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Article

"Physical Activity Is Not the Answer to Everything, But It Is to a Lot": Stakeholders' Perceived Determinants of Implementing Physical Activity Interventions for Older Adults: An Interview Study Using the Consolidated Framework for Implementation Research (CFIR).

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Abstract: Although many physical activity (PA) interventions for older adults have proven effective in controlled research settings, optimal implementation in real life remains challenging. This study identifies determinants perceived by stakeholders when implementing community-based PA interventions for older adults. We interviewed 31 stakeholders guided by the Consolidated Framework for Implementation Research (CFIR). Results showed that stakeholders are very specific about the role they can play in implementation making collaboration between stakeholders crucial. Barriers and motivators were identified in the CFIR intervention characteristics domain (relative advantage, complexity and costs, evidence quality and strength, and adaptability and trialability), in the outer setting domain (cosmopolitism, patient needs, and external policy and incentives), in the inner setting domain (implementation climate, relative priority, compatibility and organizational incentives and rewards) and in the individual characteristics domain (knowledge and beliefs, and other personal attributes). An overarching theme was the stakeholders' emphasis on aiming for broad health goals in interventions, as they perceive PA as a means to reach these goals rather than an end in itself. Another overarching theme requiring attention in future implementation efforts is the need to tailor implementation efforts to the specific needs of older adults as the end users of the intervention.

Keywords: physical activity; older adults; intervention; implementation

1. Introduction

The detrimental effects of insufficient physical activity (PA) on physical, mental and social health are well-documented [1,2] and come with high costs for society: it has been estimated that by the year 2030 insufficient PA will account for 70% of health care expenditures [3]. Some groups in society are especially prone to insufficient PA, such as older adults [4]: prevalence data indicate that the large majority of older adults are not meeting the WHO recommendations for sufficient PA and that insufficient PA among this target population has even increased in the last decades [3,5,6]. Numerous PA interventions for older adults have been developed and proven effective in Randomized Clinical Trials (RCTs) [7–9]. Thus, because of the increase in the proportion and number of older adults, as well as the health impact of regular PA, there is large potential for a significant public health impact of PA promotion in this population group.

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The impact of PA interventions on public health is, however, not only determined by their efficacy, but also by their implementation in real life settings. Previous research has demonstrated a substantial gap between scientific knowledge derived from RCTs and public health practice with regard to implementing PA interventions [10–12]. In public health practice, stakeholders play a crucial role in implementing PA interventions, as they deliver the intervention from the developer to the end user (i.e., the target population) [13]. As the implementation of (preventive) PA interventions in public health practice is often not primarily concentrated in the health sector, the presence of multiple stakeholders makes implementation a complex and challenging process [14]. It often requires stakeholders at multiple levels, each playing different roles within the implementation process. These stakeholders can come from different sectors (e.g., health care sector, municipal domain sector, sports sector, and other public or even private sectors). Within each sector, different organizations can play a role. E.g. within the municipal domain sector, the municipality itself, but also the regional health counselor or a welfare organization can play a role. Within organizations, different individuals can have a role (e.g., in health care organizations there are health care managers and nurses, and in municipalities you can have local policy advisor and mayors). No single sector has sole responsibility for all actions needed to increase population levels of PA, nor do the benefits of increasing PA accrue to just one sector [3]. Intersectoral actions and multisectoral partnership between different stakeholders are urgently needed to successfully implement these interventions [15]. It is therefore essential to gain insight into the role that stakeholders from different sectors are able and willing to play in implementing PA interventions, and the sector-specific determinants of implementation that stakeholders perceive as relevant. In the current study, we will refer to stakeholders as the individual persons, that are working within stakeholder organizations.

A well-established scientific framework that is frequently used as a tool for the assessment of implementation determinants is the Consolidated Framework for Implementation Research (CFIR) [16]. CFIR consists of a set of well-described implementation constructs that can influence implementation and, ultimately, whether interventions shown to be effective in RCTs will be used in real-world settings. These constructs are grouped in five domains: 1) Intervention characteristics (e.g., relative advantage and costs), 2) inner setting (organizational characteristics, e.g., capacity and relative priority), 3) outer setting (environmental characteristics, e.g., external policies), 4) characteristics of the individual (person engaged in the implementation initiative, e.g., attitude and knowledge), and 5) implementation process (e.g., planning, execution, and evaluation of the implementation). Cooper et al. (2021) recently systematically reviewed the determinants of implementing community-based PA interventions across all age groups [14]. They identified a relatively even distribution of implementation determinants across the five domains, indicating that indeed a wide range of factors might be relevant when implementing PA interventions. More specifically for older adults, a scoping review of Scherpenseel et al. [17] on implementation determinants of fall prevention interventions targeting community-dwelling older adults also identified a broad range of determinants influencing the implementation. Both reviews highlight that successful implementation of PA interventions in the community is challenging for all age-groups, including older adults, since there is not one single factor that can be identified as a key implementation determinant. Moreover, these reviews point out that much implementation research has focused on interventions with other behavior than PA and on a wide range of end users, while it is likely that stakeholders' perceptions are dependent on the type of intervention and end user [16], in this case PA interventions for older adults.

Despite the ageing population and the potential impact of PA interventions in this rapidly growing population group, studies identifying implementation determinants, especially regarding PA interventions targeting the PA behavior of community-dwelling older adults, are still scarce. More insight in these determinants in this specific setting is highly relevant as this could provide valuable information for the selection of effective implementation strategies [18], thereby increasing the potential public health impact of proven effective PA interventions. The aim of this study therefore is to assess the determinants perceived by a broad group of stakeholders as relevant for the

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implementation of PA interventions for community-dwelling older adults. These insights are essential in increasing PA in older adults, and thus may ultimately contribute to public health.

