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ORIGINAL PAPER

Recruiting Elderly with a Migration and/or Low Socioeconomic Status in the Prevention Study OptimaHl 60plus

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Abstract OptimaHl 60plus was a prevention study that included the participatory development and evaluation of an interdisciplinary counseling aid and aimed to improve the nutrition and physical activity behavior of people 60 years and older. The direct involvement of this vulnerable group in prevention programs might contribute to a reduction of inequities in health. This article describes the recruitment of the elderly, especially those with low socioeconomic or migration status, to the OptimaH1 60plus study. It presents successful strategies to reach and recruit the elderly. Community partner involvement, focus groups, translated intervention material, and involving the media all facilitated recruitment. The article gives recommendations for research, practice, and policy implications.

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Introduction

Recruitment to intervention studies and prevention programs is challenging, as has been described throughout the literature. One reason is that participants do not see direct benefits (Arean and Gallagher-Thompson 1996; Blumenthal et al. 1995; Choudhury et al. 2008; Lee et al. 2006).

Elderly populations have been described as difficult to reach and involve in prevention programs (UyBico et al. 2007). Several research studies identify distrust in researchers or prevention programs as a barrier to participation (Catania et al. 2008; Corbie-Smith et al. 1999, 2002). Other perceived barriers to participation are practical obstacles (e.g., inconvenience of time or place) and relevance of program (Lee et al. 2006). Lee et al. describe the relationship with study personnel through being present at the study sites as a facilitator.

This paper presents various strategies that were employed to reach, motivate, and recruit elderly persons 60 years and older to the OptimaHl 60plus study. In addition to overcoming the hurdle of reaching the elderly, this study focused in particular on the recruitment of those with a migration background and low socioeconomic status (SES; Arean

and Gallagher-Thompson 1996; UyBico et al. 2007; Walter et al. 2007). The direct involvement of such vulnerable groups may help to reduce inequities in health (Knesebeck 2005). This paper also discusses aspects on how to overcome perceived barriers to participation.

The Need for Behavior Change in Elderly Populations

Non-communicable diseases such as coronary heart diseases, hypertension, and diabetes are major chronic conditions affecting older people, but modifying health behaviors (e.g., nutrition, physical activity) in the elderly can still prevent further lifestyle-related diseases and disorders (WHO 2002).

The nutrition behavior of elderly people is often unfavorable. There are deficits in the consumption of vegetables and fruits, fish, and dairy, which are very often accompanied by a high consumption of meat. Elderly persons do not regularly ingest folic acid, vitamin D, and calcium (Fabian and Elmadfa 2008). However, an ingestion of these nutrients lowers the risk of disease: a sufficient supply with anti-oxidants, contained in fruits and vegetables, as well as regular fish consumption are related to a lower risk of dementia (Barberger-Gateau et al. 2002; Gillette et al. 2007). Vitamin D and calcium play a vital role in the prevention of osteoporosis. Consumption of margarine or fatty fish such as herring supplies the body with vitamin D. The calcium contained in dairy is also important for the preservation of the skeleton/bones (Morgan 2008).

Physical activity and physical capability are preventive actions related to the preservation of bone health; regular physical activity can also prevent cardiovascular and musculoskeletal diseases as well as falls (Tinetti et al. 1994; Tinetti 2003). DiPietro (2001) recommends that older adults get at least 30 min of physical activity such as walking, housework, or gardening per day.

The OptimaHl 60plus Study

OptimaHl 60plus was a prevention study that included the participatory development and evaluation of an interdisciplinary counseling aid through focus groups and pre-post face-to-face interviews, respectively. It aimed to improve nutrition and physical activity, the maintenance and enhancement of the quality of life, and the autonomy of elderly people 60 years or older. In addition, the counseling aid might help in the communication between primary care physicians or home care providers and the elderly when discussing nutrition and physical activity behavior. The study was carried out in several districts of the city of Bremen, Germany and included elderly persons who were able to care for themselves.

The participatory development of a counseling aid was necessary as existing didactic counseling aids were not considered eligible for the target group because of their complexity (aid Infodienst Verbraucherschutz ELeV 2005; Verband für Ernährung und Diätetik e.V. 2006). Thus, a new interdisciplinary aid was developed, which has been described in detail elsewhere (Hassel et al. 2010).

