

Effects of a peer-led senior health education program

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Abstract

The effect of a health education course guided by peers aged 55 and over was evaluated. The aim of the course was to empower older adults to participate in society and to promote their wellbeing. Evaluation included determining the effect on attitude toward aging, self-efficacy, perception of the societal opinion regarding the place of the elderly in society (social influence), social participation, perceived social support, and wellbeing of the participants aged 55 to 79 years. A quasi-experimental approach was used. The effect on the experimental group of course participants was studied compared to a control group of older adults on the waiting list. The respondents filled out postal questionnaires at three time points (before starting the course (t_0), immediately after termination (t_1) and three months later (t_2)). Using a multivariate analysis procedure, a significant interaction effect between time of measurement and group membership was found with respect to the outcome of social influence. At t_1 an effect was absent, but at t_2 , the current idea that elderly occupy a marginal position in society, found less favour with the experimental group than the control group. Moreover perceived social support and subjective health improved significantly at t_1 and t_2 among the course members, when compared to the control group. No effect was found on attitude, self-efficacy, social participation and wellbeing in the short time span of a three months follow-up. © 1998 Elsevier Science Ireland Ltd.

Keywords: Peer education; Older adults; Effect; Social participation; Wellbeing

1. Introduction

Involvement in activities by older adults is associated with a higher degree of wellbeing. A relationship has been found between engagement in voluntary or leisure activities and subjective wellbeing in several studies, however this relationship is modified by health, socio-economic status and marital status [1–4]. Unmarried older adults, those who experience health problems and those who have a

low income, benefit the most from activity participation. This positive association between high activity level and wellbeing gives support to the ‘activity theory’ which states that, unless inhibited by physical problems, the needs of older adults in the area of social interaction, are the same as those of young people. Older adults seek to fulfil multiple roles and to keep contact with their social environment [5,1]. This is the opposite of the ‘disengagement theory’ by which elderly people choose to diminish their interaction with the environment. The reduction in attention paid to other people and increase of care for the self is viewed, in this theory, as a natural process

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[5–7]. Continuation of social participation can be characterized as differential disengagement [8]. Elderly people cease their involvement in some areas when retiring, while continuing and intensifying their activities in others like leisure time pursuits or grandparenting.

The importance of having social ties is also shown by the beneficial effect of social support on the health and wellbeing of older people. Longitudinal studies show less mental health problems and mortality among older adults who experience a high availability of adequate social support [9–12]. When social support is absent, support groups can function as an alternative to provide older adults with information, emotional support or services. Health education programs which make use of peers have the potential to become a surrogate support system for people in need. Examples include peer-facilitated workshops or support groups where people can exchange their experiences with health problems [13,14].

An evaluation of the effectiveness of the health education course ‘Successful Aging’ is presented in this article. In this course, guided by peers aged 55 years and over, older adults discussed health related topics like memory problems, housing and use of medicines. The course objectives at a more general level were evaluated. The general aim of the course was to promote social participation, social support and wellbeing. Unlike most evaluation research of health education programs, this article does not consider the effectiveness of the course in achieving health related program targets. This article addresses the following question. Was the course ‘Successful Aging’ effective in improving the determinants of social participation, social participation, social support and wellbeing of its members? The contents, behavioural model and strategies of the course are explained in more detail below.

2. Outline of the course ‘Successful Aging’

2.1. Course contents

The course ‘Successful Aging’ was organized in Ridderkerk, a community in the urban area of Rotterdam. Both the national and local government

