (18), and contributes to poor quality of life and increased healthcare costs (19). Therefore, there is a growing urgency to address overweight or obesity by offering healthy lifestyle support in primary health care (20). In particular, multicomponent lifestyle interventions appear to be promising in effectively reducing overweight and obesity (21–27). Due to the new reimbursement policy for CLIs, all Dutch citizens with overweight or obesity became formally eligible for refunded participation in a CLI per January 2019.

One important but often overlooked question is whether healthcare innovations can be successfully implemented and scaled up in practice. This study explored GPs' experiences and views on the implementation of CLIs in primary care to identify barriers and facilitators to the successful implementation and scaling of healthcare innovations in primary care. Barriers and facilitators at an early stage of implementation were identified. This knowledge may contribute to optimising implementation of CLIs and/or similar healthcare innovations into primary care.

Methods

Study design

This qualitative study consisted of semi-structured interviews among a purposive sample of 15 GPs, guided by a topic list. The technology acceptance model (TAM) (28) was used as inspiration and framework for relevant topics for the interview guide (table 1) and coding of the transcripts. The TAM

model was chosen as this was originally developed as a framework for the introduction and implementation of innovative interventions (29,30). Several TAM variations have been developed since the introduction of the original TAM, which have been proven useful in different research domains, including implementation research in healthcare (31).

Table 1. Interview topic guide

Topics	
Introduction researcher	Introduction interviewer, research group and sign informed consent
Introduction participant	Characteristics of general practitioner
Prevention	Thoughts on role of GP in prevention
Lifestyle interventions	View on lifestyle interventions
CLIs	Awareness and knowledge of CLIs, view on CLIs
Experiences	Experiences with lifestyle interventions, lifestyle coaches and CLIs
Effectiveness	Belief in effectiveness of CLIs, their added value on current care provision
Intention	Intention of referring to CLI coaches, benefit of reimbursement
Implementation	Facilitators and barriers for implementation, ideal implementation
Feedback on interview	Feedback of participant on topics and questions

Ethics

The medical ethics committee of the Amsterdam UMC (location AMC) granted a waiver for this study (reference number NL68852.018.19). In line with Dutch legislation, this committee ruled that the study did not require extensive ethical review as participants were recruited on a volunteer basis and were not requested to undergo any physical examination or intervention.

Setting

In the Netherlands, more than eighty percent of GPs share a practice with other GPs (32). Most GPs work closely with practice nurses, who support them with the care for patients with a chronic condition within the general practice, for example diabetes and cardiovascular diseases. Some of the general practices are part of a health centre, which are defined as multidisciplinary primary care practices with additional primary care providers (including practice nurses, physical therapists, dieticians, etc.). In addition, general practices and/or health centres can be part of a care group, which are defined as local or regional GP networks, involved in shared contracts on chronic care delivery with health insurance companies (32).

Recruitment

Fifteen GPs across a diversity of primary care practices were purposively recruited for semi- structured interviews. Purposive sampling was used to enable balance for the following GP characteristics: gender (M/F), working experience (0-10, >10 years) type of general practice (health care centre: Y/N, part of care group: Y/N). Recruitment of GPs took place through snowballing, covering a large geographical area of the Netherlands to ensure sufficient contrasts. Invitations were sent by email, followed by an information letter after a positive reply. The interviews took place between February and April 2019. Overall, 15 GPs took part in an interview. In line with the Amsterdam UMC code of good conduct in medical research (33), provisions were made to assure the anonymity of the respondents in data collection, analysis and presentation.

Data collection

All interviews were conducted face to face at the GP practice by WH, a medical student in the final phase of training. The interviews lasted about half an hour on average. The researcher verified whether the participant had read the information letter, before asking for written consent. All interviews were audio recorded with participants' permission. After interim analysis based on half of the interviews, one topic was added to the interview guide, to obtain a deeper understanding what constitutes optimal implementation of CLIs in daily practice. To increase content validity, the GPs were asked for feedback after each interview, about the relevance of the research questions and suggestions for additional questions. The input was used to make further adjustments to wording and sequencing of the topic guide for subsequent interviews. GPs received a small reimbursement (gift voucher) for their participation.

Since most of them were relatively unfamiliar with the CLI, two additional GPs who gained clear experience with the CLI were recruited and interviewed. The research team read all (WH & JL) or a subset of the coded transcripts (EMvC & EB), discussed them among the team members and established the level of data saturation, based on the results of new interviews in relation to the previous findings. Thematic saturation (34) occurred after 15 interviews.

