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Implementation of the self-management of well-being interventions

Determinants and effects

Daphne Kuiper

IMPLEMENTATION OF THE SELF-MANAGEMENT OF WELL-BEING INTERVENTIONS DETERMINANTS AND EFFECTS

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Determinants and effects

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In liefdevolle herinnering aan mijn ouders

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Chapter 1

General Introduction

INTERVENING ON SELF-MANAGEMENT OF WELL-BEING IN OLDER AGE: WHY AND HOW?

Large increases in both number and proportion of older individuals are forthcoming worldwide [1]. Depending on the definition of health, this population-aging can be interpreted as a threat or a challenge. If health is defined as 'a state of complete physical, mental and social well-being' (WHO, 1948) the mere part of the older population is considered to be 'ill' and the threat of an overloaded health and welfare system and escalating costs is opportune. However, if health is defined as 'the ability to adapt and self-manage in the face of social, physical, and emotional challenges' [2], population-aging becomes less threatening, since many older adults display the resilience to cope with age-related limitations, and function with fulfilment and a sense of well-being, despite chronic disease or illness. In other words: population-aging can either be perceived as a burden (greying society) with unaffordable medical costs, or as a blessing (silvering society) with the particular challenge to achieve that older adults are willing and able to actively self-manage their process of ageing for as long as possible [3]. Combined with the contextual trends of decentralization (i.e. the transfer of financial resources and authority to a lower governing level) and integration of health and social care at the community level [4], intervening on self-management of well-being in older age is opportune [5] and should be considered a societal responsibility in the upcoming years in the Netherlands and throughout Europe.

Various self-management approaches have been developed since the 1980's. Most of these disease-related self-management interventions focus explicitly on enhanced self-management in one specific physical health problem (e.g. asthma, diabetes or arthritis) [6-8] and are reactive in nature [9]. A considerably smaller proportion of self-management interventions target multiple aspects of functioning (physical, mental and social) and include both reactive and proactive aspects. Especially for people of older age these broad self-management interventions are relevant, since chronic conditions, depression and loneliness often occur simultaneously when aging [10-12].

This thesis concerns the implementation the Self-Management of Well-being (SMW) interventions [in Dutch: GRIP&GLANS cursussen]. Based on the Self-Management of Well-being theory [3], the SMW interventions aim to improve self-management abilities and well-being in middle-aged and older individuals. The SMW interventions distinguish themselves from other (disease specific) self-management approaches by taking a broad approach, in which adults aged 55 years and older are targeted and multiple aspects of well-being are addressed. Moreover, the SMW interventions are not only reactive, but also preventive in nature, because the self-management abilities taught are not only intended as a response to losses, but also to anticipate on and cope with future physical, mental and social challenges

[13]. The SMW interventions explicitly focus on what individuals are still able and willing to do and in that sense take a positive outlook on aging. The SMW interventions have been thoroughly tested and proven effective in various randomized controlled trials [10, 11, 14]. Also, the hypothesized mechanism of the interventions – higher levels of self-management ability result in higher levels of well-being – has been confirmed [15]. Knowing that these SMW interventions work and how they work, it is now time to make them available to as many older adults as possible and establish this ‘silvering’ society in which the majority of the population, aged 55 years and up, is able ‘to adapt and self-manage’ and thus considered healthy.

IMPLEMENTATION: THE MISSING LINK BETWEEN SCIENCE AND PRACTICE

Unfortunately, the mere existence of well designed, theory-driven and thoroughly tested interventions, such as the SMW interventions, is not sufficient to impact public health. To impact public health the SMW interventions have to be sustainably adopted and implemented in settings where its intended target group will be reached. This process of putting to use or integrating an evidence-based intervention within a setting is called implementation [16]. Implementation is the missing link between science and practice, because the transfer of evidence-based interventions into routine practice is not spontaneous and only well-implemented evidence-based interventions have impact [17, 18]. Therefore, in the case of the SMW interventions, we have to determine how to implement them well.

Historically, implementation has not been the concern of researchers. Academic success is known to rely more on scientific than societal impact [19]. As a result, the knowledge on how to develop and test interventions has far outpaced the knowledge on how to implement these programs with public health impact. Since Rogers’ generalized theory of ‘Diffusion of Innovations’ in 1962 [20, 21], the field of implementation science has truly emerged [22]. However, it was not until the early 2000s that important knowledge and findings on implementation from different research traditions (agriculture, business, engineering, medicine, manufacturing and marketing) and domains (e.g. mental health, juvenile justice, education) were synthesized in systematic reviews [23, 24]. Only a few years later, in 2007, a new journal called Implementation Science was installed to provide a platform for this specialized area of research. Its main goal was limiting the dispersion of implementation research articles across a wide range of journals. In the new journal, ‘implementation science’ was defined as the scientific study of methods to promote the systematic uptake of research

findings and other evidence-based practices (EBPs) into routine practice, and hence, to improve the quality and effectiveness of health services and care [25].

As research on implementation evolved, so did the understanding of its complexity and the many challenges ahead. Proctor et al. state in 2009: “there is little evidence that evidence-based treatments are either adopted or successfully implemented in community settings in a timely way” (p. 24) [22]. To advance implementation science, not only the consistency in terminology and constructs had to mature, but also the methodology of design, outcome-parameters and analyses techniques had to evolve in order to capture the multiple levels of influence and distinguish between implementation outcomes and intervention outcomes. How we accounted for these challenges, is explained in more detail in the paragraph of setting-up the SMW implementation project.

Since 2006, we aimed at incorporating the proven effective SMW interventions in health and social care for older adults. In 2007, national dissemination and implementation of the SMW interventions was piloted and evaluated [26], but did not result in routine use. Therefore, we embarked in 2010 on this project to systematically implement the SMW interventions in the four Northern provinces surrounding the University Medical Center Groningen with scientific attention for its determinants of use in professionals and effects in participants.

THE SELF-MANAGEMENT OF WELL-BEING (SMW) INTERVENTIONS

As the main focus of this thesis is the implementation of the SMW interventions, we will only shortly touch upon the background of the SMW interventions. The ‘blueprint’ for the design of the SMW interventions stems from the Self-Management of Well-being (SMW) theory [3, 13]. The SMW theory postulates that individuals with better self-management abilities will attain higher levels of well-being, provided that these self-management abilities are directed at five crucial basic human needs (i.e. ‘comfort’ and ‘stimulation’ (two basic physical needs), ‘affection’, behavioral confirmation’ and ‘status’ (three basic social needs) [27]. Moreover, the SMW theory specifies six core self-management abilities: ‘taking initiative’, ‘being self-efficacious’, ‘be willing to invest’, ‘having a positive frame of mind’ and being able to take care of ‘multifunctionality’ and ‘variety’ in one’s resources. Cross-tabulating the six core self-management abilities with the five basic human needs, yields a blueprint for the development of relevant information and exercises to be taught in the SMW interventions (see Figure 1).

Figure 1, representing the explicit link between self-management abilities and needs fulfillment, can best be clarified by giving an example: we look at 'friendship', as an important resource for fulfillment of the basic need for affection. Friendship rarely is a one-way street. Sometimes you have to take the initiative and be self-confident that your friend will appreciate the initiative. So, the abilities to take initiative and to be self-efficacious with regard to one's own behavior are prerequisites in achieving and maintaining friendship. Moreover, the maintenance of friendship requires the ability to invest in the friendship. By investment behavior, we mean that you are willing to do something for a friend without directly expecting anything in return. In turn, investment behavior is helped by the ability to have a positive frame of mind with regard to this friendship in the future. Finally, the abilities to ensure multifunctionality (one friend to fulfill several needs) and variety (multiple friends to anticipate on loss of friendship) optimize the outcome of friendship for well-being.

		Basic human needs				
		Comfort	Stimulation	Affection	Behavioral confirmation	Status
Self-management abilities	Taking initiative					
	Self-efficacy					
	Investment behavior					
	Positive frame of mind					
	Multifunctionality					
	Variety					

Figure 1 Matrix of six self-management abilities and five basic human needs (translated with permission from N. Steverink, 2009 [28]).

For intervention purposes, the five basic needs have been translated to the acronym 'GLANS', which is Dutch for 'luster' or 'gleam'. G for *Gemak & Gezondheid* [Comfort], L for *Leuke bezigheden & Lichamelijke activiteit* [Stimulation], A for *Affectie* [Affection], N for *Netwerk & Nuttig voelen* [Behavioral confirmation], and S for *Sterke punten* [Status]. Analogue to the healthy-diet food-plate, the 'GLANS-schijf-van-vijf' [GLANS-plate with five slices] has been developed to help participants reflect on their available resources for overall well-being in a simple manner (see Figure 2).

In the first intervention session, the 'GLANS-schijf-van-vijf' is introduced and participants are invited to self-diagnose their situation; who or what do they have in each slice? Subsequently, they are encouraged to set a (small) goal for the coming week, which – in their opinion – enhances or sustains the fulfillment of a basic need (e.g. send a postcard to an old neighbor

to reconnect and revive friendship). In the following week, regardless of the level of goal attainment, participants are invited to reflect on preferably positive self-management behaviors (taking initiative: I bought the card and a stamp) and validated for future attempts (being self-efficacious: I trust I will find the address and think of something to write). Gradually and consistently, they become aware and proficient in how to get grip on the luster in their life.

Figure 2 De GLANS-schijf-van-vijf [GLANS-plate with five slices]

Based on the SMW theory, three SMW interventions have been developed and tested in RCTs. The interventions share the same theoretical background and differ only in the delivery-mode (individual intervention, group intervention, self-help book). Differences in the delivery mode are derived from the sub-population they aim to target. The individual SMW intervention (home visits) targets older adults who are relatively frail, experience multiple physical and social losses [10] and are more home-bound; the SMW group intervention targets women aged 55 years and older, who experience mostly social losses [11]; and the SMW self-help intervention (bibliotherapy) targets older adults who experience minor physical and/or social losses [14]. RCT's that tested all three modes, demonstrated that, compared to the control groups, the participants in the intervention groups had higher levels of self-management ability and well-being after completing the intervention [10, 11, 14].

SETTING UP THE SMW IMPLEMENTATION PROJECT

In 2009, a national SMW pilot-implementation project showed that, despite rigorous training and clear manuals for professionals, the SMW interventions were adopted, but remained under-utilized [26]. Clearly, only educating professionals was not enough to arrive at integration of the SMW interventions in health and social care. As systematic empirical knowledge on the determinants of successful implementation of the SMW interventions was lacking, it was not known how to build better and more effective implementation strategies. Therefore, it was a necessity to set up a new implementation project, with an effectiveness-implementation design. In 2010 the project proposal was funded by The Netherlands Organisation for Health Research and Development [ZonMw], in its National Program for the elderly [NPO], as one of the few implementation studies within this program [29].

In setting up the SMW implementation project, we had to consider several important aspects. We elaborate on the four most important aspects: 1) theoretical underpinnings, 2) design, 3) outcome parameters and 4) analyses techniques.

1) Theoretical underpinnings

First, we needed a theory, model or framework to underpin and operationalize the observations and assessments in our implementation project. This would help to move beyond the 'trial and error' mode of earlier empirical implementation studies, undertaken from a pragmatic rather than a theory-driven perspective [24, 26]. Only a fifth of early implementation studies until 1998, used some kind of theory [30]. As implementation is known to be complex, messy and demanding [31], a framework would help to structure both our project and the research activities. It was known that not only many factors are potentially impeding or facilitating, these determinants were also known to vary per phase and operate at multiple stakeholder levels simultaneously. In the multitude of options, we choose the Dutch Fleuren et al. framework [32] (see Figure 3) because it incorporated a multi-level and a multi-stage approach of the innovation process in a comprehensive and practical manner [33].

This framework specifies 50 determinants in four levels, upon which strategies can be built that help innovations, such as the SMW interventions, to transit from one stage to the next. To fit our aim, some adaptations were made to the Fleuren framework. These adaptations regarded re-assignment of the determinants to the stakeholder levels present in our project (target group, professionals, organizations and financial political context) and a focus in assessment on only the last three stages of the innovation process (adoption, implementation and continuation).

Figure 3 Framework representing the innovation process and related categories of determinants. With permission of Oxford University Press from: Fleuren, M. et al. *Int J Qual Health Care* 2004, 16(2):p108.

2) Design

We opted for a design that takes an a priori dual focus of assessing both intervention-outcomes and implementation-outcomes. This is called a hybrid effectiveness-implementation research design [34]. In simple wording, we aimed not only to learn about the determinants of successful implementation, but we also aimed to assess whether the effects found in the Randomized Controlled Trials could be reproduced in real world settings. The latter is of utmost importance, since interventions are traditionally expected to perform worse in real world practice than in the controlled trial setting [35] due to, for example, changes in the delineated target group or deviation from manualized protocols.

3) Outcome parameters

Given the hybrid effectiveness-implementation design, distinguishing between SMW intervention-outcomes and SMW implementation outcomes was critical. Choosing the SMW intervention-outcomes was relatively easy since they had to be the same as in the RCTs, namely: self-management ability and well-being. Self-management ability and well-being were assessed among the participating older adults by means of validated questionnaires [36, 37].

Choosing the outcome parameters of the implementation process was a bit harder, since the conceptualization and evaluation of implementation success is still an unresolved issue in the field of implementation science [38]. We decided to operationalize the degree of implementation success by outcome parameters that were observable, relevant and uniform for all professionals and organizations participating in the project. This led to a choice for

three outcome parameters. The first outcome parameter was 'use', simply discriminating between trained professionals that used or did not use the SMW interventions at least once. The second was 'pace', indicative for the time it took professionals to start up and use the SMW intervention for the first time after being trained. The third outcome parameter of implementation success was 'performance' or 'frequency of use', indicating the number of SMW interventions delivered by professionals. Use, pace and performance were assessed by direct observations by the study team, and not retrospectively indicated by professionals, as often done in previous studies [39, 40]. The study team kept records of date of training completion and date of SMW intervention use for each professional.

To identify the determinants of implementation success, factors from the theoretical Fleuren framework (independent variables) were operationalized and assessed at three fixed points in time (T1, T2 and T3) with digital questionnaires for professionals and interviews with managers and local policymakers.

4) Analyses techniques

To take into account that the determinants of implementation success operate on hierarchically structured stakeholder levels, we choose a multilevel approach to analyze the collected data. Only by employing multilevel statistical analyses techniques, we could anticipate that the outcome parameters would not only vary across professionals, but that they were also affected by characteristics of the organizations [41]. Or to put it in simple words, applying multilevel statistical analysis allowed us to determine: "What matters most when aiming to stimulate the appropriate and committed use of an ESI, such as the SMW interventions? Determinants at the professional level, at the organizational level, or both?"

OVERALL AIM AND RESEARCH QUESTIONS

The overall aim of this project was to obtain evidence on how to best perform future implementation efforts on innovative evidence-based interventions, such as the SMW interventions, in health and social care in the Netherlands. Its main objectives are threefold. The first objective was to describe the success of implementation indicated by use, pace and frequency of use of the SMW interventions after professionals in health and social care have been trained to deliver them to community dwelling older adults. The second objective was to identify the determinants of successful implementation by applying a multilevel (professionals nested in organizations) perspective. More specifically, which factors contribute to relatively quick and frequent use of the SMW interventions in practice? The third objective was to assess and describe the short and long-term intervention-effects in participants after implementation.

These objectives have been translated in the following research questions that will be answered in this thesis:

1. How many professionals start using the SMW interventions after being trained and how long does it take before they use them for the first time?
2. How often do professionals use the SMW interventions to empower older adults?
3. What are the determinants of first use and the frequency of use of the SMW interventions when the nesting of professionals in organizations is taken into account?
4. To what extent can the short-term effects of the SMW group intervention be reproduced after implementation?
5. What longer-term effects of the SMW group intervention can be established? To what extent, and why?

OUTLINE THESIS

Chapter 2 describes the protocol of the implementation study. It explains how we disseminated the SMW interventions to the field of health and social care and subsequently monitored the process of implementation at multiple stakeholder levels simultaneously (target group, professionals, organizations and financial-political context). It also explains why the Fleuren framework was chosen to identify the determinants of successful implementation and which adaptations were made to fit our goals.

Chapter 3 presents the pace and determinants of first use of the SMW group intervention. Professional and organizational determinants are tested in a multilevel model to take their dependency into account.

Chapter 4 presents the frequency of use of the SMW group intervention in health and social care. Again, professional and organizational determinants are tested in a multilevel model to explore what matters most to attain frequent use.

Chapter 5 focuses on the reproduction of the effectiveness of the SMW group intervention by comparing self-management ability and well-being of participants in the implementation study with those in the original RCT. Additionally, differences in reach, adherence and program fidelity are investigated.

Chapter 6 explores how many, how, and why participants stayed in touch with each other, and functioned as social safety nets after finishing the SMW group intervention.

Chapter 7 discusses the main findings of this thesis, adds critical notes, describes lessons learned and gives directions for future implementation efforts of the SMW interventions and comparable psycho-social interventions.

REFERENCES

1. Christensen K, Doblhammer G, Rau R, Vaupel JW. Ageing populations: the challenges ahead. *Lancet*. 2009;374(9696):1196-208.
2. Huber M, Knottnerus JA, Green L, van der Horst H, Jadad AR, Kromhout D, Leonard B, Lorig K, Loureiro MI, van der Meer JW, Schnabel P, Smith R, van Weel C, Smid H. How should we define health? *BMJ*. 2011;343:d4163.
3. Steverink N, Lindenberg S, Slaets JP. How to understand and improve older people's self-management of well-being. *Eur J Ageing*. 2005;2:235-44.
4. Reijneveld SA. The return of community-based health and social care to local government: governance as a public health challenge. *Eur J Public Health*. 2017;27(1):1.
5. Jambroes M, Nederland T, Kaljouw M, Van Vliet K, Essink-Bot M, Ruwaard D. Implications of health as 'the ability to adapt and self-manage' for public health policy: a qualitative study. *Eur J Public Health*. 2015;26(3):412-6.
6. Clark NM, Becker MH, Janz NK, Lorig K, Rakowski W, Anderson L. Self-management of chronic disease by older adults. A review and questions for research. *J Aging Health*. 1991;3(1):3-27.
7. Barlow J, Wright C, Sheasby J, Turner A, Hainsworth J. Self-management approaches for people with chronic conditions: a review. *Patient Educ Couns*. 2002;48(2):177-87.
8. Newman S, Steed L, Mulligan K. Self-management interventions for chronic illness. *Lancet*. 2004;364(9444):1523-37.
9. Lawn S, Schoo A. Supporting self-management of chronic health conditions: Common approaches. *Patient Educ Couns*. 2010;80(2):205-11.
10. Schuurmans H. Promoting well-being in frail elderly people: Theory and intervention. Dissertation. Groningen: Groningen University; 2004.
11. Kremers IP, Steverink N, Albersnagel FA, Slaets JP. Improved self-management ability and well-being in older women after a short group intervention. *Aging Ment Health*. 2006;10(5):476-84.
12. Bode C, de Ridder DTD, Kuijter RG, Bensing JM. Effects of an intervention promoting proactive coping competencies in middle and late adulthood. *Gerontologist*. 2007;47(1):42-51.
13. Steverink N. Successful development and aging: theory and intervention. In: Pachana NA, Laidlaw K, editors. *The Oxford Handbook of Clinical Geropsychology*. Oxford: Oxford University Press; 2014.
14. Frieswijk N, Steverink N, Buunk BP, Slaets JP. The effectiveness of a bibliotherapy in increasing the self-management ability of slightly to moderately frail older people. *Patient Educ Couns*. 2006;61(2):219-27.
15. Goedendorp M, Steverink N. Interventions based on self-management of well-being theory: pooling data to demonstrate mediation and ceiling effects, and to compare formats. *Aging Ment Health*. 2017;21(9):947-53.

16. Rabin BA, Brownson RC, HaireJoshu D, Kreuter MW, Weaver NL. A Glossary for Dissemination and Implementation Research in Health. *J Public Health Manag Pract.* 2008;14(2):117-23.
17. Fixsen DL, Naoom SF, Blase KA, Wallace F. Implementation: the missing link between research and practice. *APSAC Advisor.* 2007;19(1-2):4-11.
18. Durlak JA. Studying Program Implementation Is Not Easy but It Is Essential. *Prev Sci.* 2015;16(8):1123-7.
19. Bauer MS, Damschroder L, Hagedorn H, Smith J, Kilbourne AM. An introduction to implementation science for the non-specialist. *BMC Psychol.* 2015;3:32.
20. Rogers EM. Diffusion of innovations. New York: Free Press of Glencoe; 1962.
21. Skolarus TA, Lehmann T, Tabak RG, Harris J, Lecy J, Sales AE. Assessing citation networks for dissemination and implementation research frameworks. *Implement Sci.* 2017;12(1):97.
22. Proctor EK, Landsverk J, Aarons G, Chambers D, Glisson C, Mittman B. Implementation research in mental health services: an emerging science with conceptual, methodological, and training challenges. *Adm Policy Ment Health.* 2009;36(1):24-34.
23. Fixsen DL, Naoom SF, Blase KA, Friedman RM, Wallace F. Implementation research: A synthesis of the literature. Tampa: University of South Florida, Louis de la Parte Florida Mental Health Institute, The National Implementation Research Network; 2005.
24. Greenhalgh T, Robert G, Bate P, Kyriakidou O, Macfarlane F, Peacock R. How to spread good ideas. A systematic review of the literature on diffusion, dissemination and sustainability of innovations in health service delivery and organisation. London: National Co-ordinating Centre for NHS Service Delivery and Organisation R&D; 2004.
25. Eccles MP, Mittman BS. Welcome to Implementation Science. *Implement Sci.* 2006;1(1):1-3.
26. Elzen H, Steverink N. Een landelijk implementatie-project m.b.t. de GRIP- en GLANS-cursussen: een zelfmanagement-cursusaanbod voor ouderen. Eindrapport. [national implementation project of the GRIP and GLANS courses: a self-management of wellbeing program for older adults; internal report]: Groningen: University of Groningen, University Medical Center Groningen; 2009.
27. Lindenberg S. Social Rationality, Self-Regulation, and Well-Being: The Regulatory Significance of Needs, Goals, and the Self. In: Wittek R, Snijders TAB, Nee V, editors. *The handbook of rational choice social research.* Stanford, California: Stanford University Press; 2013. p. 72-112.
28. Steverink N. Gelukkig en gezond ouder worden: welbevinden, hulpbronnen en zelfmanagementvaardigheden. *Tijdschr Gerontol Geriatr.* 2009;40(6):244-52.
29. ZonMw. Nationaal Programma Ouderenzorg. In: Nationaal Programma Ouderenzorg. 2019. <https://www.zonmw.nl/nl/over-zonmw/innovatie-in-de-zorg/programmas/programma-detail/nationaal-programma-ouderenzorg/>. Accessed July 30, 2019.

30. Davies P, Walker AE, Grimshaw JM. A systematic review of the use of theory in the design of guideline dissemination and implementation strategies and interpretation of the results of rigorous evaluations. *Implement Sci.* 2010;5:14.
31. Rycroft-Malone J. The PARIHS framework—a framework for guiding the implementation of evidence-based practice. *J Nurs Care Qual.* 2004;19(4):297-304.
32. Fleuren M, Wiefferink K, Paulussen T. Determinants of innovation within health care organizations: literature review and Delphi study. *Int J Qual Health Care.* 2004;16(2):107-23.
33. Fleuren M, Wiefferink K, Paulussen T. Checklist determinanten van innovaties in gezondheidszorgorganisaties. *TSG.* 2010;88(2):51-4.
34. Curran GM, Bauer M, Mittman B, Pyne JM, Stetler C. Effectiveness-implementation hybrid designs: combining elements of clinical effectiveness and implementation research to enhance public health impact. *Med Care.* 2012;50(3):217-26.
35. Chambers DA, Glasgow RE, Stange KC. The dynamic sustainability framework: addressing the paradox of sustainment amid ongoing change. *Implement Sci.* 2013;8(1):117.
36. Schuurmans H, Steverink N, Frieswijk N, Buunk BP, Slaets JP, Lindenberg S. How to measure self-management abilities in older people by self-report. The development of the SMAS-30. *Qual Life Res.* 2005;14(10):2215-28.
37. Nieboer A, Lindenberg S, Boomsma A, van Bruggen AC. Dimensions of well-being and their measurement: The SPF-IL Scale. *Soc Indicators Res.* 2005;73:313-53.
38. Proctor E, Silmere H, Raghavan R, Hovmand P, Aarons G, Bunger A, Griffey R, Hensley M. Outcomes for implementation research: conceptual distinctions, measurement challenges, and research agenda. *Adm Policy Ment Health.* 2011;38(2):65-76.
39. Sanders MR, Prinz RJ, Shapiro CJ. Predicting utilization of evidence-based parenting interventions with organizational, service-provider and client variables. *Adm Policy Ment Health.* 2009;36(2):133-43.
40. Asgary-Eden V, Lee CM. So now we've picked an evidence-based program, what's next? Perspectives of service providers and administrators. *Prof Psychol Res Pr.* 2011;42(2):169-75.
41. Peugh JL. A practical guide to multilevel modeling. *J School Psychol.* 2010;48(1):85-112.

Chapter 2

Identifying the determinants of use of the G&G interventions for older adults in health and social care: protocol of a multilevel approach

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ABSTRACT

Background

Despite aging-related losses, many older adults are able to maintain high levels of subjective well-being. However, not all older adults are able to self-manage and adapt. The GRIP&GLEAM [Dutch: GRIP&GLANS] (G&G) interventions have shown to significantly improve self-management ability, well-being and loneliness in older adults. Actual use of the evidence-based G&G interventions, however, remains limited as long as the interplay between implementation factors at different hierarchical stakeholder levels is poorly understood. The aim of the study is to identify the determinants of successful implementation of the G&G interventions.

Methods/design

The study is performed in health and social care organizations in the northern part of the Netherlands. The degree of implementation success is operationalized by four parameters: use (yes/no), pace (time to initial use), performance (extent of use) and prolongation (intention to continue use). Based on the Fleuren model, factors at four hierarchical stakeholder levels (i.e. target group, professionals, organizations and financial-political context) are assessed at three measurement points in two years. The nested data are analyzed applying multilevel modeling techniques.

Discussion

In this study, health and social care organizations are considered to be part of multilevel functional systems, in which factors at different hierarchical stakeholder levels impede or facilitate use of the G&G interventions. Strengths of the study are the multifaceted measurement of use, and the multilevel approach in identifying the determinants. The study will contribute to the development of ecologically valid implementation strategies of the G&G interventions and comparable evidence-based practices.

BACKGROUND

Despite an increase in chronic diseases, people are living longer with less disability and fewer functional limitations [1]. Health, therefore, is recently being redefined into the more dynamic concept of ‘the ability to adapt and self-manage in the face of social, physical and emotional challenges’ [2]. Many older adults are able to adapt and self-manage, to maintain high levels of well-being, and to live independently up to very old age. Unfortunately, however, this does not hold for all older adults. Prevalence rates of loneliness [3, 4], social isolation [5], depression [6], and inactivity [7] in community-dwelling older adults are growing. Given the rapid increase in the number of older adults and the accumulation of the negative conditions mentioned, interventions that mitigate these conditions are called for [8].