in the Netherlands support activities that provide older adults with the opportunity to participate in society and to live a meaningful life. ‘Successful Aging’ was organized in support of this policy of empowering older adults to stay active. The course was designed to encourage participation in (health promotion) activities, for example, social clubs, exercise programs and memory training. Moreover, the course was aimed at changing participants’ behaviour in health risk areas. Changes in behaviour affecting health and social participation were expected to promote the central target of the program: improvement of the social, psychological and physical wellbeing of older adults. The course was facilitated by peers, aged 55 years and over, called senior health educators, who had received prior to the course intensive training. Groups of about 20 older people met each other, once a week, on four occasions. Every meeting consisted of an introduction, given by the senior health educator, of a topic relevant to individuals facing the aging process, followed by a peer facilitated discussion. The first session started with a general introduction. Guided by the senior health educator, determinants of successful aging like social support, healthy life-styles, sufficient income and self-efficacy were considered. The group was free to choose which topics they wanted to discuss at the following three sessions. Every session dealt with one topic and lasted two hours. The following topics were chosen in the six courses that were evaluated: sleeping problems, memory problems, use of medicines, housing of older adults, osteoporosis, physical exercise and growing old in different cultures.

2.2. Behavioural model

Ajzen’s theory of planned behaviour and Bandura’s social learning theory were used in the program design [15,16]. The program was based on the assumption that social participation is related to three determinants: attitude towards aging, the influence of societal opinion (social influence) regarding the role of the elderly in society, and finally self-efficacy in engaging in new activities (Fig. 1). It was hypothesized that engagement in activities can be determined by a positive or negative attitude towards aging. A positive evaluation of existence as

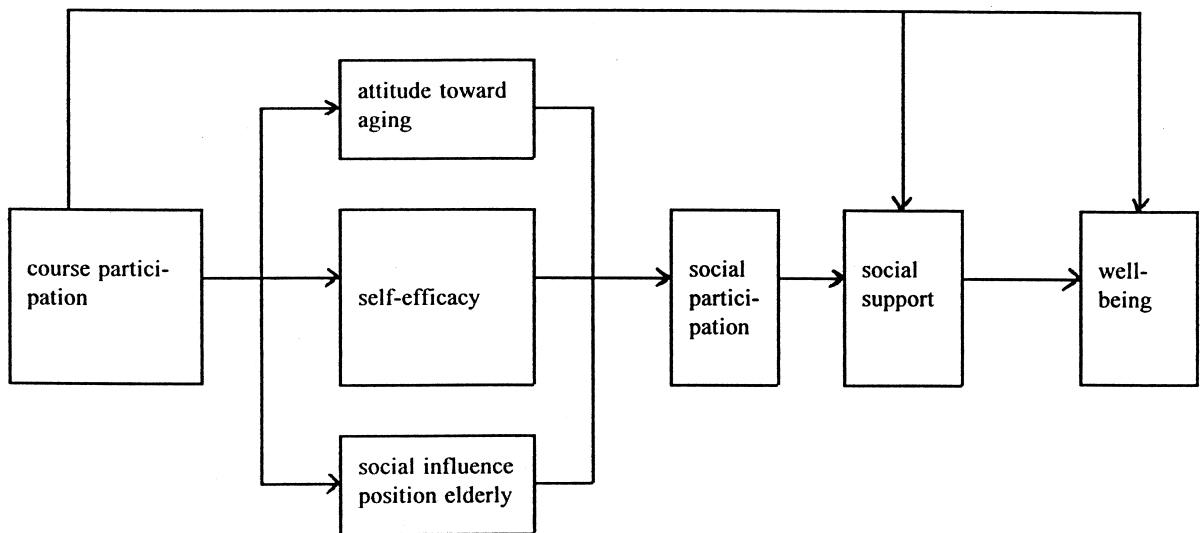


Fig. 1. Theoretical model of effect of course participation.

an older person, would have a positive influence on a person's capacity to stay active. The second determinant, social influence, is defined as the processes whereby people, directly or indirectly, influence the thoughts, feelings and actions of others [17]. The course was aimed at the individual's perception of societal opinion. In contrast to the disengagement-theory, it was argued that older adults in general, do not wish to diminish interaction with society. They continue activities and develop new interests to substitute for losses caused by the changes brought about by retirement. It was postulated that when people consider themselves to be productive persons who can contribute to society, instead of the prevailing norm that elderly have little say, they will be inclined to participate in activities. The third determinant, self-efficacy from Bandura's social learning theory, is a powerful determinant of behavioural change. Self-efficacy is similar to perceived behavioural control in the theory of planned behaviour, meaning a person's expectation regarding his capability to realize a desired behaviour [16,18–20]. Studies among older adults indicate that individuals with high self-efficacy are more likely to change their behaviour and experience better physical and mental health [21–23]. In the theoretical model presented in this article it is postulated that when an individual's perception of self-efficacy in starting

