Health promotion for a multiethnic population: the case of weight-gain prevention among a multiethnic population of mothers living in Amsterdam South-East

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CHAPTER 9

General discussion
General Discussion

The overall aim of this PhD thesis was to explore whether there is a need for targeting health promotion interventions to specific ethnic minority groups, or whether general approaches might be applicable. We studied the need for adaptations of several intervention aspects, particularly the behavioral aims, the behavioral determinants addressed, the channels used to deliver the intervention, and the manner of execution. We tried to determine the role of targeted or general approaches used in promoting reach, participation, and effectiveness of interventions aimed at behavioral change. For this purpose, we conducted studies on a specific case: weight-gain prevention among a multiethnic group of mothers, from Amsterdam South-East in particular.

Summary of the main results
We formulated three main research questions to gain insight into the need for ethnicity-based targeting. In this section, we will summarize the results per research question.

What is the current evidence for the effects of targeting?
In our first systematic literature review (Chapter 2), we have found 11 articles describing 12 interventions aimed at mothers with young children to promote physical activity and/or healthy eating. All 6 studies that reported on attendance adapted the intervention’s execution to mothers in an attempt to overcome barriers for participation. Embedding the intervention within routine visits to child health clinics increased attendance. Moreover, all 8 interventions aimed at promoting physical activity included components targeted to mothers. Three of these interventions showed a statistically significant effect on behavioral change. These interventions included components such as counseling on mother-specific barriers for physical activity, or community involvement in intervention development and implementation. Of the 7 interventions aimed at improving dietary behaviors, only 1 intervention study was targeted to mothers, using motivational appeals (e.g., set a good example for your children). This targeted intervention, but also two non-targeted interventions, resulted in positive effects on healthy eating among mothers. Nevertheless, due to the limited number of studies found and the study designs that they used, no definite conclusions could be drawn about the actual effectiveness of the targeted components.

In our second systematic literature review (Chapter 3), we identified 12 physical activity and/or nutrition intervention studies that compared the effectiveness of an ethnicity-based targeted intervention that incorporated specific cultural elements to a comparable intervention that did not make use of the cultural elements under study. One of these studies reported statistically significant effects on physical activity and dietary change favorable for the targeted intervention. The other studies did not report statistically significant effects on primary behavioral outcomes, but some studies presented positive trends (4 on dietary
change, 1 on physical activity). Consequently, we concluded that there is no evidence to support the use of ethnically homogenous intervention groups or an otherwise adapted program execution to promote physical activity and/or dietary change. Furthermore, there was no consistent evidence for the employment of community health workers or addressing sociocultural determinants such as spiritual beliefs, family influences, collectivism, racial pride, time orientation, and ethnic identity.

The needs assessment: are there differences in postpartum weight retention and related behaviors, behavioral determinants, and channels used that imply a need for targeting?

We compared weight retention after pregnancy among Turkish, Moroccan, Surinamese, Antillean/Aruban (hereafter referred to as Antillean), and Ghanaian women to that of ethnic Dutch women using epidemiological data from the “Amsterdam Born Children and their Development” study (Chapter 4). On average, the Body Mass Index (BMI) of Dutch women was lowest before, during, and after pregnancy. Only Turkish women had statistically significant more weight retention than Dutch women postpartum. Antillean women had higher odds of weight retention, but this was not statistically significant. The difference in postpartum weight retention could not be accounted for by socioeconomic status, mental health, or lifestyle factors such as physical activity during pregnancy. Based on this data, we concluded that, during pregnancy and postpartum, health promotion should focus on Turkish women in particular, though the behavioral risk factors that need to be addressed require further investigation.