2. Materials and Methods

This study uses a qualitative design: recent reviews have highlighted that research to date on this topic has often been quantitative, whereas qualitative studies could provide much-needed insights into what stakeholders consider to be determinants of implementation [14,17]. In this study, with semi-structured interviews, we adhered to the Consolidated Criteria for Reporting Qualitative Research [19].

2.1. Participants and Setting

Stakeholders were recruited via snowball sampling. The interviews were conducted with stakeholders in two provinces of the Netherlands (Limburg and Brabant): the main researchers work in this region and this region has a higher proportion of older adults than the national average. Apart from the region, no other exclusion criteria were applied a priori. Emails including a description of the research project and an informed consent form were initially sent to seven existing contact persons within the professional network of the main researchers. These seven stakeholders were selected as starting point for the interviews, as these are responsible for broad regions and as such they have extensive networks and knowledge of other relevant parties. These primary contacts include five regional health councils and two sport development organizations. After each interview, stakeholders were asked to identify any additional stakeholders they felt were important to the implementation of PA interventions in the Netherlands. In total, 22 additional stakeholders' organizations were identified. These newly identified stakeholders were then also invited by email to participate in an interview, also including a description of the research project and an informed consent form.

All participants provided written informed consent prior to participation. Interviews were recorded and transcribed verbatim, with personal identifiers omitted. Interviews were conducted in Dutch, and relevant quotes were translated into English. The transcripts were not sent to the stakeholders for feedback.

2.2. Data Collection

The (all female) research team comprised of two main researchers (JB, and DP), one junior researcher (RH) and two student assistants (KA and LS). JB and DP had PhDs in Health Psychology and worked as assistant professors in Health Psychology; RH held a master's degree in health psychology and worked as a research assistant. KA and LS were in the final year of their master's studies in Health Psychology. JB, DP and RH had prior experience in conducting qualitative research.

The interviews took place between February and June 2022 and lasted approximately 90 minutes each. Due to Covid-19 restrictions, they were conducted via video calls on the Teams platform. The first 10 interviews were conducted by two researchers: first the two main researchers performed five interviews together to identify potential issues with the interview guide; in the next five interviews, either the junior researcher or a student assistant did an interview together with one of the main researchers, in order for them to get acquainted with the interview guide. After that, each interview was conducted by one of the researchers.

A semi-structured interview guide (which can be found in supplementary file S1) was based on a template of CFIR constructs [20]. This template enabled the selection of constructs and questions relevant to this study, and was translated to Dutch by the main researchers. The complete draft of the interview guide was checked by a third person (MK), not involved in the current research, but with a broad experience in organizational change and with performing interviews within the municipal domain. Consequently, some final changes were made in terminology to better fit the perceptions of the stakeholders. The main topics in the interview guide consisted of four of the five CFIR domains: the domain on the implementation process was omitted as this domain focusses on specific

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implementation processes that have already occurred, which was not the case in our research. For the remaining domains (i.e., intervention characteristics, inner setting, outer setting, and characteristics of the individual) JB and DP adapted the interview guide to fit this research project. For each of these domains, main questions and several potential questions that could be asked depending on previous answers were formulated. Examples of main questions were "what is your opinion on PA interventions for older adults that are delivered online?" (intervention characteristics); "to what degree does implementing PA interventions contribute to your organizations' goals? (inner setting), "to what degree do you expect that other organizations support you when you implement interventions?" (outer setting); and "how important do you personally think that stimulating PA in older adults is?" (individual characteristics). A priori to these questions, an introducing question was formulated, in which participants were asked whether they perceived themselves as being able to play a role in implementing PA interventions, and if so, what kind of a role.

In this study we didn't use a strict definition for older adults, such as defining older adults as 65 years and over [21]: in the interviews we asked the stakeholders on their opinions about PA interventions for older adults, thus letting them implicitly decide what older adults were. Questions were formulated neutrally, and suggestive questions were avoided. Some questions were omitted from the original CFIR interview guide, as these topics were not relevant for the Dutch situation, and further questions were added. Although the interviews took place in the Covid-19 period, in the interviews we focused on a normal non-Covid situation.

When we discussed the intervention characteristics domain, a proven effective PA online computer tailored intervention was used as an example [22–24]. This intervention was used because it is a good example of a proven effective scientifically designed intervention that is potentially not the type of intervention that stakeholders immediately think of; moreover, it is developed at the university of the authors making them knowledgeable on this intervention.

After 31 stakeholders (within 23 stakeholder organizations) were interviewed, no other relevant parties that also needed to be interviewed were suggested by the already interviewed stakeholders and data collection was completed. Additionally, based on preliminary findings discussed by RH, JB and DP, it was found that no new information had emerged from the last 6 interviews, and therefore saturation was deemed to be reached.

2.3. Data Analyses

A preliminary codebook was developed a priori by KA, RH, JB and DP (see supplementary file S2), based on the existing codebook available on the CFIR website [20]: this codebook was adapted to the specific Dutch situation.

Atlas.ti was used to manage the data [25]. Data was analyzed using deductive thematic analysis [26] consisting of the following steps: 1) familiarization; 2) data coding; 3) generating initial themes; 4) reviewing and developing themes; 5) refining, defining and naming themes; 6) writing the report. KA and LS coded the interviews from one province each. All coding was reviewed by RH. When RH differed in opinion on specific coding, this was discussed with KA and LS. When no consensus was reached, JB or DP were included in the discussion. Themes were generated based on the codebook by KA, LS, RH and JB. It was constantly checked whether other themes than those from the pre-defined codebook had arisen from the data. The writing was done by JB; the other authors reviewed and revised the manuscript. To protect the privacy of the stakeholders that participated, we did not specify the type of organizations that had delivered each quote. Instead, we only assigned a number to each participant: Given the roles of organizations in our specific region, revealing this information could make it possible to deduce who made the statement.