Basically, the counseling aid is a template to record individual nutrition and physical activity behavior including feedback on target and performance and advice for improvement. It is divided into four categories: daily fruit and vegetable consumption, daily dairy consumption, weekly fish consumption, and daily physical activity in minutes (see Fig. 1). The concept of the counseling aid was based on the self-regulation model by Kanfer (1977, 1986) (Karoly and Kanfer 1982; Scheft and Lehr 1985).

Inclusion of Elderly Persons with Low SES and a Migration Background

Having a migration status can influence the individual understanding of health and health behaviors. The cultural understanding of health and illness also influences the individual motivation to reflect on and possibly modify behaviors such as preventive nutritional or physical activity habits (Zwick 2007).

In addition, the literature on nutritional and physical activity behavior of migrants suggests a disadvantage in their morbidity and mortality rates. However, various other factors such as belonging to a lower socioeconomic class and being from the first generation of migrants seem to positively influence the morbidity and mortality rates (Brussaard et al. 2001; Darmon and Khlat 2001; Landman and Cruickshank 2001).

The goal of the study was to develop an easily understandable counseling aid suitable for all social

Fig. 1 The developed counseling aid

classes and migration groups. In addition, enrolling these vulnerable target groups (Arean and Gallagher-Thompson 1996; UyBico et al. 2007; Walter et al. 2007) might contribute to a reduction of inequities in health (Knesebeck 2005).

Methods

Sample, Setting, and Inclusion Criteria

Recruitment settings were residences, meeting places, churches, and mosques in districts of Bremen. Special focus was placed on the inclusion of elderly persons with low SES and/or with migration status.

Thus, we first included residences and meeting places in low-SES districts. For this purpose, we used the social index for districts in Bremen. The social index is based on four characteristics: education, income, identification (migrants), and conflict potential (Der Senator für Arbeit Frauen Gesundheit Jugend und Soziales 2006). We paid special attention to the inclusion of residences and meeting places in the 29 (of 79 listed) most disadvantaged districts.

We asked the participants about their country of birth to identify migration background. The elderly with migration status in our study were either of Russian or Turkish origin. All participants were registered citizens of Germany. Russian and Turkish migrants are the largest migrant groups in Bremen (20.1 and 28.9% of all migrant groups, respectively; Lutz 2006). Though we did not purposely include only elderly persons with a Russian or Turkish migration background, in the meeting places and mosques where recruitment took place, only these two groups of people were interested in participating in the study.

To demonstrate a significantly positive change in the nutrition and physical activity behavior with respect to the four main parameters (consumption of fruits and vegetables, dairy products, and fish and physical activity) we used a Bonferroni-adjusted χ^2-test with a multiple level of significance of $\alpha = 0.05$. Assuming a positive change of 5% in the control group, a positive change of 15% due to the intervention should be detected at a power of 80% ($\beta = 0.2$). Using these assumptions, 170 elderly were needed in both intervention and control group.

Recruitment Methods

We employed different strategies to recruit the target group, starting with the involvement of community partners in the preparatory phase. The research team conducted focus groups with elderly individuals to involve potential participants, especially key persons. Key persons were those people known and accepted in the community. They were good door openers to

the target group. In the recruitment phase, we employed further strategies such as the media, community participation, and referrals. The study paid special attention to the recruitment of persons with low SES and with migration status.

Community partners were involved in the preparatory phase of the study in November and December 2007. After presenting the study to them, we discussed potential involvement of the partners and finally agreed on the following tasks under the lead of the research team: contacting and recruiting participants, implementing the counseling aid, and undertaking interviews. We motivated community partners to participate by offering health information (the control group) or health information plus the counseling aid and six group meetings with elderly participants (the intervention group) in the residences or meeting places for free. The health information (including cooking recipes and health guidelines on nutrition and physical activity) and the counseling aid were developed as part of the study. Trained study personnel led the group meetings where they presented and discussed health topics.

For recruitment and motivation, the use of already existing structures has been identified to be essential (Choudhury et al. 2008; UyBico et al. 2007). Four organizations (the Bremen Foundation of Residences [BHS], the Workers' Welfare Association [AWO], the German Red Cross [DRK] and the *Paritätische* [DPWV]) acted as community partners in our study. All these organizations have special residences called "living with service" as well as meeting places for elderly people in various districts of the city of Bremen. Living with service is an option elderly people in Germany can choose if they are still able to care for themselves but would like to buy special services. Living with service is usually provided in connection with and on the same grounds as a residence for elderly people. In addition, the DRK, AWO, and *Paritätische* offer ambulatory care services. Ambulatory care providers reach a specific group of elderly: those in need for care services but still living in their own home. Those people recruited to our study only needed household services like shopping and cleaning and were generally able to care for themselves. It is possible to reach a different clientele through meeting places for elderly: those living in their own homes and actively participating in the community.