Subsequently we conducted ethnically homogenous focus groups with ethnic Dutch, Afro-Surinamese, Ghanaian, and Antillean mothers with young children from Amsterdam South-East to study their determinants of weight change and related behaviors (Chapter 5). Sociocultural and individual norms and values for a low body weight differed between the ethnic groups. Nevertheless, almost all overweight mothers wanted to be thinner and for similar reasons (e.g., looking and feeling better). The multiethnic group of mothers shared many determinants of physical activity and dietary behavior, such as the importance of the taste of food and enjoyment of exercise; personal benefits balanced with family needs; and barriers due to household, childcare, and employment responsibilities. It was not the types of barriers for physical activity and healthy eating that differed between ethnic groups, but the severity of these barriers. We concluded therefore that mothers from different ethnic groups share enough determinants of weight-related behaviors to legitimize developing general intervention strategies, on the condition that these strategies address the shared motivations and barriers to physical activity and healthy eating, while respecting rather than exaggerating sociocultural differences regarding body weight.

In addition, we compared use and perception of communication channels to access weight-related health promotion between Ghanaian, Afro-Surinamese, and Antillean women using the focus group results (Chapter 6). The participants mentioned four types of channels
Discussion

– healthcare, media, community gatherings (e.g., churches and events), and interpersonal communication – that were oriented towards the general or ethnically specific audience. We observed differences rather than similarities between the ethnic groups in their use and perception of these communication channels. For example, regular healthcare services seemed most accessible and trusted by Surinamese women, and least by Ghanaian women; the opposite was found for traditional healthcare services. Accordingly, Ghanaians, and to a lesser extent the Antilleans, made more mention of their own ethnically specific channels (e.g., Ghanaian churches, Antillean events, word-of-mouth communication with people living in the Netherlands Antilles). The preference for use and the perceived credibility of ethnically specific channels were associated with a lower socio-economic position, a first language other than Dutch, being a first-generation immigrant, and a relatively shorter time since migration among the participants of the particular ethnic group. These results indicate that channels need to be targeted to deliver health promotion interventions within a multiethnic target group.

Testing the need for targeting in practice: does targeting contribute to intervention effects?

Our first process evaluation concerned a recruitment study for an exercise program in which the utility of ethnically specific community channels was explored, and the use of ethnically matched recruiters (i.e., leaders from community organizations) was compared to the employment of ethnic Dutch health educators as recruiters (Chapter 7). This study complemented the findings of our needs assessment: only Ghanaian women could be successfully reached through ethnically specific channels. The more closely-knit that an ethnic community was, retaining their own culture, and with poorer comprehension of the Dutch language, the better mothers were reached through ethnically specific organizations. Furthermore, we found that using ethnically matched recruiters resulted in higher receptivity to the program, and, among Ghanaian women in particular, in greater participation. This was explained by the fact that the ethnically matched recruiter was a familiar, trusted person who also acted as a translator. The recruiter could function as a motivator because of her enthusiasm (e.g., by being a positive role model) or through her ability to adapt messages (targeting/ tailoring). Nevertheless, the Dutch health expert could increase the credibility and professionalism of the recruitment, both community leaders and the reached mothers stated that they preferred an expert for information-giving.

Our second process evaluation concerned the exercise program itself (Chapter 8). This exercise program, Big Move *mama*, addressed mother-specific barriers to participation, while behavioral strategies and execution were not adapted to specific ethnic groups. We explored how this general approach stimulated or hindered satisfaction with and attendance of the program among Ghanaian, Antillean, and Surinamese mothers. Attendance patterns and reasons for non-attendance were similar between ethnic groups, with a mean attendance of 70% during the first three months of the program. Regardless of ethnicity, participants
were enthusiastic about the program, which meant they enjoyed it and were subsequently motivated to attend. Women appreciated the classes for the activity (water exercises), adaptation to their needs, and group bonding. They were positive about the mainly ethnic Dutch coaches because of their friendly and involved personalities. The language used seemed to be of minor importance to comprehension and active participation. Women criticized the differences within the group regarding exercise skills and motivation rather than regarding the multiethnic group composition of the group. Women also perceived advantages of the latter; it brings cultures together. Therefore, a general exercise program that addresses mother-specific barriers seems applicable to a multiethnic group of mothers.