3. Results

We interviewed 31 stakeholders within 23 organizations, 15 interviews with one stakeholder, and eight interviews with two stakeholders (from the same organization). The stakeholders came from 10 different types of organizations i.e., regional health council (5), municipalities (3), sports development organizations (8), lifestyle coach (1), senior citizens organization (1), wellbeing

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organization (1), healthcare organization (1), physiotherapist (1), public housing (1), general practitioner's network (1). Six additional organizations were invited to participate but declined for various reasons, such as lack of time or interest. Eleven organizations were mentioned by other stakeholders but were not invited because they were in another region than our interviews were held (8) or because they didn't focus on independently living older adults (3). The latter was not established as an exclusion criterion a priori, as we aimed to focus on PA interventions for community-dwelling older adults. However, some stakeholders believed our research also targeted institutionalized older adults, which was not our intention. Therefore, it was decided to exclude these types of organizations when they were proposed.

3.1. Stakeholders' Roles in Implementation

Each interview started with the question whether participants saw a role for themselves in the implementation of PA interventions and, if so, which role. When stakeholders asked for suggestions what roles we meant, we suggested developing, financing, organizing, coordinating, facilitating or informing All stakeholders expressed that they perceived a specific role for themselves in the implementation of PA interventions. Stakeholders indicated that they must fulfill their individual role in alignment with the goals and potential of their organizations. They expressed that even if they would like to perform other roles within the wide range of roles and responsibilities that are needed when implementing interventions, they are constrained by their job descriptions and to their organization's objectives. Consequently, they emphasized the importance of a good network to fulfill all tasks that are needed to implement an intervention. "*My network is my gold*". (#4)

Only municipalities expressed that they would be able to play a financial role, but most organizations see a role that is either organizing, coordinating, facilitating or informing. The majority of stakeholders indicated that they did not consider the development of interventions to be an appropriate role. Their attitude was that there are numerous PA interventions already in place, and therefore there is no need to develop or even adopt new ones. *"There are already so many proven effective interventions, so for me there is no need to develop new ones". (*#23)

There was a striking discrepancy between the perspectives of general practitioners and other types of stakeholders, most of which believed that general practitioners should play a major role in implementing PA interventions. In contrast, the general practitioners themselves did not share the view of the other stakeholders. The general practitioners acknowledged their ability to encourage individuals to be more physically active, however, they perceived a lack of opportunity for themselves in large-scale implementation projects due to time constraints and resource limitations. *"A general practitioner can be a good source for the target population to confront them with their behavior (……) but they are also like 'hey, we're doctors, not social workers'. If a general practitioner knows who should be directed to where, then they can do that, but they also get a lot of requests for which they have no solutions. They find it important, but the gap between the question and the solution is sometimes very wide". (*#26)

3.2. Domains

Below we present the findings per CFIR domain. We organized results per domain in line with the determinants such as described on the CFIR website, for the intervention characteristics [27], the inner setting [28], the outer setting [29], and the individual's characteristics [30].

3.2.1. Domain 1: Intervention Characteristics

Regarding the determinant *Relative Advantage* it was found that although stakeholders were positive about PA interventions, they preferred interventions that do not have PA as the sole goal. They preferred interventions that either target broader health-related goals, such as healthy lifestyle and stress management, or interventions that use PA as a means to achieve other goals, such as reducing loneliness. *"PA is not the answer to everything, but it is to a lot. Bringing people together, creating cohesion in a neighborhood, loneliness, risk of falling, self-reliance, vitality … An intervention having a proven relation with positive health is a prerequisite".* (#7)

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Several findings related to the determinant of *Evidence Quality and Strength*. Proven efficacy did not seem an essential characteristic of interventions for many stakeholders, nor was it relevant who had developed the intervention. Although proven effectiveness can make it easier to obtain funding for an intervention, stakeholders mentioned that other ways of demonstrating that an intervention is of good quality are also acceptable. "*Instead of having to read an entire Methods and Discussion of a research project, just clearly communicating 'this has happened, and these are the outcomes and therefore we think that this intervention works well' that would help to get convinced*". (#14)

A dominant view was that proven effective interventions often have the disadvantage of not being adaptable to the local situation or to the end users, whereas this adaptability was considered very important among stakeholders. *"The thing with proven effective interventions is 'It has to be done like this, because this is what we have demonstrated and therefore you can't deviate from it because if you do than we don't know if the intervention will still be effective', that for me is a drawback of proven effective interventions. But at the same time, I believe that if we do more of the things of which we know that they work, then we'll get closer to the solution… to that's a tricky balance". (*#1)

All stakeholders mentioned that resources are always scarce, so intervention costs should be kept as low as possible or in proportion to the number of end users reached. In contrast, some stakeholders pointed out that the quantity of people that an intervention can reach holds less significance compared to the demographics of the people reached. Specifically, they emphasized the significance of interventions that are able to include inactive or hard-to-reach populations. *"If I reach 300 participants of whom 295 exercise three times a week, is that a success? Or do I rather reach 10 that are not active and become structurally physically active? That for me is a bigger success than reaching 295 people".* (#20)