In addition to these four organizations, the Center for Migration and Intercultural Studies (ZIS) participated. To complete the range of organizations and ensure widespread contact with the target group, we included some parishes and mosques in low-SES districts as well.

A focus group is a group of individuals selected and assembled to discuss a topic of relevance. This technique generates detailed and valid data that are useful in developing intervention programs and help to overcome practical problems in the implementation phase (Powell and Single 1996). The focus groups, conducted for our study in March and April 2008, helped to develop the counseling aid best suited for the age group of 60 years and older (Hassel et al. 2010).

The media strategy included publishing press articles and supplying community partners and elderly people with informational flyers and posters that were distributed in low-SES districts, informing about the study and inviting participants to a first meeting. Community partners distributed the posters and flyers in residences and communal meetings places. In addition, we put up posters in low-SES districts in public locations such as shops, pharmacies, and kiosks. Young elderly (those not yet retired) were the main readers of the press articles. These elderly mainly did not live in low-SES districts in Bremen. Also, we published two articles in a Turkish newspaper to reach the Turkish groups with a migration background.

In the recruitment phase, community partners received program information (flyers) to distribute among potential participants in their residences/meeting places. Potential participants were invited to a kick-off meeting, which took place in communal areas of residences or local meeting places of the organizations (AWO, BHS, DRK, *Paritätische*, and ZIS). We also offered some kick-off meetings in communal rooms of churches and mosques. During these meetings, the research team introduced the study. We developed a communication route for these meetings to ensure that all participants received the same information: (a) welcome, (b) study background, (c) benefits for participants and research, (d) intervention program outline (for the intervention group only), and (e) questions and answers. The number of people attending the kick-off meetings varied from 5 to 50 people. Most groups were

comprised of around 10 people. The research team asked attendees to sign an informed consent form if they wanted to participate in the study.

We summarized the benefits as follows: to receive cooking recipes and health guidelines at regular intervals (for control and intervention groups), a counseling aid to improve nutritional and physical activity behavior (the intervention group), and regular intervention meetings (the intervention group) for free. The kick-off meetings always took place in an environment familiar to the elderly so that we could build a trusting relationship. This was realized by undertaking the meetings directly in the communal meeting places. All materials we distributed in the recruitment phase were translated for the elderly with a migration background (into Turkish and Russian). Bilingual key persons ensured translation during meetings. Some participants were recruited by referral—word of mouth—from their relatives or friends. For example, some couples participated together in the intervention study.

Results

We employed a variety of recruitment strategies in OptimaHl 60plus. Below we present the implementation of the strategies and our results from the recruitment phase. For a summary of recruitment strategies see Table 1.

Table 1 Summary of recruitment strategies used in OptimaHl 60plus

Overall theme/topic	Recruitment strategy
Community partners	Information channels
	Direct contact to target group
	Familiar environment
	Location and timing of meetings
	Motivation of key persons
Involving the target group	Focus groups
	Kick-off meetings
Media	Flyers
	Posters
	Press articles (different languages)
	Intervention material (translated)
Referral	Contact of spouse and partner

Recruitment Through Community Partners

The total recruitment period lasted from January to August 2008. In total, 41 residences and meeting places were included in the study. The research team contacted more residences and meeting places, but not all were able or wanted to participate (see Fig. 2). Reasons for non-participation included the place nearing closure or having a younger age group than required for the study. In addition, residences located close to each other decided to work together and were hence not listed separately.

Table 2 depicts the distribution of participants from each partner organization. We recruited between 5 and 15 elderly in each residence or meeting place. In two cases, the team recruited around 50 people (see Recruitment Through the Media). 208 participants without migration backgrounds were in the intervention group. 42 elderly persons with a migration background participated in the intervention group. The control group was comprised of 190 participants without migration background and 41 with a migration background. In total, 481 elderly persons agreed to participate in the OptimaHl 60plus study.