The GRIP&GLEAM [Dutch: GRIP&GLANS] (G&G) interventions have shown to significantly improve self-management ability, well-being, and loneliness in older adults [9, 10]. Based on a common theoretical concept [11], two interventions have been developed: the G&G home visits and the G&G group course. Both interventions have been evaluated in randomized controlled trials [9, 10]. Positive effects were found on self-management ability, well-being and loneliness. The G&G interventions are designed for older people who have lost – or are at risk of losing – resources in several domains of functioning, which may lead to a diminished capacity for managing new losses or changes. Moreover, the G&G interventions are based on an explicitly positive concept: they focus on what individuals are still willing and able to do and not on the problems they are confronted with. The self-management abilities taught are not only intended as a response to loss but also as a tool to be used before loss has occurred. The G&G interventions are therefore also preventive in nature, aiming at the strengthening of one’s generative capacity to self-manage regarding all important aspects of well-being and health simultaneously [11].

Many older adults could benefit from the G&G interventions when the interventions would be routinely provided in health and social care services. However, the actual use of evidence-based practices (EBPs), such as the G&G interventions, remains limited in the Netherlands [12] as well as internationally [13, 14]. Despite the increasing availability of, and demand for, well-validated interventions, only about 50% of the interventions delivered in health care are evidence-based [15]. In social work this percentage appears to be even lower [16]. Moreover, actual use of EBPs is only significant to the extent that these practices are sustained for a longer period of time [17].

Three problems complicate the study of determinants of EBP-use. First, there is a wide array of facilitating and impeding factors affecting the use of EBPs. Systematic reviews produce comprehensive lists, ranging from 23 up to 50 different factors [18-22]. Second, EBP-use is a process, not an event [21]. Generally four stages are discerned: orientation, adoption,

implementation (i.e. actual use) and continuation [19]. Empirical evidence which factor is important at what stage is, however, scarce. Third and last, different factors seem to operate on different hierarchical stakeholder levels, such as the individual level, the organizational, and the financial-political level [23]. This makes the study of determinants of EBP-use extra complex and explains why explicit multilevel studies on the determinants of EPB-use are also still scarce.

Historically, the focus of most studies has been on the individual level of the professional who is expected to change his routine in a way that enables the use of the new EBP [24]. Recently, a growing number of studies also encompass factors at the organizational and the financial-political level [25, 26]. A serious problem of these studies is, however, that the design and statistical methods are not fit to capture the complex interplay between phenomena at the several different hierarchical levels [15]. For example, self-efficacy (individual professional level), positive work climate (organizational level), and funding (financial-political context level) have been identified as important facilitating factors to EBP-use [23]. But, as of yet, it is not known which of these factors is decisive with respect to EBP-use in the presence of the other two. Answers to this type of questions can only be found when factors at more than one stakeholder level are assessed simultaneously, and when the nested data are analyzed employing multilevel modeling techniques.

The overall aim of the study is to identify the determinants of successful implementation of the G&G interventions. The concrete objectives of the study are, first, to describe the variation in actual use between organizations, expressed in terms of pace, performance and prolongation. And, second, to explain this variation at consecutive time points in the process by analyzing the factors at four hierarchical stakeholder levels (i.e. target group, professionals, organizations and financial-political context).

THEORETICAL FRAMEWORK

In this study, the delineation of the stages of use, and the possible factors affecting the use of the G&G interventions, is theoretically informed by the model of Fleuren et al. [19]. In the past decade, a large number of models and frameworks on implementation processes has emerged [19, 20, 27-33]. Most of them acknowledge the multi-stage character (i.e. different consecutive phases) and the multi-level structure (i.e. factors at more than one stakeholder level) of the implementation process. We choose to use the Fleuren model above other models, because it incorporates the multi-level and multi-stage approach of implementation processes and combines it with comprehensiveness and practicality. No other model or framework seemed to give such detailed and clear directions to decide, for each stakeholder level, which factor could be important at what stage in the implementation process [34].

Categorized in four levels, the Fleuren model provides a list of 50 factors. A full description of each factor is given, as well as expectations about the direction of influence of each factor (e.g. 'high staff turnover' impedes and 'low staff turnover' facilitates implementation). This equipped us with adequate detail to prepare the content of the assessments in the consecutive measurement waves. For example, 'formal reinforcement' (a factor at the organizational level) is expected to facilitate the transition from adoption to initial implementation (i.e. the start of actual use) and 'observability of effects' (a factor at the professional level) is expected to facilitate the transition from implementation to continuation. Based on the Fleuren model, we were able to decide when to look at which factors and how to operationalize them.

Figure 1 shows the theoretical framework of the study. The process of innovation the organizations are expected to go through, is divided into three stages: adoption, implementation and continuation. All possible factors of the Fleuren model are categorized at four stakeholder levels (i.e. target group, professionals, organizations and financial-political context). Moreover, within each stakeholder level, we sorted the factors into theoretically meaningful clusters, such as innovation-related factors, work-related factors, etc. In Additional File 1 of this chapter the original model of Fleuren is described, as well as the minor adaptations we made.

Figure 1 Theoretical framework

METHODS

Overview of the project

The study described in this protocol is part of a larger project that aims to promote and support the use of the evidence-based G&G interventions in health and social care organizations in the northern part of the Netherlands. Besides identifying the determinants of use of the G&G interventions, another goal of the larger project is to determine the effectiveness of the G&G interventions again. However, the study protocol at hand will only describe the former study, i.e. the study on the determinants of successful implementation of the G&G interventions.

Four partly overlapping phases can be distinguished in the study at hand. In phase 1 the G&G interventions are disseminated to the field of social and health care organizations. This is being done by means of G&G workshops, given by the G&G project team, at strategic meetings where professionals and managers of organizations gather. Because the larger project, of which this study is part, is not a 'top-down' initiative, organizations participate voluntarily. So, any organization that wants to adopt the G&G-interventions can take part in the project. The goal of phase 1 is to motivate at least 15 organizations to adopt the G&G interventions and participate in the study. In phase 2 at least 30 professionals (two per organization) are trained to perform the G&G interventions. In phase 3 the trained professionals start implementing the G&G interventions in their organizations by recruiting older adults for participation and, subsequently, delivering the G&G interventions to them. The core of the empirical study takes place in phase 3. During that phase, the stages of implementation each organization goes through, are being monitored continuously by the project team, and the facilitating and impeding factors will be assessed at all stakeholder levels in three data collection waves. In phase 4 the data analyses will be executed. A detailed description of the four phases is given in Additional File 2 of this chapter.

The study protocol has been evaluated by the ethics committee of the University Medical Center of Groningen in May 2010. The study was considered to evaluate care as usual and therefore the study was exempted from the Medical Research Involving Human Subjects Act. The study was further performed in accordance with the Helsinki declaration. Informed consent will be given orally.

The interventions

The two G&G interventions have the same theoretical basis [11], but are available in two delivery modes: the G&G home visits and the G&G group course. Both are considered in the empirical study at hand. The G&G home visits are delivered by a G&G coach in six individual home visits of 1,5 hours. The G&G group course is delivered by two G&G teachers in six weekly meetings of 2,5 hours and a booster session after three months. The home visits are intended to be delivered to both women and men, aged > 65 years, who are physically

and psycho-socially vulnerable and unable to travel to a group location. The group course is intended to be delivered to a group of around $n=10$ socially vulnerable women, aged > 55 years, who subscribe individually, and are physically capable of travelling to a group location. Both G&G interventions are described in detail in manuals, one for the G&G coach and one for the G&G teachers. There is also a workbook for each participant. The content of the G&G interventions is described in detail elsewhere [9, 10].

The training by which professionals become a certified G&G coach or G&G teacher involves two and a half days, and is given by master trainers of the G&G Program of the University Medical Center of the University of Groningen. In the first part of the training, the theoretical body of thought behind the G&G interventions is explained. In the second part, the intervention-manual is practiced through modeling and role-play. At the end of the training the professionals are being instructed on the content of the G&G implementation toolkit, which is developed by the G&G project team, and which offers a variety of materials supporting their implementation activities (e.g. PR materials, press release examples, brochures, etc.). The trained professionals are also informed about various facilitating activities offered by the G&G project team (i.e. website, annual work conference, and site visits).

Study setting

The study is performed in health and social care organizations for older adults in the northern part of the Netherlands. Since 2007 municipal authorities are responsible for supervision and execution of the Social Support Act, which prescribes that vulnerable older adults and other vulnerable citizens need to be supported to recapture or maintain their ability to manage their own well-being. In consultation with the management of health and social care organizations, municipal policies are determined and available resources are allocated. Each municipality has one or more health and social care organizations that employ a variety of professionals. Professionals can either be social workers employed in welfare organizations or health professionals employed in home care organizations, providing both physical and psychosocial care to their clients. They can also be activity leaders employed in retirement homes, striving to empower residents and older adults living in sheltered accommodations next to the home.

Study sample

The study sample consists of actors at four different hierarchical stakeholder levels (i.e. target group, professionals, organizations and financial-political context) as depicted in Figure 2. Therefore, there are four groups of informants.

Figure 2 Hierarchical stakeholder levels.

The first group (i.e. the target group) consists of the older adults at risk of becoming vulnerable. The second group are the trained professionals, who deliver the G&G interventions. The third group consists of the managers of the participating organizations. When organizations have multiple management-layers, the manager who is closest to the work floor will be invited to act as key-informant. The fourth and final group consists of key informants at the level of the financial-political context. These are local policymakers who are well informed on the execution of the Social Support Act. They will be invited to act as informants for our study.

Based on experiences from an earlier pilot-implementation of the G&G interventions, it is feasible to include at least 15 new organizations in a period of 12 months [35]. Counting with 15 organizations, the sample size at the organizational and financial-political level will be 15 managers and 15 local policymakers. With a minimum of two G&G professionals per organization, the sample size at the professional level will be at least 30 G&G professionals.

With respect to the reach of the target group, concrete performance goals are communicated with the G&G professionals. Each G&G coach is expected to deliver the G&G home visits to at least three older adults (15 G&G coaches x 3 home-visits x 1 participant = 45 participants) and each pair of G&G teachers is expected to deliver at least three group courses, with an average of ten older adults per course (15 G&G teacher pairs x 3 group-courses x 10 participants = 450 participants). In the two-year period of the data-collection, the sample size at the level of the target group will thus amount to approximately 495 older adults. Taking into account a drop-out rate of 8% [36] a maximum number of 400 older adults participating in the G&G interventions is expected to be feasible.

Procedure and measures

The degree of implementation success will be assessed per organization, and is being operationalized by four parameters: use (yes/no), pace (time to initial use), performance (extent of use) and prolongation (intention to continue use beyond the timeframe of the study). The rationale behind the selection of these four parameters is that they assess the transitions between the three consecutive implementation stages in the Fleuren model (see Figure 1). The 'use' parameter measures the transition of organizations from adoption to implementation and the 'prolongation' parameter measures the transition from implementation to continuation. Next, we expect the 'pace' and 'performance' parameter to add to the explanation of both transitions.

Use, pace and performance can be easily assessed and with very high validity, because the actual performance of all organizations regarding the use of the G&G interventions will be monitored continuously throughout the study by the project team. The fourth and final parameter (i.e. intention to continue use of the G&G interventions beyond the time frame of the study) can necessarily only be measured as an estimation of the relevant actors. The intention of each professional, each manager, and each financial-political key informant, to continue the use of the G&G interventions beyond the timeframe of the study (i.e. prolongation) is operationalized with a single question with four answer categories ranging from (0) no intention to (3) strong intention. This question will be asked at the final measurement point of the study.

The facilitating and impeding factors that possibly affect the use of the G&G interventions are being measured at multiple measurement moments, simultaneously at the four hierarchical levels (i.e. target group, professionals, organizations and financial-political context). The content of the questionnaires varies somewhat per measurement point, because some factors only apply to the specific stage the organizations are in. For example, "ownership" is only applicable when users move from the adoption to the (initial) implementation stage, while "observability of effects" is applicable only when users move from the implementation to the

continuation stage. In the following a brief outline of the measures is given. Details on the specific measurement moments, and at what point in time we measure which factors, are described in Additional File 3 of this chapter.

Target group

The impeding and facilitating factors at the level of the target group will be measured via the perception of the G&G professionals. This indirect way is necessary, because the factors at this level relate to possible participants, not to actual participants of the intervention. A sample of all possible participants (in the population) is hard to delineate. Therefore, the professionals will be asked to answer the questions of the target group level. The professionals will be able to give an estimation of the impeding and facilitating factors that possibly play a role for older adults to participate (or not) in the G&G interventions, due to their large experience with the target group. The predefined factors of the theoretical framework at the level of the target group are thus translated into questions to be answered by the professionals. For example, the factor “awareness of benefits” is translated into the question: “Do you think older adults understand the benefits of participating in the G&G interventions?” The questions contain six answer categories ranging from (0) ‘not at all’ to (5) ‘completely’.

Professionals

The impeding and facilitating factors at the level of the professionals will be assessed by means of digital questionnaires. All professionals who have been trained and certified as G&G coach and/or G&G teacher will be invited to fill out the questionnaire. The predefined factors of the theoretical framework at the level of the professionals are translated into one or more questions per factor. For example, the factor “ownership” is translated into the question “To what extent do you feel responsible for G&G intervention start-up?” Each question contains six answer categories ranging from (0) ‘not at all’ to (5) ‘completely’.

Organizations

The impeding and facilitating factors at the level of the organizations will be measured by means of a telephone interview with the managers. The predefined factors of the theoretical framework at the level of the organization are translated into one or more questions per factor. For example, the factor “staff capacity” is translated into the question “Is your staff capacity sufficient to spend time on integrating the G&G interventions in routine practice?” The questions contain six answer categories ranging from (0) ‘not at all’ to (5) ‘completely’.

Financial-political context

The impeding and facilitating factors at the level of the financial-political context will also be measured by means of a telephone interview with a strategic or financial local policymaker. The predefined factors of the theoretical framework at this level are translated into one

or more questions per factor. For example, the factor “added value” is translated into the question “To what extent do you think that the G&G interventions add something to the existing services for older people in your community?” The questions contain six answer categories ranging from (0) ‘not at all’ to (5) ‘completely’.

Data analysis

All data will be imported in SPSS statistics 20. Descriptive analysis will be used to characterize use, time to initial use (pace), extent of use (performance) and the intention to continue use beyond the timeframe of the study (prolongation). Data collected at the four stakeholder levels will be merged and aggregated. Intra-class correlations will be calculated to assess the reliability of individual data aggregated at group levels in hierarchical models (i.e. professionals nested in organizations). The relevance of applying multilevel modeling to the data will be assessed by testing an unconditional or null model in which no predictors are specified. Only when significant variations in the dependent variables are present across organizations or municipalities, multilevel regression modeling will be applied. If no significant variation in use, pace, performance or prolongation is found across organizations or municipalities, we confine to single-level modeling techniques.

DISCUSSION

The aim of the study described in this protocol is to identify the determinants of successful implementation of the G&G interventions. In this study, health and social care organizations are considered to be part of multilevel functional systems [37], in which factors at different hierarchical levels can impede or facilitate the actual use of the G&G interventions. By assessing the unique contribution of target group, professional, organizational and financial-political context factors, as well as the complex interplay between these factors, results are expected to be of added value to the current scientific knowledge on barriers and facilitators to EBP-use.

The study has several strengths. The first is that implementation success in this study is not only assessed by the parameter use (yes/no), but it is also specified in three other indicators of use, namely: pace, performance and prolongation. This approach yields a much more specified insight in the various aspects of implementation success. Second, the possible factors that are considered in this study are theoretically supported by the Fleuren model, which provides a solid basis and prevents an ad hoc selection of possible factors. Finally, the analyses of the complex interplay between factors at different hierarchical stakeholder levels are executed with advanced multilevel modeling techniques. This is the optimal way of doing justice to the multi-layered nature of reality in implementation processes.

In conclusion, globally [38] and nationally [39] there is momentum to invest in EBPs that support aging individuals to live full, enriching and productive lives for as long and as much as possible. The G&G interventions are an example of such EBPs. They have been designed and tested in the last decade. Now it is time to increase our understanding of how to transport them to health and social care settings in a sustainable way. Identifying the determinants of successful implementation of the G&G interventions will also contribute to the development of ecologically valid implementation strategies of the G&G interventions and comparable new evidence-based practices.

Abbreviations

G&G: GRIP&GLEAM [Dutch: GRIP&GLANS]; GRIP stands for the ability to adapt and self-manage. GLEAM stands for well-being and the feeling that life is good and worth living.

EBP: Evidence Based Practice; a practice that has been established as effective through scientific research according to a set of explicit criteria.

REFERENCES

1. Christensen K, Doblhammer G, Rau R, Vaupel JW. Ageing populations: the challenges ahead. *Lancet*. 2009;374(9696):1196-1208.
2. Huber M, Knottnerus JA, Green L, Horst H, Jadad AR, Kromhout D, Leonard B, Lorig K, Loureiro MI, Meer JWM. How should we define health? *BMJ*. 2011;343:d4163.
3. Victor CR, Scambler SJ, Bowling A, Bond J. The prevalence of, and risk factors for, loneliness in later life: a survey of older people in Great Britain. *Ageing Soc*. 2005;25(3):357-75.
4. Valtorta N, Hanratty B. Loneliness, isolation and the health of older adults: do we need a new research agenda? *JRSM*. 2012;105(12):518-22.
5. Nicholson NR. A review of social isolation: an important but underassessed condition in older adults. *J Prim Prev*. 2012;33(2-3):137-52.
6. Beekman A, Copeland J, Prince MJ. Review of community prevalence of depression in later life. *Br J Psychiatry*. 1999;174(4):307-11.
7. Zantinge EM, van der Wilk EA, van Wieren S, Schoemaker CG. Gezond ouder worden in Nederland. Bilthoven: RIVM; 2011.
8. Wilson DM, Harris A, Hollis V, Mohankumar D. Upstream thinking and health promotion planning for older adults at risk of social isolation. *Int J Older People Nurs*. 2011;6(4):282-88.
9. Schuurmans H. Promoting well-being in frail elderly people: Theory and intervention. PhD thesis. Groningen: Groningen University; 2004.
10. Kremers IP, Steverink N, Albersnagel FA, Slaets JP. Improved self-management ability and well-being in older women after a short group intervention. *Aging Ment Health*. 2006;10(5):476-84.
11. Steverink N, Lindenberg S, Slaets JP. How to understand and improve older people's self-management of well-being. *Eur J Ageing*. 2005;2(4):235-44.
12. Zwet R, Beneken Genaamd Kolmer D, Schalk R. Op weg naar een interactieve benadering van evidence-based werken in de sociale sector in Nederland. *J Soc Interv Theory and Prac*. 2011;20(4):62-78.
13. Mullen EJ, Bledsoe SE, Bellamy JL. Implementing Evidence-Based Social Work Practice. *Res Soc Work Prac*. 2008;18(4):325-38.
14. Proctor EK, Landsverk J, Aarons G, Chambers D, Glisson C, Mittman B. Implementation research in mental health services: an emerging science with conceptual, methodological, and training challenges. *Adm Policy Ment Health*. 2009;36(1):24-34.
15. McGlynn EA, Asch SM, Adams J, Keesey J, Hicks J, DeCristofaro A, Kerr EA. The quality of health care delivered to adults in the United States. *N Engl J Med*. 2003;348(26):2635-645.

16. Palinkas LA, Soydan H. New horizons of translational research and research translation in social work. *Res Soc Work Pract.* 2012;22(1):85-92.
17. McIntosh K, Horner RH, Sugai G. Sustainability of systems-level evidence-based practices in schools: Current knowledge and future directions. In: Sailor W, Dunlap G, Sugai G, Horner R, editors. *Handbook of positive behavior support.* New York, NY: Springer; 2009. p. 327-52.
18. Grol R, Wensing M. What drives change? Barriers to and incentives for achieving evidence-based practice. *Med J Aust.* 2004;180(6 Suppl):S57-60.
19. Fleuren M, Wiefferink K, Paulussen T. Determinants of innovation within health care organizations: literature review and Delphi study. *Int J Qual Health Care.* 2004;16(2):107-23.
20. Greenhalgh T, Robert G, Macfarlane F, Bate P, Kyriakidou O. Diffusion of innovations in service organizations: systematic review and recommendations. *Milbank Q.* 2004;82(4):581-629.
21. Fixsen DL, Naoom SF, Blase KA, Friedman RM, Wallace F. *Implementation research: A Synthesis of the Literature.* Tampa, FL: University of South Florida, Louis de la Parte Florida Mental Health Institute, The National Implementation Research Network (FMHI Publication #231); 2005.
22. Stith S, Pruitt I, Dees J, Fronce M, Green N, Som A, Linkh D. Implementing community-based prevention programming: A review of the literature. *J Prim Prev.* 2006;27(6):599-617.
23. Durlak JA, DuPre EP. Implementation matters: A review of research on the influence of implementation on program outcomes and the factors affecting implementation. *Am J Community Psychol.* 2008;41(3-4):327-50.
24. Thomas R, Zimmer-Gembeck MJ, Chaffin M. Practitioners' Views and Use of Evidence-based Treatment: Positive Attitudes but Missed Opportunities in Children's Services. *Admin Policy Ment Health.* 2014;41(3):368-78.
25. Sanders MR, Prinz RJ, Shapiro CJ. Predicting utilization of evidence-based parenting interventions with organizational, service-provider and client variables. *Admin Policy Ment Health.* 2009;36(2):133-43.
26. Asgary-Eden V, Lee CM. So now we've picked an evidence-based program, what's next? Perspectives of service providers and administrators. *Prof Psychol Res and Prac.* 2011;42(2):169.
27. Kilbourne AM, Neumann MS, Pincus HA, Bauer MS, Stall R. Implementing evidence-based interventions in health care: application of the replicating effective programs framework. *Implement Sci.* 2007;2:42.
28. Feldstein AC, Glasgow RE. A practical, robust implementation and sustainability model (PRISM) for integrating research findings into practice. *Jt Comm J Qual Patient Saf.* 2008;34(4):228-43.

29. Wandersman A, Duffy J, Flaspohler P, Noonan R, Lubell K, Stillman L, Blachman M, Dunville R, Saul J. Bridging the gap between prevention research and practice: the interactive systems framework for dissemination and implementation. *Am J Community Psychol.* 2008;41(3-4):171-81.
30. Mendel P, Meredith LS, Schoenbaum M, Sherbourne CD, Wells KB. Interventions in organizational and community context: a framework for building evidence on dissemination and implementation in health services research. *Adm Policy Ment Health.* 2008;35(1-2):21-37.
31. Damschroder LJ, Aron DC, Keith RE, Kirsh SR, Alexander JA, Lowery JC. Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. *Implement Sci.* 2009;4:50.
32. Stetler CB, Damschroder LJ, Helfrich CD, Hagedorn HJ. A Guide for applying a revised version of the PARIHS framework for implementation. *Implement Sci.* 2011;6:99.
33. Aarons GA, Hurlburt M, Horwitz SM. Advancing a conceptual model of evidence-based practice implementation in public service sectors. *Adm Policy Ment Health.* 2011;38(1):4-23.
34. Fleuren M, Wiefferink K, Paulussen T. Checklist determinanten van innovaties in gezondheidszorgorganisaties. *TSG.* 2010;88(2):51-4.
35. Elzen H, Steverink N. National implementation project of the GRIP and GLANS courses: a self-management of well-being program for older adults; internal report. [Een landelijk implementatie-project m.b.t. de GRIP- en GLANS-cursussen: een zelfmanagement-cursusaanbod voor ouderen. Eindrapport.]: Groningen: University of Groningen, University Medical Center Groningen; 2009.
36. Hunt C, Andrews G. Drop-out rate as a performance indicator in psychotherapy. *Acta Psychiatr Scand.* 1992;85(4):275-78.
37. Fixsen DL, Blase KA. Implementation: The missing link between research and practice. *NIRN Implementation Brief.* 2009; 1:1-2.
38. Good health adds life to years. Global brief for world health day 2012. http://www.who.int/ageing/publications/whd2012_global_brief/en/. Accessed July 3, 2015.
39. The National Care for the Elderly Programme. <http://www.beteroud.nl/ouderen/dutch-national-care-programme-for-the-elderly.html>. Accessed July 3, 2015.

ADDITIONAL FILES

Additional file 1: Two-step procedure constructing theoretical framework

Although useful, we made some specific choices and adaptations regarding the Fleuren model as depicted below in Figure 3.

Figure 3 Framework representing the innovation process and related categories of determinants. By permission of Oxford University Press from: Fleuren, M. et al. *Int J Qual Health Care* 2004, 16(2):p108.

First, in our study we concentrate on assessing the facilitating and impeding factors associated with especially the three last stages of the innovation process (i.e., the adoption, implementation, and continuation stage), not on the first dissemination stage.

Second, we chose to reorganize the levels and predefined factors somewhat as to make them more suitable to our study aims. Table 1 shows the two-step procedure that was followed to tailor the framework of Fleuren et al. to our purpose.

Step 1 consisted of adapting the four levels and the factors, because some levels and some factors are less applicable to our purpose. As a first adaptation, we decided to make a separate (new) level of the target group, because several of the factors on the level of the socio-political context [factors 1 to 5] would better fit to the level of the target group (i.e. the older adults) in our study. We believe that also at the level of the target group impeding and facilitating factors to successful implementation should be identified.

As a second adaptation, we left the level of the innovation as a separate level out, because, in our study, most of the factors on this level better fit to the level of the professionals delivering the G&G-interventions. For example, clearness of procedures [factor 34] or appealing to use [factor 39] relate to the intervention as it is being used by the professional.

The result of step 1 is shown in the middle column of Table 1, in which the four stakeholder levels are shown, and the predefined factors assigned to these four levels. Note that four factors [28, 29, 30 and 50] have been assigned to two levels, because these factors appear to apply to both.

In step 2 we sorted the separate factors within each level into meaningful clusters, because, in our opinion, several of the predefined factors of Fleuren et al. interrelate more closely than others. For example, skills [factor 24], knowledge [factor 25] and self-efficacy [factor 26] can be clustered as competencies of the professional, whereas reimbursement [factor 44] and opinion leader [factor 50] can be clustered as motivators at the level of the organizations. Clustering of factors adds to a more systematic classification, and subsequently helps in the process of operationalizing the factors into groups of items. Moreover, the term 'patient' is replaced by the term 'client', which is more applicable to the social care service setting of the study.