new activities is high, they will more likely be successful in engaging in these activities. Participation in 'Successful Aging' in the model is not only connected indirectly to social support and wellbeing through the promotion of social participation and its determinants. Participation in the course, being an act representing an active life, will also have a direct effect on the perceived social support and wellbeing of its members (Fig. 1). The behavioural model used in 'Successful Aging' and presented in this article was based on hypotheses, which have to be studied in more depth.

2.3. Course strategies

Information transfer, role modeling, education by peers and group interaction were strategies used in the course. The senior health educators passed on information to fellow senior citizens about healthy lifestyles. The introduction of health issues was used as a vehicle to discuss repeatedly the three determinants of social participation. For instance in a session about forgetfulness, the senior health educator addressed the question of barriers to subscribe for a memory training course, thus the self-efficacy to participate in memory training became an issue. The senior health educators communicated continuously the message that older peo-

ple can make an important contribution to society, and opposed the common idea that they play only a marginal role. The educators served as role models, representing older adults who still have a say [16]. They fulfil the policy target of social participation and function as an example for successfully living an independent and active life. Use of peers enhances the credibility of the information given by the health educator [24]. It was expected that communication using peer educators, who were close in age, beliefs, and social status, to the target population, would be more effective. Finally, course members learned from each other, during the discussions and group interaction sessions, where information and experiences were exchanged, and social support was available.

3. Method

All independent living older adults, aged 55 to 79 years, in the community of Ridderkerk were invited by direct mail to participate. A more detailed explanation of this procedure is discussed in a separate paper on characteristics of people interested in participation in the course ‘Successful Aging’ [25]. At the start of the course, 320 individuals were interested in participation. Later more people subscribed to the course, but they were excluded from the evaluation research. In the order in which the applications were received, 150 individuals were assigned to the experimental group. This procedure was chosen because of the shortage of time before course commencement, and because of the short time-span, it was not expected that ‘early’ subscribers would differ from ‘late’ subscribers. A total of 138 applicants participated in the course. The experimental group was split up into six course groups. The other 182 interested people formed the control group and were given the opportunity to join the course after the research period.

3.1. Measures

The experimental and control group received postal questionnaires at three time points: a pre-test right before the start of the course (t_0), a post-test directly after finishing the course (t_1) and another

three months after termination (t_2). The target population was confined to older adults up to 79 years of age, as they could be expected to be capable of filling out the postal questionnaires without problems. Attitude, perceived social influence, self-efficacy, social participation, social support and wellbeing were operationalized in the questionnaires as follows. Attitude was measured by five items, forming a scale of negative and positive opinions about growing older, for example ‘as an older adult one feels that every day is the same’ ($\alpha = 0.64$). Perception of the societal opinion on the position of elderly in society was measured by one item: ‘older adults have a too little say’. Self-efficacy in starting new activities was measured using the Dutch version of the validated general self-efficacy scale [26,27]. This scale measures self-efficacy expectations across a variety of situations and consists of two components: initiation and persistence of behaviour, and efficacy in the face of adversity. The scale consists of 16 items, e.g. ‘when I decide to do something, I go right to work on it’ ($\alpha = 0.83$). Social participation was measured by having the respondents rate the number of hours per week spent recently on hobbies and activities with other people, outside the home. This question was not asked at t_1 because of the possible interference of course participation. Social support was measured using the validated scale of perceived everyday support, consisting of ten items like ‘do you feel that attention is being paid to you?’ ($\alpha = 0.88$). [28]. Wellbeing was measured using a short version of the validated Dutch scale for wellbeing of the elderly (8 items) [29]. The scale measures negative and positive feelings, experienced by the respondent, e.g. ‘on the whole I am satisfied with myself’ ($\alpha = 0.81$). Subjective health was assessed by answering a question in which respondents could rate their health from 1 (very bad) to 10 (very good).