Recruitment Through Early Involvement of the Target Group

We carried out focus group discussions to develop a suitable counseling aid for the target group. Through the elderly participating in the focus groups as key persons, other groups and individuals eligible to participate were identified and recruited (Hassel et al. 2010).

Involving the target group through community partners turned out to be an advantage. The elderly experienced the direct contact through the community partners as trustworthy. In addition, the kick-off meetings helped the elderly to reduce prejudices against university-led studies (Paine et al. 2008). We were, for example, able to counter fears of being perceived as guinea pigs by explaining to the participants that this was not a laboratory study but an intervention program (Petereit and Burhanstipanov 2008).

In addition, ensuring the meetings would take place in an environment familiar to the elderly and in the community meant that we could build a trusting

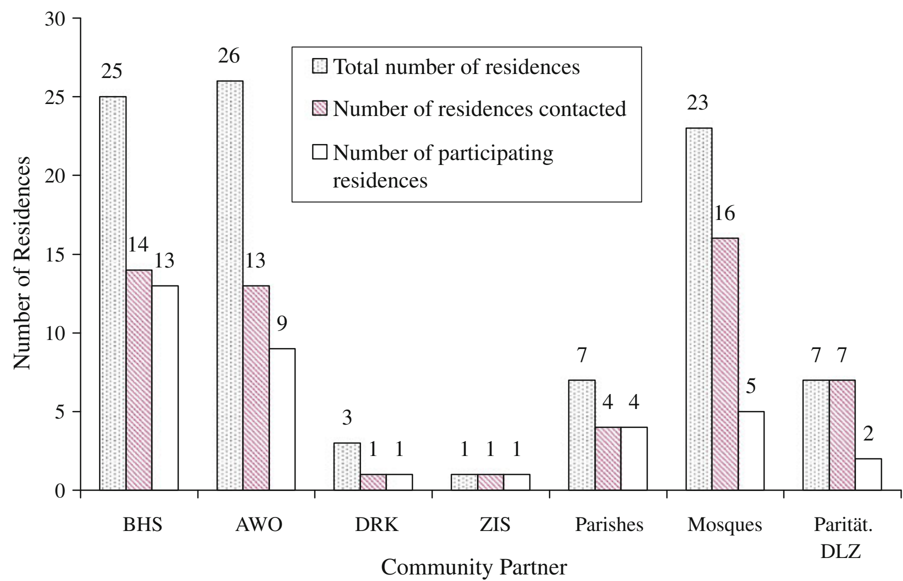

Fig. 2 Number of residences/meeting places existing, contacted, and included in OptimaHl 60plus. (Those recruited through the media are not listed. Four residences merged their groups to two. *AWO* Workers' Welfare Association, *BHS* Bremen Foundation of Residences, *DLZ* Service Center, *DRK* German Red Cross, *Parität* Paritätische, *ZIS* Center for Migration and Intercultural Studies)

Table 2 Partners, number of residences/meeting places, and participants according to intervention and control group

Intervention group	Community partners	Number of residences/meeting places	Number of participants
Intervention group without MBG	BHS	11	105
	Parishes	4	44
	AWO	1	6
	Paritätischer	0	0
	Recruitment through press	2	53
Intervention group with MBG	ZIS	1	16
	AWO	2	15
	Mosques	2	11
Control group without MBG	AWO	6	52
	DRK	1	5
	BHS	2	21
	Paritätischer	2	18
	Recruitment through press	2	94
Control group with MBG	AWO	1	5
	DRK	1	23
	Mosques	3	13
Total		41	481

AWO Workers' Welfare Association, *BHS* Bremen Foundation of Residences, *DRK* German Red Cross, *MBG* migration background, *ZIS* Center for Migration and Intercultural Studies

relationship and that transportation was not a problem for the elderly. Only in one residence the research team had to organize a transport service for the elderly. Offering convenient locations (Lee et al. 2006) and times are important strategies to support the recruitment of study participants (Arcury et al. 1999; Austin-Wells et al. 2006).

From April to August 2008, kick-off meetings with potential participants took place to inform them of the study OptimaHl 60plus. In total, 36 kick-off

meetings in various residences and meeting places took place. During the study it turned out to be advantageous to enroll participants directly at the first meeting where we also interviewed participants. Austin-Wells et al. (2006) also described this as a good strategy.