Some stakeholders regretted that interventions are often selected based on the short-term gains rather than on long-term gains, such as a reduction in public healthcare costs, which stakeholders consider more important. *"There are numerous studies that demonstrate that every euro invested in prevention in a good way will more than pay for itself. But that's a short-term, long-term problem. The long-term benefits, you don't really see, just because people don't consult you anymore".* (#7) As these stakeholders expect that long-term gains are difficult to assess, they feared that interventions may not be continued after first implementation. Therefore, they preferred qualitative assessments of results over quantitative ones, as the first may give an indication of the results before quantitative measures. *"Effects for me aren't always really measurable. You always hope that the intervention triggers some sort of movement. That you see things happen or that an organization says, 'yes we find this important and we are going to implement this ourselves".* (#9)

The determinant of *Complexity and Costs* was reflected in the fact that several stakeholders expressed that interventions should not be too complex or labor intensive to implement: *"If you see the implementation manual you already get a little bit tired, you have to do this, and you have to do that… it just seems like a hell of job, you have to really delve into it, and you need so much volunteers and a project manager…."*. (#6)

Interventions that can be tested in small pilots first, and then implemented on a larger scale if they are successful, were preferred. "*First you try it out on a small scale in a pilot; does it work, is this what we want? And when the end users are super enthusiastic, then you start implementing on a bigger scale. That's how we deal with innovations".* (#26)

The determinant *Adaptability and Trialability* was also a determinant that was relevant according to many stakeholders. Being able to offer a range of different interventions was considered more important than the relative advantage of one intervention over another, as stakeholders want to reach as many as possible, especially those end users that are hard to reach. *"That's why it's so important to have different flavors; some you reach with this type of intervention and another you reach with that type of intervention, and some not at all".* (#15)

3.2.2. Domain 2: Outer Setting

Regarding the CFIR determinant *External Policies and Incentives*, many stakeholders noticed that PA in itself is not a priority in external policy. More specifically, PA was considered to be not a goal

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in itself but as a way to reach other goals, such as positive health. Stakeholders indicated that the current shift in Dutch national policies from a focus on older adults to younger generations affects their potential to have a role in the implementation of PA interventions for older adults in several ways. Some mentioned that they are still trying to implement PA interventions for older adults by including them under other goals. *"PA can have priority, but in a different way, in terms of people having to live independently for as long as possible because of shortages in retirement home, so the longer people can stay active, the better not only for the older adult, but also for society".* (#18)

In addition to national policies, more individual preferences in other organizations can also play a relevant role within local policies. *"An issue we have to deal with are local politics: a new city counselor can have other goals, almost personal preferences. That can conflict with what we have built in our own organization in the years before. And at the end of the day, the one that pays, decides… that how the world rolls unfortunately".* (#1)

Apart from these external policies, the end users (i.e., the older adults) were the most important factor in the perceptions of stakeholders, which is coherent with the determinant that CFIR describes as *Patient Needs*. Stakeholders believed that it is very important to assess the needs of the end users before deciding what intervention to implement. Some argued that an intervention should not be spread too broadly, but that needs should be assessed area by area or neighborhood by neighborhood, as needs can vary widely. "*What PA or sport interventions are already available in this area, that's what we chart. Then we perform among the older individuals a needs assessment. And that shows real divergence; per municipality, per neighborhood the differences are just huge".* (#15)

Most stakeholders expressed that in general the end users are often not aware of the importance of PA, making it difficult to reach them for PA interventions, which is even more pronounced for certain populations. "*The people that are physically inactive don't know, it's the hardest group to get going. I don't know the solution but approaching them individually and pointing out why PA is important… but let's not approach thousands of people in a neighborhood because then you only reach those you don't want to reach".* (#20)

In terms of the needs of the end user, many stakeholders also believed that the end user has other priorities than being physically active, such as the need to socialize more with others, or other issues in their lives, such as poverty, that may make them uninterested in PA interventions. "*If an intervention delivers on multiple factors, then people may be inclined to participate, so not 'I have to become active because there is a PA intervention'. No, I'll go to an intervention because it teaches me what a healthy diet is, how I can deal with loneliness. So, yeah, I think that for the end users it's important if they can get more out of an intervention than just PA".* (#20)

Apart from knowing what the needs of the end users are and to address those properly, another feature of the outer setting that the stakeholder consistently mentioned as important is having a robust network and having good alignment within the network, which can be grouped under the determinant of *Cosmopolitism*. "*Do we know from each other what we are doing, what we have? I think there are a lot of interventions that are similar, and that's not a bad thing, but if we know what we have and what we do, that makes it easier. Working as a chain is important, working together is essential to make a difference".* (#15)

In some cases, organizational commitment to actively implement (PA) interventions is lacking due to stakeholders believing that counterparts in other organizations should take this role or should assume a greater responsibility. *"We would definitely try to stimulate interventions, but we are not all going to do this ourselves".* (#8)

Some stakeholders also admitted that there may be individuals that have an important role in the implementation of PA interventions but who are not known to them or are not obviously included in regular networks. "*I organize a walking intervention in a neighborhood, but when the social worker is on vacation then suddenly, I have less participants…so that shows how important it is that these people are included in implementing interventions too".* (#19)

Financial restrictions were consistently considered to be a limitation. "Well, that's a little crooked. Because in the health insurer's expressions, all of a sudden, it's all about prevention and

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combined lifestyle intervention and vitality. But actually, yes, we've been wanting that for years. And yes, it's not being honored". (#24)

3.2.3. Domain 3: Inner Setting

Regarding the determinant of *Implementation Climate*, stakeholders all expressed that internal policies are mostly driven by external policies. Currently, many stakeholders have shifted their focus from older adults to youth, or they have to allocate resources to other priorities instead of PA, such as reducing loneliness or improving the local physical environment. This shift in focus in the inner setting is driven by shifts in policy in the outer setting, in this case Dutch governmental policies. Some policies appear somewhat compartmentalized, and stakeholders regret that there is no connection made between PA, social goals, and health. "*Those nation-wide programs are often directly aimed at municipalities. Municipalities are then facilitated to run these programs, they get funding for that, so that's what they do… Participation, social connectedness, those are themes that get more attention. Health has zero priority in municipalities, don't get any illusions on that, and nor does PA.*" (#2)