**Methodological issues**

We have already considered the specific limitations of the various studies in detail in the separate chapters of this thesis. In this section, we will focus on the limitations and strengths of our methods used in relationship with the overall aim of this thesis. Do the study designs and methods used give valid insights into the need and potential effects of targeting?

**Overall strength: the systematic approach**

An important strength of this thesis was that it used systematic approaches to gain insight into the need for ethnicity-based targeting. This enabled providing insights that were most valuable in the light of the current knowledge. First, we used a systematic approach that is advised for health promotion, beginning with an orientation phase (the literature reviews), then the needs assessment (epidemiological study and focus groups), followed up by intervention selection, and evaluation [1, 2]. Second, we used a systematic approach for consideration of the need of ethnicity-based targeting of individual intervention aspects [3]. And third, we started a systematic approach for evaluating complex interventions.

There is a growing recognition for the need for qualitative studies that explore mechanisms underlying intervention outcomes, before large-scale randomized trials are conducted [4-6]. Our process evaluations are good examples of Phase II evaluations as suggested by Campbell et al. [5]. In Phase II, the information gathered during previous studies is used to develop an intervention and to test this in practice. It involves testing the feasibility of delivering the intervention, and acceptability to providers and the target population. The intervention may have to be adapted several times to achieve optimal effects [5]. For example, our recruitment study (Chapter 7) showed that most key figures from the community organizations did not accept a role in which they had full responsibility for recruitment, but that an expert was preferred for information giving. This would have been troublesome had we started a randomized controlled trial in which ethnically matched recruiters in the one arm were compared with Dutch recruiters in the other, because the intervention arms need to be controlled. However, through the qualitative character of the study we could gain insight into the circumstances under which the involvement of key figures contributed to recruit-
ment effects. Consequently, initial well-informed decisions can be taken for practice, as well as well-informed decisions for the employment of larger-scale experimental studies [3, 5].

The summative studies: systematic literature reviews
The strength of our systematic literature reviews was that it tried to make a comparison between targeted interventions and non-targeted comparable interventions. In the review that focused on interventions aimed at mothers we compared studies using targeted interventions with studies that used non-targeted interventions (Chapter 2). In the review that focused on targeting to ethnic minority groups we included only studies that used a design in which an ethnicity-based targeted intervention in one study arm was compared with a comparable intervention without the targeted component under study in another study arm (Chapter 3). This type of comparative analysis is necessary to draw conclusions on whether targeting the intervention to the population subgroup does additionally contribute to the program effects, and thus is worth the additional efforts [3, 7]. However, in the review concerning targeting to mothers, all interventions directed at physical activity were targeted and could therefore not be compared to non-targeted interventions. The opposite was the case for dietary interventions: only one dietary intervention was targeted, the others were not. Therefore, it cannot be claimed that the targeted intervention components accounted for the effect of the intervention, or whether mothers could have benefited more from targeted dietary interventions than the general attempts. In addition, the amount of eligible studies available for both literature reviews was limited.

Consequently, these limitations hinder drawing any definite conclusions about the need for targeting strategies to increase effectiveness on behavioral change based on the literature reviews only. This, in fact, underlines the necessity of setting up new studies as we did in this thesis. In the absence of sure summative evaluation evidence, project-specific formative research can give more insight into the need for targeting, and underpin targeting-decisions regarding the type of targeting strategies necessary [3].