Data analysis

The framework method for qualitative research was followed for a systematic approach of data analysis (35). This comprised the stages of transcription, familiarisation, coding, applying the framework and interpretation. All but one of the interviews were transcribed verbatim. One audio recording failed due to a technical error. Instead of being transcribed, WH summarised the conversation immediately after the interview. Familiarisation with the data took place during transcription and by reading the transcripts in detail. In parallel, the interview guide was discussed and refined by the research team. Transcripts were coded using both an inductive and deductive approach with supporting qualitative data analysis software ATLAS.ti 8 (36). Two separate researchers (WH & JL) coded the transcripts, starting with an inductive open coding phase, identifying categories and applying a code to a line or paragraph. After the first three transcripts, these open codes were deductively assigned to the categories of the TAM model (28). Applied categories were perceived utility, perceived ease of use and intention to use, including their subcategories, creating a coding scheme. When a code did not fit TAM the model, a new category was created, capturing the essence of the code. After the full research team agreed on the identified categories and codes, the final coding scheme emerged, which then was applied on all transcripts. The Standards for Reporting Qualitative Research (SRQR) were used as guideline for appropriate reporting (37).

Patient and Public Involvement

There was no patient or public involvement in the study.

Results

Sample of GPs

The purposive sample of GPs contained a balance in the intended characteristics (Appendix 1). The experience with referring patients to CLIs (hardly any experience/little experience/experienced) emerged during data analysis, to be clearly related with GPs' view on lifestyle interventions and potential barriers and facilitators. Therefore, the research team decided to include this characteristic as an additional sampling criterion.

Perceptions, intentions and behaviour of GPs

The perception, intentions and behaviour of GPs regarding the implementation of CLIs in primary care could be categorized into three main themes: 1) Relevance and use of lifestyle interventions in general,

2) Relevance and use of CLIs, and 3) Barriers and facilitators to the implementation of CLIs. Each theme will be discussed below, with the corresponding sub-themes, as summarized in Table 2.

Table 2. Themes and subthemes in results

Themes	Subthemes
Relevance and use of lifestyle interventions in general	GPs' role in lifestyle modification interventions
	Perceived effectiveness of lifestyle interventions
Relevance and use of combined lifestyle interventions	Awareness of CLI
	Perceived effectiveness of CLI
	Experiences with CLI
Barriers and facilitators to implementation of CLIs	Barriers
	Facilitators

Relevance and use of lifestyle interventions in general

GPs' views on the relevance of lifestyle interventions and their current use in daily practice was influenced by their opinion about the role a GP should play in lifestyle support as well as the perceived effectiveness of lifestyle interventions.

GPs' role in lifestyle modification interventions

Prevention through lifestyle interventions was considered important by all GPs, although there was substantial variation on perceived relevance and the role of the GP in lifestyle interventions.

From the interviews, two main approaches of lifestyle support by GPs emerged. The first one focused on referral of eligible patients to qualified professionals for further lifestyle coaching.

When you want to do something with lifestyle, you often refer to the dietician or physical therapist for example. Nowadays, it's often embedded in a chronic care program, such as the one for diabetes. **- GP 7, Male**

The second approach was followed by GPs taking an active role in guidance on healthy lifestyles themselves.

I actually experiment with lifestyle support myself, for example by doing a one-hour lifestyle consultation, to discuss all kinds of lifestyle-related issues in more detail. I am busy with all kinds of projects, together with social work, physiotherapists, dieticians and lifestyle coach-like people, from which a nice network has emerged. **- GP 2, Male**

One of the interviewees believed achieving a healthy lifestyle was a responsibility that primarily lied with patients themselves, without the need to provide large-scale support and coaching.

I think the best thing is if patients take control themselves. Without the help of other care providers (besides GPs)*, becoming more independent and stronger and taking it into their own hands.* **- GP 3, Male**

Next to their own role, GPs felt that the national government plays an important role in prevention, mainly through policies and regulations promoting a healthy lifestyle, e.g. raising taxes on unhealthy food products.

I think the government has a big role in imposing taxes and other smart things. How products are displayed in the supermarket, the locations of snack bars... instead of leaving it up to the medical care. **- GP 13, Male**

GPs' own experiences with providing or referring their patients for lifestyle support appeared to have a positive effect on their judgement of this type of care provision, due to the stimulating effect of ample positive feedback from their patients and the health results that were achieved. .

