Nationwide implementation of guided supermarket tours in the Netherlands: a dissemination study

Patricia van Assema, Johannes Brug, Karen Glanz1, Maria Dolders and Aart Mudde

Abstract

The purpose of this study was to assess adoption, implementation and maintenance of a guided supermarket tour program of nutrition education by Dutch Public Health Services (PHSs), and the factors associated with program dissemination. A first questionnaire was sent to all 60 PHSs, and measured program adoption, perceived program attributes, and characteristics of the adopting organization and person. A second questionnaire was only sent to adopting PHSs, and measured extent and success of implementation, intentions to continue the program, and characteristics of the main implementing person. Of the 59 PHSs who responded, 30 adopted the program and 17 implemented it sufficiently. Perceived program complexity, social influence within the PHS toward program participation and existence of a separate health education department were predictors of adoption. Perceived program complexity was also a predictor of extent of implementation. The number of health educators within each PHS was a predictor of sufficient implementation. It was concluded that adoption and implementation of the program was reasonable, considering the limited dissemination strategy. Dissemination might have been more successful if the program had been less complex and required less effort, if positive social influence had been generated, and if specific attention had been given to PHSs without a separate health education department.

Introduction

The importance of programs to stimulate the adoption and continued implementation of effective health behavior change interventions (e.g. smoking prevention, weight control and stress reduction) has often been emphasized in the recent literature (e.g. Basch, 1984; Parcel et al., 1989; Orlandi et al., 1990; Mullen et al., 1995; Oldenburg et al., 1997). The wider implementation of a program should be a planned activity in the same way that the initial development and testing of behavior change interventions should be a systematic process. With carefully planned implementation, there is a better chance that effective health promotion interventions that were developed to be used by community organizations will be adopted and well implemented (Stone, 1984; Orlandi, 1986; Parcel et al., 1989; Oldenburg et al., 1997). The development of diffusion strategies should be based on knowledge about factors influencing the adoption and continued implementation of the intervention (Basch, 1984; Stone, 1984).

In the Netherlands, Public Health Services (PHSs) are considered to be key organizations for nationwide implementation of health promotion programs. National categorical institutes and research institutes have tried to implement their interventions through PHSs, which have access to local networks of schools, volunteer organizations, worksites, etc. At the time of the study, there were 60 PHSs in the Netherlands. Each PHS is responsible...
for the public health of a region with 50 000–
750 000 inhabitants (Vereniging van Nederlandse
Gemeenten, 1991). To date, no research has been
reported on adoption and implementation rates, and
factors influencing the adoption and implementation
of effective health promotion programs among
PHSs.

The main purpose of the present study was to
assess the PHSs adoption, extent of implementation,
intentions to continue, and the factors associated
with program adoption and implementation for a
guided supermarket tour program of nutrition educa-
tion for the general public. Based on the study
results, recommendations are formulated about fac-
tors to consider in the development of programs to
be implemented by PHSs. In addition, recommenda-
tions are made for the development of programs to
stimulate large-scale adoption and continued imple-
mentation of programs in public health settings.

Method

Guided supermarket tours
The nutrition education tours by dietitians in super-
markets, conducted for small groups of people (eight
to 15 persons), were initiated by the Netherlands
Heart Foundation. In 1990, a workbook was
developed for organizing these guided tours. The
main purpose of the tour is to help participants to
better understand the nutrition information on
products in order to learn about the fat content of
their food choices and to show them possible low-
fat alternatives. Reduction of (saturated) fat con-
sumption of the Dutch population is a priority for the
Netherlands Nutrition Council, because the largest
health gain is expected from this dietary change
relative to other dietary recommendations
(Voedingsraad, 1986, 1991). Participants are invited
to the tours through local media. The tour starts with
a short introduction by the dietitian with information
about healthy nutrition and the role of fat, especially
saturated fat, in the diet. Next, the group walks along
the supermarket aisles and the focus is on a number
of product groups (e.g. milk products, butter and
oils, etc). The dietitian notes the fat content and
the kind of fat [saturated or (poly)unsaturated] in
different products. During the tour several educa-
tional methods are used by the dietitians. Informa-
tion is given using posters and products. To stimulate
active participation, questions are asked by the dieti-
tian, participants are given small tasks, games are
played and participants are offered products to taste.
Also, participants are encouraged to read the nutri-
tion information on products and to compare
products. The tour is organized in supermarkets of
all sizes. On average, the tour takes 90 min. At
the end of the tour the participants receive written
information to take home, i.e. pamphlets of various
organizations about fat intake and healthy nutrition
in general.