Several stakeholders also expressed that the decision to implement may have other motivations than actual internal policies. "Well, these days it's also important if a city counselor can score, to put it bluntly… For us, we want to make sure that an intervention works, that it is effective, but that's not what is important for local councils, for them other things matter". (#4)

Some findings related to the determinants of *Relative Priority* and *Organizational Incentives*. In some organizations, employees, especially those with decision-making power, change every few years, making internal policies unstable, and consequently changing the possibilities of implementing interventions. *"Every four years, we get a whole new board. And that new board then starts writing all new policies all over again and sets new goals".* (#4)

In order to demonstrate internally that interventions are important and that these interventions are achieving their internal goals, most stakeholders stressed the significance of monitoring the progress towards these goals to ensure that they are being met. Stakeholders thereby seemed to vary in their priorities regarding the metrics needed to assess these goals. For instance, local municipalities may prioritize reaching a large number of end users with interventions, emphasizing quantitative impact. Conversely, organizations like sport development organizations may prioritize qualitative impact, by rather delving into the narratives behind the numbers. *"You have to let the data speak, so you have to look at what is going on and what it means for the citizens of our region, and then maybe we will see that we need to shift our focus more on healthy aging."* (#9)

The determinant of *Compatibility* was also present among the stakeholders' perspectives. The limited availability of resources within an organization, both financial and otherwise (such as personnel), can have an impact on what stakeholders can do in implementing interventions. *"When there's an intervention where I'm asked to contribute, I always have to check in my organization what time it's going to take and where I can get it from or where I can allocate less time. That is a decision I have to make. It's not that if there's an intervention, I can just participate because I always have to check our resources."* (#20)

The size of an organization also seemed to be related to the role one can play during intervention implementation. As most stakeholders have relatively small organizational settings, stakeholders find it easy to have contact with others in their organization about interventions or proposals. "*We don't have a very large department, so we have our people who are involved in the social domain. And they include, for example, the policy officer who is involved with our citizens, our public relations officer. And there you can ask 'how do you think about it and where is profit in it."* (#8)

Stakeholders in bigger organizations mentioned that one department sometimes is not aware of what the other department is doing. All stakeholders indicated that no individual within their organization has the authority to decide whether they can assume a role in implementing interventions. For this decision, authorization from multiple levels of the organization must be obtained.

3.2.4. Domain 4: Individual Characteristics

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Knowledge and beliefs was a determinant that seemed to be reflected in the stakeholders' perceptions. When we began the interviews by asking all stakeholders what role they could play in implementation, it became clear that stakeholders did not seem to know what an intervention was, and the majority asked for an explanation or definition. Most seemed to think that interventions were small scale locally developed programs in group settings. After giving our definition of interventions ("proven effective scientifically designed programs aiming at changing individual PA behavior"), stakeholders mentioned that they have a positive attitude to interventions that stimulate PA and that target the population of older adults. They are of the opinion that these end users often had too little attention. *"In my personal opinion, I find it really a pity that important target populations are forgotten. We are not going to get a healthy region if we only focus on youth, especially when older adults are such a large group, and then you just ignore them".* (#2)

Within the determinant *Other Personal Attributes*, some other findings could be grouped. Some stakeholders expressed that interventions should not be used to force people into engaging in PA behavior. *"Some people, well you should just let them be. That may seem strange coming from someone who holds positive health very high. But if an older person has always lived his life in a certain way and is happy, then I would say 'even if he smokes his cigarette and drinks his pint of beer every day, just let them live on as they like''.* (#15)

Stakeholders had varied opinions on the ongoing digitization of society and its reflection in PA interventions. Some feared that older adults may not be interested or able to use interventions with digital components, but others feel that older adults nowadays don't have these issues anymore or that such an intervention could even stimulate them to do more things digitally. *"It's true that many older adults are not digitally literate. But I see also a lot of older adults who are, or who maybe can ask for help at a library or a grandchild. I'm not afraid of that, after all, it's how our whole society looks like now".* (#6)

Stakeholders believed that if they want to promote PA, they may need to take an approach other than focusing on PA to engage end users in PA interventions. *"What we have in our minds is 'people should be more active', but we translate that to them as 'would you like to join us for a cup of coffee, come join us at….', so we use our secondary goal to keep the threshold as low as possible".* (#11).

4. Discussion

In this study, we utilized the CFIR to gain deeper insight into the determinants perceived by stakeholders when implementing PA interventions for older adults. We found that stakeholders generally identified the same determinants, that could either hinder or facilitate implementation, or sometimes both, depending on the setting. The results offered a wide range of information, revealing several overarching issues spanning multiple domains.

4.1. Stakeholder Roles in Implementing PA Interventions

A relevant finding of the current study is that although implementation of effective PA interventions in practice is still very limited, all interviewed stakeholders were willing to play a certain role in the implementation of PA interventions targeting older adults. This is also reflected in a high response rate of stakeholders who were asked to participate in the current study: 26 stakeholder organizations (in totally including 31 individual stakeholder participants) were willing to participate in our research. While each stakeholder mentioned to be willing to play a specific role (e.g., financing, facilitation or organizing), none of the organizations was able to take care of a complete intervention implementation process of developing, financing, organizing, coordinating, facilitating and informing the end-user, due to restraints within their organizations or job description. Therefore, networking and collaboration with other organizations within and across different sectors was considered particularly crucial for successful implementation. This is in line with the findings of a previous scoping review on the implementation of fall prevention interventions in older adults, that also states that working collaboratively with the right stakeholders, within and outside an organization, is one of the essential implementation determinants. Moreover, unclarity of roles and responsibilities among involved stakeholders was found to be an important factor in this review [17]. In addition, a recent and extensive pooled analyses study underlines that multi sectoral efforts are

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needed to stimulate PA, especially in older adults [31]. The role stakeholders are willing to play in intervention implementation can be related to the different domains of the CFIR as described below.