Table 1 Two-step procedure constructing theoretical framework

STEP 1		STEP 2
Original categorization Fleuren et al., 2004		Clustering subgroups within stakeholder levels
Determinants related to socio-political context [1] willingness patient to cooperate [2] patient awareness of health benefits [3] patient doubts expertise professional [4] financial burden on patient [5] patient discomfort [6] existing rules, regulations and legislation	Target group [1] willingness patient to cooperate [2] patient awareness of health benefits [3] patient doubts expertise professional [4] financial burden on patient [5] patient discomfort	Target group Characteristics older adults [1] willingness client to cooperate [2] client awareness of health benefits [3] client doubts expertise professional [4] financial burden on client [5] client discomfort
	Professionals [19] support from colleagues [20] support from other professionals [21] support from supervisor [22] support from higher management [23] modeling [24] skills [25] knowledge [26] self-efficacy [27] ownership [28] innovation - task orientation fit [29] expectations cooperation target group [30] expectations satisfaction target group [31] work-related stress [32] contradictory goals [33] ethical problems [34] cleanness procedures [36] trialability [37] relative advantage [38] observability [39] appealing to use [41] risks to the patient [42] frequency of use [49] professionals involved in development	Professionals Competencies professional [24] skills [25] knowledge [26] self-efficacy Innovation factors [27] ownership [34] cleanness procedures [36] trialability [37] relative advantage [39] appealing to use [42] frequency of use [49] professionals involved in development Work factors [19] support from colleagues [20] support from other professionals [21] support from supervisor [22] support from higher management [23] modeling [28] innovation - task orientation fit [35] compatibility [31] work-related stress [32] contradictory goals Target group factors [29] expectations cooperation target group [30] expectations satisfaction target group [33] ethical problems [38] observability [41] risks to the client
	Organizations [7] decisionmaking process and procedures [8] hierarchical structure [9] formal reinforcement [10] organizational size [11] functional structure [12] relationship with other organizations [13] nature of collaboration internally [14] staff turn-over [15] staff capacity [16] available expertise [17] logistical procedures [18] number of potential users [28] innovation - task orientation fit [29] expectations cooperation target group [30] expectations satisfaction target group [35] compatibility [44] reimbursement [45] other resources available [46] administrative support available [47] time available [48] availability of staff for coordination [50] opinion leader	Organizations Characteristics organization [10] organizational size [11] functional structure [14] staff turn-over [15] staff capacity [18] number of potential users [28] innovation - task orientation fit [29] expectations cooperation target group [30] expectations satisfaction target group Decision-making factors [7] decisionmaking process and procedures [8] hierarchical structure [9] formal reinforcement Collaboration factors [12] relationship with other organizations [13] nature of collaboration internally Resources [16] available expertise [17] logistical procedures [45] other resources available [46] administrative support available [47] time available [48] availability of staff for coordination Motivators [44] reimbursement [50] opinion leader
	Financial-political context [6] existing rules, regulations and legislation [43] financial resources [40] relevance/added value [50] opinion leader	Fin-pol context Legislation [6] existing rules, regulations and legislation Resources [43] financial resources Motivators [40] relevance/added value [50] opinion leader
	Determinants related to the user [19] support from colleagues [20] support from other professionals [21] support from supervisor [22] support from higher management [23] modeling [24] skills [25] knowledge [26] self-efficacy [27] ownership [28] innovation - task orientation fit [29] expectations cooperation target group [30] expectations satisfaction target group [31] work-related stress [32] contradictory goals [33] ethical problems	
Determinants related to the innovation [34] cleanness procedures [35] compatibility [36] trialability [37] relative advantage [38] observability [39] appealing to use [40] relevance/added value [41] risks to the patient [42] frequency of use		

Additional file 2: Time plan G&G implementation study

The G&G-implementation study is framed in time for 42 months, consisting of four overlapping phases. Main tasks and actions of both the health- and social care organizations and the G&G-project team are depicted below in the time plan and subsequently described in detail.

Figure 4 Timeplan G&G-implementation study

Phase 1

In phase 1 the innovative body of thought of the G&G-interventions is disseminated by the project team to the practice field of (vulnerable) older adults. Workshops demonstrated to be a feasible and effective dissemination strategy when piloting the G&G-interventions. Professionals, managers and/or local policymakers attending the workshops and ‘tasting’ a part of the intervention, have proven to be easily persuaded of the potential value of the G&G-interventions for vulnerable older adults. Professionals, managers and/or local policymakers considering adoption of the G&G-interventions, are informed by the G&G-project team on the prerogatives (e.g. the subsidized fee for training professionals) and the obligations (e.g. participation in monitoring and assessment activities is mandatory) of becoming an implementation site in the study under consideration. The dissemination strategy will be deployed until saturation of the planned number of organizations (at least n=15) has been reached.

Phase 2

After having reached agreement on study participation a minimum number of two professionals per implementation site subscribe to the next G&G-coach or G&G-teacher-training. The training is executed by master trainers of the G&G-program of the UMCG by means of a structured training manual. The maximum number of professionals participating in the training amounts to n=12. The duration of both the G&G-coach and G&G-teacher training is two and a half consecutive days. Knowledge transfer on the SMW-theory (Steverink et al, 2005) and the educational tools to translate it into appealing and comprehensible language for older adults are central to the first training day. Skills training in instructional and modeling behavior are central to the second training day. Information on the (new developed) implementation toolkit and the way in which trained and certified professionals can ask for implementation support from the G&G-project team are communicated during the last training day. Moreover, a performance goal for the delivery of the G&G-interventions is communicated with the professionals in training.

Phase 3

Trained professionals can start implementing the G&G-interventions in their own organization immediately after being certified as coach and/or teacher by the G&G-program of the UMCG. Tools needed for recruitment of older adults (e.g. text for flyers or newspaper), intake and delivery of the G&G-interventions (e.g. PDF workbook for participants) are available upon request from the G&G-project team. Other ways to facilitate implementation efforts of the G&G professionals are the launch of the GRIP&GLANS-website [www.gripenglans.nl], an annual work conference and a site visit on request. All the above-mentioned facilitating activities of the G&G-project team are voluntary and attended or given only on request of the adopting organization or professional.

Besides ongoing facilitation and monitoring, in phase 3 the assessment of the predefined factors from the Fleuren model (Fleuren et al, 2004) are performed by the G&G-project team. Participation in the measurements is introduced as mandatory to participating organizations and professionals.

Phase 4

In phase 4 the data analysis and reporting of results will be executed. Requests for support of implementation sites who continue to use the G&G-interventions, will be complied with.

Additional file 3: Factors¹, time-points and number of items per stakeholder level.

Level target group²	Number of items T1	Number of items T2	Number of items T3
Characteristics older adults			
[1] willingness client to cooperate	-	1	1
[2] clients awareness of benefits	-	1	1
[3] clients doubts expertise professional	-	1	1
[4] financial burden on client	-	1	1
[5] client discomfort	-	2	2
Level professionals			
Competencies professional			
[24] skills	5	-	-
[25] knowledge	2	-	-
[26] self-efficacy	4	4	4
Innovation factors			
[27] ownership	3	2	2
[34] clearness procedures	-	1	1
[36] trial ability	na ^a	na ^a	na ^a
[37] relative advantage	2	2	2
[39] appealing to use	4	5	5
[42] frequency of use	na ^b	na ^b	na ^b
[49] professionals involved in development	na ^a	na ^a	na ^a
Work factors			
[19] support from colleagues	2	2	2
[20] support from other professionals	2	2	2
[21] support from supervisor	2	2	2
[22] support from higher management	2	2	2
[23] modeling	2	2	2
[28] innovation – task orientation fit	2	2	2

1 Detailed descriptions of each factor can be found on page 110 and 111 in Fleuren M, Wiefferink K, Paulussen T: Determinants of innovation within health care organizations: literature review and Delphi study. Int J Qual Health Care 2004, 16(2):107-123

2 The impeding and facilitating factors at the level of the target group will be measured indirectly, i.e. via the perception of the professionals

Level professionals (continued)	Number of items T1	Number of items T2	Number of items T3
Work factors (continued)			
[35] compatibility	2	2	2
[31] work-related stress	8	8	8
[32] contradictive goals	1	1	1
Target group factors			
[29] expectations cooperation target group	1	-	-
[30] expectations satisfaction target group	2	-	-
[33] ethical problems	na ^c	na ^c	na ^c
[38] observability effects	-	1	1
[41] risks to the client	na ^c	na ^c	na ^c

na^a = not applicable, because these factors were taken into consideration when the G&G-interventions were developed and tested. During the timeframe of this study, manuals and procedures for delivering the G&G-interventions are fixed.

na^b = not applicable, because it interacts with a parameter of implementation success, i.e. performance (extent of use).

na^c = not applicable, because participation in the G&G-interventions does not involve any ethical dilemmas for the professional or risks for the older adult

Level organizations	Number of items T1	Number of items T2	Number of items T3
Characteristics organization			
[10] organizational size	-	4	4
[11] functional structure	-	2	2
[14] staff turn-over	-	1	1
[15] staff capacity	-	1	1
[18] number of potential users	-	fixed ³	fixed ³
[28] innovation – task orientation fit	-	2	2
[29] expectations cooperation target group	-	1	1
[30] expectations satisfaction target group	-	2	2
Decision-making factors			
[7] decision making process and procedures	-	1	1
[8] hierarchical structure	-	1	1
[9] formal reinforcement	-	1	1

- 3 Training of professionals to be a G&G coach and/or a G&G teacher is confined to month 6-18 of the project. So the number of potential users is known and fixed after month 18.

Level organizations (continued)		Number of items T1	Number of items T2	Number of items T3
Collaboration factors				
[12]	relationship with other organizations	-	3	3
[13]	nature of collaboration internally	-	1	1
Recources				
[16]	available expertise	-	1	1
[17]	logistical procedures	-	1	1
[45]	other resources available	-	1	1
[46]	administrative support available	-	1	1
[47]	time available	-	4	4
[48]	availability of staff for coordination	-	1	1
Motivators				
[44]	reimbursement	-	4	4
[50]	opinion leader	-	1	1

Level financial-political context		Number of items T1	Number of items T2	Number of items T3
Legislation				
[6]	existing rules, regulations and legis- lation	-	4	4
Resources				
[43]	financial resources	-	3	3
Motivators				
[40]	relevance/added value	-	2	2
[50]	opinion leader	-	3	3

Note

Not all time-points and items mentioned have been included in the determinant-analyses of chapters 3 and 4. Time-point T1 was not included because training of professionals was still ongoing. Items were dropped when they failed to discriminate between professionals or organizations (e.g. Ownership [27a] "To what extent do you subscribe the SMW body of thought?") or when they did not correlate with other items in the scale (e.g. Self efficacy [26b] "To what extent are you able to diagnose whether a potential participant will benefit from the SMW group intervention").

Chapter 3

Pace and determinants of implementation of the self-management of well-being group intervention: a multilevel observational study

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ABSTRACT

Background

When implementing an empirically supported intervention (ESI) arrays of influencing factors operate on the professional and organizational level, but so far dependency between these levels has often been ignored. The aim of this study is to describe the pace and identify determinants of implementation of the Self-Management of Well-being (SMW) group intervention while taking the dependency between professionals and organizations into account.

Methods

Pace of implementation was measured as the time between training of professionals and first use of the SMW intervention in months. Determinants of first use were derived from the Fleuren framework and assessed using web-based questionnaires and telephone interviews. First, univariate analyses, Fisher's exact tests and t-tests, were performed to identify determinants of first use of the SMW intervention on the individual professional and the organizational level independently. Second, multilevel analyses were performed to correct for the dependency between professionals and organizations. Simple multilevel logistic regression analyses were performed with determinants found significant in the univariate analyses as independent variables, first use as dependent variable, professionals entered in the first level, and organizations in the second level.

Results

Forty-eight professionals from 18 organizations were trained to execute the SMW intervention. Thirty-two professionals achieved first use, at a mean pace of 7.5 months $\pm$ 4.2. Determinants on the professional level were 'ownership', 'relative advantage', 'support from colleagues' and 'compatibility'. Determinants on the organizational level were 'organizational size' and 'innovation-task orientation fit'. Multilevel analysis showed that 'compatibility', a factor on the professional level, was the only significant determinant contributing to first use in the multilevel model.

Conclusions

This implementation study revealed a strong dependency between professionals and organizations. Results showed that a majority of professionals used the SMW intervention in about 8 months. When the dependency between professionals and organization was taken into account, the professionals' perception of compatibility was the only remaining determinant of implementation on the professional level. Organizational size and managers' perception of 'innovation-task orientation fit' were determinants of implementation on the organizational level. It is advisable to discuss the compatibility between new and current tasks among managers and professionals before adopting a new intervention.

BACKGROUND

The gap between science and practice is well-known [1, 2]. Many empirically supported interventions (ESIs) are neither adopted nor successfully implemented in practice [3, 4]. Moreover, the ones that do succeed to ‘bridge the gap’, take many years to do so [5, 6], but then still the complex interplay of determinants and stakeholders is not yet understood. It has been established that the Self-Management of Well-being (SMW) interventions¹ improve self-management ability and well-being, and reduce loneliness in older adults [7-11]. When adopted and implemented in health and social care settings, the SMW interventions may have the potential to constrain the accumulating prevalence of social isolation [12], depression [13], and inactivity [14] in older adults. Therefore, the current study aimed to investigate the implementation of the SMW group intervention in health and social care, with special focus on the pace of this process and the dependency between individual and organizational determinants in this process.

It is known that new interventions often take long to be implemented in practice, even though time effectiveness has been identified as a priority [6, 15]. Reasons to transit from adoption to implementation in ‘a relatively quick manner’ is important, because one-third of the newly learned competencies in professionals will be lost after one year [16]. Furthermore, organizations perceive implementation as a return on their investment in having professionals trained. This return diminishes when professionals fail to attain first use of a new intervention [17]. The rule of thumb is that it takes between two and six months to attain first use [18]. Since the pace of implementation of the SMW group intervention is not yet known, it is subject of investigation in this study.

It is known that a wide array of facilitating and impeding factors affect implementation. Literature reviews produce comprehensive lists, ranging from 23 up to 50 factors [1, 19-23]. Some also acknowledging that different factors operate at different stakeholder levels, such as professionals, organizations, and financial-political contexts [23]. However, not many studies take the interdependencies between these stakeholders into account when investigating factors affecting implementation.

Although many implementation models exist that distinguish various stakeholder levels [24], to our knowledge, hardly any models exist that provide clear directions how to empirically investigate determinants of the implementation process. An exception is the Fleuren framework, which provides detailed descriptions to determine which stakeholder’s factors are important at what stage of the implementation process [21].

1 In former publications, the SMW interventions were also referred to as “GRIP and GLEAM (G&G) interventions”.

First, the Fleuren framework distinguishes four stages: orientation, adoption, implementation and continuation [21]. The transition from adoption to implementation has been recognized to be the most challenging [18]. Professionals have to become proficient in applying new just acquired skills, and organizations have to be or become efficient in allocating time and resources to the new way of doing things [18]. Therefore, the focus of this study is on exactly this stage in the implementation process, i.e. the stage where professionals and their organization transit from adoption to first use of the SMW intervention.

Second, the Fleuren framework identifies determinants of implementation on both the professional and organizational level. It is very important to realize that professional and organization levels are not independent [25]. Proficient professionals might not start using a new intervention if there are organizational barriers. Vice versa, a facilitating organization will not start using a new intervention when there are professional barriers. Therefore, this study will not only investigate which determinants play a role on either the professional or the organizational level when implementing the SMW group intervention, but also which factors remain determinants when taking the nested structure of professionals in their organizations into account.

Study aims

The aims of this study are to investigate the pace of implementation of the SMW group intervention in health and social care organizations, and to identify determinants of implementation while taking the dependency between professionals and organizations into account. Three research questions will be addressed: 1) How many of the professionals trained, realize first use of the SMW group intervention and at what pace? 2) What are the determinants of first use in: 2a) professionals, and 2b) organizations? 3) What are the determinants of first use when the nesting of professionals in organizations is taken into account?

METHOD

Study design

The current study is part of a larger implementation project that aimed to identify the determinants of use of the SMW interventions in health and social care organizations. The study protocol of this larger project has been described in detail elsewhere [26].

In short, the project entails four overlapping project phases and started in April 2010. In project phase 1 (month 0-12) the aim was to motivate at least 15 organizations to adopt the SMW group intervention. In project phase 2, between May 2010 and March 2011, professionals (two per organization) were trained to perform the SMW group intervention (see training). In project phase 3 the trained professionals started implementing the SMW group intervention by recruiting older adults aiming to reach 400 participants. Data collection waves were scheduled in month 12-15 (T1), month 24-26 (T2) and month 36-39 (T3). In phase 4 data analyses were executed. The current study is based on the data collected at T2 between April and June 2012.

Study sample

The study sample consists of participants at two hierarchical levels: the professional and the organizational level. The professional level was represented by trained SMW professionals, and the organizational level was represented by managers closest to the SMW professionals.

Setting

The study was performed in the northern part of the Netherlands. Various health and social care organizations in that region contribute to the execution of the nationwide Social Support Act (2007), which prescribes that vulnerable older adults and other vulnerable citizens need to be supported to recapture or maintain their ability to manage their own well-being. The objectives of the SMW group intervention correspond largely to the purposes of this Act, which makes health and social care organizations suitable settings for implementing the SMW intervention. Health care organizations interested in participating were predominantly home-care organizations, employing public health nurses aimed at supporting older adults in their direct living environment (home and/or neighborhood). The interested social care organizations were predominantly organizations employing social service or social group workers specialized in executing community-based services for specific vulnerable target groups such as lonely older adults.

Recruitment

In project phase 1, from April 2010, an invitation to participate in the implementation project was disseminated among all formal health and social care organizations in the northern part

of the Netherlands. For interested health and social care organizations, SMW workshops were given for professionals and managers of these organizations.

The SMW intervention

The SMW group intervention is designed for socially vulnerable women, aged > 55 years, who subscribe individually, and are physically capable of travelling to a group location. It is specifically designed for women, because in general these kinds of interventions require gender-specific topics, wording and assignments and the need for such support was largest among them. The SMW group intervention is theory-driven, applying the theory of Self-Management of Well-being (SMW theory) [27, 28]. This theory postulates that if people have good self-management abilities – that is, skills enabling them to adequately handle their important physical and social resources – they are able to maintain a higher level of overall well-being. The SMW group intervention has proven to be effective in enhancing self-management ability and well-being, and reducing loneliness [8, 11].

The SMW group intervention consists of six consecutive group meetings (8-12 participants) and one booster session after three months. Each session takes 2½ hours and is being supervised by two trained professionals. Each meeting focuses on one or more of the six self-management abilities identified by the SMW theory [27, 28]. The six self-management abilities are: 1) taking initiatives; 2) being self-efficacious; 3) investing; 4) having a positive outlook; 5) ensuring multi-functionality in resources; 6) ensuring variety in resources. The women are taught to apply these abilities to the five dimensions of well-being, summarized by the Dutch acronym 'GLANS' [Dutch for 'gleam' or 'gloss']. In the acronym G stands for *Gemak en Gezondheid* [easy living and health: Comfort], L for *Leuke bezigheden en Lichamelijke activiteit* [pleasant and physical activity: Stimulation], A for *Affectie* [giving and receiving love and affection: Affection], N for *Netwerk* [social network contacts: Behavioral confirmation], and S for *Sterke punten* [strengths: Status]). For a detailed description of the intervention, see Kremers et al., 2006 [8].

Training professionals

The professionals of the health and social care organizations that adopted the SMW group intervention followed the standardized SMW-training of 2½ days taught by two qualified SMW-trainers. Professionals were admitted to the training under three conditions (1) being female, because the SMW group intervention participants would all be women, (2) being currently employed in a formal health and/or social organization, and (3) registering together with one or more female colleagues from the same organization.

The training focused on knowledge transfer regarding SMW theory and on practicing skills. Skills needed to guide and supervise the SMW group intervention were trained by means

of role-play and feedback. Additional instructions were given on the intervention materials (manual and workbook for participants) and the availability of support from the research team by means of the implementation toolkit, website and site-visits. The professionals were certified as SMW teachers after completion of the training.

Adaptation Fleuren framework to fit the SMW implementation study

The data collection is based on the original Fleuren framework, which identifies 50 determinants on various stakeholder levels and stages of implementation [21]. However, we needed to adapt this general framework for the study at hand, i.e., for the case of the SMW intervention, because not all levels and determinants fitted our study. For example, we removed the originally defined level of the innovation and attributed its factors (e.g. 'clearness procedures' and 'appealing to use') to the individual professional level, because these factors would need to be assessed by the professionals that execute the SMW intervention (innovation). Additionally, we renamed some levels and factors. For example, 'users' in the Fleuren framework we referred to as the 'professionals', and 'patients' were 'clients' in the current study. This adaptation process of the Fleuren implementation framework is described in detail elsewhere [26]. The resulting implementation framework for the current study identifies four stages of implementation and 35 determinants on the professional and the organizational level (see Figure 1). On the professional level, 15 factors were sorted into three clusters: competencies, innovation and work situation. On the organizational level 20 factors were sorted into five clusters: characteristics of the organization, decision-making, collaboration, resources and motivators.

Figure 1 Framework of factors affecting first use of the SMW group intervention (Adapted from Fleuren et al., 2004 and 2010)

Data collection

The current study is based on the data collected at T2. At that time, professionals have had at least 13 months to realize implementation and use of the SMW group intervention. Three types of data were collected by the research team: 1) observational data: training dates, and starting dates of the SMW intervention were recorded; 2) web-based questionnaires were filled out by professionals, and 3) structured telephone interviews were held among managers.

All professionals were contacted, and two reminders were sent when they did not respond. Five professionals did not respond, because of compulsory redundancy (n=2), sick leave (n=2), and technical failure (n=1). Two of the non-responding professionals were users and three were non-users of the SMW intervention. All managers (100% response) of the 18 organizations were willing to participate in the telephone interview.

Dependent variables

The 'pace' of implementation is expressed as the time in months between having completed the training and first use of the SMW intervention by professionals. 'Implementation' on the professional level is assessed as 'first use' (yes/no) of the SMW group intervention by the professionals. Implementation on the organizational level is expressed in first use ratio (i.e. the number of SMW-trained professionals using the SMW intervention at T2 divided by the number of all SMW-trained professionals in the organization).

Independent variables

To assess the determinants of implementation of the SMW group intervention in health and social care organizations, the Fleuren framework [21] was adapted for the current study. Next, the checklist for determinants of innovations in health care organizations, published by Fleuren in 2010 [29], was used to operationalize factors (determinants) into items. Fifteen factors on the professional level were assessed with 31 items in three clusters: competencies (3 factors, 5 items), innovation (4 factors, 7 items) and work situation (8 factors, 19 items). On the organizational level 20 factors were assessed with 23 items in five clusters: characteristics of the organization (7 factors, 10 items), decision-making (3 factors, 3 items), collaboration (2 factors, 2 items), resources (6 factors, 6 items) and motivators (2 factors, 2 items). The predefined factors from the framework were translated into one or more closed questions per factor. For example, the factor "compatibility" on the professional level (described by Fleuren (2010) [29] as "to what extent does the care provider view the innovation as matching his/her job description") is operationalized by two items: (1) "Is preparing and executing the SMW group intervention part of your formal task description?" (2) "Do you have enough time to prepare and execute the SMW group intervention?" If Cronbach's alpha was > 0.7 , items measuring the same factor were combined into a scale [30]. Single items and scales were dichotomized and given the value '1' for facilitating first use, and value '0' when impeding first use. The questionnaire and interview, as well as the scales and recoding of the scores, can be found as supporting information in the Appendix of this thesis.

Data analysis

The observational data, the data from the web-based questionnaire, and those from the telephone interviews were entered using the IBM SPSS statistics 20 program. Descriptive statistics on the characteristics of the study sample are reported as means, standard deviations and ranges in case of continuous variables, and as the absolute numbers and percentages in case of discrete variables. Descriptive statistics on the pace of implementation are reported as mean, standard deviation and range in months.

Univariate analyses were performed to identify the determinants of first use on the professional and on the organizational level. Fisher's exact tests (one-sided with a significance

level set at $p < 0.05$) were used to test which factors were significantly associated with first use (yes/no) on the professional level. Independent samples t-tests were used to test which factors were significantly associated with the mean first user ratio (% of users per organization) on the organizational level.

Multilevel analyses were performed to identify the determinants of first use in context (professionals nested in organizations). Significant determinants of first use found in univariate analyses were selected and imported in Mplus, version 7.1 [31]. Subsequently, simple multilevel logistic regression analyses [32] were performed with the data of 43 professionals (level 1) nested in the data of 18 organizations (level 2) and first use (yes/no) as the dependent variable. For each factor an unadjusted analysis was performed.

RESULTS

Characteristics study sample

In total 48 professionals from 18 different organizations were trained and certified to execute the SMW group intervention. The average number of professionals trained per organization was 2.7 (range 1-5). In total, 18 managers, one from each organization, participated in the study.

All professionals were female and most ($n=29$) were social service workers. Most managers ($n=12$) were also female, and in a lower or middle management job. The characteristics of the professionals and managers are described in Table 1.

Pace of implementation of the SMW group intervention

Two third of the SMW professionals (32/48) achieved first use of the SMW group intervention at T2. The mean pace at which they achieved first use was 7.5 months (SD 4.2 months, range 1-17 months). Six percent (3/48) of the professionals achieved first use within 3 months, 29% (14/48) between 3 and 6 months, 23% (11/48) between 7 and 12 months and in 8% (4/48) it took longer than a year.

Determinants of first use of the SMW group intervention on the professional level

In Table 2 the results on the professional level are shown. None of the three factors related to competencies of the professional was significantly associated with first use of the SMW group intervention (all $p > .064$). However, two of the four factors related to the innovation, were significantly associated with first use of the SMW group intervention. The majority of the SMW professionals felt responsible for implementation of the SMW group intervention ('ownership') and those who did feel ownership achieved first use more often than those

Table 1 Characteristics study sample

Professionals (n=48)		mean	(sd)	range	n	(%)
Gender	female				48	(100)
	male				0	(0)
Age	years	50.4	(9.0)	26-62		
Work hours ^a	hours per week	24.1	(5.6)	8-36		
Job description	social service worker				29	(60)
	social group worker				8	(17)
	public health nurse				3	(7)
	other (e.g. psychomotor therapist)				8	(17)
Work setting	health organization				9	(19)
	social work organization				39	(81)
Managers (n=18)		mean	(sd)	range	n	(%)
Gender	female				12	(67)
	male				6	(33)
Age	years	52.9	(5.9)	39-63		
Work hours ^a	hours per week	31.2	(6.0)	20-36		
Job description	higher management				4	(22)
	middle management				8	(45)
	lower management				6	(33)
Work setting	health organization				3	(17)
	social work organization				15	(83)

sd standard deviation.

^a *Work hours according to employment contract*

who did not feel ownership ($p = .036$). The majority of the SMW professionals also perceived using the SMW group intervention as advantageous for themselves ('relative advantage'). Those who perceived relative advantage achieved first use more often than those who did not perceive relative advantage ($p = .010$).

Of the eight factors related to the work situation, two showed to be significantly associated with first use of the SMW group intervention. The majority of the SMW professionals reported positive actions by their direct SMW colleagues ('support'). Those who did feel supported achieved first use more often than those who did not feel supported ($p = .031$). A minority of SMW professionals reported that implementing the SMW group intervention was part of their formal task description, and that they had enough time to prepare and execute the intervention ('compatibility'). Those who did report that implementing the SMW group intervention was compatible with other designated tasks, achieved first use more often than those who reported non-compatibility ($p = .019$).