You see that people can get rid of their medication, that HbA1c has gone down, that blood pressure is improving, that people are losing weight, that kind of things. That shows me that it is effective. **- GP 2, Male**

Perceived effectiveness of lifestyle interventions

One of the main factors driving the judgement on lifestyle programs was the GP's perceived effectiveness of these interventions with quality of the lifestyle coaches and intensity (duration and number of sessions) playing a big role.

It obviously depends on the intervention, how many contact moments there are for communication and weighing. Besides that, when such a program ends, are people left to themselves again or do they still have follow-up meetings regularly? Of course, we know from research that behaviour change takes time. If it is a very short intervention without any follow-up, it is not going to be effective. **- GP 1, Female**

Patient's motivation also was an important prerequisite for effectiveness of lifestyle interventions. Most GPs considered it their responsibility to motivate participants, but some felt that without a certain motivation level any attempt would be useless.

Lifestyle interventions can be extremely effective in risk reduction. However, that definitely requires patient's motivation. Unfortunately, many think it will be arranged for them if they start with something like that (CLI)*. Of course, that's not the case. You get information, you get advice, you get a helping hand, but in the end, you have to do it yourself.* **- GP 15, Female**

Both, a proactive attitude of GPs in offering lifestyle support and more experience with lifestyle interventions, made GPs more convinced of the potential effectiveness and usefulness of lifestyle interventions in general.

Relevance and use of combined lifestyle interventions

Only few GPs were well aware of the recently introduced CLI-programs and almost no one had experience with referring patients to a CLI. The perceived effectiveness of CLIs varied.

Awareness of CLI

Only few GPs appeared to be well informed on the concept of a certified coach and lifestyle groups for weight reduction for obese patients with high cardiovascular risk profile. GPs indicated that more understanding of the proposed multi-component interventions was necessary to facilitate their referral of patients to such programs.

I need to know more about it (CLI) *and have clearer and more specific information about it… I think if I know more about it, someone explains me more clearly what will be reimbursed or not, what the investment is for the patient, what happens if they drop out, then I might be able to do something with it.* **- GP 10, Male**

The interviews revealed that GPs had a more positive attitude towards the program when they had an unequivocal understanding for which of their patients CLI was intended, as it was not always clear which patients were eligible for participation in CLIs.

I do have a number of patients in mind who are overweight or obese and if the CLI might be a solution for them, that would be great. **- GP 7, Male**

Perceived effectiveness of CLI

Some GPs believed CLIs could be effective in the prevention of chronic diseases.

I think something like that (CLI) *is much better than all those pills we prescribe. These are the things that have been proven to be good for you, if you exercise it is good for the prevention of cardiovascular disease, for diabetes, it is good for everything.* **- GP 9, Female**

However, some were sceptical about the added value of such interventions above and beyond the already well-established support offered by existing qualified paramedical health care professionals, such as physiotherapists, dieticians or practice nurses. GPs without prior experience with CLI felt that the introduction of a lifestyle coach might even complicate referral procedures.

Do I believe in it (lifestyle coach)*? Well, I am not convinced yet. A lifestyle coach is a new profession in healthcare. What is their background, what can they do? I think you can easily call yourself a lifestyle*

coach. When I will co-operate with someone, I need to have a little bit of faith in someone. I want to know that someone can actually do what is asked. **- GP4, Female**

Finally, GPs often expressed doubts on the long-term effect of CLIs, despite a potential beneficial short-term effect in behavioural change.

I'm always a little afraid of a temporary effect only. After 2 years, that (CLI) *is stopped and then people can easily fall back into old behavioural patterns. That is the problem with groups, as long as they are together, it is going well, but I think it is very difficult to maintain the lifestyle changes afterwards.* **- GP 4, Female**

Experiences with CLI

The four GPs who had gained some experience with CLIs and lifestyle coaches worked within care groups which had contracted this type of care.

We refer people with cardiovascular diseases to lifestyle groups and recently we have also started referring overweight people to the combined lifestyle intervention. **- GP 15, Female**

All of them were positive on the group sessions being part of the CLIs and were convinced of the added value of these group sessions on current lifestyle care.

It's nice to hear the experiences of other people, to hear those others struggle with the same problems. Sometimes people get to know each other, pick things up together, have each other's support. So, I think it is certainly not for everyone, but it is very useful for quite a lot of people. **- GP 14, Female**

Limited awareness of CLIs among GPs and lack of belief in the long-term effect or the added value of CLIs -on top of established interventions-, may result in barriers for the implementation of CLIs. On the contrary, GPs who are convinced CLIs may be effective and who have a positive experience, may contribute successful implementation of CLIs.