4.2. Domains

4.2.1. Domain 1: Intervention Characteristics

In this domain, several determinants were found to play a major role in the implementation of PA interventions for older adults. In terms of CFIR [27], these can be grouped under the determinants of r*elative advantage*, *adaptability and trialability, evidence quality and strength*, *complexity and costs*.

For a PA intervention for older adults to have a *relative advantage* over other interventions, it seems that the intervention should not have PA as the sole or primary goal. PA should rather be used as a means to achieve other goals, having a comprehensive understanding of health and the number of co-benefits of PA in mind. In this regard, focusing on promoting social interactions, living independently and reducing loneliness seems to be particularly promising. First, our results indicate that these goals seem to better address the needs of older adults increasing their motivation to get engaged. This matches with previous research which also shows that studies that have broader health goals in mind—such as mental health improvement, social interaction, and chronic disease management—are often better appreciated by participants [21,32–34]. One issue to consider is that a recent study showed that when communicating about interventions, end users dislike messages that focus on health problems, but prefer messages that emphasize the enjoyment that PA can bring or the mental, social and cognitive benefits of health [21]. Second, our findings show that increasing PA in itself is not a priority in external policy and consequently also often not in internal policies, but the social, economic, and environmental co-benefits of PA promotion are. To increase implementation of PA interventions for older adults, intervention developers are therefore challenged to make clear what other goals can be reached with their intervention, being clear of the co-benefits of PA promotion and having both the needs of older adults and the political priorities in mind.

In line with the CFIR determinant *Adaptability*, interventions should be adaptable to the local situation to promote successful implementation. This is in line with the findings of previous reviews indicating that adaptability to the specific context of an intervention is an important facilitator for interventions [35]. In accordance with this, we found that stakeholders perceive the possibility of trialing an intervention as beneficial. When deemed a success, interventions can then be scaled up or adapted to better meet the local needs. Seeking feedback from the end users on their perceptions regarding intervention components and materials can provide valuable insights into potential barriers to intervention engagement and can increase its acceptability and feasibility, which can ensure that the intervention is as likely to be successful in changing behavior as possible [36,37]. This desire for A*daptability* and *Trialability* however may conflict with the determinant of *Evidence quality and strength.* Stakeholders fear that proven effectiveness does not align with adaptability or they think that these interventions are more complex. Although proven effectiveness is considered important by stakeholders, it should be made clear by intervention owners which parts of the intervention can be adapted without compromising proven effectiveness [38,39]. Co-creation methods (including universities, stakeholders and end users) and including a deliverable that focuses on adaptation for different settings therefore seems an advisable strategy, that has also been suggested in previous research [40–42].

Regarding the CFIR determinant *Evidence quality and strength,* our study shows that how efficacy is determined in RCT's may be different from how an intervention is deemed successful by stakeholders. This also seems highly dependent on the stakeholder in question. Some stakeholders are mostly interested in reaching a large number of end users, whereas others find it successful when hard-to-reach population are reached, even if it is only a small number. Hard-to-reach populations in this regard are especially those with a comparatively high risk of not being sufficiently physically active, such as populations of lower socioeconomic position (SEP) (e.g., low education and income or ethnic minority populations) [43–45]. Results from a systematic review and meta-analysis indicate that health behaviors, including PA, play a major role in explaining health inequalities [46]. It has been found that particularly interventions aiming at changing individual behavior may unintentionally increase health inequalities by benefiting high-SEP individuals disproportionally

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more than low-SEP individuals [47,48]. According to the World Health Organization, individually focused intervention approaches to promote PA should be implemented according to the principle of proportionate universalism, i.e., aiming at all groups of older adults, but at a scale and intensity that is proportionate to the degree of need [3]. It is obvious that aiming for a large number of participants, or aiming for those hard-to-reach will affect implementation choices and outcomes, and therefore it is important to assess what stakeholders find important in what they want to achieve [49]. It is important to keep in mind that only 40% of those aged 65+ years meet PA guidelines [50]: from a population health perspective, the largest impact can be made by getting large population groups who do not meet guidelines to engage in more PA. In this case, the challenge is to reach those large groups with low PA levels for maximal impact, considering financial and logistical implementation limitations. One issue to consider is that previous research has shown that many older adults believe that they are sufficiently active while actually overestimating their level of PA [21,51], making it important that in intervention recruitment messages stakeholders should make clear what sufficient PA is.

The difference in relevance of effectiveness metrics was also identified in one of our previous implementation trials, which showed that although the intervention was effective in increasing levels of PA, implementation was not continued by stakeholders due to the lower than expected numbers of participants [49]. This study thereby highlights the importance of performing qualitative research while identifying implementation determinants in order to clarify which outcome measure is perceived as most relevant.

Stakeholders acknowledge that it is challenging to assess the long-term health effects and potential cost savings of an intervention. Literature from other countries also has demonstrated that these effects are highly context-specific (for example regarding policies and culture), indicating that a one-size-fits-all approach is inadequate [52]. It is therefore recommended that, when implementing, stakeholders are consulted to ascertain which target groups and outcomes are of greatest importance to them and are feasible to address given budget and personnel, in order to be able to chart this information for them in the implementation process.