The epidemiological/behavioral assessment
A limitation of the epidemiological assessment was the use of country of birth as the single indicator of ethnicity. Consequently, the study was not sensitive for differences in weight change from women of different ethnic backgrounds that originated from one country. This applies to the Surinamese women in particular. It is not unlikely that ethnic groups from Suriname differ in their weight patterns. On the national level, there were also no differences found between ethnic Dutch and Surinamese women in general, while remarkable differences have been observed in the prevalence of overweight and obesity between Afro-Surinamese and Dutch women [8]. An additional measurement of ethnicity through self-identification could have overcome this problem (see also Chapter 1 box 1.1).
The focus groups
We adapted the recruitment strategy to the ethnic groups to improve reach. This enabled
the recruitment of focus group participants among non-Western ethnic minority groups. This
is a strength since the recruitment of ethnic minority women can be problematic for health
researchers [9]. However, this adapted recruitment might also have cause recruitment bias, a
potential threat for the internal validity of our focus group study. The Dutch participants were
recruited more passively in settings for their children, while the other participants were re-
cruited actively through community organizations by network sampling and during religious
worship services. This may have caused the differences between the ethnic groups in the age
of the participants’ youngest child, their social class, and body mass index.

Nevertheless, we do not expect that the recruitment would have changed our conclusions
in chapter 5, namely, that there are large similarities in determinants of weight-related behav-
iors between ethnic groups that legitimize the development or use of general intervention
strategies. The differences that we have found between the ethnic groups may be actually
smaller if social class and body size would have been more similar. For instance, Dutch adults
with a lower socio-economic status (SES) have also been found to be less concerned with
weight maintenance and more limited by monetary constraints for exercise and healthy eat-
ing compared to their counterparts with a higher SES [10].

In our “channel study” (Chapter 6), we adjusted for the largest difference in recruitment
method: namely passive via general audience oriented channels like schools and crèches
(ethnic Dutch women) and active via community organizations (Surinamese, Antillean, and
Ghanaian women), through excluding the Dutch women from the analysis. This increased
the comparability between the ethnic groups, and thus internal validity since a comparison
between ethnic groups was the aim of this study.

The process evaluations
Process evaluations are a useful source to gain insight into the underlying mechanisms of
intervention effects. It looks inside the so-called “black box” to see what happened in the
program and how that could affect program impacts or outcomes [11]. Our process evalua-
tions gave insight in two black boxes: 1) why ethnically specific community resources did not
consistently contribute to successful recruitment; and 2) how general programs might fit a
multiethnic target group.

We had searched for and had found an existing intervention that suited our needs assess-
ment. This had not only practical benefits, but could have also contributed to more valid
research results. Health promotion practitioners recommend the use of existing interven-
tions, in order to avoid reinventing the wheel. Moreover, by using embedded interventions
the implementation is assured. This enables evaluation of the program without being biased
by implementation problems [12, 13].
Although Ghanaian, Antillean, and Surinamese women were not equally reached by the targeted recruitment approach, this selection bias is not likely to have threatened our conclusions about the exercise program. The characteristics of the interviewed participants were diverse (e.g., different kinds of educational level, Dutch language proficiency, and time since migration) and were similar among the non-participants. Moreover, mothers that did not join the exercise program had similar reasons for non-participation, which could not be related to ethnicity or to cultural factors.

**Overall external validity: transferability**
It is worth questioning the transferability of the qualitative study results of this thesis in order to gain insight into their external validity [14, 15]. Transferability to other population subgroups as well as other health behaviors needs consideration.

**Transferability towards population subgroups.** Our case was restricted to mothers with young children only; it is uncertain whether our findings are transferable to other age groups and to men. As the channels used were related to characteristics of ethnic communities, these channels may also be successful in reaching men from these communities. However, an important common denominator in our study group was the issues relating to motherhood. Therefore, commonalities in the determinants of weight-related behaviors in other sub-groups would need to be assessed.

Furthermore, for each specific sub-study we have discussed the transferability of the findings regarding the ethnic groups under study in relationship to the broader multiethnic population. Generally, the study results were transferable to different ethnic groups (Ghanaian, Antillean, and Surinamese), that differed with regard to generation levels (first or second generation), time since migration, proficiency of the Dutch language, employment, and educational level.