Table 2 Factors on the professional level affecting first use

	Use (n=30)		No use (n=13)		p-value
	n	(%)	n	(%)	
Factors related to competencies professional					
Skills					
1=prior experience working with groups of older adults	26	(72.2)	10	(27.8)	.561
0=no prior experience working with groups of older adults	4	(66.7)	2	(33.3)	
Knowledge					
1=higher education	27	(71.1)	11	(28.9)	.482
0=vocational education	3	(60.0)	2	(40.0)	
Self-efficacy					
1=confidence in recruiting, organizing and supervising the group	17	(85.0)	3	(15.0)	.064
0=no confidence in recruiting, organizing and super- vising the group	13	(59.1)	9	40.9)	
Factors related to the innovation					
Ownership					
1=feeling responsible for SMW group intervention implementation	25	(80.6)	6	(19.4)	.036
0=not feeling responsible for SMW group intervention implementation	5	(45.5)	6	(54.5)	
Clearness procedures					
1=SMW manual is clear	30	(73.2)	11	(26.8)	.286
0=SMW manual is not clear	0	(0.0)	1	(100.0)	
Relative advantage					
1=advantage	21	(87.5)	3	(12.5)	.010
0=no advantage	9	(50.0)	9	(50.0)	
Appealing to use					
1=appealing	22	(66.7)	11	(33.3)	.190
0=not appealing	8	(88.9)	1	(11.1)	
Factors related to work situation					
Support from SMW-colleagues					
1=positive actions	27	(79.4)	7	(20.6)	.031
0=no positive actions	3	(37.5)	5	(62.5)	
1=positive cooperation (missing n=11)	28	(93.3)	2	(6.7)	.877
0=no positive cooperation	2	(100.0)	0	(0.0)	
Support from other colleagues					
1=positive attitude	25	(75.8)	8	(24.2)	.216
0=no positive attitude	5	(55.6)	4	(44.4)	

Table 2 Factors on the professional level affecting first use (continued)

	Use (n=30)		No use (n=13)		p-value
	n	(%)	n	(%)	
Factors related to work situation (continued)					
1=positive actions	15	(71.4)	6	(28.6)	.633
0=no positive actions	15	(71.4)	6	(28.6)	
Support from supervisor					
1=positive attitude	28	(75.7)	9	(24.3)	.131
0=no positive attitude	2	(40.0)	3	(60.0)	
1=positive actions	17	(77.3)	5	(22.7)	.296
0=no positive actions	13	(65.0)	7	(35.0)	
Support from higher management					
1=positive attitude	23	(76.7)	7	(23.3)	.207
0=no positive attitude	7	(58.3)	5	(41.7)	
1=positive actions (missing n=9)	9	(75.0)	3	(25.0)	.351
0=no positive actions	19	(86.4)	3	(13.6)	
Modelling					
1=stimulated by implementation success of other organizations	18	(72.0)	7	(28.0)	.481
0=not stimulated by implementation success of other organizations	12	(66.7)	6	(33.3)	
Innovation task-orientation fit					
1=fit between innovation and needs older adults	29	(72.5)	11	(27.5)	.231
0=no fit between innovation and needs older adults	1	(33.3)	2	(66.7)	
1=fit between innovation and perceived task professional	24	(70.6)	10	(29.4)	.589
0=no fit between innovation and perceived task professional	6	(75.0)	2	(25.0)	
Work related stress					
1=no overtime work	15	(68.2)	7	(31.8)	.540
0=overtime work	15	(71.4)	6	(28.6)	
1=no sick leave	23	(69.7)	10	(30.3)	.654
0=sick leave	7	(70.0)	3	(30.0)	
1=satisfied with job	28	(71.8)	11	(28.2)	.350
0=not satisfied with job	2	(50.0)	2	(50.0)	
1=no work pressure	2	(66.7)	1	(33.3)	.671
0=work pressure	28	(70.0)	12	(30.0)	
Compatibility					
1=compatible	14	(93.3)	1	(6.7)	.019
0=not compatible	16	(59.3)	11	(40.7)	

SMW = Self-management of Well-being

Determinants of first use of the SMW group intervention on the organizational level

In Table 3 the results on the organizational level are shown. Two of the seven organizational characteristics showed to be significantly associated with the mean first user ratio. In organizations with more than 150 employees ('size organization') the mean first user ratio was significantly higher than in their smaller counterparts ($p = .018$). Additionally, in organizations where the SMW group intervention complied with the task orientation of the management (i.e. 'innovation - task orientation fit') the mean first user ratio was significantly higher than in organizations where there was no fit ($p = .008$). All other organizational characteristics did not yield statistically significant results (see Table 3).

Table 3 Factors on the organizational level (n=18) affecting mean first user ratio

	n	Mean % of users per organization	p-value
Factors related to characteristics organization			
Size organization			
1=large (> 150 employees)	8	.97	.018
0=small (< 150 employees)	10	.52	
Size unit			
1=large (> 10 FtU)	8	.72	.750
0=small (< 10 FtU)	8	.65	
Structure			
Functional structure			
1=task oriented	11	.72	.814
0=output oriented	6	.67	
Setting			
1=social work	15	.68	.384
0=health	3	.92	
Staff turn-over			
1=low	3	.83	.616
0=high	15	.69	
Staff capacity			
1=sufficient	6	.62	.523
0=insufficient	12	.76	
Innovation task-orientation fit			
1=fit between innovation and needs older adults	16	.75	.453
0=no fit between innovation and needs older adults	2	.50	
1=fit between innovation and view management	15	.79	.008
0=no fit between innovation and view management	2	.00	

Table 3 Factors on the organizational level (n=18) affecting mean first user ratio (continued)

	n	Mean % of users per organization	p-value
Factors related to characteristics organization (continued)			
Expectations cooperation target group			
1=positive	1	1	.544
0=not positive	16	.75	
Expectations satisfaction target group			
1=positive	13	.71	.376
0=not positive	2	1	
Factors related to decision-making			
Decision making process and procedures			
1=both professionals and management participated	7	.89	.164
0=professionals or management decided (bottom-up or top-down)	11	.61	
Hierarchical structure			
1=short communication channels (low formalization)	15	.67	.211
0=long communication channels (high formalization)	3	1	
Formal reinforcement			
1=formal reinforcement (incorporated in annual report)	14	.78	.250
0=no formal reinforcement (not incorporated in annual report)	4	.50	
Factors related to collaboration			
Relationships with other organizations			
1=outreaching	17	.76	
0=introvert	0	0	
Nature of collaboration internally			
1=good collaboration	16	.68	.327
0=poor collaboration	2	1	
Factors related to resources			
Available expertise			
1=much expertise	14	.64	.189
0=little expertise	3	1	
Logistical procedures			
1=well arranged	13	.75	.614
0=badly arranged	5	.63	
Other (material) resources available			
1=available	12	.65	.318
0=not available	6	.86	

Table 3 Factors on the organizational level (n=18) affecting mean first user ratio (continued)

	n	Mean % of users per organization	p-value
Factors related to resources (continued)			
Administrative support available			
1=available	11	.69	.804
0=not available	7	.75	
Time available			
1=time available	7	.71	.979
0=no time available	11	.72	
Coordinator available			
1=coordinator available	16	.75	.453
0=no coordinator available	2	.50	
Factors related to motivators			
Reimbursement			
1=reimbursement	2	.87	.589
0=no reimbursement	16	.70	
Opinion leader			
1=available	11	.75	.695
0=not available	7	.67	

FTU = Functional Task Unit

Determinants of first use of the SMW group intervention when professionals are nested in their organizations

The intraclass correlation coefficient for the empty model was 0.8. Based on the previous single level analyses, six significant factors were identified. For each factor a simple multilevel logistic regression analysis was performed. Multilevel modelling was not possible for one factor, namely 'innovation - task orientation fit', because of empty cells in the joint distribution of professionals nested in organizations. These analyses showed that 'compatibility' (professionals' perception that implementing the SMW group intervention was compatible with other designated tasks), was the only significant factor contributing to first use on the professional level in the multilevel model (odds ratio 59.8; 95% confidence interval 1.17 - 3044; $p = .041$).

DISCUSSION

This study showed that two out of three trained professionals achieved first use of the SMW group intervention in about eight months. Four determinants of using the SMW intervention were identified on the professional level. When the nested structure of professionals within organizations was taken into account, compatibility on the professional level, remained the only significant determinant of first use on the professional level, confirming the importance of organizational dependency. Organizational size and managerial innovation-task orientation fit were factors on the organizational level that determined first use of the SMW group intervention.

To our knowledge not many implementation studies report utilization rate and pace of implementation. However, the utilization-rate of 67% found in the current study is similar to another community-based intervention; the rate in this Positive Parenting Program (Triple P) was 63 and 70% [17, 33, 34]. The mean pace at which SMW professionals realized first use of the SMW group intervention was 7.5 months. This is a little bit slower than the 2-6 months, as indicated by Fixsen et al., 2007 [18], but much quicker than the start-up time reported in other studies. Implementation of a Colorectal Cancer Screening Demonstration program took 9-11 months to start-up [35]. Implementation of AHA guidelines took 13 months [36], while implementation of a software program in laboratories took 1.8 years [37]. Although, the above mentioned implemented interventions are different in nature, it seems that the utilization rate and the pace of implementation of the SMW group intervention in health and social care is quicker. So overall, the pace of implementation of the SMW group intervention was successful.

Four determinants of first use could be identified on the professional level when the dependency of organizations was ignored. The chance of a professional realizing first use of the SMW group intervention seemed to be determined by the extent to which she perceives 'ownership', 'relative advantage', 'support' and/or 'compatibility'. However, when the nested structure of professionals in organizations was taken into account, results showed that professionals' perceived 'compatibility' was the only remaining significant key determinant. This means that independently of the organization in which professionals work, compatibility is an important factor of professionals that determines use of the SMW intervention. Compatibility seems an important facilitating factor for implementation, as confirmed by other studies. For example, it was found that the innovation needs to fit the work and routines of healthcare professionals [38] and Van der Stege [39] found that incompatibility of own goals with intervention goals was a barrier of implementation.

'Ownership', 'relative advantage' and 'support perceived by the professional' were no longer significant determinants of SMW intervention first use, when the dependency of

the organization was taken into account. This means that the organization, in which the professionals work, has a stronger influence on whether or not the SMW intervention will be used than these three determinants on the professional level.

Our results showed that 'organizational size' and 'managerial innovation-task orientation fit' were determinants of mean first user ratio on the organizational level. However, we didn't find any significant organizational determinants of first use of the SMW group intervention on the professional level. Regarding this finding, it should be noted that first use on the professional level and mean first user ratio, are different outcome measures, with the latter being a collective measure. It remains speculative why larger organizations realized use of the SMW intervention more often than smaller organizations, but it could be that, for example, the availability of a PR department in larger organizations might be a facilitating factor. Nevertheless, the finding that 'managerial innovation - task orientation fit' was also a significant determinant, indicates that compatibility of the SMW intervention with current tasks was important for both professionals and managers to start using the SMW intervention.

The strengths of this study are that it is an observational study in health and social care settings that applies both a predefined implementation framework and a multilevel approach to identify determinants of successful implementation of a new evidence-based intervention. Though the use of frameworks in implementation sciences has significantly increased over the past decades [24, 40], the use of multilevel analysis techniques has primarily been confined to health care professionals' behavior or behavioral intentions to use information technology [41, 42] or research utilization in general [43, 44]. To our knowledge, multi-level analyses investigating model-based determinants of implementation in health and social care settings are scarce (for an exception see: [45]).

Despite these strengths some limitations should be noted. First, the sample size was a limitation. Even though we had more than 10 groups as recommended for multilevel logistic regression analysis [32], our sample was too small for multivariate testing in the multilevel model. Moreover, the large odds ratio and wide 95% confidence interval of the multilevel analysis could be attributed to the small sample size as well, and therefore, the results should be interpreted with caution. Additionally, we may have missed some significant single level determinants, because of the small sample size. For example, 'self-efficacy', a well-known factor on the professional level from other studies [21, 23, 46], might also have proven to be significant when many more professionals and organizations had participated in the project. Although we succeeded to engage more organizations and professionals than planned, implementation research is typically beset by a "small N" problem [15].

Second, although we assessed determinants on the level of the professional and the organization, other contextual factors could be important too. According to the original model of Fleuren et al. (2004) factors on the level of the financial political context, such as rules and legislation, and financial resources, are relevant too [21]. In our larger project [26], we did consider these factors, but due to the restricted scope of the project, we were not able to get sufficient and valid data on these factors. Additionally, it should be noted that this study was performed in four provinces in the Northern part of the Netherlands, so our results might not apply to other regions in the Netherlands, nor to other countries.

Third, the items to measure the potential determinants based on the Fleuren framework [21] have been self-constructed and have not yet been validated. Therefore, it is unknown whether the factors are measured reliably and validly. In the meantime, Fleuren et al. (2014) have developed the MIDI-instrument [47], but this instrument was not available by the time we had to assess the factors. Moreover, the MIDI instrument also needs validation.

Fourth, a control group could have been of added value to the design. An ideal design would have included organizations with similar baseline characteristics that did not adopt the SMW intervention. However in practice, this would be very hard to realize.

Furthermore, one could reason that the level of implementation might be overestimated, because it has been shown that implementation can deteriorate over time [23], and we assessed use early in the project, two years after the start of the project. However, we don't expect that the level of implementation was overestimated, because some of the professionals were trained relatively late in the project and had relatively limited time to start using the SMW intervention. To get a full understanding of the process of implementation of innovations in health and social care, it is needed to collect data over multiple time points [23].

Despite these limitations, this study offers useful directions for implementation practice. Given the outcome that, regardless of organizational size and culture, compatibility with other designated tasks on the individual professional level is the key determinant in the first toilsome stage from adoption to initial implementation, it is important that managers create an environment that professionals perceive as encouraging for implementation [48]. As also advised by Van der Kleij et al. [49], emphasis should be placed on limiting the number of prescribed activities and allocating sufficient time to get experienced with the innovation. Therefore we recommend for clinical practice, that managers and administrators of adopting organizations should not only properly reserve formal and operational time for intended users, but also fine-tune allocated time with professionals during the process. Fine-tuning should not only encompass telling the professional what they can start doing new, but also telling them what they can stop doing the conservative way.

CONCLUSIONS

Forty-eight professionals from 18 health or social care organizations adopted the SMW group intervention. Thirty-two of them achieved first use at a pace of almost 8 months. The current study showed that 'ownership', 'relative advantage', 'support from colleagues' and 'compatibility' were determinants of implementation on the professional level, while 'organizational size' and 'innovation - task orientation fit' were determinants on the organizational level. Multilevel analyses, taking the dependency between professionals and organizations into account, showed that the professionals' perception of compatibility, i.e. whether the SMW intervention was compatible with other designated tasks, was the main determinant of implementation on the professional level.

Abbreviations

ESI: Empirically Supported Intervention; SMW: Self-management of Well-being

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REFERENCES

1. Grol R, Wensing M. What drives change? Barriers to and incentives for achieving evidence-based practice. *Med J Aust.* 2004;180(6 Suppl):S57-60.
2. Wandersman A, Duffy J, Flaspohler P, Noonan R, Lubell K, Stillman L, Blachman M, Dunville R, Saul J. Bridging the gap between prevention research and practice: the interactive systems framework for dissemination and implementation. *Am J Community Psychol.* 2008;41(3-4):171-81.
3. Backer TE. The failure of success: Challenges of disseminating effective substance abuse prevention programs. *J Community Psychol.* 2000;28(3):363-73.
4. Goodman RM. Bridging the gap in effective program implementation: From concept to application. *J Community Psychol.* 2000;28(3):309-21.
5. Boren SA, Balas EA. Evidence-based quality measurement. *J Ambul Care Manage.* 1999;22(3):17-23.
6. Palinkas LA, Soydan H. New horizons of translational research and research translation in social work. *Res Soc Work Prac.* 2012;22(1):85-92.
7. Schuurmans H. Promoting well-being in frail elderly people: Theory and intervention. Veenendaal: Universal Press; 2004. p. 119-64. [<http://dissertations.ub.rug.nl/faculties/medicine/2004/j.e.h.m.schuurmans/>]. Accessed March 2014.
8. Kremers IP, Steverink N, Albersnagel FA, Slaets JP. Improved self-management ability and well-being in older women after a short group intervention. *Aging Ment Health.* 2006;10(5):476-84.
9. Frieswijk N, Steverink N, Buunk BP, Slaets JP. The effectiveness of a bibliotherapy in increasing the self-management ability of slightly to moderately frail older people. *Patient Educ Couns.* 2006;61(2):219-27.
10. Masi CM, Chen H, Hawkey LC, Cacioppo JT. A meta-analysis of interventions to reduce loneliness. *Personality and Social Psychology Review.* 2011;15(3):219-66.
11. Goedendorp MM, Kuiper D, Reijneveld SA, Sanderman R, Steverink N. Sustaining program effectiveness after implementation: The case of the self-management of well-being group intervention for older adults. *Patient Educ Couns.* 2017;100(6):1177-84.
12. Valtorta N, Hanratty B. Loneliness, isolation and the health of older adults: do we need a new research agenda? *JRSM.* 2012;105(12):518-22.
13. Beekman A, Copeland J, Prince MJ. Review of community prevalence of depression in later life. *Brit J Psychiat.* 1999;174(4):307-11.
14. Busch, M., Gommer, A., Post, N., Savelkoul, M., Schoemaker, C., van Wieren, S., van der Wilk, M., Zantinge, E.M. Healthy aging in the Netherlands [Gezond ouder worden in Nederland]. Bilthoven: RIVM; 2011. [<http://rivm.nl/bibliotheek/rapporten/270462001.pdf>]. Accessed March 2014.

15. Proctor EK, Landsverk J, Aarons G, Chambers D, Glisson C, Mittman B. Implementation research in mental health services: an emerging science with conceptual, methodological, and training challenges. *Adm Policy Ment Health*. 2009;36(1):24-34.
16. Custers EJ. Long-term retention of basic science knowledge: a review study. *Adv Health Sci Educ*. 2010;15(1):109-28.
17. Sanders MR, Prinz RJ, Shapiro CJ. Predicting utilization of evidence-based parenting interventions with organizational, service-provider and client variables. *Adm Policy Ment Hlth*. 2009;36(2):133-43.
18. Fixsen DL, Naoom SF, Blase KA, Wallace F. Implementation: the missing link between research and practice. *APSAC Advisor*. 2007;19(1-2):4-11.
19. Stith S, Pruitt I, Dees J, Fronce M, Green N, Som A, Linkh D. Implementing community-based prevention programming: A review of the literature. *J Prim Prev*. 2006;27(6):599-617.
20. Fixsen DL, Naoom SF, Blase KA, Friedman RM, Wallace F. Implementation research: A synthesis of the literature: Tampa: University of South Florida, Louis de la Parte Florida Mental Health Institute, The National Implementation Research Network; 2005.
21. Fleuren M, Wiefferink K, Paulussen T. Determinants of innovation within health care organizations: literature review and Delphi study. *Int J Qual Health Care*. 2004;16(2):107-23.
22. Greenhalgh T, Robert G, Macfarlane F, Bate P, Kyriakidou O. Diffusion of innovations in service organizations: systematic review and recommendations. *Milbank Q*. 2004;82(4):581-629.
23. Durlak JA, DuPre EP. Implementation matters: A review of research on the influence of implementation on program outcomes and the factors affecting implementation. *Am J Community Psychol*. 2008;41(3-4):327-50.
24. Tabak RG, Khoong EC, Chambers DA, Brownson RC. Bridging research and practice: models for dissemination and implementation research. *Am J Prev Med*. 2012;43(3):337-50.
25. McCullough MB, Chou AF, Solomon JL, Petrakis BA, Kim B, Park AM, Benedict AJ, Hamilton AB, Rose AJ. The interplay of contextual elements in implementation: an ethnographic case study. *BMC Health Serv Res*. 2015;15(1):62.
26. Kuiper D, Goedendorp MM, Sanderma R, Reijneveld SA, Steverink N. Identifying the determinants of use of the G&G interventions for older adults in health and social care: protocol of a multilevel approach. *BMC Res Notes*. 2015;8:296.
27. Steverink N, Lindenberg S, Slaets JP. How to understand and improve older people's self-management of well-being. *Eur J Ageing*. 2005;2:235-44.
28. Steverink N. Successful development and aging: theory and intervention. In: Pachana NA, Laidlaw K, editors. *The Oxford Handbook of Clinical Geropsychology*. Oxford: University Press; 2014. doi:10.1093/oxfordhb/9780199663170.013.028.

29. Fleuren M, Wiefferink K, Paulussen T. Checklist determinanten van innovaties in gezondheidszorgorganisaties. TSG. 2010;88(2):51-4.
30. Nunnally JC, Bernstein IH, ten Berge JMF. Psychometric theory. New York: McGraw-Hill; 1967.
31. Muthén LK, Muthén BO. Mplus. The comprehensive modelling program for applied researchers: User's guide, 5. Los Angeles: Muthén & Muthén; 2012.
32. Paccagnella O. Sample size and accuracy of estimates in multilevel models, new simulations results. Methodology. 2011;7(3):111-20.
33. Asgary-Eden V, Lee CM. So now we've picked an evidence-based program, what's next? Perspectives of service providers and administrators. Prof Psychol Res Pr. 2011;42(2):169-75.
34. Asgary-Eden V, Lee CM. Implementing an Evidence-Based Parenting Program in Community Agencies: What Helps and What Gets in the Way? Adm Policy Ment Hlth. 2012;39(6):478-88.
35. DeGross A, Holden D, Goode Green S, Boehm J, Seeff LC, Tangka F. Start-up of the colorectal cancer screening demonstration program. Prev Chronic Dis. 2008;5(2):A38.
36. Bigham BL, Koprowicz K, Aufderheide TP, Davis DP, Donn S, Powell J, Suffoletto B, Nafziger S, Stouffer J, Idris A. Delayed prehospital implementation of the 2005 American Heart Association guidelines for cardiopulmonary resuscitation and emergency cardiac care. Prehosp Emerg Care. 2010;14(3):355-60.
37. Hall RK, Wang V, Jackson GL, Hammill BG, Maciejewski ML, Yano EM, Svetkey LP, Patel UD. Implementation of automated reporting of estimated glomerular filtration rate among Veterans Affairs laboratories: a retrospective study. BMC Med Inform Decis. 2012;12(1):69.
38. van der Meer EWC, van der Gulden JWJ, van Dongen D, Boot CR, Anema JR. Barriers and facilitators in the implementation of recommendations for hand eczema prevention among healthcare workers. Contact Derm. 2015;72(5):325-36.
39. van der Stege HA, van Staa A, Hilberink SR, Visser AP. Using the new board game SeCZ TaLK to stimulate the communication on sexual health for adolescents with chronic conditions. Patient Educ Couns. 2010;81(3):324-31.
40. Nilsen P. Making sense of implementation theories, models and frameworks. Implement Sci. 2015;10(1):53.
41. Doran D, Haynes BR, Estabrooks CA, Kushniruk A, Dubrowski A, Bajnok I, Hall LM, Li M, Carryer J, Jedras D. The role of organizational context and individual nurse characteristics in explaining variation in use of information technologies in evidence based practice. Implement Sci. 2012;7(1):122.
42. Gagnon M, Simonyan D, Ghandour EK, Godin G, Labrecque M, Ouimet M, Rousseau M. Factors influencing electronic health record adoption by physicians: A multilevel analysis. Int J Inf Manage. 2016;36(3):258-70.

43. Estabrooks CA, Midodzi WK, Cummings GG, Wallin L. Predicting research use in nursing organizations: a multilevel analysis. *Nurs Res.* 2007;56(4 Suppl):S7-23.
44. Estabrooks CA, Squires JE, Hayduk L, Morgan D, Cummings GG, Ginsburg L, Stewart N, McGilton K, Kang SH, Norton PG. The Influence of Organizational Context on Best Practice Use by Care Aides in Residential Long-Term Care Settings. *J Am Med Dir Assoc.* 2015;16(6):537.
45. Ahn H, Keyser D, Hayward-Everson RA. A multi-level analysis of individual and agency effects on implementation of family-centered practice in child welfare. *Child Youth Serv Rev.* 2016;69:11-8.
46. Kallestad JH, Olweus D. Predicting Teachers' and Schools' Implementation of the Olweus Bullying Prevention Program: A Multilevel Study. *Prev Treat.* 2003;6(1):21a.
47. Fleuren MA, Paulussen TG, Van Dommelen P, Van Buuren S. Towards a measurement instrument for determinants of innovations. *Int J Qual Health Care.* 2014;26(5):501-10.
48. Jacobs SR, Weiner BJ, Reeve BB, Hofmann DA, Christian M, Weinberger M. Determining the predictors of innovation implementation in healthcare: a quantitative analysis of implementation effectiveness. *BMC Health Serv Res.* 2015;15(1):6.
49. van der Kleij, Rianne MJJ, Crone MR, Paulussen TG, van de Gaar, Vivan M, Reis R. A stitch in time saves nine? A repeated cross-sectional case study on the implementation of the intersectoral community approach youth at a healthy weight. *BMC Public Health.* 2015;15(1):1032.

Chapter 4

A multilevel analysis of professional and organizational determinants of implementation of the self-management of well-being group intervention

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ABSTRACT

Background

Implementation of empirically supported interventions (ESIs) in clinical practice is a complex process, and an important outcome of implementation success is frequency of using the ESIs. Numerous factors and stakeholders influence this outcome, although the multilevel interdependency is often disregarded. The aim of this study was to identify determinants of frequency of using the self-management of well-being (SMW) group intervention by professionals after implementation in health and social care organizations, in multilevel analyses.

Methods

Forty-eight professionals and their managers from 18 organizations adopted the SMW intervention, and completed web-based questionnaires and telephone interviews. Determinants of use were derived from the Fleuren framework. The use of the interventions was recorded by the research team during the project. Multilevel linear regression analyses were performed to identify determinants for frequency of use.

Results

Thirty-three professionals of the 40 respondents used the SMW group intervention with an average frequency of 1.6 (0-4) times within two years. Eighty-five percent of the variance in the frequency of professional use occurred across organizations. Eight factors determined frequency: 'formal reinforcement', 'opinion leader', 'support from fellow SMW-teachers', 'support from other colleagues' and 'support from supervisor', were factors with large effect sizes, while 'ownership', 'relative advantage' and 'observability of effects' were factors with medium effect sizes. Organizational size, self-efficacy, support from higher management, innovation task-orientation fit, and compatibility were significant in bivariate analyses, but not in multilevel analyses.

Conclusion

After adoption of the SMW group intervention in health and social care organizations, professionals used it on average 1.6 times in two years, with a maximum of four times. The frequency of use by professionals was predominantly explained by the organization in which they were employed. This study shows that the frequency of using a new ESI could increase when adopting organizations formally reinforce using this new ESI and support their professionals.

INTRODUCTION

Implementation of empirically supported interventions (ESIs) in practice is widely recognized as a complex process. Implementation of an ESI within an organization can be defined as the process of gaining targeted professionals' appropriate and committed use of the ESI [1]. Determinants can be defined as the factors that impede ('barriers') or enable ('facilitators') the appropriate and committed use of the ESI [2]. If determinants of use of a given ESI in a particular practice-setting would be known, tailored strategies could be designed to increase use [2-4]. In turn, increased use would affect implementation outcomes such as 'uptake' or 'penetration' [5], ultimately expanding public health impact.