The perceived C*omplexity and Cost* of implementing an intervention is regarded a barrier to uptake. A good manual may thus be essential, however, too extensive a manual seems a deterrent for implementation. It is striking that interventions that are proven to be effective for increasing PA are often perceived as complex to implement. Stakeholders prefer interventions that are easy to implement, have a practical manual, and do not require a lot of resources. It might therefore be advisable to identify effective interventions, but to pay attention to easy guidelines on practical implementation. Our findings are in line with previous literature from the UK and USA that also emphasizes the critical role of well-developed easy to understand manuals in ensuring the effective implementation, fidelity, and scalability of PA interventions [53,54].

4.2.2. Domain 2: Outer Setting

According to CFIR [16], stakeholders that are supported and encouraged by other external stakeholders are more motivated to implement interventions and to sustain them for longer. This was also reflected in our findings where, in the terms of CFIR for this domain [29], C*osmopolitism*, *Patient needs*, and E*xternal policy and incentives* were seen as the most relevant determinants.

Regarding *Cosmopolitanism,* the stakeholders' perceptions make clear that a good network and good alignment within that network is important. This result is in line with a recent review [14] which also showed that poor relationship between organization and community, and lack of coordination and communication between organizations can hinder the implementation of interventions in a community setting across different age groups, including older adults. As no stakeholder seems to be able or willing to play all roles needed in an implementation process, collaboration between stakeholders and maintaining a strong network seems crucial. This means that when implementing an intervention, including all relevant stakeholders in such a network is key: literature provides several strategies to facilitate such collaboration [16], for example, by promoting network weaving (e.g., to promote information sharing, collaborative problem-solving) or by creating a learning

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collaborative. As settings and relevant stakeholders may change over time, it is important to regularly check whether all stakeholders are still included. This interactive process was endorsed previously [49].

In line with the CFIR determinant *Patient needs*, insight in the needs of the end user was found to be the most important implementation determinant of the outer setting. These needs differ between different population groups of older adults. For example, there may be differences regarding motivational factors and barriers to, perceptions about and attitudes towards PA, preferred PA domains as well as cultural expectations [55–57]. The review of Cooper et al. (2021) also showed that community involvement to support the intervention was an important facilitator for implementation [14]. However, these *Patient needs* are very context specific [58], and therefore it seems essential to assess the needs of the end users before implementing an intervention [59–61], e.g., using focus groups with representatives of the end users or other participatory approaches. A potential barrier mentioned by stakeholders is that many end users are unaware that they are not physically active enough and therefore don't seem to notice information about PA interventions, or they have other priorities [62]. Attracting end users by appealing to other priorities that the end user has, such as the opportunity to socially interact with peers, seems an interesting option [63,64]. Existing literature has demonstrated the importance of integrating the perspectives of stakeholders and end users when adapting interventions [65,66].

Stakeholders perceive a shift of national policies from older adults to youth, and from PA to more societal issues such as social connectedness. While the latter shift appears to be a global trend [67], the former shift (from older adults to youth) seems to be particularly evident in the Netherlands and possibly also in some other countries The review of Cooper et al. (2021) [14] also identified the instability or lack of *external policy and incentives* supporting interventions for older adults as an important barrier for implementing interventions.

4.2.3. Domain 3: Inner Setting

The CFIR states that the extent to which an intervention is supported within an organization impacts its implementation chances. At this inner setting level, our findings show that in terms of CFIR [28], the determinants I*mplementation climate*, R*elative priority*, C*ompatibility* and O*rganizational incentives and rewards* were the main factors that influenced implementation.

A matter to consider in the *Implementation climate* is that policies in the outer setting can shape the inner setting. The inner policies of most implementing organizations are determined by outer setting policies, which can affect the capacity for change, available budgets, and the freedom and involvement of individual stakeholders to be active in the implementation of interventions [68]. Important barriers related to the inner setting that have been identified previously [14] are among others: competing priorities, lack of funding, lack of perceived responsibility among organizations, and limited capacity to take part in multiple initiatives. Those are mainly in line with the results of our study, and are mostly related to the outer setting determinant of policies changing their focus from older a adults to youth, and from PA to other health goals like improving mental health and social interaction. To increase implementation of PA interventions, intervention developers therefore need to make clear how PA interventions for older adults can contribute to those other health goals they aim to achieve. Implementation strategies like conducting local consensus discussions, conducting local needs assessments, and capturing and sharing knowledge are implementation strategies that are recommended to target these determinants [69,70].

A second relevant CFIR determinant is the *Relative priority* that implementation of interventions receives. This is, besides changes in external policies, often influenced by changes in management. For example, high staff turnover and lack of support from leadership are also identified previously as important implementation barriers within the inner setting [14]. Sometimes the preferences of certain individuals may contradict with the inner policies but may still affect the relative priority that an intervention gets, such as local politicians in municipalities that decide to implement interventions that best fit their personal interests or political agenda, which can affect the overall strategic direction. This may mean that support or prioritization of interventions is closely tied with the perspective of

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decision makers. It therefore seems highly relevant when implementing interventions not only to talk to those who have an organizational role, but also to those who have a decision-making power [71,72].

The matter of *Compatibility* is similar to some of the issues described under intervention characteristics. Since every organization has different goals and is held accountable for these goals, the effects of an intervention are not always compatible with what is considered important in organizations. This also requires an inventory of what exactly a stakeholder who decides to implement an intervention wants to see reported as effects. Of course, this is also determined by the role of the stakeholder; a stakeholder who is only organizing may have different priorities regarding compatibility than those who are funding [73].