Supermarkets are a recognized setting for nutri-
tion education, but there are no reports of tours in
them or of their evaluation (Glanz et al., 1992).

The first time the tours were implemented on a
large scale was 1992, when the tours were imple-
mented by the Netherlands Heart Foundation and a
local health care organization in the city of Alkmaar.
Overall, almost 500 inhabitants participated in 59
tours during a 4 month period. The results of the
evaluation study of this project showed high parti-
cipant satisfaction, increased knowledge, and self-
reported changes in attitudes and behavior among
participants (Van Assema et al., 1996). In March
1994, the tours were implemented on an even larger
scale. About 1200 tours were organized in 580 super-
markets throughout the Netherlands as part of the
nationwide ‘Fat Watch’ campaign of the Dutch Ste-
ering Group on Good Nutrition (Van Wechem et al.,
1998). At the same time, the National Institute for
PHSs started a 2 year project to continue nationwide
implementation of the tours through PHSs. The aim
of the National Institute, working in cooperation
with and financed by the Netherlands Heart Founda-
tion, was to stimulate PHSs to organize supermarket
tours in their regions.

Implementation of the supermarket tour
by PHSs
The National Institute sent two letters to inform
the PHSs about the guided supermarket tour pro-
gram and invited all PHSs to participate in the
program, in 1993 and 1994. Participation in the program primarily meant that the PHS agreed to organize between eight and 12 tours in a period of 5 months. PHSs that adopted the program were asked to appoint a program coordinator. All adopting PHSs were invited to an information meeting, where information about the organization and coordination of the supermarket tours was provided. Also, a demonstration tour was given by one of the trained dietitians from the Netherlands Heart Foundation.

The tasks and responsibilities of the National Institute, the Netherlands Heart Foundation and the PHSs were written down in a contract that was signed by all parties. The main responsibilities of the National Institute were to inform the PHSs, to develop and supply educational materials for recruiting participants, and to provide a handbook with detailed guidelines for organizing the tours. The Netherlands Heart Foundation's main responsibilities were to recruit and train a team of 40 dietitians to conduct the supermarket tours, to pay for travel expenses and dietitians’ time up to 12 tours in each region, and to supply educational materials. Finally, the main responsibilities of the PHSs were to organize and coordinate eight to 12 supermarket tours in the region and to recruit participants for each tour. A comprehensive list of rules was included in the contract.

Analytical framework

Figure 1 shows the analytical framework for the dissemination study. The model was based on a review of literature about diffusion of innovations theory and applications of this theory in the large-scale implementation of health promotion programs. Diffusion is defined as the "process by which an innovation is communicated through certain channels over time among the members of a social system" and an innovation is defined as a "policy, program or technology that is new to its potential users" (Rogers, 1983). The supermarket tour program can be seen as an innovation for PHSs. The PHSs are the members of the social system among whom the innovation is communicated. Along with diffusion, the concept ‘dissemination’ is often used in the literature. Usually diffusion refers to a more or less naturally occurring process. The concept ‘dissemination’ is used if there is an active effort to influence the diffusion process (Rogers, 1983). Therefore, in this article we use the term ‘dissemination’.