The number of empirical studies that have tried to identify the determinants of implementation of a given ESI or program is considerable. Most of them employ qualitative methods to systematically describe the barriers and facilitators perceived by individual professionals (e.g. Aarons, 2007) [6] and other implementation stakeholders, such as agency directors, program managers, and sometimes consumers (e.g. Aarons, 2009; Po'e, 2010; Akin, 2016) [7-9]. However, in these observational studies, the causal relations between determinants and implementation outcomes, such as the frequency of use, are often not tested and thus remain inconclusive. The studies that do test the causality between certain barriers and facilitators and the use of an ESI in practice, unfortunately confine themselves to measuring factors at only one stakeholder level (e.g. Sanders, 2009; Urquhart, 2011; Thomas, 2014) [10-12]. As various stakeholders are usually not independent from each other, it should not be ignored that barriers and facilitators on multiple hierarchically nested stakeholder levels simultaneously affect implementation outcomes at the level of professionals [13].

In the current study we assessed both professional and organizational determinants of the frequency of use of the self-management of well-being (SMW) group intervention. In three ways we sought to address the methodological issues inherently present in implementation studies. First, instead of retrospectively investigating determinants of an ESI, we prospectively and theoretically driven assessed professional and organizational factors based on the Fleuren framework [2, 14]. The Fleuren framework incorporates both a multilevel and a multistage approach of the determinants of implementation. To our knowledge, no other model or framework gives such detailed and clear directions to determine which professional and/or organizational factors are potentially important at what stage of the implementation process (orientation, adoption, implementation and continuation) [15].

Second, a conceptually clear and continuous implementation outcome measure was chosen, as advised by Proctor et al., 2011 [5]. To determine frequency of use of the SMW group-intervention, we did not rely on retrospective self-report, but prospectively registered each SMW group intervention delivered, when it was delivered and by whom.

Third and most important, to take into account that determinants operate on multiple hierarchically dependent stakeholder levels, multilevel statistical analysis of the collected data was employed. By employing such multilevel statistical analyses, we can anticipate that the frequency of use of the SMW group intervention will not only be determined by characteristics of professionals, but also by characteristics of the organizations that employ these professionals. Moreover, only by employing multilevel statistical analysis, we can determine whether determinants identified to explain frequency of use between professionals alter (i.e. become more or less important), when determinants that explain frequency of use across organizations are added to the multilevel nested analysis. Or to put it in simple words, applying multilevel statistical analysis allows us to answer a frequently asked question: “What matters most when aiming to stimulate the appropriate and committed use of an ESI, such as the SMW group intervention? Determinants at the individual professional level, at the organizational level, or both?”

The aim of this study was to describe the frequency of use of the SMW group intervention during the implementation project across professionals nested in organizations, and to identify the determinants. Therefore, three research questions were addressed:

1. What are the determinants of the frequency of using the SMW group interventions by professionals?
2. What are the determinants of the frequency of using the SMW group interventions by organizations?
3. What are the determinants of the frequency of use, when nesting of professionals within organizations is taken into account?

METHOD

Study design

The current study is part of a larger implementation project that aimed to identify the determinants and effects of use of the SMW interventions in health and social care organizations. The study protocol of this larger project has been described in detail elsewhere [15]. In short, the project entails four overlapping project phases and started in April 2010. In project phase 1 (month 0-12) the aim was to motivate at least 15 organizations to adopt the SMW group intervention. In project phase 2, between May 2010 and March 2011, professionals (two per organization) were trained to use the SMW group intervention (see training). In project phase 3 the trained professionals started implementing the SMW group intervention by recruiting older adults aiming to reach 400 participants. In project phase four data analyses were executed. Data collection waves were scheduled in month 12-15 of the project (T1), month 24-27 (T2) and month 36-39 (T3). This paper is based on the data collected in third and final assessment wave. At that time, the project had run for three years and for all professionals it was at least two years ago since they participated in the standardized training.

The ethics committee of the University Medical Center Groningen evaluated and approved the study in May 2010 and indicated that it did not fall under the Medical Research Involving Human Subjects Act. Informed consent of participating professionals and their managers was given orally.

Study sample

The study sample consists of participants at two hierarchical levels: the professional and the organizational level. The professional level was represented by trained SMW professionals, and the organizational level was represented by managers hierarchically closest to the SMW professionals in their organizations.

Setting

The study was performed in the northern part of the Netherlands. Various health and social care organizations in that region contribute to the execution of the nationwide Social Support Act [16], which prescribes that vulnerable older adults and other vulnerable citizens need to be supported to recapture or maintain their ability to manage their own well-being. The objectives of the SMW group intervention correspond largely to the purpose of this Act, which makes health and social care organizations suitable settings for implementing the SMW intervention. Health care organizations interested in participating in the implementation project were predominantly home-care organizations, employing public health nurses aimed at supporting older adults in their direct living environment (home and/or neighborhood). The interested social care organizations were predominantly organizations employing social

service or social group workers specialized in executing community-based services for specific vulnerable target groups, such as lonely older adults.

Recruitment

In project phase 1, from April 2010, an invitation to participate in the implementation project was disseminated among all formal health and social care organizations in the northern part of the Netherlands. For interested health and social care organizations, SMW workshops, in which the SMW-theory was explained and participants were invited to apply the theory of Self-Management of Well-being to their own lives, were given for professionals and managers of these organizations.

The SMW intervention

The SMW group intervention was designed for socially vulnerable women, aged > 55 years, who subscribed individually, and were physically capable of travelling to the intervention location. It was specifically designed for women, because the need for social support was largest among them. Therefore, the intervention contained gender-specific topics, wording and assignments. The SMW group intervention is theory-driven, applying the theory of Self-Management of Well-being (SMW theory) [17, 18]. This theory postulates that if people have good self-management abilities – that is, skills enabling them to adequately handle their important physical and social resources – they are able to maintain a higher level of overall well-being. The SMW group intervention proved to be effective in enhancing self-management ability and well-being and in reducing loneliness [19-21].

The SMW group intervention consists of six consecutive group meetings with 8 to 12 participants and one booster session after three months. Each session has a duration of 2½ hours and is supervised by two trained professionals. Each meeting focuses on one or more of the six self-management abilities identified by the SMW theory [17, 18]. The six self-management abilities are: 1) taking initiatives; 2) being self-efficacious; 3) investing; 4) having a positive outlook; 5) ensuring multi-functionality in resources; 6) ensuring variety in resources. Women are taught to apply these abilities to the five dimensions of well-being, summarized by the Dutch acronym 'GLANS' [Dutch for 'gleam' or 'gloss']. In the acronym G stands for *Gemak en Gezondheid* [easy living and health: Comfort], L for *Leuke bezigheden en Lichamelijke activiteit* [leisure and physical activity: Stimulation], A for *Affectie* [giving and receiving love and affection], N for *Netwerk* [social network contacts: Behavioral confirmation], and S for *Sterke punten* [strengths: Status]). For a detailed description of the course content per meeting we refer to Kremers et al., 2006, Goedendorp et al., 2017 and Goedendorp & Steverink, 2017 [19-21].

Training professionals

Professionals of the health and social care organizations that adopted the SMW group intervention followed the standardized SMW-training of 2½ days taught by two qualified SMW-trainers. Professionals were admitted to the training under three conditions (1) being female, because the SMW group intervention participants would all be women, (2) being currently employed in a formal health and/or social organization, and (3) registering together with one or more female colleagues from the same organization.

The training focused on knowledge transfer regarding SMW theory and on practicing skills. Skills needed to guide and supervise the SMW group intervention were trained by means of role-play and feedback. Additional instructions were given on the intervention materials (manual and workbook for participants) and the availability of support from the research team by means of the implementation toolkit, website and site-visits. The professionals were certified as SMW teachers after completion of the training.

Adaptation of the Fleuren framework to fit the SMW implementation study

The original Fleuren framework identifies 50 determinants on various stakeholder levels and stages of implementation [2]. However, we needed to adapt this general framework, because not all levels and determinants fitted our study. For example, we moved the originally defined level of the innovation and attributed its factors (e.g. 'clearness procedures' and 'appealing to use') to the professional level, because these factors would need to be assessed by the professionals who would use the SMW group intervention (innovation). Additionally, we renamed some levels and factors. For example, 'users' in the Fleuren framework we referred to as the 'professionals', and 'patients' as 'clients' in the implementation study. This adaptation process of the Fleuren determinant framework is described in detail elsewhere [15]. The adapted framework for our implementation study identifies four stages of implementation and 34 determinants on the professional and the organizational level (see Figure 1). For the current study we focused on the causality between determinants on two levels and the implementation stage. On the professional level, 14 factors were sorted into three clusters: competencies, innovation and work factors. On the organizational level 20 factors were sorted into five clusters: characteristics of the organization, decision-making, collaboration, resources and motivators.

Figure 1 Framework of factors affecting frequency of use of the SMW group intervention (Adapted from Fleuren et al., 2004 and 2010)

Data collection

The current study is based on the data collected in the third and final assessment wave (T3) that took place between April and September 2013. Data collection took five months instead of the anticipated four months, because of additional reminders. At that time, professionals have had at least 25 months to realize implementation and use of the SMW group intervention. Three types of data were collected by the research team: 1) observational data: training dates, and starting dates of the SMW group interventions were recorded; 2) web-based questionnaires were filled out by trained professionals, and 3) structured telephone interviews were held among managers of the participating organizations.

All trained professionals (n=48) were contacted by e-mail, and two reminders were sent when they did not respond. Eight professionals did not respond, because they were no longer

employed in the adopting organization (n=3), sick leave (n=2) and for unknown reason (n=3). Four of the non-responding professionals were users and four were non-users of the SMW group intervention. In total 40 professionals responded. Seventeen managers of the 18 organizations were willing to participate in the telephone interview. The non-responding manager, employed in an organization that did not use the SMW group-intervention, had already indicated in the second assessment wave, one year earlier, that she did not want to be contacted again.

Dependent variables

The frequency of use on the professional level was assessed as the number of SMW group interventions delivered by a professional. The frequency of use on the organizational level was the number of SMW interventions delivered by an organization. Additionally a frequency user-ratio was calculated on the organizational level, whereby the number of interventions delivered by the organization was multiplied by the number of professionals using the SMW intervention divided by the number of trained professionals.

Independent variables

To assess the determinants of the frequency of using the SMW group intervention in health and social care organizations, the checklist for determinants of innovations [14] was used to operationalize factors (determinants) into items. Fourteen factors on the professional level were assessed with 30 items in three clusters: competencies (1 factor, 3 items), innovation (5 factors, 8 items) and work situation (8 factors, 19 items). On the organizational level 20 factors were assessed with 23 items in five clusters: characteristics of the organization (7 factors, 10 items), decision-making (3 factors, 3 items), collaboration (2 factors, 2 items), resources (6 factors, 6 items) and motivators (2 factors, 2 items). The predefined determinants from the Fleuren framework were operationalized into one or more closed questions per factor. For example, the determinant “compatibility” on the professional level (described by Fleuren in 2010) [14] as to what extent does the care provider view the innovation as matching his/her job description) was operationalized by two items: (1) “Is preparing and executing the SMW group intervention part of your formal task description?” (2) “Do you have enough time to prepare and execute the SMW group intervention?” When Cronbach’s alphas were > 0.7 , items measuring the same determinant were combined into a scale [22]. Single items and scales were dichotomized. The questionnaire and interview, as well as the scales and recoding of the scores, are found as supporting information in the Appendix of this thesis.

Data analysis

The data were entered using the IBM SPSS statistics program, version 20. Descriptive statistics on the characteristics of the study sample are reported as means, standard deviations and ranges in case of continuous variables, and as the absolute numbers and percentages in case

of discrete variables. Descriptive statistics on the variation in use on the professional and the organizational level, are reported as mean, standard deviation and range.

To identify the determinants of use on the professional and the organizational level univariate analyses were performed. Independent samples t-tests were used to test which factors were significantly associated with the mean frequency of SMW group intervention use by professionals and with mean frequency user-ratio by organizations. Cohen's d were calculated to determine effect sizes [23].

To determine if mean frequency of professional use varied notably across organizations, the Intraclass Correlation Coefficient (ICC or null model) was calculated using variance estimates from an intercept-only multilevel model. The ICC provides an answer to whether multilevel modelling is applicable to the identification of significant determinants of the frequency of professional use (adapted from Peugh, 2010, page 89) [24]. When the ICC was larger than zero, multilevel simple linear regression analyses were performed, in which the significant determinants on the professional and organizational level were selected and modelled with a linear mixed-effects model. The data of 40 professionals (level 1) were nested in the data of 17 organizations (level 2) and frequency of professional use was the dependent variable. A multilevel linear regression analysis was performed for each determinant separately.

RESULTS

Characteristics study sample

At T3 data were collected from 40 professionals of 17 different organizations. All professionals were female and most (n=25) were social service workers. Most managers (n=13) were also female and in a lower or middle management job. More characteristics of the professionals and managers are described in Table 1. The average number of professionals trained per organization was 2.7 (range 1-5). The mean time between the date of the training certification of professionals and the T3 measurement was 30 months (sd 3.8, range 25-40 months).

Frequency of using the SMW group intervention

At T3, 33 of the responding professionals (n=40) used the SMW group intervention and seven were non-users. Of the non-responding professionals, four were users and four were non-users. The mean frequency of use of the responding professionals (n=40) was 1.6 SMW group interventions delivered (sd 1.3, range 0-4), and of the responding organizations (n=17) it was 1.9 (sd 1.6, range 0-5). When the non-responding professionals and managers were taken into account the mean frequency of professional use (n=48) was 1.5 SMW group

interventions delivered (sd 1.3, range 0-4), and the frequency of organizational use (n=18) was 1.8 (sd 1.6, range 0-5). Within the professional users, the time between training certification and T3 was not significantly correlated with the frequency of professional use (Pearson correlation= -0.194, $p = .324$).

Table 1 Characteristics study sample

Professionals (n=40)		mean	(sd)	range	n	(%)
Gender	female				40	(100)
Age	years	51.5	(8.9)	27-63		
Work hours ^a	hours per week	25.0	(5.6)	8-36		
Job description	social service worker				25	(63)
	social group worker				7	(17)
	public health nurse				2	(5)
	other (e.g. psychomotor therapist)				6	(15)
Work setting	health care organization				7	(18)
	social work organization				33	(82)
Managers (n=17)		mean	(sd)	range	n	(%)
Gender	female				13	(77)
	male				4	(23)
Age	years	52.3	(7.2)	40-62		
Work hours ^a	hours per week	30.5	(6.4)	16-36		
Job description	higher management				4	(24)
	middle management				5	(29)
	lower management				8	(47)
Work setting	health care organization				3	(18)
	social work organization				14	(82)

^aWork hours according to employment contract

Determinants of frequency of using the SMW group intervention by professionals

In Table 2 results on the determinants of the frequency of use on the professional level are shown. Overall, ten out of 14 determinants showed significant univariate associations with frequency of professional use with large effect sizes. Within the cluster competencies, self-confidence ('self-efficacy') was significantly associated with higher frequency of professional use ($p = .042$). Professionals that were self-confident in recruiting, organizing and supervising the group delivered the SMW group intervention significantly more frequently than professionals who had no self-confidence.

Of the five determinants within the cluster innovation, three determinants were significantly associated with more frequent professional use. The majority of the trained SMW professionals felt responsible for implementation of the SMW group intervention ('ownership') and those who felt ownership used the SMW group-intervention more frequently than professionals who did not feel responsible ($p < .001$). Second, the professionals who perceived delivering the SMW group intervention as advantageous for themselves ('relative advantage') used the SMW group-intervention more frequently than professionals who perceived no advantage ($p = .003$). Third, professionals stating that effects in SMW participants were observable, used the SMW group-intervention more frequently than professionals who observed no effects ($p = .012$).

Of the eight determinants within the cluster work situation, six showed to be significantly associated with the frequency of professional use. Professionals who did feel supported, either by actions and/or attitudes, used the SMW group-intervention more frequently than professionals who did not feel supported; 1) $p < .001$ in positive actions from fellow SMW-teachers ('support from SMW teachers'); 2) $p = .001$ in positive attitude from other colleagues ('support from other colleagues'); 3) $p < .001$ in positive attitude from supervisor ('support from supervisor) and 4) $p = .047$ in positive attitude from higher management) ('support from higher management'). 5) Professionals reporting a fit between the innovation and their perceived task ('innovation task-orientation fit') used the SMW group-intervention more frequently than professionals that perceived no fit ($p = .036$).

6) Professionals who reported that implementing the SMW group intervention was compatible with other designated tasks used the SMW group-intervention more frequently than professionals who reported no compatibility ($p = .012$).

Table 2 Determinants of frequency of professional use

	Frequency of professional use number of group interventions delivered			Indep t-test 2-sided	cohen's <i>d</i>
	n	mean	sd	<i>p</i> -value	
Factors related to competencies professional					
Self-efficacy					
1=self-confidence in recruiting, organizing and supervising the group	15	2.20	1.01	.042	0.78
0=no self-confidence in recruiting, organizing and supervising the group	23	1.35	1.34		
Factors related to the innovation					
Ownership					
1=feeling responsible for SMW-group inter- vention implementation	26	2.15	1.12	<.001	1.52
0=not feeling responsible for SMW-group intervention implementation	13	0.62	0.96		
Clearness procedures					
1=SMW manual is clear	38	1.63	1.30	...	
0=SMW manual is not clear	1	2.00	..		
Relative advantage					
1=advantage	23	2.13	1.22	.003	1.04
0=no advantage	16	0.94	1.06		
Appealing to use					
1=appealing	26	1.85	1.26	.225	
0=not appealing	12	1.33	1.30		
Observability of effects					
1= effects are observable in SMW partici- pants	21	2.14	1.01	.012	0.82
0= effects are not observable in SMW partici- pants	17	1.12	1.36		
Factors related to work situation					
Support from fellow SMW-teachers					
1=positive actions	27	2.19	1.08	<.001	1.66
0=no positive actions	11	0.45	0.82		
1=positive cooperation (missing n=9)	29	2.07	1.13	.933	
0=no positive cooperation	2	2.00	0.00		
Support from other colleagues					
1=positive attitude	30	2.03	1.19	.001	1.74
0=no positive attitude	8	0.38	0.52		
1=positive actions	11	2.27	1.27	.069	
0=no positive actions	27	1.44	1.22		
Support from supervisor					
1=positive attitude	29	2.14	1.09	<.001	2.30
0=no positive attitude	9	0.22	0.44		
1=positive actions	15	2.07	1.10	.138	
0=no positive actions	23	1.43	1.34		

Table 2 Determinants of frequency of professional use (continued)

	Frequency of professional use number of group interventions delivered			Indep t-test 2-sided	cohen's <i>d</i>
	<i>n</i>	mean	<i>sd</i>	<i>p</i> -value	
Factors related to work situation (continued)					
Support from higher management					
1=positive attitude	26	1.96	1.25	.047	0.75
0=no positive attitude	12	1.08	1.16		
1=positive actions	6	2.17	0.75	.319	
0=no positive actions	32	1.59	1.34		
Modelling					
1=stimulated by implementation success of other organizations	22	1.55	1.10	.773	
0=not stimulated by implementation success of other organizations	18	1.67	1.53		
Innovation task-orientation fit					
1=fit between innovation and needs older adults	37	1.54	1.28	.315	
0=no fit between innovation and needs older adults	3	2.33	1.53		
1=fit between innovation and perceived task professional	27	1.93	1.33	.036	0.77
0=no fit between innovation and perceived task professional	12	1.00	0.95		
Work related stress					
1=no overtime work	21	1.71	1.45	.565	
0=overtime work	19	1.47	1.12		
1=no sick leave	19	1.42	1.35	.414	
0=sick leave	21	1.76	1.26		
1=satisfied with job	37	1.51	1.19	.141	
0=not satisfied with job	3	2.67	2.31		
1=no work pressure	3	1.67	0.57	.928	
0=work pressure	37	1.59	1.34		
Compatibility					
1=compatible	10	2.50	1.18	.012	1.0
0=not compatible	29	1.34	1.20		

Determinants of frequency of using the SMW group intervention by organizations

Three out of 20 determinants showed significant univariate associations with organizational frequency user-ratio with large effect sizes (see Table 3). Within the cluster organizational characteristics, the size of the organization ('size') showed to be significantly associated with organizational frequency user-ratio. In large organizations with more than 150 employees, organizational frequency user-ratio was significantly higher than in their smaller counterparts ($p = .047$).

Within the cluster of determinants related to decision-making, one determinant showed to be significantly associated with organizational frequency user-ratio. In organizations where implementation of the SMW group-intervention was included in the annual plan ('formal reinforcement'), organizational frequency user-ratio was significantly higher than in organizations where the implementation of the SMW group-intervention was not included in the annual plan ($p = .011$).

Finally, within the cluster motivators, the availability of an opinion leader showed to be significantly associated with the organizational frequency user-ratio. In organizations stating to have an influential employee promoting the use of the SMW group intervention ('opinion leader'), the organizational frequency user-ratio was significantly higher than in organizations where no such employee was present ($p = .003$). All other organizational determinants tested did not yield statistically significant results (see Table 3).

Table 3 Determinants of frequency user-ratio of organizations

	Frequency user-ratio on the organizational level number of interventions delivered * number of users / number of potential users			Indep t-test 2-sided	cohen's d
	n	mean	sd	p-value	
Factors related to characteristics organization					
Size					
1=large organization (≥ 150 employees)	7	2.85	1.62	.047	1.05
0=small organization (< 150 employees)	10	1.31	1.31		
1=large unit (≥ 10 FtU)	6	1.90	1.61	.778	
0=small unit (< 10 FtU)	7	1.66	1.48		
Functional structure					
1=task oriented	12	2.00	1.60	.611	
0=output oriented	4	1.50	1.91		
1=social work setting	14	1.79	1.51	.423	
0=health care setting	3	2.64	2.19		
Staff turn-over					
1=low	6	1.81	1.33	.806	
0=high	11	2.02	1.79		
Staff capacity					
1=sufficient	7	1.87	1.23	.883	
0=insufficient	10	1.99	1.88		
Innovation task-orientation fit					
1=fit between innovation and needs older adults	14	2.19	1.63	.173	
0=no fit between innovation and needs older adults	3	.78	0.84		
1=fit between innovation and view management	15	2.16	1.58	.377	
0=no fit between innovation and view management	1	.67	-		
Expectations cooperation target group					
1=positive	1	1.67	-	.868	
0=not positive	16	1.96	1.65		
Expectations satisfaction target group					
1=positive	16	2.06	1.57	-	
0=not positive	0	-	-		

Table 3 Determinants of frequency user-ratio of organizations (continued)

	Frequency user-ratio on the organizational level number of interventions delivered * number of users / number of potential users			Indep t-test 2-sided	cohen's d
	n	mean	sd	p-value	
Factors related to decision-making					
Decision making process and procedures					
1=both professionals and management participated	7	2.74	1.55	.085	
0=professionals or management decided (bottom-up or top-down)	10	1.38	1.45		
Hierarchical structure					
1=short communication channels (low formalization)	15	2.16	1.58	.135	
0=long communication channels (high formalization)	2	0.34	0.47		
Formal reinforcement					
1=formal reinforcement (included in annual plan)	8	2.93	1.58	.011	1.39
0=no formal reinforcement (not included in annual plan)	9	1.07	1.05		
Factors related to collaboration					
Relationships with other organizations					
1=outreaching	15	2.16	1.58	.135	
0=introvert	2	0.34	0.47		
Nature of collaboration internally					
1=good collaboration	16	1.94	1.65	.972	
0=poor collaboration	1	2.00	-		
Factors related to resources					
Available expertise					
1=much expertise	12	1.69	1.46	.327	
0=little expertise	5	2.55	1.92		
Logistical procedures					
1=well arranged	12	2.26	1.55	.218	
0=badly arranged	5	1.18	1.62		
Other (material) resources available					
1=available	15	2.16	1.58	.135	
0=not available	2	0.34	0.47		

	Frequency user-ratio on the organizational level number of interventions delivered * number of users / number of potential users			Indep t-test 2-sided	cohen's <i>d</i>
	n	mean	sd	<i>p</i> -value	
Factors related to resources (continued)					
Administrative support available					
1=available	11	2.44	1.58	.128	
0=not available	5	1.10	1.42		
Time available					
1=time available	6	2.36	1.36	.574	
0=no time available	10	1.88	1.73		
Coordinator available					
1=coordinator available	11	2.19	1.69	.404	
0=no coordinator available	6	1.49	1.46		
Factors related to motivators					
Reimbursement					
1=reimbursement	0	-	-	-	
0=no reimbursement	17	1.94	1.60		
Opinion leader					
1=available	7	3.20	1.10	.003	1.79
0=not available	10	1.06	1.28		

Determinants of frequency of using the SMW group intervention by professionals in context of their organizations

ICC computation showed that 85% ($ICC=1.589 / [1.589+0.2740] = 0.85$) of the variance in the frequency of professional use occurred across organizations. Therefore, multilevel simple linear regression analyses of the previously found significant determinants (see Table 2 and 3) were performed with frequency of professional use as the dependent variable. The results are shown in Table 4.

Overall, of the 13 determinants analyzed in context (professionals nested in organizations), five determinants showed to be no longer significant and eight remained significant. Determinants that ceased to be significant were, respectively: 'size organization', 'self-efficacy', 'support from higher management', 'innovation task-orientation fit', and 'compatibility'. Of the eight determinants that remained significant, the effect sizes of three determinants dropped from large to medium, while the effect sizes of the other five remained large. The three significant determinants with medium effect sizes were: 'ownership', 'relative advantage' and 'observability of effects'. The five significant determinants with large effect sizes were: 'support

from fellow SMW-teachers', 'support from other colleagues', 'support from supervisor', 'formal reinforcement' and 'opinion leader'.