Barriers and facilitators to implementation of CLIs

The interviews revealed several factors that may affect successful implementation of CLI.

Barriers

Most GPs indicated already providing lifestyle advice on a daily basis and therefore were not always convinced that CLIs would have an additional value.

In all honesty, I think prevention is always a complicated issue in general practice. We're busy with prevention all day long, giving lifestyle advice throughout the day. That is what I also think with this CLI, it is what we are already doing all the time, isn't it? What more can we offer? **- GP 5, Female**

The limited budget health insurance companies received from the government was seen as a major barrier for CLI implementation, yielding insufficient room to cover the eligible high-risk population within their practice population.

It (CLI) *will not get off the ground, because they have deliberately limited the budget.* **- GP 13, Male**

Lack of convincing scientific evidence on the effectiveness of the CLI for the patient was also mentioned as a barrier to implementation. Therefore, GPs proposed to test CLIs in a trial first, before the government would take a final decision on large-scale funding of such programs in the health care landscape. Finally, lack of visibility of CLI-offering organisations in the close vicinity of the practice, as well as shortage of certified lifestyle coaches were mentioned as barriers to make use of CLIs.

Facilitators

GPs indicated that successful implementation of CLIs would mainly depend on long-term financial and organisational support.

I hope that when health insurance companies say we will reimburse it, they will do so for at least 5 years or so. That there is the opportunity to build something and have success with it. Because I think, it takes around 2-3 years before such a new measure is picked up a bit. **- GP 1, Female**

Other prerequisites for a successful program were adequate, centralised coordination of the implementation, and continuous monitoring and evaluation of the program with key stakeholders, including GPs.

We have a regional primary care organization for the entire region, so to speak. Almost all general practitioners are affiliated with it. They are responsible for the organisation of chronic care, people with cardiovascular disease, diabetes and COPD for example. This (CLIs) *is actually part of it, so the organization will pick it up and inform us* (GPs) *on it.* **- GP 12, Female**

This preference was emphasised by the GPs who had already worked with CLIs.

You need someone who takes care of the organisation. A GP cooperative is quite an appropriate organisation for that, I think. Someone who examines: do we have lifestyle coaches in the region, how are we going to get more, how are we going to arrange referrals from general practitioners to lifestyle coaches and how do we ensure that they become known to general practitioners? **- GP 14, Female**

Discussion

Main findings

In this study, we explored GPs' views on the implementation of combined lifestyle interventions (CLIs) in primary care, from an early moment of the introduction of the reimbursement policy in the Netherlands. Most GPs acknowledge the relevance and importance of lifestyle support across a broad spectrum of patients. GPs' views on lifestyle support programmes were influenced by their belief in its effectiveness and their perceived professional role in preventive care. In addition, this appeared to be closely related to the way they put personal lifestyle guidance into practice, or to referrals to health care professionals to deliver such care, including CLI coaches. According to GPs, the implementation of CLIs fell short on several levels. First, there was limited awareness of CLIs among GPs, and also the content of the CLIs and its effectiveness was not entirely clear. GPs were not always convinced of the added value of such programs above and beyond the existing lifestyle support already offered by paramedical professionals (e.g., physiotherapists, dieticians). Most GPs indicated they provided lifestyle support on a daily basis themselves. Second, the amount of available budget for CLI reimbursement was perceived to be insufficient to cover the costs of the entire group of eligible patients. The CLI reimbursement policy was also perceived as a potential threat to other, already established, health care

professions and lifestyle interventions. Third, limited capacity of CLI coaches in the proximity of the GP practice, as well as a lack of coordination of the implementation of CLI programmes was regarded as a potential barrier to their adoption. According to the GPs, a well-coordinated introduction of CLIs for GP practices would facilitate early adoption and implementation. GPs also indicated that continuous monitoring and evaluation of the CLI programme should be available, to create an evidence base on the long-term effectiveness. This is needed to justify and facilitate the allocation of sufficient budget for reimbursement of CLIs for all potentially eligible participants.

Related work

Below we discuss how the main findings relate to earlier work in this domain.