The dissemination of a program can be seen as a five-stage process. In the first stage an organization obtains knowledge about the program. In the second stage the organization’s decision makers form an attitude toward the program. In the third stage the organization, through its decision makers, adopts or rejects the program. When the program is adopted, the fourth stage is implementation. In the final stage the program is institutionalized or becomes part of the ongoing activities of the organization.

The present study focused on program adoption, implementation and maintenance. In the literature, many variables have been suggested to be related to program dissemination. The first set of variables is attributes of the program (Rogers, 1983), such as:

- Relative advantage: the unique benefits of the innovation over other practices.
- Compatibility: the match between the innovation and the sociocultural, economic and ideological value system of the adopter.

![Fig. 1. Analytical framework.](image)
Complexity: the degree of difficulty in understanding and using an innovation.

Trialability: the degree to which the innovation can be split up for small-scale experiments.

Observability: the visibility of the innovation’s results.

In addition, characteristics of the adopting organization, such as the organizational climate, concern and interest in the organization about the subject, social influence toward program participation, size and structure of the organization, and the decision-making process, have been found to be related to dissemination (Rogers, 1983; Basch et al., 1986; Steckler et al., 1992; De Vries, 1993).

A third group of variables that has been found to influence the dissemination process is characteristics of the adopting person(s), such as socio-economic characteristics, self-efficacy expectations and personality (Rogers, 1983; De Vries, 1993).

Finally, it has been proposed that the perceived level of success of program implementation influences the dissemination process. The chances that a program is perceived as more successful will increase when the program is properly implemented. Greater success will lead to increased institutionalization (Steckler et al., 1992).

**Questionnaires and procedures**

Data were collected using two written questionnaires. The questionnaires were based on the analytical framework. An English-language instrument developed by Steckler et al. (1992) for a study on the dissemination of anti-smoking programs in schools was used as a model.

Drafts of both questionnaires were pre-tested among PHS staff who were not involved in the study; minor changes were made in the questionnaires based on the pre-test.

**Adoption questionnaire**

The first questionnaire (the adoption questionnaire) was sent to the health education contact person at each PHS. Due to practical reasons this was not done before, but on average 2 months after most PHSs had made the decision to accept or decline participation in the program. In an accompanying letter the contact person was asked to make sure that the questionnaire was completed by the person who had been most involved in the decision about whether to participate in the program. Respondents were asked to complete the questionnaire as they would have done at the time they made the decision. The questionnaire measured adoption of the program and possible dissemination-related factors. Cronbach α’s were used to compute the internal consistency of scaled variables (see below). Values greater than 0.5 were considered sufficient for summation of items to form overall variable scores (Nunnally, 1967).

**Adoption** was assessed by one item asking whether the PHSs had decided to accept or decline participation in the program.

**Perceived program attributes** were assessed by asking about respondents’ perceptions of the relative advantage, compatibility, complexity, trialability and observability of the program. All these variables were measured by one or more (maximum eight) five-point (completely agree–completely disagree) scaled items. Cronbach α’s varied between 0.59 and 0.85.

**Organizational characteristics.** The decision-making process was assessed by asking who was involved in the decision to participate, and whether the formal and the informal decision was made by the same or by different persons. With regard to the nutrition education policy of the organization, we asked whether nutrition education for the general public was officially documented in a PHS policy plan. Former nutrition education activities were assessed by asking whether the PHS organized nutrition education activities for the general public during the last 5 years. Three five-point scaled items measured support for the current nutrition education policy in the PHS (α = 0.69). Two five-point scaled items measured social influence within the organization towards participation in the program (α = 0.84). Finally, we asked about the number of health educators on staff and whether the PHS had a separate health education department. [The request to participate in the supermarket program did not mean that the PHS had to invest working hours of dietitians (i.e. to conduct the
tours), but working hours of health educators (i.e. to organize the tours). Some PHSs have separate health education departments, in other PHSs health educators are, for instance, spread over different departments.]