Reaching those with a migration background was a particularly difficult task. We contacted the Center for Migration and Intercultural Studies as well as the mosques in Bremen. Table 2 gives the number of recruited participants with a migration background.

According to the study protocol, we assigned the recruited participants ($N = 481$; 381 women and 100 men) to one of four groups: intervention group without migration backgrounds ($n = 208$), control group without migration backgrounds ($n = 190$), intervention group with migration backgrounds ($n = 42$), and control group with migration backgrounds ($n = 41$).

Recruitment Through the Media

Press articles in German were continuously printed to introduce the study to the general public. We targeted the age group of 60 years and older in particular through specialized magazines that were available only in residences and meeting places. In addition, the researchers distributed posters in districts with low socioeconomic status and with a high percentage of migrant populations to inform about OptimaHl 60plus and invite potential participants to kick-off meetings. Among potential participants, community partners distributed information leaflets. Translated materials (e.g., flyers) were provided to Turkish and Russian groups, and the research team published two articles in a Turkish newspaper. The recruited number of participants through the media are displayed in Table 2.

Preliminary Results Related to Nutrition, Physical Activity, and Acceptance

To better understand the implications of the counseling aid on the group of elderly persons with migration status and/or low SES, we present a few preliminary results here. These results are based on sub-group analyses and are thus only explorative. However, detailed summaries of the results are already in progress and will be part of forthcoming publications.

A significant positive change in nutrition behavior can be noted in the group of those with a migration background when looking at the weekly consumption of fish ($p = 0.0498$). The same is true for the group of low-SES elderly ($p = 0.015$). The intervention group with migration background shows a tendency for improvement in overall daily physical activity, but results are not significant. For being physically active, those with a migration background only show a significant increase in the minutes physically active outdoors after the intervention ($p = 0.014$). For those with low SES, no significant results are shown.

Over 80% (intervention group, $n = 174$) of the participants were "very satisfied" or "satisfied" with the handling of the counseling aid. This result is replicated in the group of elderly persons with a migration background and low SES, and even over 90% (intervention group, $n = 176$; control group, $n = 184$) were "very satisfied" or "satisfied" with the prevention program as a whole.

Discussion

The main problems encountered in the recruitment phase were the restricted timing of the study phase and an unexpected lower interest of the target group. We countered these problems by extending the recruitment period from six to eight months. This was possible because of the early start of the recruitment period. To reach and motivate elderly persons to participate, the research team had to employ various strategies, as outlined in the results section, to reach the target number.

Most elderly stated that they were very active and had limited time resources to participate in the program. Hence, the OptimaHl 60plus study offered easy-to-reach and familiar locations for meetings (Damush et al. 2002; Lee et al. 2006) and agreed on a time with participants (Arcury et al. 1999; Austin-Wells et al. 2006).

Even though community partnerships facilitated recruitment, it was difficult to recruit the target numbers in the intervention and control groups (170 elderly individuals in each group). We had to contact a larger number of residences and meeting places over a longer period of time. This was mainly because of the target group not being very interested in the intervention program. Our community partners

also often reported that the elderly were skeptical about what the program would involve. The kick-off meetings usually helped in convincing the target group of the benefits. A large group of those not attending these meetings could, of course, not be convinced. Some elderly persons did not feel the study topics were of relevance to them, as has also been described by Choudhury et al. (2008) and Lee et al. (2006) and by Kolip and Altgeld (2006), who found the topics were primarily of interest to women. Women are described as having a greater interest in topics related to diet and a more positive attitude towards healthy eating habits. Thus, consulting services are demanded differently by men and women (Kolip and Altgeld 2006; Robert Koch Institut 2006; Specht-Leible 2005). This was reflected by more women participating in OptimaHl 60plus.

The main reason for not being interested in the prevention study was that elderly persons perceived themselves as too old for a change. Another reason was that their current lifestyle was perceived as healthy enough to get to their current old age.

At first, it was important to involve the target group in focus groups and include the community partners (Arcury et al. 1999; Austin-Wells et al. 2006; Blumenthal et al. 1995; Choudhury et al. 2008; Coleman et al. 1997). We identified focus groups as good door openers from the target population, which helped in understanding the target group. Shared ownership of a program has been described as helpful in the preparatory phase of a study. This might have positively influenced the recruitment phase as well (August et al. 2004). Thus, we involved the community partners at an early stage in the study process. The research team received hints regarding the location as well as the content for the intervention meetings from community partners who work closely with the target group (Gucciardi et al. 2007).