The transferability of the applicability of general exercise approaches towards other religious denominators (e.g., Muslims instead of Christians) and ethnic identity may be limited. Muslim women are found to perceive additional barriers for participation in general-audience oriented exercise facilities [16, 17]. Therefore, our results may not be directly transferable to Muslim women. However, a barrier for participation due to gender roles may be overcome by channel targeting; general practitioners have been found to have an enabling role in exercise enrolment for Muslim women [18]. Furthermore, the program Big Move mama was for women only, which fits with the wish of Muslim women for gender-segregated activities [16, 17].

Ethnic identity was measured as part of the process evaluations. Almost all participants shared a “fifty-fifty” ethnic identity, both Dutch and that of their country of origin. This might have been influenced by the Dutch ethnicity of the interviewers, as answers on ethnicity-related questions can be likely to defer to the ethnic background of interviewers [19]. We
recommend searching for reliable strategies to measure ethnic identity, and further exploration of the role of ethnic identity in the applicability of general program approaches. An intervention study by Resnicow et al. [20] found, for example, that additional benefits for a culturally tailored intervention were only observed among a subgroup with a strong Afro-centric identity [20]. This implies that a strong identification towards one’s ethnic origin may increase the need for ethnic-specific targeting.

Transferability towards health behaviors. We have gained most insight into the need for targeting interventions aimed at the promotion of physical activity. However, our findings do not necessarily apply to other health behaviors. For instance, dietary behavior may be more deeply rooted in culture and therefore require behavioral targeting [21-23]. Moreover, a more sensitive topic like safe sex to prevent AIDS might benefit more from the use of community health workers to execute the program [24, 25].

Overall internal validity: data triangulation

Finally, a strength of the studies in this thesis was the use of data triangulation, not only within the process evaluations but also across studies. This triangulation involved the collection of various types of data [14, 15, 26]. For instance, we used systematic literature reviews that included randomized and non-randomized quantitative studies. These study designs provide insight into the overall success of an intervention approach, but usually give less insight into the mechanisms underlying this success [27]. Throughout the whole community-based project we consulted and collaborated with key figures from the community. They were more likely to have a helicopter view of the community than the community members themselves (i.e., target population) who relied more on their personal experiences [28]. Focus groups were used to consult the target population in order to generate initial ideas for potential interventions [1, 28, 29]. While interviews with intervention participants provided in-depth understanding of their experiences with and reactions on the recruitment and exercise intervention [28]. Moreover, we used our own observations to supplement our insights into the implementation of the intervention and its impacts [13].

Data triangulation is thought to provide a better understanding of a given phenomenon; agreement among different sources confirms validity [14]. The process evaluations described in this dissertation confirm the findings of the literature reviews and focus groups, thus providing a better understanding of the conditions under which the proposed targeted recruitment strategies and general program approaches could work.

Interpretation of the results

The strength of the studies in this thesis is the insights they provide in the need for ethnicity-based targeting, based on the determinants addressed, the channels used, and the employed executers. For the interpretation, in contrast to the development, we will consider the results
in terms of the causal sequence of their impact [1]: from reach, to participation, and to potential effectiveness for behavioral change.

Reach and accessibility: channel use

The focus groups during the needs assessment and process evaluation of the recruitment indicated that recruitment channels for health promotion require targeting to ethnic groups. Ghanaian, Antillean, and Surinamese women were found to use different types of channels, but varied in their degree of orientation towards ethnically specific channels. Use of appropriate communication channels can facilitate the reach of women (i.e., their exposure to information) and the accessibility of the available facilities.

This conclusion is supported by other studies, both within and outside the Netherlands [30-34]. In the Netherlands, among ethnic communities with characteristics comparable to the Ghanaian (i.e. close-knit, highly organized, retaining the own culture and language), such as the Moroccan and Cape Verdean, studies have found that community organizations form a bridge function towards Dutch society [30, 31]. Södergren et al. [34] found that if convenient, pleasant, and proper exercise facilities are generated, many migrant women might still need specific help to get started. Women’s organizations, for instance, have been found to facilitate such initiation [34].