Some sociodemographic characteristics were asked in the questionnaire at t_0 : gender, age, marital status and level of last occupation. Physical functioning was measured using the 6-item sub-scale of the MOS Shortform General Health Survey (MOS-20) ($\alpha = 0.86$) [30–32]. Data were also gathered concerning locus of control (‘to what extent can you influence your own health?’) and life-events (‘have there been radical changes in your life the last few years?’).

3.2. Analysis

The response rates of the experimental and control group were established. Differences in background characteristics in the experimental and control group were tested statistically using the Chi-square test when variables were dichotomous, and Mantel-Haenszel test for linear trend when trichotomous. The effect of attending the course was analyzed using repeated measures analysis of variance, with the scores of the outcome measure at t_1 and t_2 as dependent variables, and the score at t_0 as covariate (MANOVA). Membership of experimental or control group was the between-subjects factor and time of measurement the within-subjects factor. The between-subjects main effect averaged over t_1 and t_2 , and interaction effect were studied. When there was a significant interaction effect ($P < 0.10$), mean scale scores of the experimental and control group on the outcome measures were assessed separately at t_1 and t_2 . When an interaction effect was absent, the mean of the scores of the outcome measure at t_1 and t_2 was assessed. The scores were adjusted for the initial level of the outcome measure using multivariate regression analysis. Differences in mean scale scores between the experimental and control group and 95%-confidence intervals (95%-C.I.s) were assessed.

SPSS/PC + 5.0 was used in the analysis procedures [33].

4. Results

4.1. Response

The response rates of people filling out the questionnaire at all three time points were 51% for the experimental group, and 41% for the control group. Gender, age and marital status of the response groups did not differ from the originally selected experimental and control group. The experimental and control group did not differ significantly in background characteristics (Table 1). Neither did they differ with respect to the initial scores of the outcome variables at t_0 (Table 2). These results agree with the assumption that the experimental group ('early' subscribers) did not differ from the control group.

4.2. Effectiveness

The crude, unadjusted, outcome scores of the pre-test and post-tests are given in Table 2. A significant difference of mean scores between the experimental

Table 1
Background characteristics of experimental ($n = 71$) and control group ($n = 75$)

		Experimental group %	Control group %
Gender	male	37	39
	female	63	61
Age	55–64	52	43
	65–74	32	47
	75–79	16	11
Marital status	married	55	65
	unmarried	45	35
Radical changes in life the last few years	no/few	37	43
	moderate/many	63	57
Extent to which one can influence one's own health	internal	78	85
	external	22	15
Physical limitations	many	37	28
	moderate/few	32	31
Socio-economic status (occupational level)	no	31	41
	low	33	45
	moderate	32	34
	high	35	21

Table 2

Effect of the course: crude and adjusted mean scale-scores and difference in mean scores between experimental and control group (95%-confidence intervals)