In addition, the questionnaire measured characteristics of the adopting person. Five-point scaled items asked about the respondents’ perception of the importance of nutrition education, experience cooperating with organizations such as the National Institute and the Netherlands Heart Foundation, cooperation with dietitians and recruitment of participants for educational activities, willingness to try new educational methods, and opinion about prior support by the National Institute in other health education programs. Self-efficacy was measured by six five-point scaled items about how difficult or easy participation in the program was expected to be in terms of, for example, available staff (α = 0.67). Gender, function, years in the position and number of working hours per week of the adopting person were also measured.

Implementation questionnaire
The second questionnaire was only sent to the PHSs that adopted the program. The questionnaire had to be completed by the program coordinator after implementation. If no program coordinator was appointed, the questionnaire was to be completed by the person who had been most involved in the implementation.

The questionnaire measured extent of program implementation using 23 items based on the rules for implementation of the program in the contract. Level of success of program implementation was measured by two five-point scaled items (α = 0.58). We measured intentions to continue participation in the program under four different financial conditions. PHSs were defined as ‘intenders’ if they indicated intending to continue under at least one of the given four conditions. Also, we asked if a decision had been made about continuation of the supermarket tours and, if so, whether this was officially documented. Finally, the characteristics of the respondent were measured as in the first questionnaire. This part of the questionnaire only had to be completed if the respondent was different from the person who completed the first questionnaire.

Statistical analyses
Descriptive statistics were used to assess program adoption, implementation and maintenance. Univariate analysis of variance (for data on interval level) and χ² tests (for data on nominal or ordinal level) were conducted to assess differences in perceived program attributes, and characteristics of the adopting organization and person, between adopting and non-adopting PHSs.

A new dichotomous implementation variable was created using the item on program implementation asking for the number of supermarket tours that were organized. PHSs that organized at least eight tours were labeled as ‘sufficient implementers’ and PHSs that organized fewer than eight tours were labeled ‘insufficient implementers’. Univariate analysis of variance and χ² tests were also conducted to assess differences in perceived program attributes, characteristics of the adopting organization and person, and level of success between sufficient and insufficient implementers.

In order to decrease the probability that significant differences would occur merely by chance a significance level of 0.01 was used for these univariate analyses. Multiple logistic regression analyses (stepwise) were conducted to assess the most important factors associated with adoption and (sufficient or insufficient) implementation.

A second variable measuring extent of implementation was created, based on all the 23 implementation items in the questionnaire. Positive answers to all those items were summed. The possible range of scores was 0–23 (α = 0.60). A stepwise multiple linear regression analysis was conducted, with extent of implementation as dependent variable and those variables with a correlation of at least 0.3 with the dependent variable as independent variables, to assess predictors of extent of implementation.
Results

Response

A total of 59 of the 60 PHSs returned the adoption questionnaire and 58 questionnaires (96.7%) were complete enough to be included in the analyses. Of the 30 PHSs that adopted the program, 27 (90%) completed and returned the implementation questionnaire.

Adoption and factors influencing adoption

In the adoption questionnaire, 30 respondents indicated that their service had decided to participate in the program, 17 said their services had decided not to and 11 services had not yet made a decision.

Table 1 shows that with regard to program attributes, adopting PHSs were significantly more positive about the compatibility, complexity and observability of the program than non-adopting PHSs. No significant differences between adopting and non-adopting PHSs were found in perceived relative advantage and trialability of the program.

With regard to organization characteristics, significantly more adopting PHSs had nutrition education for the general public written into their policy documents and had a separate health education department. Further, in adopting PHSs the social influence toward program participation was significantly more positive. Adopting PHSs did not differ significantly from non-adopting PHSs in perceived support within the organization for the current nutrition education policy or the number