4.2.4. Domain 4: Individual Characteristics

CFIR states that organizations are made up of individuals and that the setting and intervention constructs all have a foundation in the behaviors of individuals. At this individual characteristics level, *Knowledge and beliefs about the intervention,* and *Other personal attributes* [30] were the main factors that influenced implementation.

Regarding *Knowledge and beliefs about the intervention,* it was noteworthy that almost every stakeholder had doubts about what an intervention really is. Many didn't seem to know the term, and when it was explained to them, they seemed to see interventions mostly as small-scale PA programs for groups. Part of this seemed to stem from a desire to use interventions that were already available in the region. However, these were often not proven effective interventions, but projects developed by local volunteers. It seems important, therefore, that discussions with stakeholders always start with a clear explanation of what interventions are, what different interventions are, and why proven effective interventions are relevant.

Most stakeholders had a positive attitude to PA interventions and to older adults as the end user. However, not all stakeholders had decisional power and as described earlier, a high staff turnover might also hinder intervention implementation as new staff members might have a less positive attitude. In line with the recommendations of Fernandez et al. (2019) [18], future initiatives are therefore recommended to involve multiple stakeholders per organization within their implementation plan: all stakeholders including adopters, implementers, and those responsible for maintaining the intervention should be identified.

4.3. Methodological Issues

Our study corroborates that CFIR provides a valuable framework for analyzing various aspects of intervention implementation while taking into account the variety and complexity of multiple organizations with different experiences. However, in our study a key challenge was the lack of a specific intervention as an example. Without a concrete case study, it was sometimes difficult to directly translate CFIR's theoretical framework accurately to our research questions. In addition, we found that because of the interconnectedness and complexity of the different domains within the CFIR framework, certain aspects in different CFIR domains sometimes seemed to overlap (e.g., the outer setting domain seemed to have a large impact on the inner setting domain and on the perceptions of the intervention characteristics). These methodological challenges suggest that while the CFIR Guide is highly useful, caution should be used when applying it to diverse contexts. It requires a careful and flexible approach to do justice to the unique situations and interconnectedness of different factors in each organization [74–76].

In this article, we have chosen not to demarcate determinants as either facilitating or hindering for implementation as the distinction between barriers and facilitators strongly differs from a point of view. E.g. whereas proven efficacy of interventions can be seen as a stimulating factor in terms of quality, it may also be seen as a hindering factor in terms of complexity. The perception of determinants is all related to a certain positive or negative context, which are all discussed in the current study. Labeling each determinant as a barrier or a facilitator would only complex the findings of the current study.

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When interpreting the results of the present study, it should be taken into account that we only interviewed stakeholders in the south of the Netherlands: as all countries may have different structures and different stakeholders involved, this should be taken into account when generalizing results. However, the results of the study are in line with the results on perceived implementation determinants that origin in other countries. Furthermore, by including authors from three countries, we aimed to enhance the international applicability of our findings.

Another methodological issue is that in the current study we only interviewed one (or sometimes two in one interview) stakeholder per organization. However, as within an organization the intervention adopter (i.e., the actual decision maker) might differ from the intervention implementer (i.e., the stakeholder who plays an active role in intervention implementation), involving a broader perspective of stakeholders per organization is recommended.

Another point worth mentioning is that qualitative research often identifies the type of organization that provided each quote. For privacy reasons, however, we were unable to include this information. For our findings, this omission is not problematic, as our analysis did not reveal substantial differences in opinions between different types of organizations. However, for future research, this may be a gap between science and practice, as in some cases this information may be useful for creating an implementation plan tailored to different organizations. Replicating this study on a larger scale might solve privacy issues.

5. Conclusions

The current study identified relevant determinants among stakeholders when implementing PA interventions for older adults. Our research shows that the different CFIR domains seem heavily interrelated. Consequently, our conclusions and recommendations in one domain, might influence the identified determinants in other domains as well. Overall, we recommend considering that:

- A broad group of stakeholders is willing to play a role in implementation, but each have their own specific role: Ensure collaboration between stakeholders.
- Inner setting determinants (e.g., goals and relative priority) and outer setting determinants (mainly external policies) are highly interconnected: Stay attuned to national policies as these will affect the potential to implement PA interventions.
- In relation to the internal and external policies, PA is often considered as a means to an end. Regarding the intervention characteristics, make sure that when approaching stakeholders, the intervention is not just profiled as a PA intervention, but as an intervention that can contribute to a broad perspective of health.
- The needs of the end user, especially of hard-to-reach populations, are a key outer setting determinant: Avoid one-size-fits-all approaches as an intervention characteristic.

The insight in implementation determinants as provided in the current study, may provide relevant information that will contribute to increasing the potential public health impact of proven effective PA interventions. For future research, it is advisable to assess which implementation strategies can be applied to target these determinants. Although the evidence for implementation strategies is steadily developing (e.g., by the development of the Expert Recommendations of Implementation Change (ERIC) compilation [77]), these implementation strategies are sometimes seen as rather generic [78,79]. Using Implementation Mapping (IM) protocol [18] can offer guidance, as it highlights the choice of appropriate behavior change techniques for influencing determinants and it provides tools for tailoring implementation strategies focused on the determinants of individual stakeholders.

Supplementary Materials: The following supporting information can be downloaded at: www.mdpi.com/xxx/s1, Supplementary File 1: Interview guide; Supplementary File 2: Codebook.

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Institutional Review Board Statement: This study was conducted in accordance with the Declaration of Helsinki [80]. The protocol was approved by the Ethical Committee of the Open University of The Netherlands (registration number U202200520).

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