Previous implementation research has shown that GPs have different perceptions on whether lifestyle support is part of their core tasks (38–40). This is in line with our findings, showing a broad range of preferred strategies, from provision of personalised, active lifestyle support to referral of patients to other health care professionals. A crucial prerequisite for adopting preventive interventions, including lifestyle guidance, appears GPs' belief in their effectiveness (38,41). Conversely, the perceived lack of scientific evidence for their (long-term) effectiveness, or belief that health care authorities are better equipped to provide preventive care withholds GPs to implement interventions in practice (21,38,40,42–45).

Our study demonstrated a lack of awareness among GPs on the CLI and the reimbursement policy. Sufficient awareness and knowledge among GPs on content and effectiveness of new programs appear to be important requirements for a positive attitude towards healthcare innovations (38,46–48). The visibility and sustained provision of behavioural lifestyle interventions is an additional factor that affects GPs' willingness to utilize them in their daily care (49). This appears to be strengthened by GPs' mention of their unfamiliarity with the CLI-program's content and lifestyle coaches' new and unknown role as important barriers to its implementation. There is some evidence that education and early involvement of key stakeholders (e.g., those needed to implement the innovation) increase the adoption of healthcare innovations (43,46,50–53). Facilitating increased awareness and knowledge on CLIs among GPs through actively involving GPs in an early phase could therefore contribute to their overall implementation.

Other factors that may impede implementation of behavioural lifestyle support programs are high workload, lack of time and lack of finances (38–40,43,46). In our study, burden of work or time constraints were hardly mentioned, possibly since the intervention mostly lay outside GPs' care provision. Nevertheless, they did raise concerns about potential limitations in funding and professional resources, which have been shown important factors for successful adoption (50,54). On the other hand, it was emphasized that coordination at the GP cooperative level was a clear potential facilitator for early adoption and implementation of the CLI.

Strengths and limitations

The timing of this study was at an opportune moment, as an intervention for primary care became available in real life, in order to observe to what extent a new policy was being leveraged. This made it possible to explore and understand facilitators and barriers for adoption in an early stage of implementation. These first experiences and expectations can inform the guidance of the further development of its implementation. However, this may also be a limitation, as overall perceptions of the GPs may have changed over time due to more experience and more public discussion related to the CLIs. Another limitation of our study is that it focused on GP's perspectives only, while the views of other stakeholders, including patients, health insurance companies or lifestyle coaches, could have led to more comprehensive insights on the dynamics of CLI implementation.

Conclusion and implications

This study showed that the early adoption and implementation of CLIs in primary care in the Netherlands is challenging. Although GPs acknowledged the importance of lifestyle support in general, the awareness of CLIs was still limited. At the same time, doubts about their effectiveness for participants, their added value on top of already existing lifestyle support interventions and the lack of resources for GPs to realise the CLI in practice, hindered their adoption. Policy makers, together with the developers of the CLIs, should pay attention to the adequate promotion of new CLIs and the early involvement of

key stakeholders in the regional implementation. In addition, the available financial and professional resources to realise the CLI in practice for the entire group of potentially eligible people and coordination at a GP cooperative level must also be considered. Finally, attention should also be paid to the alignment with existing programs for lifestyle support and preventive services in primary care and the feedback to the GPs on achieved results by participants. Proper monitoring and evaluation of the implementation of CLIs and their effectiveness may elucidate opportunities for improvement.

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Author contributions

- WH designed the study in collaboration with the research team, created the interview guide, led the qualitative data collection and conducted and transcribed the interviews, then coded all transcripts and has analysed the data in collaboration with the research team.
- JL assisted in the study design, recruited participants, finetuned the interview guide, coded transcripts and contributed to the interpretation of data and editing of the article.
- EMvC assisted in the study design, recruited participants, coded transcripts and contributed to the interpretation of data and editing of the article.
- EB assisted in the study design, recruited participants, coded transcripts and contributed to the interpretation of data and editing of the article.
- All authors provided feedback on the manuscript and approval to the publishing of this manuscript.

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Competing interests
The authors have no competing interests to declare.

Data availability statement
The data is stored in a secure environment of the Amsterdam UMC. If necessary, data can be requested from E.J.A.J. Beune (Department of Public and Occupational Health, Amsterdam UMC location AMC, Meibergdreef 15, 1105 AZ Amsterdam, e.j.beune@amc.uva.nl).