<table>
<thead>
<tr>
<th>Variable (range 1–5) (b)</th>
<th>Adoption</th>
<th>Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes ((n = 30))</td>
<td>No ((n = 17))</td>
</tr>
<tr>
<td>Program characteristics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>relative advantage</td>
<td>3.1 (0.7)</td>
<td>3.0 (0.7)</td>
</tr>
<tr>
<td>compatibility</td>
<td>4.4 (1.1)</td>
<td>3.3 (1.0)*</td>
</tr>
<tr>
<td>complexity</td>
<td>3.6 (0.4)</td>
<td>3.0 (0.6)**</td>
</tr>
<tr>
<td>trialability</td>
<td>3.7 (0.7)</td>
<td>3.5 (0.7)</td>
</tr>
<tr>
<td>observability</td>
<td>3.8 (0.5)</td>
<td>3.4 (0.6)*</td>
</tr>
<tr>
<td>Characteristics of the adopting organization</td>
<td></td>
<td></td>
</tr>
<tr>
<td>support for nutrition education policy</td>
<td>3.0 (0.6)</td>
<td>3.1 (0.4)</td>
</tr>
<tr>
<td>nutrition education policy officially documented (yes/no)</td>
<td>63</td>
<td>24*</td>
</tr>
<tr>
<td>organized nutrition education activities during last 5 years (yes/no)</td>
<td>47</td>
<td>35</td>
</tr>
<tr>
<td>social influence</td>
<td>3.4 (0.7)</td>
<td>2.1 (0.7)**</td>
</tr>
<tr>
<td>separate health education department (yes/no)</td>
<td>50</td>
<td>12*</td>
</tr>
<tr>
<td>health education staff (1,20)</td>
<td>2.5 (1.3)</td>
<td>3.2 (4.6)</td>
</tr>
<tr>
<td>Characteristics of the adopting or implementing person</td>
<td></td>
<td></td>
</tr>
<tr>
<td>perceived importance of nutrition education</td>
<td>4.0 (0.5)</td>
<td>4.0 (0.7)</td>
</tr>
<tr>
<td>experience in cooperation with the other two institutes</td>
<td>3.1 (0.9)</td>
<td>2.8 (1.0)</td>
</tr>
<tr>
<td>experience in recruitment of participants</td>
<td>3.6 (0.9)</td>
<td>3.9 (0.6)</td>
</tr>
<tr>
<td>experience in co-operation with dietitians</td>
<td>2.5 (1.1)</td>
<td>2.6 (1.2)</td>
</tr>
<tr>
<td>willingness to try new methods</td>
<td>4.3 (0.6)</td>
<td>4.4 (0.7)</td>
</tr>
<tr>
<td>opinion about prior support of the National Institute</td>
<td>3.9 (0.7)</td>
<td>3.7 (0.6)</td>
</tr>
<tr>
<td>self-efficacy toward program participation</td>
<td>3.1 (0.6)</td>
<td>2.7 (0.6)</td>
</tr>
<tr>
<td>Level of success</td>
<td>3.7 (0.8)</td>
<td>3.3 (0.9)</td>
</tr>
</tbody>
</table>

\(a\)For dichotomous variables.

\(b\)Unless indicated otherwise.

\*\(P < 0.01; \)\**\(P < 0.001.\)
The dissemination of guided supermarket tours of staff health educators. Also, there was no significant difference in the proportion adopting and non-adopting PHSs that organized nutrition education activities during the last 5 years.

Neither were there significant differences found between adopting and non-adopting PHSs with regard to the decision-making process (not included in Table I). In about half the PHSs the formal and the informal decision to participate was made by different person(s). The formal decision was usually made by the director or by the director and the department head. The informal decision was made mostly by one or more health educators. In the other half of the PHSs the formal and informal decision was made by the same person(s), usually the chief of the department with either the director or a health educator. In most PHSs (85%) the decision to participate was made by more than one person.

Finally, no significant differences were found between adopting and non-adopting PHSs in gender, working years or working hours of the adopting person, or any of the other characteristics of the adopting person in Table I. The majority of the subjects were female health educators. The average number of working years in the current function was 5 years and the average number of working hours a week was 31.