		Experimental group (E)	Control group (C)	E – C	95%-C.I. ^a
Interaction time × treatment		M	M		
Social influence position in society (1–5) ^b	t_0	2.41	2.43	– 0.02	(–0.47–0.43)
	t_1	2.39	2.61	– 0.22	(–0.68–0.24)
	t_2	3.05	2.51	0.54	*(0.08–1.00)
	t_1^c	2.40	2.61	– 0.21	(–0.65–0.23)
	t_2^c	3.05	2.50	0.55	*(0.13–0.96)
<i>No interaction</i>					
Attitude towards aging (5–25)	t_0	17.78	17.45	0.33	(–1.04–1.70)
	t_1	17.01	17.78	0.77	(–0.53–2.07)
	t_2	17.62	16.76	0.86	(–0.55–2.28)
	$t_{1,2}^d$	17.59	16.99	0.60	(–0.24–1.44)
Generalized self-efficacy (16–80)	t_0	59.47	60.68	– 1.21	(–4.72–2.29)
	t_1	61.32	60.53	0.79	(–3.19–4.78)
	t_2	60.47	60.20	0.27	(–3.58–4.12)
	$t_{1,2}^d$	61.41	59.95	1.46	(–1.07–3.98)
Time spent on hobbies and activities (hours/week)	t_0	6.55	6.93	– 0.38	(–2.94–2.17)
	t_2	6.61	6.61	– 0.01	(–2.53–2.52)
	t_2^c	6.75	6.48	0.27	(–1.49–2.02)
Social support	t_0	31.77	32.45	– 0.68	(–2.06–0.70)
	t_1	32.36	32.00	0.78	(–1.18–1.90)
	t_2	32.18	31.56	0.62	(–0.83–2.07)
	$t_{1,2}^d$	32.54	31.56	0.98	*(0.05–1.91)
Wellbeing (0–20)	t_0	14.81	14.59	0.22	(–1.40–1.84)
	t_1	14.91	14.66	0.25	(–1.29–1.79)
	t_2	15.44	14.49	0.94	(–0.69–2.58)
	$t_{1,2}^d$	15.09	14.66	0.42	(–0.43–1.28)
Subjective health (1–10)	t_0	7.18	7.50	– 0.33	(–0.81–0.16)
	t_1	7.42	7.25	0.17	(–0.32–0.65)
	t_2	7.43	7.34	0.10	(–0.35–0.54)
	$t_{1,2}^d$	7.55	7.18	0.37	*(0.11–0.63)

^a 95%-confidence interval.

^b Scale range.

^c Values of the outcome variables have been adjusted for the initial level at t_0 .

^d Values of the outcome variables at t_1 and t_2 have been averaged and adjusted for the initial level at t_0 .

* Confidence interval does not contain value 0.

and control group was only found for the outcome of social influence at t_2 . A multivariate repeated measures analysis (MANOVA) was used to determine the effect of the course, taking into account the initial level of the outcome variable in the pre-test. Interaction between treatment (course membership) and time of measurement was found for the outcome of social influence ($F = 9.74$, $P < 0.01$). The effect was therefore analyzed separately at each time point, however, because of the almost equal pre-test scores of the experimental and control group, the multi-

variate analysis did not change the results of the crude scores at bivariate level. At t_1 immediately after course termination the respondents did not differ significantly with respect to their perception of the societal opinion regarding the position of elderly in society (Table 2). After three months (t_2) the experimental group compared to the control group disagreed significantly more with the opinion that elderly have little say (difference in adjusted mean scores of 0.55 (95%-C.I. 0.13–0.96)).

In the repeated measures MANOVA no significant

interaction between treatment and time of measurement was found for the other outcome measures. The adjusted scores on the post-tests at t_1 and t_2 are therefore presented in Table 2 as group means of the single scores averaged over t_1 and t_2 . An effect on attitude towards aging and self-efficacy still was absent, when the pre-test scores of the experimental and control group were taken into consideration. The difference between the experimental and control group in time spent on hobbies and activities with other people outside the home, as an indication of social participation, three months after course termination was also not significant. The course had an effect on the perception of everyday social support among its members (a difference in mean averaged scores at t_1 and t_2 of 0.98; 95%-C.I. 0.05–1.91). The scores of the course members increased from pre-test to post-tests, while the scores of the control group decreased. An effect on general wellbeing was absent, but a clear effect was found on the rating of participants of their subjective health. The course members gave their health at t_1 and t_2 a mean averaged score of 7.55, while the score of the control group was 7.18 (difference in mean averaged scores of 0.37; 95%-C.I. 0.11–0.63). Again a rise in mean scores among the course members could be observed against a fall in the control group.