Table 4 Determinants of frequency of using the SMW group intervention by professionals in the context of their organizations

	Frequency of professional use				
	n	mean Multilevel	sd Multilevel	p-value	cohen's d
Factors related to competencies professional					
Self-efficacy					
1=self-confidence in recruiting, organizing and supervising the group	15	1.91	1.21	.069	
0=no self-confidence in recruiting, organizing and supervising the group	23	1.50	1.45		
Factors related to the innovation					
Ownership					
1=feeling responsible for SMW-group intervention implementation	26	1.89	1.42	.009	0.56
0=not feeling responsible for SMW-group intervention implementation	13	1.17	1.11		
Relative advantage					
1=advantage	23	1.86	1.41	.037	0.42
0=no advantage	16	1.30	1.26		
Observability of effects					
1= effects are observable in SMW participants	21	2.01	1.45	.029	0.55
0= effects are not observable in SMW participants	17	1.24	1.37		
Factors related to perceived work situation					
Support from fellow SMW-teachers					
1=positive actions	27	2.04	1.38	<.001	1.04
0=no positive actions	11	0.76	1.06		
Support from other colleagues					
1=positive attitude	30	1.85	1.52	.006	0.74
0=no positive attitude	8	0.90	0.99		
Support from supervisor					
1=positive attitude	29	1.96	1.40	<.001	1.12
0=no positive attitude	9	0.58	1.04		
Support from higher management					
1=positive attitude	26	1.62	1.63	.574	
0=no positive attitude	12	1.78	1.24		

Table 4 Determinants of frequency of using the SMW group intervention by professionals in the context of their organizations (continued)

	Frequency of professional use				
	n	mean Multilevel	sd Multilevel	p-value	cohen's <i>d</i>
Factors related to perceived work situation (continued)					
Innovation task-orientation fit					
1=fit between innovation and perceived task professional	27	1.74	1.56	.145	
0=no fit between innovation and perceived task professional	12	1.38	1.15		
Compatibility					
1=compatible	10	1.83	1.07	.356	
0=not compatible	29	1.58	1.61		
Factors related to characteristics organization					
Size organization					
1=large (≥ 150 employees)	21	2.38	1.10	.081	
0=small (< 150 employees)	17	1.27	1.14		
Formal reinforcement					
1=formal reinforcement (included in annual plan)	20	2.43	1.06	.031	1.24
0=no formal reinforcement (not included in annual plan)	18	1.12	1.06		
Factors related to motivators					
Opinion leader					
1=available	21	2.60	1.00	.015	1.46
0=not available	17	1.12	1.03		

DISCUSSION

This study observed the frequency of use of the SMW group intervention by professionals employed in health or social care organizations and identified its determinants. On average professionals delivered the SMW group intervention 1.6 times in two years, with a maximum of four times. About one third of trained professionals were non-users. Overall, variation in the frequency of use by professionals was predominantly explained by characteristics of the organization in which they were employed, and only for a minor part by characteristics of professionals. Eight factors determined frequency: 'formal reinforcement', 'opinion leader', 'support from fellow SMW-teachers', 'support from other colleagues' and, 'support from supervisor', were factors with large effect sizes, while 'ownership', 'relative advantage' and 'observability of effects' were factors with medium effect sizes. Organizational size, self-efficacy, support from higher management, innovation task-orientation fit, and compatibility were significant in bivariate analyses, but not in multilevel analyses. It can be concluded that determinants at both the organizational and the individual professional level matter, but organizational determinants, such as formal reinforcement and support, matter more when aiming to stimulate the frequency of use of the SMW group intervention in the health and social care setting.

The highest frequency of use of the SMW group intervention by professionals was two times per year; mostly one course in the fall and one in the spring. No empirical reference-data on the frequency of use of comparable psycho-educational group interventions in community-based settings were found. However, for future SMW implementation efforts of organizations, we can indicate how many professionals per organization should be trained to reach a specified number of older adults. We estimate that to empower, for example, 100 community-dwelling older adults per year, you need to deliver 10 courses (8-12 participants) and thus have at least five pairs of professionals trained.

Not many studies, that investigated determinants of frequency of using ESIs, apply multilevel modelling techniques [13]. We found, to the best of our knowledge, six empirical multilevel studies to compare our results. Unfortunately, some did not report on the Intraclass Correlation Coefficient, or null model, which indicates how much variation was explained by the various levels [25, 26]. Of the four studies that did report on their null model, three found that most of the variation in use of a new program or best practice was predominantly explained by differences at the professional level [27-29]. In line with our study, only one study found that a large part of the variation was explained by the organization level. We found that 85% of the variance was explained by the organizational level, while Doran et al. (2012) [30] found that 35% of the variation in use of information technology by nurses was explained at the organization level and another 13% was explained at the sector level (i.e. hospital, long term care facilities and community organizations). More studies have to employ multilevel

modelling analysis to verify that our found percentage of explained variation in the use of the SMW group intervention at the organizational level, was exceptionally high.

Substantive comparison of specific determinants identified in our study with other multilevel studies is complicated by the fact that none of the other studies has been informed by the same theoretical framework as employed in our study (i.e. the Fleuren framework). Some of the studies are informed by the PARISH-model [28-30], others by evidence from empirical studies or researchers' own conceptualizations of potentially significant determinants [25-27]. However, despite the many differences in concepts assessed, we found empirical confirmation in other multilevel studies for two determinants identified in the current study i.e. 'support' and 'ownership'. First, previously found determinants, such as 'nurse to nurse collaboration' [28], 'recognition from others' [30] and a 'supportive workplace environment' [25] all point in the direction that 'support' is indeed a key-factor in implementation success. Also the importance of 'ownership' at the professional level was underpinned by the results of other multilevel studies. Though conceptualized slightly different, 'the intent to use' [29], 'the willingness to implement' [30] and 'professionals investment in the program' [25] are equivalents to indicate that the use of a new ESI, in casu the SMW group intervention, increases if the professionals are committed to the intended change.

Four determinants identified in our study (i.e. 'formal reinforcement', 'presence of an opinion leader', 'relative advantage' and 'observability of effects') were not confirmed by other multilevel studies. This is mainly because comparable concepts simply have not been assessed. However, the 'presence of an opinion leader' has been supported by a literature review, a qualitative study and a single level study. The existence of – at least one – “program champion” has been recognized as a valuable resource to encourage innovation [31, 32]. This opinion leader may either be a near-peer, respected by other staff, who champions the use of the innovation [11], or a line manager trained in program delivery along with staff [10]. So, we did find support for the determinant 'presence of an opinion leader', although not confirmed by multilevel studies.

Finally, one organizational determinant that ceased to be significant in our multilevel analysis, 'size organization', showed to be present in another multilevel analysis of research use in nursing organizations [28]. But as Estabrooks et al., 2007 state, results on organizational size might have been equivocal, because “size” functions as a surrogate or proxy-variable for other factors [28] (page s18). Two professional determinants ('self-efficacy' and 'compatibility') that also ceased to be significant in our multilevel analysis, frequently are labelled as key in implementation theory [31], reviews [32, 33], and single level studies [9, 10]. Our study shows that self-efficacy and compatibility are determinants of intervention utility rates, but when the

dependence of professionals within their organizations is taken into account, these individual professional characteristics may not be as important as assumed.

The strengths of this study are that we applied a theoretical implementation framework and a multilevel approach to investigate determinants of frequency of using the SMW group intervention. Although the use of implementation frameworks and multi-level approaches are promoted in the implementation literature, to our knowledge multi-level analyses investigating model-based determinants of implementation in health and social care settings are promoted [13, 32], but still scarce.

Despite these strengths, some limitations should be noted. First, the items to assess the potential significant determinants on the professional and organizational level are informed by the Fleuren framework, but have been self-constructed. Therefore, reliability and validity of the items are not known. At the time of our first measurement the recently developed MIDI-instrument (2014) [34] was not available yet, and hasn't been validated to date. Even if the MIDI-instrument would have been available, the items would have had to be adjusted to fit our implementation study of the SMW group intervention in health and social care organizations.

Second, the sample size was a limitation. Although we achieved to engage more professionals and organizations than originally planned [15], sample size was constrained by the regional scope of the project. The difference in sample size between the levels ($n=48$ professionals nested in $n=18$ organizations), and thus the difference in chance of empirical variation in the preparatory univariate single level analysis, explain why ultimately a relatively higher number of professional than organizational determinants have been identified. So, due to the limited sample size, especially at the organizational level, we could not establish significance levels for certain determinants.

Third, the multilevel analysis in this study is confined to the professional level and the organizational level. In both the Fleuren framework and in the implementation literature, other contextual factors, such as the municipal or provincial rules and grants, are deemed to be relevant in explaining the variation in use of an ESI such as the SMW group intervention. Irrespectively of not knowing the municipality determinants, generalizability of our finding need to be done with caution, since this study has been performed in the four provinces in the Northern part of the Netherlands, and therefore our results might not apply to other regions in the Netherlands, nor to other countries, where other policies apply.

CONCLUSIONS

After adoption of the SMW group intervention in health and social care organizations, professionals used it on average 1.6 times in two years, with a maximum of four times. The frequency of using the SMW group intervention was predominantly explained by characteristics of the organizations and only for a minor part by characteristics of professionals. The overall picture that emerges from the results of this study is that the frequency of using a new ESI, in this case the SMW group intervention, is higher when the adopting organization is willing to formally reinforce the professionals who are targeted and trained to do the actual work (i.e. work with the innovation). Additionally, the support from people close to professionals (colleagues, supervisor and an opinion leader) is enabling. To a slightly lesser extent, professionals who perceive the ESI as advantageous for both themselves and clients experience more ownership and are thus inclined to use the ESI more frequently.

PRACTICAL IMPLICATION

The SMW group intervention has proven to be used effectively [21] and successfully by professionals employed in health and social care organizations in the northern part of the Netherlands. Future scaling-up efforts should expand their implementation strategy from not only standardized competency training of professionals, but also by checking organizational conditions and readiness to implement in, for example, managers and supervisors.

SCIENTIFIC IMPLICATION

Historically, implementation science is hampered by poor theoretical and methodological underpinnings. This makes it difficult to understand and explain how and why implementation succeeds or fails, and to identify factors that predict the likelihood of future implementation success and develop better strategies to achieve more successful implementation. In this study, we applied both a theoretical framework and a multilevel approach to systematically capture and reveal the key-determinants of frequency of using the SMW group intervention during implementation in health and social care organizations. If future studies use theoretical frameworks to investigate determinants of using ESIs, this will be helpful in comparing these kind of implementation studies.

Furthermore, we emphasize the importance of performing multilevel analyses, because our study revealed that some professional determinants, such as self-efficacy with regard to the intervention, and some organizational determinants, such as size, were no longer significant when the nested structure of professionals within organizations was taken into account. So, there is a fair risk of misinterpretation of results, and consequently faulty advice, when studies only focus on one level of determinants in the implementation context.

REFERENCES

1. Klein KJ, Sorra JS. The challenge of innovation implementation. *Academy of management review*. 1996;21(4):1055-80.
2. Fleuren M, Wiefferink K, Paulussen T. Determinants of innovation within health care organizations: literature review and Delphi study. *Int J Qual Health Care*. 2004;16(2):107-23.
3. Baker R, Camosso-Stepinovic J, Gillies C, Shaw EJ, Cheater F, Flottorp S, Robertson N, Wensing M, Fiander M, Eccles MP. Tailored interventions to address determinants of practice. *Cochrane Database Syst Rev*; 2015;(4):CD005470.
4. Proctor EK, Powell BJ, McMillen JC. Implementation strategies: recommendations for specifying and reporting. *Implement Sci*. 2013;8(1):139.
5. Proctor E, Silmere H, Raghavan R, Hovmand P, Aarons G, Bunger A, Griffey R, Hensley M. Outcomes for implementation research: conceptual distinctions, measurement challenges, and research agenda. *Admin Policy Ment Health*. 2011;38(2):65-76.
6. Aarons GA, Palinkas LA. Implementation of evidence-based practice in child welfare: Service provider perspectives. *Admin Policy Ment Health*. 2007;34(4):411-9.
7. Aarons GA, Sommerfeld DH, Walrath-Greene CM. Evidence-based practice implementation: the impact of public versus private sector organization type on organizational support, provider attitudes, and adoption of evidence-based practice. *Implement Sci*. 2009;4(1):83.
8. Po'e EK, Gesell SB, Caples TL, Escarfuller J, Barkin SL. Pediatric obesity community programs: Barriers & facilitators toward sustainability. *J Community Health*. 2010;35(4):348-54.
9. Akin BA, Brook J, Lloyd MH, Bhattarai J, Johnson-Motoyama M, Moses M. A study in contrasts: supports and barriers to successful implementation of two evidence-based parenting interventions in child welfare. *Child Abuse Negl*. 2016;57:30-40.
10. Sanders MR, Prinz RJ, Shapiro CJ. Predicting utilization of evidence-based parenting interventions with organizational, service-provider and client variables. *Adm Policy Ment Health*. 2009;36(2):133-43.
11. Urquhart R, Sargeant J, Porterm GA. Factors related to the implementation and use of an innovation in cancer surgery. *Curr Oncol*. 2011;18(6):271-9.
12. Thomas R, Zimmer-Gembeck MJ, Chaffin M. Practitioners' Views and Use of Evidence-based Treatment: Positive Attitudes but Missed Opportunities in Children's Services. *Adm Policy Ment Health*. 2014;41(3):368-78.
13. Proctor EK, Landsverk J, Aarons G, Chambers D, Glisson C, Mittman B. Implementation research in mental health services: an emerging science with conceptual, methodological, and training challenges. *Adm Policy Ment Health*. 2009;36(1):24-34.
14. Fleuren M, Wiefferink K, Paulussen T. Checklist determinanten van innovaties in gezondheidszorgorganisaties. *TSG*. 2010;88(2):51-4.

15. Kuiper D, Goedendorp MM, Sanderman R, Reijneveld SA, Steverink N. Identifying the determinants of use of the G&G interventions for older adults in health and social care. *BMC Research Notes*. 2015;8(1):296.
16. Government of the Netherlands. <https://www.government.nl/topics/care-and-support-at-home/social-support-act-wmo>. Accessed February 1, 2020.
17. Steverink N, Lindenberg S, Slaets JP. How to understand and improve older people's self-management of well-being. *Eur J Ageing*. 2005;2:235-44.
18. Steverink N. Successful development and aging: theory and intervention. In: Pachana NA, Laidlaw K, editors. *The Oxford Handbook of Clinical Geropsychology*. Oxford: Oxford University Press; 2014. doi:10.1093/oxfordhb/9780199663170.013.028.
19. Kremers IP, Steverink N, Albersnagel FA, Slaets JP. Improved self-management ability and well-being in older women after a short group intervention. *Aging Ment Health*. 2006;10(5):476-84.
20. Goedendorp MM, Kuiper D, Reijneveld SA, Sanderman R, Steverink N. Sustaining program effectiveness after implementation: The case of the self-management of well-being group intervention for older adults. *Patient Educ Couns*. 2017;100(6):1177-84.
21. Goedendorp M, Steverink N. Interventions based on self-management of well-being theory: pooling data to demonstrate mediation and ceiling effects, and to compare formats. *Aging Ment Health*. 2017;21(9):947-53.
22. Nunnally JC, Bernstein IH, ten Berge JMF. *Psychometric theory*. New York: McGraw-Hill; 1967.
23. Cohen J. A power primer. *Psychol Bull*. 1992;112(1):155-9
24. Peugh JL. A practical guide to multilevel modeling. *J School Psychol*. 2010;48(1):85-112.
25. Asgary-Eden V, Lee CM. So now we've picked an evidence-based program, what's next? Perspectives of service providers and administrators. *Prof Psychol Res Pr*. 2011;42(2):169-75.
26. Ahn H, Keyser D, Hayward-Everson RA. A multi-level analysis of individual and agency effects on implementation of family-centered practice in child welfare. *Child Youth Serv Rev*. 2016;69:11-8.
27. Kallestad JH, Olweus D. Predicting Teachers' and Schools' Implementation of the Olweus Bullying Prevention Program: A Multilevel Study. *Prev Treat*. 2003;6(1):21.
28. Estabrooks CA, Midodzi WK, Cummings GG, Wallin L. Predicting research use in nursing organizations: a multilevel analysis. *Nurs Res*. 2007;56(4 Suppl):S7-23.
29. Estabrooks CA, Squires JE, Hayduk L, Morgan D, Cummings GG, Ginsburg L, Stewart N, McGilton K, Kang SH, Norton PG. The Influence of Organizational Context on Best Practice Use by Care Aides in Residential Long-Term Care Settings. *J Am Med Dir Assoc*. 2015;16(6):537.e1-537.e10.

30. Doran D, Haynes BR, Estabrooks CA, Kushniruk A, Dubrowski A, Bajnok I, Hall LM, Li M, Carryer J, Jedras D. The role of organizational context and individual nurse characteristics in explaining variation in use of information technologies in evidence based practice. *Implement Sci.* 2012;7(1):122.
31. Rogers EM. *Diffusion of innovations*: 5th ed. New York: Free press; 2003.
32. Durlak JA, DuPre EP. Implementation matters: A review of research on the influence of implementation on program outcomes and the factors affecting implementation. *Am J Community Psychol.* 2008;41(3-4):327-50.
33. Fixsen DL, Naoom SF, Blase KA, Friedman RM, Wallace F. *Implementation research: A synthesis of the literature*: Tampa: University of South Florida, Louis de la Parte Florida Mental Health Institute, The National Implementation Research Network; 2005.
34. Fleuren MA, Paulussen TG, Van Dommelen P, Van Buuren S. Towards a measurement instrument for determinants of innovations. *Int J Qual Health Care.* 2014;26(5):501-10.

Chapter 5

Sustaining program effectiveness after implementation:
The case of the self-management of well-being group
intervention for older adults

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ABSTRACT

Objective

The Self-Management of Well-being (SMW) group intervention for older women was implemented in health and social care. Our aim was to assess whether effects of the SMW intervention were comparable with the original randomized controlled trial (RCT). Furthermore, we investigated threats to effectiveness, such as participant adherence, group reached, and program fidelity.

Methods

In the implementation study (IMP) 287 and in the RCT 142 women participated. We compared scores on self-management ability and well-being of the IMP and RCT. For adherence, drop-out rates and session attendance were compared. Regarding reach, we compared participants' baseline characteristics. Professionals completed questions regarding program fidelity.

Results

No significant differences were found on effect outcomes and adherence between IMP and RCT (all $p \geq .135$). Intervention effect sizes were equal (.47-.59). IMP participants were significantly less lonely and more likely to be married, but had lower well-being. Most professionals followed the protocol, with only minimal deviations.

Conclusion

The effectiveness of the SMW group intervention was reproduced after implementation, with similar participant adherence, minimal changes in the group reached, and high program fidelity.

Practice Implications

The SMW group intervention can be transferred to health and social care without loss of effectiveness. Implementation at a larger scale is warranted.

INTRODUCTION

The efficacy of interventions is best demonstrated in randomized controlled trials (RCTs) [1], in which the population is clearly defined, protocols are used, professionals are trained, and both participants and professionals are closely monitored [2]. Once efficacy is demonstrated they can be labeled as empirically supported interventions (ESIs). It is certainly for sure a great challenge to transfer ESIs to health care [3] and social work settings while sustaining program effectiveness [4, 5]. Effectiveness might be threatened in several ways. First, there is a fair risk that the practice settings may not attract the same type of participants as the research setting [6]. Second, adherence of participants may be less. Third, program fidelity (also known as integrity), the degree to which the intervention is delivered as intended [7], may be a concern. Several studies showed program fidelity can be a moderator of program effectiveness [8-10], and low program fidelity after implementation can even lead to null results [11]. So, changes in the delineated target population, poor adherence of participants, and lack of program fidelity could reduce the effectiveness of implemented ESIs.

Implementing ESIs in practice settings is often guided by implementation frameworks [12] such as implementation of disease self-management programs [13-16]. Implementation frameworks commonly cover the issue of sustainability, also referred to as continuation [17], maintenance [18], or embedding an ESI at hand [19]. Often financial sustainability is the priority. However, what should matter most is the sustainability of effectiveness [20]. Insight into the sustainability of an ESI's effectiveness could be gained through comparison of the original study results of a new intervention with the results of the same intervention after implementation in practice settings. To our knowledge, such comparisons are scarce, especially in the field of social and well-being interventions.

The focus of the current study is on evaluating the effectiveness of the Self-Management of Well-being (SMW) group intervention¹ for older women after implementation in health and social care. A previously performed randomized controlled trial (RCT) demonstrated that self-management abilities and well-being in the intervention group improved, while feelings of social loneliness were reduced, in comparison with women in the control group [21, 22]. However, so far it is unknown whether the effectiveness of the implemented SMW group intervention is sustained after implementation in practice settings.

The aim of the current study was to investigate whether the effectiveness of the SMW group intervention after implementation was comparable with the original RCT. Furthermore, we

1 In previous publications, the SMW group intervention was also referred to as the GRIP&GLEAM (G&G) intervention [23] or the "Giving life more LUSTRE" intervention [21]. We now speak of SMW interventions to indicate they are based on the Self-Management of Well-being (SMW) theory [24,25, 34].

investigated potential threats to its effectiveness. Specifically, we compared differences in terms of participant adherence (drop-out and session attendance), and in terms of the groups reached by the RCT and after implementation. Additionally, we investigated program fidelity after implementation, specifically whether professionals performed the SMW group intervention according to protocol.

METHODS

Design and sample

The current study was part of a larger implementation study (IMP) [23]. During that study, 48 professionals from 18 different health (home health care and retirement homes) and social care organizations were trained to deliver the SMW group intervention to their clients. Between November 2010 and November 2013, thirty-nine SMW group interventions were delivered to 287 participants by 32 trained professionals. For the RCT [21], 142 women were recruited in 2004 and were randomly assigned to either the intervention condition (IRCT, $n = 63$ in six groups) or the control condition (CRCT, $n = 79$). The medical ethical review committee of the University Medical Center Groningen evaluated and approved both studies and indicated they were not subject to the Medical Research Involving Human Subjects Act.

Procedure

We performed the RCT and the IMP separately. Mirroring the order in which they were conducted, we describe the procedure of the RCT first and that of the IMP second. For the RCT, potential participants were recruited through advertisements in local newspapers in two regions of the Netherlands. The advertisements asked community-dwelling women aged 55 and older who were living alone to contact the researchers by phone if they would like to “give their life more luster or gleam”. After the first telephone contact, women received a letter containing a flyer with more information about the intervention, the study and four self-diagnostic questions, and an informed consent form. The four self-diagnostic questions asked whether a woman: 1) missed having people around them; 2) would like to have more friends; 2) was engaged in only a few leisure activities; or 4) had trouble initiating activities. Women were told by covering text that when one or more of these questions were answered with “yes”, the intervention would probably be helpful [21]. Being single was an inclusion criterion. Women who signed and returned the informed consent were asked to complete the baseline assessment (T0). Subsequently, they were randomly allocated to the intervention or control group. For women assigned to the intervention, the second assessment (T1) was post-intervention, six weeks after T0. Participation of the control group involved only completion of the questionnaires at T0 and T1.

For the IMP, health and social care organizations recruited participants in various active and passive ways, including personal persuasion, open informational workshops, flyers in public places, and advertisements in local newspapers. Phrasing used in these recruitment methods was similar to that used in the RCT. After a woman signed up individually, she received an intake with a professional who checked for contraindications for participation. Contraindications included illiteracy, deep mourning, severe depression, severe divorce issues, severe physical impairments, unresolved trauma, or inability to function in a group. Contrary to the RCT, being single was not an inclusion criterion. Women who participated completed

the T0 in two parts. One questionnaire was completed at the start of the first intervention session and included questions assessing demographic variables, self-management ability and well-being. A second questionnaire was completed at home after the first session and included questions assessing general health and loneliness. T1 was completed at the end of the final intervention session, six weeks after T0. The flow of participants in both studies is illustrated in Figure 1. Finally, to evaluate program fidelity, the 32 trained professionals who carried out the SMW group interventions were asked to complete a questionnaire to assess whether they performed the intervention according to protocol. This occurred at the conclusion of the IMP in 2014.

Figure 1 Participant flow diagram.

Intervention

In both studies the SMW group intervention was similar. The intervention is based on SMW theory. SMW theory specifies six core self-management abilities assumed to be important for managing one's physical and social resources in such a way that physical and social well-being are achieved and maintained, and that losses in physical and social resources are managed optimally [24, 25]. The SMW group intervention consisted of six one-week interval group sessions of 2½ hours with about ten participants. During the sessions the six self-management abilities identified by SMW theory [24, 25] were addressed. These abilities include: 1) taking initiatives; 2) being self-efficacious; 3) investing; 4) having a positive outlook; 5) ensuring multi-functionality in resources; and 6) ensuring variety in resources. Additionally, participants were taught to apply these abilities to the five dimensions of well-being, as also specified in SMW theory. These dimensions of well-being are derived from five basic human physical and social needs, and include needs for comfort and stimulation (physical needs), as well as needs for affection, behavioral confirmation, and status (social needs). All participants received a workbook with summaries of the sessions and homework exercises. Homework exercises were designed to let participants list their resources on the five domains of well-being as well as list changes in resources they preferred to make. Homework exercises were also designed to help participants practice applying the six self-management abilities to the five domains of well-being. For example, a homework exercise involved keeping a diary of positive daily events to practice the self-management ability "having a positive outlook". More details about the SMW group intervention can be found elsewhere [21].

Training of professionals

In the IMP the SMW group intervention was carried out by two trained professionals, referred to as 'teachers'. The professionals had to be female, employed in a formal health or social organization, and have experience or interest with group interventions. The professionals received 2½ days of training by two qualified SMW-trainers, according to a detailed trainers protocol. During the training, professionals were taught SMW theory and the skills required to supervise the SMW group intervention by means of role play, feedback, and practical exercises. Furthermore, the professionals were taught how to work with the teachers' protocol and the workbook for participants. The importance of working according to protocol was emphasized. Making changes to the teachers' protocol was strongly discouraged. In the RCT, one female member of the research team and one trained volunteer social worker carried out the SMW group interventions.

Instruments

In both the IMP and the RCT the same instruments were used. The demographic variables age, education and marital status, were collected using a self-report questionnaire.

Self-management ability was measured using the second version of the Self-Management Ability Scale (SMAS-30) consisting of 30 items using 5 and 6 point Likert scales [26, 27]. The SMAS-30 includes six subscales corresponding to six self-management abilities: taking initiative, investment behavior, self-efficacy, variety, multi-functionality and positive frame of mind. A total score is also calculated and is transformed to range from 0 to 100. Higher scores indicate better self-management ability. The psychometric properties of the scale are good [26,27] and Cronbach's alphas in the IMP and the RCT were 0.90 and 0.91, respectively.

Well-being was assessed using the short version of the Social Production Function Index Level Scale (SPF-ILs) [28]. The SPF-ILs consists of 5 subscales assessing five domains of well-being (i.e., comfort, stimulation, affection, behavioral confirmation and status). Each subscale consists of 3 items, each using a 4-point Likert scale. A total score is also calculated and ranges from 0 to 45. Higher scores indicate greater well-being. Cronbach's alphas in the IMP and the RCT were 0.82 and 0.84, respectively.

Loneliness was assessed using the short version of the Loneliness scale of De Jong Gierveld [29, 30]. It consists of 6 items using a 5-point Likert scale. Total scores range from 0 to 6 with higher scores indicating greater loneliness. Total scores > 2 on the Loneliness scale are considered to indicate loneliness. Cronbach's alphas in the IMP and the RCT were 0.78 and 0.79, respectively.

General health and a change in general health were assessed using two items from the Health Survey Short Form-36 (SF36): 1) In general, would you say your health is: Excellent (1) to Poor (5); and 2) Compared to one year ago, how would you rate your health in general now?: Excellent (1) to Poor (5). The Dutch language version of the SF-36 has been shown to be a reliable and valid instrument in both general and chronic disease populations [31].

Drop-out and session attendance of participants were viewed as indicators of participant adherence. Two types of drop-out were distinguished. Participants who dropped out of the SMW group intervention, irrespective of whether they completed questionnaires, were categorized as "intervention drop-out". Participants who did not complete the post-intervention assessment were categorized as "research drop-out", irrespective of whether they completed the SMW intervention. The teachers of the intervention kept a record of the session attendance of participants.