The media strategy might have helped to increase the credibility of the project and raise awareness of the study (Austin-Wells et al. 2006; Choudhury et al. 2008). Press releases primarily led to the recruitment of young elderly persons (see Table 2). These elderly individuals mainly did not live in low-SES districts. They knew our research institute well from previous projects, which was a reason to participate. An in-depth analysis of this particular group will show if this group may have biased the results.

Trust is an important issue and might have helped in the recruitment phase (Corbie-Smith et al. 1999; Petereit and Burhanstipanov 2008). Especially in minority groups, it plays a great role in research participation (Corbie-Smith et al. 2002). Involving community partners respected by the target group in all aspects of the research process from design through development and dissemination of findings can lead to a trusting relationship (Corbie-Smith et al. 2002), which was the case in OptimaHl 60plus. We observed that we were successful in developing trust, especially in those target groups where we conducted the focus groups. Participants from focus groups were more familiar with the program than those recruited at a kick-off meeting, which may have biased the results. A further negative aspect of building a close relationship is that some elderly may have just participated because they wanted to do us a favor (Choudhury et al. 2008). For future recruitment strategies, the aspects of closeness and keeping one's distance, known as an interview technique, should be adhered to (Määttä 2006).

The recruitment of persons with a migration background was facilitated by reaching them through the mosques in Bremen and the Center for Migration and International Studies. The Center offers cookery courses for women with a migration background as well as language courses and a café, a regular meeting point for Turkish people. In the recruitment phase, it turned out that only a small group of regulars met at the café, and most people taking language courses were below the age of 50 years. This misconception happened even though we discussed with all partners beforehand how many potential participants could be reached through their organizations.

The translated material helped when contacting and working with Turkish or Russian groups (Walter et al. 2007). Understanding the cultural differences of the target groups is essential (Arean and Gallagher-Thompson 1996) and was facilitated by community partners with the same cultural background who could give ideas on how to reach these groups. Apart from this helpful support, we found that we could reach primarily men in mosques. This was because of the fact that the managing board we contacted first consisted of only men, who passed the information to other men. However, we tried to balance this by recruiting Turkish and Russian women through other meeting places mentioned above.

As a result of these difficulties, we could only recruit a limited number of people with a migration background in the control and intervention groups. For future prevention programs it would be ideal to employ bilingual staff to accompany the study from the beginning. The research team could thus offer a better scientific explanation of the prevention program. A further recommendation for other studies would be to contact a number of mosques at an early point in the recruitment phase, since our experience showed that discussions before a kick-off meeting could take place were time consuming.

Certainly, it would be desirable for future research to identify which of the recruitment strategies works best—to be in line with the request from UyBico et al. (2007). OptimaHl 60plus did not set out as a study to investigate recruitment strategies. Nonetheless, we believe that the mixture of strategies we employed helped the successful recruitment and that a published summary of these might help future research and practice.

In conclusion, the recruitment phase of this study has implications for further research, practice, and policy. We recommend that future prevention studies allow for sufficient time to recruit potential participants. For this, researchers should employ various strategies, as described above, to increase the number of recruited people. This article also gives some practical advice for people working with migrants or those with a low social background. The findings presented can be applied to service settings. Given that service settings also need to engage in outreach efforts to reach disadvantaged populations, it would be helpful for service professionals to use the same types of recruitment strategies listed in this article. Many of our techniques used for the prevention program were culturally sensitive and took into account the needs of the target population. The same types of culturally sensitive strategies could hence be used in a service setting.

In addition, one idea when developing the counseling aid was to use it in primary care physician practices. As part of the study, we also interviewed primary care physicians about the use of the counseling aid in their work when discussing health topics related to nutrition and physical activity with elderly patients. The results of this part of the study indicated that for both topics, primary health care providers perceived the counseling aid as very useful to opening discussions and giving recommendations.

The research results showed that the elderly accepted the counseling aid as a tool and that for some groups, a behavior change occurred after the intervention. One recommendation for policy makers could thus be the increase of prevention programs that have benefits on the health of the elderly population. The ideal would be to have support from health insurance companies in setting up these programs. Taking into account the structural differences in each country's health care system, these policy as well as practice and research recommendations could also be applied to European or American settings.

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Conflict of interest None declared.

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