These ethnically specific community organizations appeared less useful in reaching ethnic groups with characteristics more similar to the ethnic majority population (e.g., with a preference to the main local language). These ethnic groups are found to use similar channels as used by the ethnic majority population [35]. In accordance, the Surinamese group in our study seemed more likely to be reached through general-audience oriented channels. This group has a colonial history with the Netherlands, longer residence duration (and thus more people born in the Netherlands), is generally competent in the Dutch language, and generally higher educated [36, 37].

Participation – decision making and attendance: the employed executer

It is difficult to distinguish the role of community health workers as “just being a familiar, trusted person who is able to translate” from someone who can provide “cultural adaptations of message or addressed determinants” [38, 39]. From our process evaluation, however, it appeared that community health workers generally feel more comfortable in performing the former roles, than bringing the educational and recruitment message also. Though, expertise and trustworthiness are both considered to be major factors generating source credibility [40]. It appeared from our process evaluation that both roles contribute to recruitment effects. If no expert from the ethnic community is available, we saw that collaboration between an ethnically matched recruiter and a Dutch health educator (expert) resulted in higher receptivity and, subsequently, participation compared to a situation when the recruitment was executed by experts alone.
Furthermore, we found no consistent evidence for the employment of community health workers in the execution of health promotion programs in our systematic review [5, 41-45], while our process evaluation of Big Move *mama* revealed no problems with the Dutch coaches. They were appreciated for their approach, which in fact was part of the program strategy itself. Therefore, the collaboration with ethnically matched key figures (i.e., community health workers) seemed more necessary for the recruitment, especially among the aforementioned close-knit communities, than for program execution.

The findings regarding the division of roles between ethnically matched executers and professional program executers might be explained by the elaboration likelihood model and external and intrinsic motivations. The involvement of ethnically matched key figures – trusted persons – in collaboration with health educators – experts – can be seen as the peripheral route of persuasion as described by the elaboration likelihood model [46]. This route requires less thinking and motivation; it is rather an affective response to a messenger and context. This type of persuasion can especially be effective in the short-term, to initiate behavior change such as starting to participate in a health promotion program [46]. For sustaining behavioral change in the longer term, stronger positive attitudes like intrinsic motivations are suggested to be necessary [46-48]. For the latter, the behavioral change strategies used may be more important than the source that promotes them. The strategies used by the Big Move *mama* coaches seemed to stimulate intrinsic motivations, as further described below.

*Potential effectiveness on behavioral change: the behavioral determinants addressed*

With regard to which determinants need to be addressed, we gained most insight into the relationship with physical activity. The systematic literature review regarding ethnicity-based targeting, the focus groups about determinants of weight-related behaviors, as well as the process evaluation of Big Move *mama* indicated that ethnicity-based targeting on the determinants of physical activity is not necessary. In fact, the process evaluation of Big Move *mama* showed how a general intervention might contribute to satisfaction, and attendance in exercise classes.

It seemed worth searching for similarities – i.e., common denominators – alongside the differences in determinants between ethnic groups [3, 49]. During our needs assessment motherhood appeared an important shared factor in determining motivations and barriers for weight-related behaviors [50-53]. These findings were confirmed by the systematic literature review of targeting interventions to mothers [54-56], and by the process evaluation of the general exercise program Big Move *mama*. Mothers were satisfied with the group composition of women only. These other women were also overweight and/ or did not exercise. This can overcome a barrier that mothers face in regular fitness centers: “being surrounded by young, fit, slim, and trendy people” [50, 52]. Moreover, the outcome of a moment for yourself and relaxation, were reasons for satisfaction and thereby a motivation to participate.
Satisfaction and enjoyment of the exercise classes were, subsequently, main reasons for participation. This is in accordance with the reflection of Thurston and Green [57] that adherence to exercise and leisure time activities seem largely related to enjoyment and satisfaction, as opposed to a focus on a more cognitive approach of motivation and behavioral change. During our needs assessment mothers already indicated that enjoyment was decisive in the type of activity done (see also the review of Trost et al. [58]), and that dissatisfaction with exercise facilities were reasons to quit exercising. Our process evaluation confirmed this finding, and furthermore showed that a general exercise program like Big Move *mama* can induce the needed satisfaction and enjoyment. Important contributory factors for this were exercising in a group, group bonding, no pushing by the coaches, but adaptation of the lessons to wishes from the group, and the activity itself (in this case water exercises).