Program fidelity was assessed by a set of five questions assessing whether professionals worked according to the teachers protocol: 1) To what extent were you able to follow the protocol strictly? 2) To what extent were you able to perform the core activities, focused on the six self-management abilities of well-being, exactly as described? 3) To what extent were

you able to perform the supplementary activities, the communication exercises, exactly as described? 4) Did you sometimes deviate from the prescribed six sessions? and 5) Did you sometimes deviate from the prescribed one-week interval between the sessions? The first three questions used a six-point Likert scale ranging from “Fully” to “Not at all”. The latter two questions were answered with “Yes” or “No”, and teachers were asked to describe any deviations.

Analyses

To investigate whether the effects of the SMW group intervention on participants’ well-being and self-management ability were similar in both the IMP and the RCT, separate ANCOVAs were performed and between group effect sizes calculated. In the two ANCOVAs, SMAS and SPF-ILs at T1 were dependent variables, the three conditions (IMP, IRCT and CRCT) were fixed factors, and baseline values of SMAS and SPF-ILs were covariates. Baseline factors that differed significantly between the two studies were also entered as covariates. Effect sizes, Cohen’s d, were calculated by $\text{mean T1} - \text{mean T0} / \text{sd}_{\text{pooled}}$, where $\text{sd}_{\text{pooled}} = \sqrt{[(\text{sd T1}^2 + \text{sd T0}^2) / 2]}$ for the intervention and the control groups [32]. Controlled effect sizes were calculated by subtracting the effect size of the control group from the effect size of the intervention groups. Controlled effects sizes of ≤ 0.2 were considered small, around 0.5 as medium and ≥ 0.8 as large [32]. To assess participant adherence, intervention drop-out, research drop-out, and session attendance in the two intervention conditions (IMP and RCT) were compared using chi-square.

To investigate whether similar target groups were reached in the IMP and RCT, baseline differences in participants’ age, marital status, SF36 general health, SF36 change in general health, SMAS, SPF-ILs and loneliness were compared using t-tests or chi-square tests. Descriptive statistics were used to assess program fidelity.

RESULTS

Description of the sample

At baseline the mean age of participants was 65 years, i.e., 66 years in the IMP and 64 years in the RCT. All participants were female. In the IMP 50 participants were research drop-outs (i.e., did not return the post-intervention questionnaire), leaving post-intervention data available for 237 participants. Due to missing data for some items, data from fewer participants were available for some analyses (see Fig. 1 and Tables). Of the 32 teachers, 29 completed the questions regarding program fidelity.

Were the effects of the SMW group intervention in the IMP on participants' well-being and self-management ability comparable with the RCT?

Results of the ANCOVAs showed no significant differences between the IMP and the RCT on SMAS and SPF-ILs scores at T1. All controlled effects were medium in size. The controlled effect size was .59 in the IMP and .50 in the RCT on the SMAS and .49 in the IMP and .47 in the RCT on the SPF-ILs. The mean scores of the three conditions (IMP, IRCT and CRCT) and effect sizes are described in Table 1, and the results of the ANCOVAs in Table 2.

Table 1 Mean scores at baseline and post-intervention for the IMP, IRCT and CRCT conditions

Condition		IMP	IRCT	CRCT
Outcome				
SMAS	n	203	43	67
	T0 (mean $\pm$ sd)	53.3 $\pm$ 10.3	49.5 $\pm$ 10.8	53.6 $\pm$ 8.6
	T1 (mean $\pm$ sd)	59.0 $\pm$ 10.9	54.1 $\pm$ 9.8	53.1 $\pm$ 8.9
	effect size	.54	.45	-.06
SPF-ILs	n	199	43	63
	T0 (mean $\pm$ sd)	18.9 $\pm$ 5.6	19.9 $\pm$ 5.4	20.7 $\pm$ 4.9
	T1 (mean $\pm$ sd)	21.3 $\pm$ 5.6	22.0 $\pm$ 5.1	20.4 $\pm$ 5.2
	effect size	.43	.41	-.06

CRCT: control condition of the randomized controlled trial, IMP: implementation study; IRCT: intervention condition of the randomized controlled trial, SMAS: Self-Management Ability Scale, SPF-ILs: Social Production Function Index Level scale, T0: baseline assessment, T1: post-intervention assessment.

Footnote: In the RCT one item from the SMAS was different from the second version of the SMAS. In the IMP the item "Are you good at something?" [Bent u ergens goed in?] was used, while in the RCT the item "Can you see your own qualities?" [Lukt het u eigen kwaliteiten te zien?] was used

Table 2 ANCOVA Comparisons of the effects at T1 among the IMP, IRCT and CRCT conditions

Overall effect on SMAS		F	p-value	
Marital status		.603	.438	
T0 SMAS		147	<.001	
T0 Loneliness		8.57	.004	
T0 SPF-ILs		1.14	.288	
Condition		15.5	<.001	
Pairwise comparisons	Mean difference SMAS	p-value	95% confidence interval	
IMP-IRCT	1.75	.486	-1.29 – 4.77	
IMP-CRCT	5.86	<.001	3.34 – 8.40	
IRCT-CRCT	4.11	.011	.745 – 7.47	
Overall effect on SPF-ILs		F	p-value	
Marital status		.855	.356	
T0 Loneliness		11.7	.001	
T0 SPF-ILs		228	<.001	
Condition		7.37	.001	
Pairwise comparisons	Mean difference SPF-ILs	p-value	95% confidence interval	
IMP-IRCT	-.459	1.00	-1.98 – 1.06	
IMP-CRCT	1.88	.002	.568 – 3.19	
IRCT-CRCT	2.34	.004	.607 – 4.07	

CRCT: control condition of the randomized controlled trial, IMP: implementation study, IRCT: intervention condition of the randomized controlled trial, SMAS: Self-Management Ability Scale, SPF-ILs: Social Production Function Index Level scale, T0: baseline assessment.

Were drop-out rates and session attendance in the IMP comparable with the RCT?

In the IMP fewer participants dropped out than in the IRCT condition, although the difference was only significant for intervention drop-out and not for research drop-out. There was no significant difference between the IMP and the IRCT on either the mean number of attended sessions or the number of women attending four or more sessions (see Table 3).

Table 3 Drop-out rates and session attendance for the IMP and the RCT

Condition		IMP	IRCT	p-value
Outcome				
Drop-out	Intervention	45 (16%)	17 (27%)	.033
n (%)	Research	50 (17%)	17 (27%)	.081
	Intervention and/or research	60 (21%)	17 (27%)	.292
Attendance	Mean number of sessions	4.9 ± 1.5	4.6 ± 1.6	.153
n (%)	Four or more sessions	164 (85%)	46 (77%)	.135

IMP: implementation study; IRCT: intervention condition of the randomized controlled trial

In the IMP not all teachers monitored intervention attendance. The attendance lists were completed for 26 (of the 39) interventions groups involving 193 participants. Therefore, we repeated the analyses comparing the IMP and IRCT with regard to drop-out with participants with known session attendance. For this subset of IMP participants, intervention drop-out was 20% ($p = .221$), research drop-out was 18% ($p = .106$) and intervention and/or research drop-out was 23% ($p = .498$). These results show the drop-out rates in the IMP were lower, but not significantly so, compared to the IRCT.

Were participants in the IMP comparable to participants in the RCT at baseline?

There was a significant difference in educational level and marital status between the two study samples at baseline (see Table 4). The difference in marital status was expected, as being single was an inclusion criterion in the RCT, but not in the IMP.

Women in the IMP had significantly lower well-being, but were less lonely, compared to women in the RCT (see Table 4). Using the cut-off score for being lonely [29,30], results showed 86% of the women in the IMP were lonely compared to 91% in the RCT. This difference was, however, not significant ($p = .162$).

Did the professionals in the IMP deliver the SMW intervention according to the teachers' protocol?

Most of the professionals indicated they 1) were able to follow the teachers protocol (fully: $n = 10$; for the most part: $n = 18$; reasonably: $n = 1$; slightly: $n = 0$; hardly: $n = 0$; not at all: $n = 0$); 2) were able to perform the core activities (fully: $n = 16$; for the most part: $n = 13$); and 3) were able to perform the supplementary activities (fully: $n = 9$; for the most part: $n = 18$; reasonably: $n = 2$). Reasons for not following the protocol exactly were participant-related. For example, some teachers reported participants needed more time and explanation than foreseen and prescribed. Two professionals deviated regarding the number of sessions, and 18 professionals deviated regarding the prescribed one-week interval between the sessions due to holidays or foreseen absence of participants.

Table 4 Differences between IMP and RCT participants at baseline

	IMP		RCT		t	p-value
	Mean $\pm$ sd (n) (min-max)	% (n)	Mean $\pm$ sd (n) (min-max)	% (n)		
Marital status						<.001
Married or cohabiting		32% (89)		0		
Divorced		29% (80)		46% (65)		
Widowed		30% (84)		36% (50)		
Other ^a		9% (24)		18% (25)		
Unknown		(10)		(2)		
Education						<.001
lower education		29% (71)		21% (29)		
secondary vocational		58% (140)		39% (55)		
(pre) university		13% (31)		40% (56)		
unknown		(45)		(2)		
Age	66 $\pm$ 9.1 (287) (44-92)		64 $\pm$ 7.4 (142) (52-80)			.066
SMAS total score	52.8 $\pm$ 10.7 (272) (15-86)		51.4 $\pm$ 11.1 (142) (8-81)		1.2	.220
SPF-ILs total score	18.9 $\pm$ 5.5 (261) (3-35)		20.4 $\pm$ 5.8 (133) (2-32)		-2.5	.013
Loneliness	3.9 $\pm$ 1.9 (243) (0-6)		4.3 $\pm$ 1.9 (142) (0-6)		-2.2	.028
SF-36 general health	3.36 $\pm$.78 (246) (1-5)		3.19 $\pm$.92 (142) (1-5)		1.9	.058
SF-36 general health change	2.95 $\pm$.89 (246) (1-5)		3.05 $\pm$.90 (142) (1-5)		-1.1	.278

Notes: IMP: implementation study; RCT: randomized controlled trial, sd: standard deviation, SF-36: Health Survey Short Form-36, SMAS: Self-Management Ability Scale, SPF-ILs: Social Production Function Index Level scale.

^a For example, never married or a LAT (living apart together) relationship.

DISCUSSION AND CONCLUSION

Discussion

This is the first study to demonstrate that the SMW group intervention is equally effective when implemented in health and social care settings compared to the original research setting. Moreover, potential threats to sustaining the effectiveness of the SMW intervention were largely minimized, demonstrated by small differences between the IMP and RCT in the reached group, comparable participant adherence, and high program fidelity. These findings show valid transfer of the SMW group intervention to practice settings is possible without loss of effectiveness.

Regarding the effectiveness of the implemented SMW group intervention, we found its effects on self-management ability and well-being were medium in size and not significantly different from those in the RCT. These findings add to previous findings from two other RCTs using the SMW intervention in which effect sizes were small to medium [33-35]. Not only was effectiveness in the IMP comparable to that in the RCT, but drop-out rates and session attendance, indicating similar participant adherence, were also comparable. As demonstrated in previous research [6], the fact we monitored intervention implementation may have contributed to the effectiveness of the intervention. However, we would expect this influence to be present in both studies. Overall, professionals in the health and social care settings were able to deliver the SMW group intervention with effectiveness similar to that realized in the earlier RCT.

To our knowledge research investigating the sustainability of the effectiveness of well-being interventions is lacking, although some studies focused on the transfer from research to practice settings of physical health-related interventions, such as disability prevention for older adults and diabetes self-management programs [36-38]. These studies showed transfer is feasible, with similar or smaller effects in replication studies compared to the original trials. Our study showed the SMW intervention - a well-being intervention - can be transferred to practice settings without effect size reduction. This knowledge is of major importance for practice settings in deciding whether or not to adopt, implement and continue with well-being interventions.

Regarding the reached group, women in the IMP had lower well-being scores but were less lonely than those in the RCT. Yet, though women in the IMP were less lonely on average, the percentage of women meeting criterion for being lonely was high in both studies (86% IMP and 92% RCT) and not significantly different. Furthermore, participants in the IMP had a lower level of education and were more often married or cohabitating. No significant differences were found between the two studies for age, self-management ability, self-reported general health or change in general health. Thus, the health and social care organizations that were

involved in the IMP seem to have reached a slightly different target group in comparison to the original RCT. These minimal changes did not influence the effectiveness of the SMW group intervention, however.

The small differences in reach, between the IMP and RCT may be explained in several ways. First, the RCT included only single women, which may imply they were lonelier on average. In support of this explanation, an additional analysis in which baseline loneliness scores were compared in the two studies after excluding married women showed no significant differences between the IMP and RCT. Second, the health and social care organizations in the IMP reached women in more and different ways than was done in the RCT. For example, teachers in the IMP also recruited participants by direct client contact, and advertisements. Although the text of recruiting materials were similar in both studies, the RCT advertisement did state the SMW intervention was the object of study. Therefore, some women in the RCT might have participated for reasons of contributing to scientific research, rather than for their own benefit. The somewhat higher level of education in the RCT participants, as compared to the IMP, may support this explanation.

Program fidelity was high in this study, i.e. the majority of teachers carried out the SMW intervention according to protocol. This finding indicates the demonstrated effects on self-management and well-being are likely to be attributable to the SMW intervention. Although program fidelity, that is, the degree to which the intervention is delivered as intended [7], is important for optimizing implementation, it has been largely under-investigated [39]. We took several actions to enhance program fidelity including training the professionals and using detailed protocols, as suggested by Dane and Schneider (1998) [40]. Furthermore, in both the RCT and IMP intervention sessions were performed in meeting rooms of practice settings. These actions contributed to the similarity of intervention delivery. Despite these actions there might have been a few differences between the RCT and the IMP that could have impacted the delivery of the intervention. For example, the teachers of the RCT were a researcher and a volunteer social worker whereas the teachers of the IMP were professional social workers with less experience delivering the intervention. However, the fact we did not find differences in effectiveness of the SMW intervention between both studies suggests these small differences were negligible.

This study had several limitations. Post-intervention data from some participants were missing and about a third of the attendance lists were not provided by the professionals delivering the SMW group intervention in the IMP. This might have influenced results but perhaps not substantially, because drop-out rates were comparable in both studies irrespective of whether attendance lists were kept. Furthermore, we assessed program fidelity by self-report measure, which may be subject to information bias. Future research should consider

alternative methods for assessing program fidelity, such as recording of intervention sessions or use of independent assessors.

Finally, it is important to note that reach and program fidelity are not the only factors influencing the sustainability of an intervention in practice settings. Successful implementation depends on a number of actions of involved stakeholders as well as on characteristics of interventions, settings and strategies [12, 41, 42]. Future research should respect this complexity and include these various factors when implementing an intervention in practice settings.

Conclusion

This implementation study showed transfer of the SMW group intervention from a research setting to practice settings can be performed without loss of effectiveness. Although the health and social care organizations participating in the implementation study reached a slightly different group of participants, adherence of participants in the intervention study was similar to that of the original RCT and the effectiveness of the SMW intervention was not compromised. High program fidelity, enhanced by several actions such as training the professionals and using detailed protocols, indicates demonstrated effects are likely to be attributable to the SMW intervention.

Practice Implications

We demonstrated professionals from various health and social care organizations can provide the SMW group intervention with effectiveness similar to that in the original RCT. As a result, implementation of this intervention on a larger scale is warranted. Given the aging population in the Netherlands [43] and Dutch policy appealing to people's self-management ability when facing physical, social and psychological challenges [44], the SMW intervention could promote older individuals' positive health and well-being and be a valuable contribution to these societal issues.

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REFERENCES

1. van den Berg M, Schoemaker CG. Effects of prevention. Section of the report Exploration of Public Health in the Future 2010. From healthy to better [Effecten van preventie. Deelrapport van de Volksgezondheid Toekomst Verkenning 2010; Van gezond naar beter], 2010. Accessed August 15, 2016.
2. Chambless DL, Hollon SD. Defining empirically supported therapies. *J Consult Clin Psychol.* 1998;66(1):7-18.
3. Grady PA. Advancing the health of our aging population: a lead role for nursing science. *Nurs Outlook.* 2011;59(4):207-9.
4. Mullen EJ, Bledsoe SE, Bellamy JL. Implementing Evidence-Based Social Work Practice. *Res Soc Work Pract.* 2008;18(4):325-38.
5. Proctor EK, Rosen A. From knowledge production to implementation: Research challenges and imperatives. *Res Soc Work Pract.* 2008;18(4):285-91.
6. Durlak JA, DuPre EP. Implementation matters: A review of research on the influence of implementation on program outcomes and the factors affecting implementation. *Am J Community Psychol.* 2008;41(3-4):327-50.
7. Carroll C, Patterson M, Wood S, Booth A, Rick J, Balain S. A conceptual framework for implementation fidelity. *Implement Sci.* 2007;2(1):40.
8. Hasson H, Blomberg S, Dunér A. Fidelity and moderating factors in complex interventions: a case study of a continuum of care program for frail elderly people in health and social care. *Implement Sci.* 2012;7(1):23.
9. Henggeler SW, Melton GB, Brondino MJ, Scherer DG, Hanley JH. Multisystemic therapy with violent and chronic juvenile offenders and their families: the role of treatment fidelity in successful dissemination. *J Consult Clin Psychol.* 1997;65(5):821-33.
10. Keith RE, Hopp FP, Subramanian U, Wiitala W, Lowery JC. Fidelity of implementation: development and testing of a measure. *Implement Sci.* 2010;5(1):99.
11. Dobson D, Cook TJ. Avoiding type III error in program evaluation: Results from a field experiment. *Eval Program Plann.* 1980;3(4):269-76.
12. Moullin JC, Sabater-Hernández D, Fernandez-Llimos F, Benrimoj SI. A systematic review of implementation frameworks of innovations in healthcare and resulting generic implementation framework. *Health Res Pol Syst.* 2015;13(1):16.
13. Glasgow RE, McKay HG, Piette JD, Reynolds KD. The RE-AIM framework for evaluating interventions: what can it tell us about approaches to chronic illness management? *Patient Educ Couns.* 2001;44(2):119-27.
14. Stellefson M, Chaney B, Barry AE, Chavarria E, Tennant B, Walsh-Childers K, Sriram P, Zagora J. Web 2.0 chronic disease self-management for older adults: a systematic review. *J Med Internet Res.* 2013;15(2):e35.

15. van Gaalen JL, van Bodegom-Vos L, Bakker MJ, Snoeck-Stroband JB, Sont JK. Internet-based self-management support for adults with asthma: a qualitative study among patients, general practitioners and practice nurses on barriers to implementation. *BMJ Open*. 2016;6(8):e010809.
16. Kennedy A, Rogers A, Chew-Graham C, Blakeman T, Bowen R, Gardner C, Lee V, Morris R, Protheroe J. Implementation of a self-management support approach (WISE) across a health system: a process evaluation explaining what did and did not work for organisations, clinicians and patients. *Implement Sci*. 2014;9(1):129.
17. Fleuren M, Wiefferink K, Paulussen T. Determinants of innovation within health care organizations: literature review and Delphi study. *Int J Qual Health Care*. 2004;16(2):107-23.
18. Virginia Polytechnic Institute and State University, Reach Effectiveness Adoption Implementation Maintenance (RE-AIM). <http://www.re-aim.hnfe.vt.edu/>. Accessed February 19, 2015.
19. Stirman SW, Kimberly J, Cook N, Calloway A, Castro F, Charns M. The sustainability of new programs and innovations: a review of the empirical literature and recommendations for future research. *Implement Sci*. 2012;7(1):17.
20. Racine DP. Reliable effectiveness: a theory on sustaining and replicating worthwhile innovations. *Administration and Policy in Mental Health and Mental Health Services Research*. 2006;33(3):356-87.
21. Kremers IP, Steverink N, Albersnagel FA, Slaets JP. Improved self-management ability and well-being in older women after a short group intervention. *Aging Ment Health*. 2006;10(5):476-84.
22. Masi CM, Chen H, Hawkey LC, Cacioppo JT. A meta-analysis of interventions to reduce loneliness. *Pers Soc Psychol Rev*. 2011;15(3):219-66.
23. Kuiper D, Goedendorp MM, Sanderma R, Reijneveld SA, Steverink N. Identifying the determinants of use of the G&G interventions for older adults in health and social care. *BMC Res Notes*. 2015;8(1):296.
24. Steverink N, Lindenberg S, Slaets JP. How to understand and improve older people's self-management of well-being. *Eur J Ageing*. 2005;2:235-44.
25. Steverink N, Successful Development and Ageing: Theory and Intervention, in Pachana NA, Laidlaw K (Eds), *The Oxford Handbook of Clinical Geropsychology*, University Press Oxford. 2014; doi: <http://dx.doi.org/10.1093/oxfordhb/9780199663170.013.028>.
26. Schuurmans H, Steverink N, Frieswijk N, Buunk BP, Slaets JP, Lindenberg S. How to measure self-management abilities in older people by self-report. The development of the SMAS-30. *Qual Life Res*. 2005;14(10):2215-28.
27. Steverink N, Self-Management Ability Scale: SMAS-30/version 2. Background, manual and scoring [Achtergrond, handleiding en scoring]. 2009. www.nardisteverink.nl. Accessed April 4, 2013.

28. Nieboer A, Lindenberg S, Boomsma A, van Bruggen AC. Dimensions of well-being and their measurement: The SPF-IL Scale. *Soc Indicators Res.* 2005;73:313-53.
29. de Jong-Gierveld J, van Tilburg T. A 6-item scale for overall, emotional, and social loneliness confirmatory tests on survey data. *Res Aging.* 2006;28(5):582-98.
30. de Jong Gierveld J, Van Tilburg T. Manual of the loneliness Scale 1999. http://home.fsw.vu.nl/tg.van.tilburg/manual_loneliness_scale_1999.html, 2011. Accessed September 9, 2014.
31. Aaronson NK, Muller M, Cohen PD, Essink-Bot M, Fekkes M, Sanderman R, Sprangers MA, Te Velde A, Verrips E. Translation, validation, and norming of the Dutch language version of the SF-36 Health Survey in community and chronic disease populations. *J Clin Epidemiol.* 1998;51(11):1055-68.
32. Cohen J. *Statistical Power Analysis for the Behavioral Sciences.* Hillsdale, NJ: Lawrence Erlbaum Associates; 1998.
33. Frieswijk N, Steverink N, Buunk BP, Slaets JP. The effectiveness of a bibliotherapy in increasing the self-management ability of slightly to moderately frail older people. *Patient Educ Couns.* 2006;61(2):219-27.
34. Goedendorp M, Steverink N. Interventions based on self-management of well-being theory: pooling data to demonstrate mediation and ceiling effects, and to compare formats. *Aging Ment Health.* 2017;21(9):947-53.
35. Schuurmans JEHM. Effects of the SMA Intervention on Self-management Abilities and Well-being. In: Schuurmans JEHM. *Promoting well-being in frail elderly people: Theory and intervention.* Dissertation. Groningen: University of Groningen; 2004. p. 119-64.
36. Dossa A, Capitman JA. Implementation challenges and functional outcome predictors for elder community-based disability prevention programs. *J Geriatr Phys Ther.* 2012;35(4):191-9.
37. Glasgow RE, Toobert DJ, Hampson SE, Strycker LA. Implementation, generalization and long-term results of the “choosing well” diabetes self-management intervention. *Patient Educ Couns.* 2002;48(2):115-22.
38. Seguin RA, Heidkamp-Young E, Kuder J, Nelson ME. Improved physical fitness among older female participants in a nationally disseminated, community-based exercise program. *Health Educ Behav.* 2012;39(2):183-90.
39. Schinckus L, Van den Broucke S, Housiaux M, Diabetes Literacy Consortium. Assessment of implementation fidelity in diabetes self-management education programs: a systematic review. *Patient Educ Couns.* 2014;96(1):13-21.
40. Dane AV, Schneider BH. Program integrity in primary and early secondary prevention: are implementation effects out of control? *Clin Psychol Rev.* 1998;18(1):23-45.
41. May C, Rapley T, Mair FS, Treweek S, Murray E, Ballini L, Macfarlane A, Girling M, Finch TL. *Normalization Process Theory On-line Users' Manual, Toolkit and NoMAD instrument.* 2015. <http://www.normalizationprocess.org>. Accessed December 30, 2016.

42. Damschroder LJ, Aron DC, Keith RE, Kirsh SR, Alexander JA, Lowery JC. Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. *Implement Sci.* 2009;4:50.
43. Giesbers H, Verweij A, de Beer J. Ageing: What are the most important expectations for the future? [Vergrijzing: Wat zijn de belangrijkste verwachtingen voor de toekomst?]. <http://www.nationaalkompas.nl/bevolking/vergrijzing/toekomst/>, 2013. Accessed April 9, 2015.
44. Hoeymans N, van Loon AJM, van den Berg M, Harbers MM, Hilderink HBM, van Oers JAM, Schoemaker CG. A healthy Netherlands. Pitches about exploring the future of public health [Een gezonder Nederland. Kernboodschappen van de Volksgezondheid Toekomst Verkenning]. Bilthoven: Rijksinstituut voor Volksgezondheid en Milieu (RIVM); 2014.

Chapter 6

Keeping in touch with each other: An exploratory study into the development of Informal Social Support Structures after the SMW group intervention

[In Dutch: Contact houden met elkaar: Een exploratief onderzoek naar het ontstaan van Informele Sociale Steunstructuren na afloop van de GRIP&GLANS groepscursus]

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Shortened version of the Dutch report: Contact houden met elkaar: Een onderzoek naar Informele Sociale Steunstructuren na de GRIP&GLANS groepscursus, Utrecht: Movisie, 2015

SAMENVATTING

Inleiding

De GRIP&GLANS (G&G) groepscursus is een effectieve interventie voor ouderen, gericht op het verbeteren van zelfmanagementvaardigheid en welbevinden en het verminderen van eenzaamheid. Tijdens een implementatieproject bleek dat ouderen na afloop van de cursus elkaar bleven ontmoeten. Het doel van dit onderzoek was systematisch in kaart brengen op welke schaal dit gewenste neveneffect, 'Informele Sociale Steunstructuren', optrad en de kenmerken hiervan. Tevens is exploratief gezocht naar de verklarende factoren van het ontstaan en voortbestaan van deze Informele Sociale Steunstructuren. Het begrip Informele Sociale Steunstructuur (ISS) is afgebakend als 'het contact tussen drie of meer mensen dat zonder georganiseerde en/of beroepsmatige tussenkomst aanwezig is en waarbinnen sociale basisbehoeften worden vervuld'.

Methode

In een mixed-method design is gebruik gemaakt van vragenlijsten en diepte-interviews. Aan het vragenlijstonderzoek namen 141 oud-cursisten deel. De oud-cursisten waren allen vrouwen, gemiddeld 68 jaar en 34% was getrouwd. Veertien respondenten zijn aanvullend geïnterviewd, omdat zij in de vragenlijst aangaven nog steeds contact te hebben met twee of meer mede-cursisten.

Resultaten

Veertig procent van de respondenten had nog contact met een mede-cursist, waarvan 11% in een duo en 29% in een netwerkje met twee of meer mede-cursisten. De drie subgroepen (geen contact, duo, netwerkje) bleken niet significant te verschillen qua achtergrondkenmerken en ook niet qua zelfmanagementvaardigheid, welbevinden of eenzaamheid. Uit elf verschillende cursusgroepen bleken zes verschillende Informele Sociale Steunstructuren te zijn voortgekomen. De grootte varieerde tussen de drie en zeven personen en gemiddeld bestonden de netwerkjes ruim twee jaar. De frequentie van contact was veelal maandelijks. De leden van het netwerk ervaarden verbondenheid en waardering tijdens de ontmoetingen en typeren hun band als 'iets tussen vriendschap en kennissen in'.