The logistic regression analysis with adoption as dependent variable revealed three significant predictors: program complexity ($P < 0.05$, OR = 24.3, 95% CI = 1.03–573.06), social influence toward program implementation ($P < 0.005$, OR = 18.5, 95% CI = 2.47–137.78) and having a separate health education department ($P < 0.005$, OR = 18.5, 95% CI = −12.4 to 15630.63). Higher adoption was associated with less complexity, more positive social influence toward participation within the organization and having a separate health education department.

Implementation and factors influencing implementation

Three of the 27 PHSs that returned the implementation questionnaire did not organize a single supermarket tour. Seven PHSs organized four to seven tours. Seventeen of the 27 PHSs (63%) organized at least eight supermarket tours. Table II shows the results of the 23 items that were used to measure extent of implementation. Most components of the program that were described in the contract were implemented by most PHSs. Only two components were inadequately implemented: most PHSs did not use advertisements to recruit participants and did not send the list of appointments to the National Institute in time. In total, 367 tours were organized by the 27 PHSs (range 0–38, mean = 13.6, SD = 11.0). The estimated total number of participants was about 4000.

Table I shows that PHSs that organized at least eight tours had significantly more staff health educators than the other PHSs. No other significant differences were found. This was also the only variable that came out of the multiple logistic regression analysis as a predictor of adoption of the program ($P < 0.02$, OR = 6.1, 95% CI = 1.34–27.92).

For the multiple stepwise linear regression analysis with extent of implementation as dependent variable, the three PHSs that did not organize a single tour were removed as outliers. To improve normality, a reflect and logarithmic transformation was applied to the dependent variable. Only program complexity contributed significantly to predicting the extent of implementation ($R^2 = 0.33$): the less complex the PHSs perceived the program to be before the start of the project, the better they implemented the program.

Continued implementation

Of the 24 PHSs that organized tours, 19 indicated their intent to continue implementation under at least one of the given conditions. Nine of these PHSs indicated that their PHS had already decided to continue the program and the other PHSs had not yet made a decision. Only one PHS had written down their decision to continue. Two of the PHSs that made the decision to continue did this before they knew the Netherlands Heart Foundation would also give financial support in 1995. Five PHSs made the decision to continue after they knew about the possibility of financial support.
Table II. Implementation of the tasks in the contract

<table>
<thead>
<tr>
<th>Tasks</th>
<th>PHSs that conducted this task (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attempted to organize tours at least once</td>
<td>92</td>
</tr>
<tr>
<td>Approached supermarkets at least once</td>
<td>89</td>
</tr>
<tr>
<td>Referred (almost) always to the Dutch Heart Foundation in written materials</td>
<td>89</td>
</tr>
<tr>
<td>Made the dietitians acquaintance</td>
<td>89</td>
</tr>
<tr>
<td>Informed the supermarkets (almost) always about the planned tours</td>
<td>89</td>
</tr>
<tr>
<td>Informed the participants (almost) always about the location</td>
<td>85</td>
</tr>
<tr>
<td>Informed the participants (almost) always about the time of the tour</td>
<td>85</td>
</tr>
<tr>
<td>Checked (almost) always which data were suitable for the dietitian</td>
<td>85</td>
</tr>
<tr>
<td>Appointed a coordinator</td>
<td>82</td>
</tr>
<tr>
<td>Organized the tours in a time period of 5 months or less</td>
<td>82</td>
</tr>
<tr>
<td>Send the participants (almost) always a written confirmation of participation</td>
<td>82</td>
</tr>
<tr>
<td>Send out a press release at least once</td>
<td>78</td>
</tr>
<tr>
<td>Disseminated brochures at least once</td>
<td>78</td>
</tr>
<tr>
<td>Conducted two tours on one morning or one afternoon at least once</td>
<td>78</td>
</tr>
<tr>
<td>Referred (almost) always to the Dutch Heart Foundation in verbal messages</td>
<td>74</td>
</tr>
<tr>
<td>Disseminated posters at least once</td>
<td>74</td>
</tr>
<tr>
<td>Participated in the information meeting</td>
<td>74</td>
</tr>
<tr>
<td>Used at least three other media channels</td>
<td>70</td>
</tr>
<tr>
<td>Organized at least eight tours</td>
<td>63</td>
</tr>
<tr>
<td>Used the handbook a lot</td>
<td>63</td>
</tr>
<tr>
<td>Send a written report to the National Institute</td>
<td>60</td>
</tr>
<tr>
<td>Send the list of appointments (almost) always 2 weeks before the tour to the National Institute</td>
<td>41</td>
</tr>
<tr>
<td>Put an advertisement at least once</td>
<td>7</td>
</tr>
</tbody>
</table>