However, there was also dissatisfaction with the program among women that already had good exercise skills. It is likely that, for this group, the exercise intensity was too low to achieve benefits for physical and mental health [48]. Therefore, exercise groups segregated on exercise level and motivation (i.e., seriousness) seem advisable.

**Recommendations**

A number of recommendations arise for the results. These recommendations apply to policy, practice, and further research.

**Recommendations for policy**

Recommendations for policy concern the facilitation of exercise options that fit multiethnic target populations, and the facilitation of bridges to allow access to these exercise possibilities. Currently, policy is primarily directed to children because their health behavior tracks into adulthood [59, 60]. Because parents are important role models for their children, facilitation of exercise possibilities for them can contribute to the promotion of a healthy weight and physical activity among their children [61]. We advise to direct these facilities at common denominators, such as “mothers or women-only”, with groups divided based on exercise skills and the promotion of motivational factors that drive exercise participation across different ethnic groups. Professional coaches that apply strategies directed at group bonding, and alignment of exercise lessons to the needs of a group can contribute to program satisfaction and thereby the sustained use of these facilities. These facilities are preferably at neighborhood locations [18, 58].

Furthermore, policy makers can support bridges between close-knit ethnic communities and exercise facilities through the facilitation of collaboration between health professionals and ethnically specific community organizations. As general exercise programs seem applicable, given the right conditions, sport and exercise may also be a good way to connect people with different ethnic backgrounds, and encourage the participation of those that might otherwise be excluded.
**Recommendations for practice**

The most important recommendation for health promotion practitioners is to search not only for differences between ethnic groups, but also to try to get insight into similarities among ethically diverse groups with regard to, for instance, behavioral determinants and channel use. These similarities can be the basis for general program approaches.

Furthermore, if the intervention involves more than communication alone, then it seems good for health promotion practitioners to consider that strategies used for recruitment are quite separate from those needed for the program itself. Both health promotion aspects have, namely, their own behavioral goal: the former to initiate action, participation in a health promotion program; the latter the actual behavior change and sustaining this.

We recommend that health promotion practitioners carefully consider how recruitment channels and recruiters might be targeted to different ethnic groups to improve reach and participation. The employment of a trusted person and expert in the recruitment seems recommendable. With regard to the recruitment, messages may be based on particular program characteristics that address motivational factors or barriers towards behavior change.

With regard to the program itself, we recommend that the applicability of common approaches should be considered per health behavior. For this purpose our systematic approach can be applied. During the needs assessment similarities and differences between ethnic groups can be assessed with regard to behaviors, determinants, and execution (e.g., executers, the vehicle used). Based on this needs assessment interventions can be developed or chosen, and tested in practice using Phase I or II evaluations first (e.g., small-scale process evaluations).