When multiple testing was taken into account ($P < 0.01$ instead of 0.05), the effect on subjective health remained significant at a 99%-confidence interval (99%-C.I. of mean averaged scores at t_1 and t_2 : 0.02–0.72). The effect on perceived social influence at t_2 was lost (99%-C.I. –0.01–1.10). The effect on social support was also no longer significant (99%-C.I. of mean averaged scores at t_1 and t_2 : –0.25–2.21).

5. Discussion

The effectiveness of the peer-led health education course ‘Successful Aging’ was evaluated with regard to the following outcome measures: attitude towards aging, perceived social influence, generalized self-efficacy, social participation, social support and wellbeing. Although joining the course is already an act of active aging, assessment of the impact of the course on determinants of participation is relevant in

view of the policy aim of motivating older people to become more active. The course is thought to have encouraged people to engage in new (health promotion) activities which should result in an improvement in well-being.

This evaluation showed an effect on several outcome measures, however the effect size was small. The course ‘Successful Aging’ had an effect on the opinion of participants regarding the position of elderly. The experimental group, three months after course termination, showed less agreement with the current societal view (social influence) that ‘elderly have a too little say in society’ when compared to the control group. Social learning theory indicates that modeling can be viewed as exerting indirect social influence [16,19]. Education by peers, who act as role models for living an active life, will have contributed to the effect of the importance attached to the elderly. A significant effect on attitude towards aging and generalized self-efficacy could not be found. The strategies used in the course, consisting of only four sessions, were presumably not powerful enough to accomplish an effect. Another explanation may be a ‘ceiling-effect’. Participants (and control group) were prepared to join the course, so their initial scores on the outcome measures were already high. Lack of results might also be due to the general nature of the scales used. For instance, the scale used to measure self-efficacy may not have been sensitive enough to monitor the intended change [20].

The limited effect on the determinants of social participation did not result in a change of activity level, as can be expected from the theoretical model presented in this article (Fig. 1). The time spent on activities and hobbies with other people outside the home among the experimental and control group did not differ significantly. The course members did not increase engagement in activities that were promoted by the senior health educators, like physical exercise programs, and courses in the field of memory training or dealing with sleeping problems. It should be mentioned that the follow up period during which people could take up activities was very short. Moreover, the follow up took place during the summer vacation period, when many social activities stop in the Netherlands.

The course did achieve an effect on the perception

of the daily social support available from the environment. Participation in the course group had influenced social support directly. The group served as a substitute support system for individuals who lacked sufficient informative and emotional support, and because the effect was maintained after three months, the expectations of the social support available in the environment will also have been changed. An indirect influence of course attendance on social support as described in the theoretical model is not plausible because of the absence of an effect on social participation.

The change of perceived social support did not result in an improvement of wellbeing measured by a comprehensive scale, however an effect on the more limited measure of subjective health was present. Directly after finishing the course, and after a lapse of three months, the subjective health valuation of participants changed in a favourable way. The effect on subjective health may have been accomplished by the discussion on health related topics in the course. A study into the characteristics of the older people of Ridderkerk who were interested in participation in the course, showed a lower wellbeing among the interested people compared to the uninterested [25]. Both the experimental and control group were recruited from the older adults who showed interest. Apparently they subscribed to the course in order to work on their health. The need of members of the control group for information and to change their behaviour may explain the decline in perceived social support and subjective health, while they were on the waiting list.

The theoretical model presented in this article is hypothetical, although this study did shed some light on the mechanism of change for wellbeing through participation in a peer-led health education program. A closer study into the determinants of social participation has yet to be undertaken. This evaluation showed that the message of the peer educators to stay active had, after three months, strengthened the course participants in their opinion that society attaches importance to the elderly. The course was not powerful enough to change all determinants of social participation. The experimental group did not take up more activities, however the follow up period of three months may have been too short to show an effect. Other strategies that link up with the

course objective of promotion of social participation have to be considered to enlarge effectiveness. For instance site visits to social activities may be added to the course program of 'Successful Aging'. The evidence from the literature on the beneficial effect of social participation on wellbeing could not be confirmed in this study, however a direct effect of the course on social support and subjective health of its members was present. They experienced increased social support and a better subjective health.

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