Discussion

The purpose of the present study was to assess PHSs’ adoption, implementation and maintenance of a nutrition education program for the general public. The study also aimed to assess factors associated with program adoption and implementation. The results reveal that 50% of all PHSs in the Netherlands decided to adopt the program. This is impressive considering adoption rates in other settings and considering that this was the result of mailing just two letters. In the school setting, curriculum adoption rates of about 25% have been found among teachers (Paulussen et al., 1995; Oldenburg et al., 1997). Among physicians in general, lower adoption rates have been found also (Oldenburg et al., 1997). Of the 27 adopting PHSs that completed the second questionnaire, 17 organized at least eight supermarket tours as required in the contract. This indicates once more that adoption of a program does not guarantee full implementation of the program (Parcel et al., 1990; Brink et al., 1991). Most PHSs that organized tours indicated their intent to continue implementation, and nine PHSs said they had already decided to continue implementation. However, the present study did not measure actual continued implementation.

Program adoption was especially related to three factors. In interpreting these results, one should be cautious, since the factors were measured retrospectively, after the decision to adopt or reject the program was made. Although subjects were asked to complete the questions as they would have done at the time of decision making, they might have adjusted their opinion to the decision that had been made. In other words, we might not have measured the reasons that determined the decision, but the arguments to justify the decision. First of all, adopting PHSs perceived the program as less complex than non-adopting PHSs. Therefore, a
The dissemination of guided supermarket tours

dissemination strategy that focused specifically on convincing PHSs that the program is not as complex as they might think, might have stimulated more PHSs to adopt the program. On the other hand, under-estimation of the potential complexity and difficulties in implementing a program could also have led to disillusionment and poor implementation. Moreover, those who adopted the program may have been in a better position to do so and therefore it actually is less complex for them. Therefore, a better strategy might be to explore the possibilities to make the program actually less complex. The same recommendation can be given to improve program implementation, as perceived program complexity was also found to be a predictor of extent of program implementation. Second, more adopting PHSs had a separate health education department. In the Netherlands, there is a lot of diversity in the organizational structure of PHSs. Maybe it is easier for PHSs with a separate health education department to adopt health education initiatives of national organizations and more effort is necessary to motivate or assist the other PHSs. Third, in adopting PHSs there was more positive social influence toward program participation. Therefore, a dissemination strategy that focuses on generating social support and positive opinions of the program within each PHS might stimulate more PHSs to adopt the program.

One factor was found to influence sufficient versus insufficient program implementation among PHSs that adopted the program: the number of health education staff. It seems that program developers should realize that implementation of the present program might not be feasible for PHSs with restricted manpower.

In conclusion, it appears that dissemination of the nutrition education program might have been more successful if the program was less complex and required less manpower. Further research should assess what exactly made the program complex and what elements required most manpower. The dissemination strategy could have focused on generating positive social influence toward program participation. It might have also helped if specific attention was given to PHSs without a separate health education department. The question is whether these conclusions can be generalized to the dissemination of other health promotion programs through public health organizations. It seems reasonable to suppose that complexity of the program, social influence within the organization, the organizational structure and manpower are also important determinants of the dissemination of other health promotion programs. This should be kept in mind when developing both the program and the dissemination strategy.

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