**Recommendations for research**

We would like to recommend four directions for further research. Firstly, it is important to explore similarities and differences across ethnic groups, as well as within ethnic groups. The heterogeneity within ethnic groups may be larger than the heterogeneity across ethnic groups [3]. For example, in the Netherlands the Surinamese and Antilleans are perceived as heterogeneous groups [62]. If there are other characteristics such as language use or educational level that determine, for instance, channel use within these ethnic groups, then alternative targeting criteria rather than ethnicity may better fit to reach the multiethnic target group [3]. In-depth interviews about the use and perception of communication channels with people that differ in characteristics such as language use, educational level, generational level, and time since migration could provide a better understanding of the channels they use and for what reason. In addition, large-scale quantitative studies can test differences in channels use for several characteristics on statistical significance (see for example the study of Clayman et al. [35]).
The second recommendation relates to further exploration of the need for targeting nutrition interventions to different ethnic groups. For weight reduction, the combination of both the promotion of physical activity along with the promotion of dietary behaviors is found to be more effective than targeting only one of the behaviors [63]. Therefore, we need more insight into dietary patterns and related factors of different ethnic groups. The Helius-dietary pattern study, part of the large cohort study Helius, will investigate these in detail, and relate them to cardiovascular risk factors such as overweight and obesity [64]. This study will provide basic information upon which the decision as to whether there is a need for behavioral targeting to ethnic groups can be made. Moreover, although we found many similar determinants of healthy eating, the role that social and sociocultural determinants of healthy eating play and whether these differ between ethnic groups remains unclear and requires further exploration. The nutrition intervention healthy shopping, healthy cooking, designed for a multiethnic population, and classified as theoretically well grounded [65] may be a credible general intervention to start testing in practice with.

The third recommendation relates to conducting systematic literature reviews of the formative, qualitative studies used in the development and evaluation of interventions. We explained the value of earlier phases in intervention evaluation in providing insight in underlying mechanisms of intervention effects [5, 11]. Therefore, systematic literature reviews of such formative evaluation studies might provide more insight into the potential effects of ethnicity-based targeting and the conditions and mechanisms underlying its impact.

The fourth recommendation relates to designing larger scale experimental studies. These studies are recommended as the final stage of intervention evaluation, to provide strong evidence on the actual effectiveness of interventions [4-6, 27]. Based on our findings, large-scale recruitment studies for close-knit ethnic communities might be designed to evaluate the employment of ethnically specific channels and key figures in collaboration with health educators, compared with, for example, regular channels like healthcare services and Dutch health educators. Moreover, experiments evaluating general program approaches such as provided by Big Move mama may be worthwhile; the generalizability of our findings to other ethnic groups like Moroccan and Turkish women needs to be tested.

**Conclusion**

This thesis aimed to explore whether targeting health promotion interventions to specific ethnic minority groups is necessary. Although, the general assumption is that such targeting is needed, we conclude that the need for ethnicity-based targeting does not necessarily apply. The need for adaptation depends on the intervention aspects being examined, and the behavioral aims.

With regard to the recruitment for health promotion programs, when the behavioral aim is to initiate participation, we can conclude that the channels used need to be targeted to close-knit ethnic communities that are highly organized and retain their own cultures and
language. For such ethnic communities, the employment of ethnically specific community organizations as channels and collaborations between health professionals – an expert – and community leaders – a trusted person – contributes to reach and participation. For other ethnic groups, that are more similar to the Dutch population (e.g., whose members speak Dutch, and/or have a longer history with and in the Netherlands) or who have fewer own organizations, the use of regular channels through trusted experts seems appropriate. This needs further testing, however.

Regarding the health promotion program itself, we can conclude that targeting the program to multiethnic populations seems unnecessary if different ethnic groups share common ground that can be addressed by the program. This was applicable for the promotion of physical activity. However, because the need for targeting health promotion to ethnic groups is dependent on the behavioral aim, considering this need in relationship to other health-related behaviors requires further exploration.

For this purpose, a systematic approach should be applied, similar to the one we used in this thesis. This includes considering different intervention aspects, exploring similarities and differences in needs regarding these aspects within a diverse population, and using different phases when evaluating complex interventions. Using this strategy increases insight into how a general or targeted approach might contribute to the program's impact, under which conditions and for whom, before conducting larger-scale experimental studies. Moreover, this approach can make it possible to make well-informed decisions on policy and practice with regard to the applicability of general interventions or the necessity for ethnicity-based targeted aspects for a multiethnic target population.
References