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Appendix 1

GP characteristics

Characteristics	N	%
Gender		
Male	6	40%
Female	9	60%
Age		
30-40	6	40%
40-50	5	33%
50-65	4	27%
Years of working experience		
0-10	8	53%
>10	7	47%
General practice in health centre		
Yes	7	47%
No	8	53%
Practice part of a care group		
Yes	7	47%
No	8	53%
Socioeconomic status of practice's population		
Low	6	40%
Middle	6	40%
High	3	20%
Experience with CLIs		
No experience	11	73%
Little experience	2	13%
Experienced	2	13%

Standards for Reporting Qualitative Research (SRQR)

O'Brien B.C., Harris, I.B., Beckman, T.J., Reed, D.A., & Cook, D.A. (2014). Standards for reporting qualitative research: a synthesis of recommendations. *Academic Medicine, 89(9)*, 1245-1251.

No. Topic	Item	Page
Title and abstract		
S1 Title	Concise description of the nature and topic of the study identifying the study as qualitative or indicating the approach (e.g., ethnography, grounded theory) or data collection methods (e.g., interview, focus group) is recommended	1
S2 Abstract	Summary of key elements of the study using the abstract format of the intended publication; typically includes objective, methods, results, and conclusions	2
Introduction		
S3 Problem formulation	Description and significance of the problem/phenomenon studied; review of relevant theory and empirical work; problem statement	3
S4 Purpose or research question	Purpose of the study and specific objectives or questions	3
Methods		
S5 Qualitative approach and research paradigm	Qualitative approach (e.g., ethnography, grounded theory, case study, phenomenology, narrative research) and guiding theory if appropriate; identifying the research paradigm (e.g., positivist, constructivist/interpretivist) is also recommended	4
S6 Researcher characteristics and reflexivity	Researchers' characteristics that may influence the research, including personal attributes, qualifications/experience, relationship with participants, assumptions, or presuppositions; potential or actual interaction between researchers' characteristics and the research questions, approach, methods, results, or transferability	4
S7 Context	Setting/site and salient contextual factors; rationale[a]	4
S8 Sampling strategy	How and why research participants, documents, or events were selected; criteria for deciding when no further sampling was necessary (e.g., sampling saturation); rationale[a]	4
S9 Ethical issues pertaining to human subjects	Documentation of approval by an appropriate ethics review board and participant consent, or explanation for lack thereof; other confidentiality and data security issues	4
S10 Data collection methods	Types of data collected; details of data collection procedures including (as appropriate) start and stop	4-5

	dates of data collection and analysis, iterative process, triangulation of sources/methods, and modification of procedures in response to evolving study findings; rationale[a]	
S11 Data collection instruments and technologies	Description of instruments (e.g., interview guides, questionnaires) and devices (e.g., audio recorders) used for data collection; if/how the instrument(s) changed over the course of the study	4-5
S12 Units of study	Number and relevant characteristics of participants, documents, or events included in the study; level of participation (could be reported in results)	4
S13 Data processing	Methods for processing data prior to and during analysis, including transcription, data entry, data management and security, verification of data integrity, data coding, and anonymization/deidentification of excerpts	5
S14 Data analysis	Process by which inferences, themes, etc., were identified and developed, including researchers involved in data analysis; usually references a specific paradigm or approach; rationale[a]	5
S15 Techniques to enhance trustworthiness	Techniques to enhance trustworthiness and credibility of data analysis (e.g., member checking, audit trail, triangulation); rationale[a]	4-5
Results/Findings		
S16 Synthesis and interpretation	Main findings (e.g., interpretations, inferences, and themes); might include development of a theory or model, or integration with prior research or theory	10
S17 Links to empirical data	Evidence (e.g., quotes, field notes, text excerpts, photographs) to substantiate analytic findings	8-9
Discussion		
S18 Integration with prior work, implications, transferability, and contribution(s) to the field	Short summary of main findings; explanation of how findings and conclusions connect to, support, elaborate on, or challenge conclusions of earlier scholarship; discussion of scope of application/generalizability; identification of unique contribution(s) to scholarship in a discipline or field	10
S19 Limitations	Trustworthiness and limitations of findings	10-11
Other		
S20 Conflicts of interest	Potential sources of influence or perceived influence on study conduct and conclusions; how these were managed	12
S21 Funding	Sources of funding and other support; role of funders in data collection, interpretation, and reporting	12

[a]The rationale should briefly discuss the justification for choosing that theory, approach, method, or technique rather than other options available, the assumptions and limitations implicit in those choices, and how those choices influence study conclusions and transferability. As appropriate, the rationale for several items might be discussed together.