Factoren die het ontstaan van een ISS belemmerden waren: negatieve gedachten (over zichzelf en anderen) en gebrek aan initiatief. Overeenkomsten tussen cursisten (homophily) en praktische zaken (nabijheid en tijd) bevorderden het ontstaan van een ISS. Factoren die het voortbestaan van een ISS bevorderden waren: de beschikbaarheid van een ontmoetingsplek, tevredenheid met natuurlijk gegroeide rolverdeling, gespreksregulatie en (emotionele en materiële) wederkerigheid.

Conclusie

Een substantieel deel van de G&G-cursisten hield na afloop contact met elkaar. Bij één op de twee bestudeerde cursusgroepen is na afloop een Informele Sociale Steunstructuur ontstaan waarin cursisten – uit eigen beweging – elkaar op regelmatige basis blijven ontmoeten en hierin steun en verbondenheid ervaren. Ook zijn factoren geïdentificeerd die het ontstaan van contact kunnen stimuleren, zoals het bewustmaken van onderlinge overeenkomsten en het wegnemen van belemmerende gedachten over het nemen van initiatief tot contact. Aanbevolen wordt hiervoor een separate interventie-module te ontwikkelen.

INLEIDING

De GRIP&GLANS (G&G) groepscursus is een evidence-based interventie voor ouderen gericht op het verbeteren van de eigen regie en het welbevinden en het verminderen van eenzaamheid. De effectiviteit van de interventie is aangetoond in een gerandomiseerde gecontroleerde studie (RCT) [1] en tijdens een implementatieproject waarin de G&G groepscursus werd aangeboden door welzijns- en zorgorganisaties in de regio Noord-Oost Nederland [2].

De G&G groepscursus is een op individuele ouderen gerichte cursus die in groepen van acht tot twaalf vrouwen gegeven wordt. In zes wekelijkse bijeenkomsten wordt aan het versterken van de eigen regie (zelfmanagementvaardigheid) en het welbevinden gewerkt, volgens de theorie van Zelf-Management van Welbevinden [3-5]. De cursus wordt begeleid door twee professionals die zijn getraind tot G&G docent. De G&G groepscursus is in de RCT in meer detail beschreven [1].

Sociaal contact en groepsvorming tussen individuen tijdens en na afloop van een groepsinterventie is geen onbekend fenomeen in zowel de praktijk als de literatuur. In de literatuur wordt het ontstaan van sociale relaties tijdens en na afloop van groepsinterventies bestudeerd vanwege de vermeende kansen die dit fenomeen biedt om beoogde interventie-effecten te versterken en te laten voortduren [6, 7]. In het G&G implementatieproject kwam het ontstaan van ‘netwerkjes onder oud-cursisten’ onbedoeld aan het licht, omdat docenten hierover rapporteerden wanneer zij drie maanden na de laatste cursusdag – tijdens de terugkombijeenkomst – oud-cursisten opnieuw spraken. Het is geen expliciet doel van de G&G groepscursus om (blijvend) contact tussen cursisten te bevorderen. Evenmin is tot op heden de potentie van onderlinge relaties voor het versterken van (korte- en lange termijn) effecten op zelfmanagementvaardigheden en welbevinden overwogen. Echter, gezien de kenmerken van de beoogde doelgroep (gebrek aan initiatief, somberheid, eenzaamheid)

kan het ontstaan van (blijvend) contact en netwerkvorming na afloop beschouwd worden als een positief, maatschappelijk relevant en dus gewenst neveneffect. Daarom is het zaak de omvang, aard en verklarende factoren van dit fenomeen systematischer te bestuderen, om te bepalen óf en hoe het optreden van dit neveneffect bevorderd kan worden.

Om onderscheid te kunnen maken tussen contact in 'Informele Sociale Steunstructuren' (ISS) en alle overige mogelijke vormen van contact, is gekozen voor de volgende afbakening van het begrip ISS:

Een Informele Sociale Steunstructuur (ISS) is het contact tussen drie of meer mensen dat zonder georganiseerde en/of beroepsmatige tussenkomst aanwezig is en waarbinnen sociale basisbehoeften worden vervuld.

Drie elementen zijn van belang in deze definitie: 1) het uitsluiten van georganiseerde en/of beroepsmatige inmenging [8, 9], 2) de voorwaarde dat er in het onderlinge contact sociale basisbehoeften worden vervuld [10] en 3) de ondergrens van minimaal drie mensen die onderling contact in een netwerkje tot een 'structuur' maken. Pas wanneer er aan alle drie de elementen wordt voldaan, kan er gesproken worden van een ISS. Zo wordt bijvoorbeeld contact tussen twee oud-cursisten – waarin mogelijk ook sociale basisbehoeften worden vervuld – als duo aangemerkt en niet als ISS.

De doelstelling van dit exploratieve onderzoek is vierledig:

1. In kaart brengen of er contact blijft bestaan tussen oud-cursisten van de G&G groepscursus en zo ja, wat de omvang en aard van het contact is.
2. Verkennen of er verschillen (demografisch en qua interventie-effecten) bestaan tussen oud-cursisten die geen contact, contact in duo's of contact in een netwerkje hebben.
3. De kenmerken (structurele en functionele) van het contact in de netwerkjes beschrijven en duiden of het Informele Sociale Steunstructuren zijn.
4. Verkennen welke factoren het ontstaan van contact verklaren, en in het bijzonder het voortbestaan van contact in een netwerkje.

METHODE

Design

Dit onderzoek bouwt voort op een grootschalig implementatieproject in het kader van het Nationaal Programma Ouderenzorg waarin de determinanten van succesvolle implementatie van de G&G groepscursus en de effecten van deelname bij ouderen systematisch zijn gemonitord [2, 11, 12].

Tussen 2010 en 2013 zijn in totaal 34 G&G groepscursussen gegeven door professionals van verschillende zorg- en welzijnsorganisaties in de Opleidings en Onderwijs Regio van het Universitair Medisch Centrum Groningen (UMCG). Alle deelnemende cursisten zijn in het voorjaar van 2014 opnieuw aangeschreven met het verzoek (nogmaals) hun medewerking te verlenen aan het invullen van een vragenlijst en – indien bereid – een aanvullend diepte-interview over hun ervaringen na afloop van de cursus.

Het design van dit exploratieve onderzoek is 'mixed-method'. Dit houdt in dat gebruik gemaakt is van zowel kwantitatieve als kwalitatieve dataverzameling en -analyse.

Onderzoeksgroep

Uit de database van het implementatieproject zijn die cursisten-nummers geselecteerd waarvoor gold dat de zesde bijeenkomst van de cursus minimaal drie maanden geleden had plaatsgevonden en waarvan bekend was dat zij hadden geparticipeerd in de eerdere effectmetingen. In de praktijk was drie maanden immers een termijn gebleken waarbinnen er voldoende gelegenheid is geweest om onderling contact te laten ontstaan en mensen hierop te bevragen. Deze criteria resulteerden in een selectie van 206 oud-cursisten. Zes oud-cursisten werden uitgesloten, omdat op voorhand bekend was dat zij niet bereikbaar waren voor deelname aan dit onderzoek (verhuisd en adres onbekend, overleden of expliciet weigeraar van verdere medewerking aan onderzoek).

De uiteindelijk geselecteerde groep subjects voor dit onderzoek bestond uit 200 oud-cursisten. In totaal zijn 141 vragenlijsten geretourneerd (respons 71%). Daarvan waren 41 respondenten bereid tot een aanvullend telefonisch diepte-interview. Uiteindelijk zijn 14 van deze 41 oud-cursisten benaderd voor deelname aan het interview, omdat zij in de vragenlijst aangaven nog steeds contact te hebben met minimaal twee of meer mede-cursisten (netwerkje). De overige 27 respondenten zijn – ondanks hun bereidheid – niet nader geïnterviewd, omdat zij geen contact (meer) hadden met mede-cursisten of slechts met één enkele mede-cursist (duo).

In Figuur 1 is in een stroomschema weergegeven hoe de respons van de onderzoeksgroep was gedurende dit onderzoek.

Figuur 1 Stroomschema inclusie respondenten onderzoek

Beschrijving onderzoeksgroep

De gemiddelde leeftijd van de 141 respondenten was 68 (46 - 95) jaar. Van de respondenten was 34% getrouwd, 22% gescheiden, 35% weduwe, 7% ongehuwd, 1% duurzaam samenlevend en 2% had de burgerlijke staat niet aangegeven. Van de vrouwen leefde 62% zelfstandig alleen, 33% leefde zelfstandig met anderen (bijv. partner of kinderen), 4% woonde in een verzorgingstehuis en één vrouw woonde in een verpleeghuis.

Meetmethoden

Vragenlijst cursisten

De schriftelijke vragenlijst bestond uit demografische gegevens (leeftijd, burgerlijke staat en woonsituatie), zelfmanagementvaardigheden, welbevinden en eenzaamheid, en over het contact met mede-cursisten.

Zelfmanagementvaardigheden

De zelfmanagementvaardigheden zijn gemeten door gebruik te maken van de verkorte versie van de Self Management Ability Scale (SMAS-S)[13, 14]. De SMAS-S bestaat uit 18 items: drie items per zelfmanagementvaardigheid. De subschalen initiatief nemen, investeren, variëteit en multifunctionaliteit hebben per item zes antwoordcategorieën. De subschalen self-efficacy en positief perspectief hebben per item vijf antwoordcategorieën. De subschalen en de SMAS-totaalscore hebben na transformatie een range van 0 tot 100. Hogere scores geven meer zelfmanagementvaardigheid aan. De betrouwbaarheid van de schaal voor zelfmanagementvaardigheid is ook in deze dataset zeer goed gebleken (Cronbach's alfa was .89).

Welbevinden

Het welbevinden wordt gemeten door gebruik te maken van de verkorte versie (15 items) van de Social Production Function Instrument for the Level of wellbeing (SPF-IL) [15]. De sociale behoeften zijn: affectie, gedragsbevestiging en status. Fysieke behoeften zijn: comfort en stimulatie. Indien men hoog scoort op alle vijf behoeften, heeft men een hoog welbevinden. Voor alle vijftien items gelden dezelfde antwoordcategorieën: (1) nooit, (2) soms, (3) vaak en (4) altijd. De vijftien items worden samengevoegd en gemiddeld tot een schaal van 15 tot 60. Hogere scores geven meer welbevinden aan. De schaal voor welbevinden heeft in deze dataset een Cronbach's alfa van 0.69 en is aan te merken als voldoende betrouwbaar.

Eenzaamheid

Eenzaamheid wordt gemeten door de verkorte versie van de eenzaamheidsschaal van De Jong-Gierveld & Van Tilburg [16, 17]. De verkorte versie van de eenzaamheidsschaal bestaat uit zes items. Drie items gaan over emotionele eenzaamheid en drie over sociale eenzaamheid. Er zijn vijf antwoordcategorieën: Ja!, Ja, Min of meer, Nee, Nee! De totale eenzaamheidsscore

heeft een range van 0-6 na hercodering en dichotomisering van de afzonderlijke items. Een hogere score op de schaal duidt op een hogere mate van eenzaamheid. Een totaalscore hoger of gelijk aan 2 duidt op eenzaamheid. De Cronbach's alfa is 0.84, wat aangeeft dat deze schaal een goede betrouwbaarheid heeft.

Contact met mede-cursisten

Om in kaart te brengen hoeveel cursisten contact hielden met elkaar (omvang) is aan de respondenten gevraagd of zij nog contact hebben met mede-cursisten (nee; nee, nu niet meer; ja). Vervolgens is gevraagd naar de aard van het contact, met hoeveel mede-cursisten (aantal), en hoe vaak (frequentie). Tevens zijn – indien van toepassing – de redenen waarom men wel of geen contact heeft uitgevraagd.

Diepte-interview cursisten die contact hebben in een netwerkje

Het format voor het interview is opgezet vanuit de persoonlijke netwerkanalysebenadering [18]. Bij de persoonlijke netwerkmethode worden respondenten (behorend tot verschillende groepen of netwerken) gevraagd hoe zij het netwerk ervaren. De veertien geïnterviewden waren afkomstig uit elf verschillende cursusgroepen. Alle respondenten gaven toestemming een geluidsopname te maken van het gesprek. Allereerst is het aantal vrouwen, waarmee men had aangegeven nog contact te hebben, gevalideerd door de voornamen van deze vrouwen te laten noemen.

De tweede vraag was erop gericht onderscheid te kunnen maken tussen respondenten die (a) steeds in een netwerkje contact hadden met minimaal twee andere mede-cursisten (b) afzonderlijk contact hadden met minimaal twee andere mede-cursisten en (c) zowel in een netwerkje als afzonderlijk contact hadden met minimaal twee andere mede-cursisten. Afhankelijk van het antwoord zijn eerst de structurele en functionele kenmerken van het contact in het netwerkje en vervolgens – indien van toepassing – de structurele en functionele kenmerken van het afzonderlijke contact uitgevraagd.

De structurele kenmerken van het contact betroffen de grootte en levensduur van het netwerkje, de frequentie van contact en de aard van de activiteiten die samen worden ontplooid.

De functionele kenmerken van het contact in het netwerkje zijn geoperationaliseerd met behulp van vijf vragen gebaseerd op de Sociale Steun Lijst-Interacties (SSL-I) [19]. De drie vragen voor alledaagse steun zijn: (1) Voelt u zich verbonden met ? (2) Voelt u zich gewaardeerd door ? (3) Beschouwt u als echte vriendin(nen)? De twee vragen voor steun in bijzondere gevallen zijn: (4) Als u ergens mee zit, kunt dan bij terecht voor een luisterend oor? (5) Zou u in bijzondere gevallen (bijv. ziekte verhuizing) om hulp kunnen vragen? Ook

zijn de activiteiten (Kunt u beschrijven wat u met elkaar doet?), de ontstaansgeschiedenis van het netwerkje, de aanleiding, de eventuele initiatiefnemers en de redenen voor continuering van het contact uitgevraagd. Vervolgens is de respondenten gevraagd een eindoordeel te geven over de vraag of het deel uitmaken van het netwerkje een meerwaarde is in hun leven en zo ja, wat het hen dan precies brengt.

Data-analyse

De data van de schriftelijke vragenlijst zijn ingevoerd in SPSS Statistics versie 22. De geluidsopnamen van de diepte-interviews zijn woordelijk getranscribeerd in Word. Vervolgens zijn de kwalitatieve data uit de vragenlijst en de interviews geïmporteerd in Atlas.ti versie 7.0.

Voor de analyses van de kwantitatieve data is gebruik gemaakt van beschrijvende statistiek (frequencies, descriptives) en toetsende statistiek (Chi-square, ANOVA). In de ANOVA analyses, die het verschil in zelfmanagementvaardigheid, welbevinden en eenzaamheid testten tussen respondenten die geen contact, contact in een duo of contact in een netwerkje hebben gehouden, is steeds gecontroleerd voor de tijd tussen het meedoen aan de cursus en het invullen van de vragenlijst.

De analyse van de kwalitatieve data (zowel uit de schriftelijke vragenlijst als uit de diepte-interviews) is door de eerste auteur in drie stappen gedaan. Ten eerste is gebruik gemaakt van 'open coding'. Dit houdt in dat voorlopige codes zijn toegekend aan betekenisvol geachte stukjes tekst (paar woorden, zin, alinea, fragment). Vervolgens is gebruik gemaakt van 'axial coding'. Daarbij worden de 'open codes' geordend en teruggebracht naar categorieën. Dit terugbrengen lukt omdat de aanvankelijk toegekende codes soms min of meer synoniem zijn. Tot slot heeft 'selective coding' plaatsgevonden. 'Selective coding' betekent dat uit de verzameling categorieën een voorzichtige selectie is gemaakt van de meest belangrijke categorieën en deze benoemt als terugkerend thema [20]. De uitkomsten van de derde stap zijn gevalideerd door een tweede onafhankelijke beoordelaar welke tevens de transcripties van de 14 interviews heeft geanalyseerd.

RESULTATEN

In welke omvang en aard houden cursisten na afloop van de G&G groepscursus contact?

Gemiddeld zat er ruim twee jaar (26 maanden, sd 8 maanden, range 9-39 maanden) tussen deelname aan de cursus (datum eerste bijeenkomst) en deelname aan dit onderzoek (datum invullen vragenlijst).

Omvang

Veertig procent (n=55) van de respondenten had contact gehouden met één of meerdere mede-cursisten. Zeven procent had aanvankelijk contact, maar ten tijde van dit onderzoek niet meer. Vijf respondenten gaven in de toelichting op hun antwoord aan dat degene waarmee zij contact hadden, al kenden van vóór de start van de cursus, omdat zij familie of vriendinnen waren of bij elkaar in het verzorgingshuis woonden.

Aard

De groep respondenten die met één andere mede-cursist contact had wordt de subgroep duo's genoemd en bestond uit 16 respondenten (11%). De derde subgroep wordt 'netwerkje' genoemd, omdat deze 39 respondenten (29%) nog met twee of meer (maximaal zeven) mede-cursisten contact hadden. Zowel voor de duo's als de netwerkjes gold dat de frequentie van het contact veelal maandelijks was. Bij de duo's lag de frequentie van contact vaker hoger (zes respondenten hadden wekelijks contact, zeven hadden maandelijks contact, en drie hadden minder dan maandelijks contact). Bij de netwerkjes hadden van de 37 respondenten (2 missende waarden), zeven respondenten wekelijks contact met een mede-cursist, 19 respondenten hadden maandelijks contact en 11 hadden minder dan maandelijks contact.

Zijn er verschillen tussen cursisten die geen contact houden en cursisten die in een duo of netwerkje contact houden?

Respondenten die na afloop van de cursus geen contact hielden met mede-cursisten, met één mede-cursist contact hadden (duo), of die met meerdere mede-cursisten contact hadden (netwerkje), verschilden niet qua achtergrond kenmerken (zie Tabel 1). Er was geen verschil in leeftijd, burgerlijke staat en woonsituatie tussen de drie subgroepen.

Tabel 2 laat zien dat er ook geen significante verschillen waren tussen de drie subgroepen qua zelfmanagementvaardigheid, welbevinden en eenzaamheid. Gemiddeld hadden de duo's iets betere zelfmanagementvaardigheden, ervoeren zij iets meer welbevinden en minder eenzaamheid dan de respondenten zonder contact of de respondenten die een netwerkje hadden gevormd. Deze verschillen waren echter niet statistisch significant.

Tabel 1 Verschillen in achtergrond kenmerken tussen respondenten met 'geen contact', in 'duo's' en in 'netwerkjes'

	Geen contact		Duo		Netwerkje		p-waarde
	gem	sd (range)	gem	sd (range)	gem	sd (range)	
Leeftijd (jaren)	68	9 (51-88)	68	10 (46-88)	68	11 (46-92)	.98
Burgerlijke staat	n	(%)	n	(%)	n	(%)	.81
Gehuwd	25	(30)	5	(31)	16	(43)	
Gescheiden	18	(22)	3	(19)	9	(24)	
Weduwe	30	(37)	7	(44)	11	(30)	
Ongehuwd	8	(10)	1	(6)	1	(3)	
Samenwonend	1	(1)	0	-	0	-	
Totaal	82	(100)	16	(100)	37	(100)	
Woonsituatie	n	(%)	n	(%)	n	(%)	.60
Zelfstandig alleen	53	(65)	11	(69)	20	(56)	
Zelfstandig samen	25	(31)	5	(31)	13	(36)	
Verzorgingshuis	3	(4)	0	-	3	(8)	
Totaal	79	(100)	16	(100)	36	(100)	

Tabel 2 Verschillen in zelfmanagementvaardigheid, welbevinden en eenzaamheid

	Geen contact		Duo		Netwerkje		F	p-waarde
	gem	(sd)	gem	(sd)	gem	(sd)		
Zelfmanagement vaardigheid	58.7	(10.2)	64.7	(13.9)	59.6	(11.5)	1.913	.15
Welbevinden	36.1	(6.8)	37.3	(6.3)	36.6	(4.9)	0.218	.80
Eenzaamheid	3.1	(2.0)	2.3	(2.2)	3.1	(2.1)	0.928	.40

Structurele en functionele kenmerken van contact in een netwerkje

Inzicht in het contact in een netwerkje is verkregen door de diepte-interviews met de veertien respondenten die in de vragenlijst hadden aangegeven dat zij nog met minimaal twee andere mede-cursisten contact hadden en bereid waren tot een interview. De resultaten worden hieronder samengevat.

Structurele kenmerken

De grootte van de ontstane netwerkjes varieerde van drie tot zeven personen. Er kon één cursusgroep worden geïdentificeerd waarvan alle deelnemers contact bleven houden met elkaar.

De levensduur van de netwerkjes bedroeg gemiddeld twee jaar en vijf maanden en varieerde tussen de 22 en 39 maanden.

De frequentie van contact in vier netwerkjes was maandelijks. Bij twee netwerkjes lag deze frequentie lager, respectievelijk zes en twee keer per jaar. In een netwerkje dat een jaar heeft bestaan en daarna is verwaterd, was sprake van wekelijks (telefonisch) contact.

De aard van de activiteiten in de netwerkjes bewoog zich tussen de uiterste polen van 'gezelligheid buitenshuis' ("...We zijn eens met z'n allen uit eten geweest en naar de kroeg gegaan voor een drankje. En ja, dat doe je nooit alleen, dus ja, het is toch gezellig om dat te doen. Ja, het is gewoon gezellig en heel oppervlakkig." [ID 144]) tot 'diepgaande gesprekken op basis van een thema' ("Ik bedenk dan een thema. ...We hebben ook een keer over de jeugd gesproken. ... En dan komen er mooie en emotionele verhalen naar boven." [ID 01])

Verschillende rollen konden op basis van de informatie die de respondenten verstrekten bij een drietal open vragen in het interview (Hoe is het groepje ontstaan? Wie nam/namen het initiatief? Waarom blijft het contact bestaan?) worden geïdentificeerd, zoals: 'connector', iemand die individuen verbindt, organiseert en beslist ("Ja, ja ...ik probeer het toch een beetje, zeg maar...bij elkaar te houden." [ID 01]), de 'gespreksregulator' ("Ik roep dan even centraal 'hou je mond'...Dat bedoel ik er eigenlijk mee. Dan kan iedereen zijn zegje doen." [ID 114]). De 'trouwe deelnemer' ("Jawel, ja ik vind het..., ja het is eh.. ja, je ziet er toch elke keer wel weer naar uit om bij elkaar te komen. Ik zou het niet willen missen." [ID 03]). De 'deelnemer die meedoet wanneer het uitkomt' ("Uit eten gaan en naar de kroeg gaan, dat doe je niet alleen." [ID 144]).

De structurele kenmerken van het contact per interview-respondent staan in Tabel 3.

Tabel 3 Structurele kenmerken van contact in een netwerkje

Respondent ID nummer	G&G cursusgroep ID nummer	Grootte oorspronkelijke G&G cursusgroep	Grootte van ontstane netwerkje	Levensduur netwerkje	Frequentie van contact	Aard activiteiten	Rollen	Is er een ISS ontstaan?
ID 01	1	7	5	39 maanden tot op heden	2 keer per jaar	thematische ontmoetingen georganiseerd door connector	connector	Ja, "glans vriendinnen" (ISS 1)
ID 03	1	7	5	39 maanden tot op heden	2 keer per jaar	thematische ontmoetingen georganiseerd door connector	trouwe deelnemer	Ja, "glans vriendinnen" (ISS 1)
ID 19	4	12	5	onduidelijk	random	praatje maken wanneer men elkaar toevallig tegen kwam	geen rol	Nee
ID 59	6	8	4	onduidelijk	random	praatje maken wanneer men elkaar toevallig tegen kwam	geen rol	Nee
ID 79	10	5	3	12 maanden	wekelijks	bellen en 2 keer mee ge-weest naar voorstelling	aangehaakt bij reeds bestaande vriendschap tussen twee andere cursisten	Nee, niet meer
ID 100	14	11	6	29 maanden tot op heden	5 keer per jaar	koffiedrinken, eten, nieuwtjes uitwisselen, gezelligheid	initiator van de subgroep en moederfiguur voor 1 van de jongere leden	Ja "ons soort mensen" (ISS 2)
ID 109	13	9	7	29 maanden tot op heden	1 keer per maand	afwisselend gast-vrouwschap, "praten en koffie drinken"	deelnemer: "één van de dames haalt mij altijd op. Dat vind ik lief"	Ja (ISS 3)
ID 114	13	9	7	29 maanden tot op heden	1 keer per maand	afwisselend gast-vrouwschap, "praten over heel veel dingen, net zoals in de cursus"	gespreksregulator: "Iedereen wordt geaccepteerd, ook die ene die een beetje stoort. En als er iemand af zou haken, dan stopt de hele groep"	Ja (ISS 3)

Tabel 3 Structurele kenmerken van contact in een netwerkje (vervolg)

Respondent ID nummer	G&G cursusgroep ID nummer	Grootte oorspronkelijke G&G cursusgroep	Grootte van ontstane netwerkje	Levensduur netwerkje	Frequentie van contact	Aard activiteiten	Rollen	Is er een ISS ontstaan?
ID 139	17	6	6	28 maanden tot op heden	1 keer per maand	afwisselend gast-vrouwschap mbt de lunch "hecht groepje dat elkaar luisterend oor biedt"	trouwe deelnemer: Je krijgt toch een wat hechter contact met elkaar, dan dat je elkaar af en toe op de weg eens spreekt. Je weet dan meer van de pers. omstandigheden...hoe iemand leeft enzo".	Ja (ISS 4)
ID 141	17	6	6	28 maanden tot op heden	1 keer per maand	afwisselend gast-vrouwschap mbt de lunch "praten over hoe het met elkaar is"	trouwe deelnemer: "op de 1 of andere manier hebben we een soort verbond gekregen, dus zolang iedereen dit wil, gaan we hier denk ik wel mee door"	Ja (ISS 4)
ID 144	18	6	3	27 maanden tot op heden	1 keer per maand	altijd afspreken buitens-huis (wijnkje drinken in café, hapje eten in restaurant).	deelnemer: "uit eten gaan en naar de kroeg gaan, dat doe je niet alleen".	Ja (ISS 5)
ID 152	19	5	2	onduidelijk	random	praatje maken wanneer ze 1 andere vrouw toevallig tegen kwam	geen rol	Nee
ID 167	22	7	5	22 maanden tot op heden	1 keer per maand	afwisselend gast-vrouwschap: "we drinken koffie of thee en praten over wat ze de afgelopen maand hebben meege-maakt"	vriendin van de con-nector	Ja, glans netwerkje (ISS 6)
ID 195	25	5	3	onduidelijk	random	praatje maken als we elkaar tegenkomen met het wandelen	geen rol	Nee

Functionele kenmerken

Alledaagse steun

De eerste functie van het contact die is uitgevraagd, is het vervullen van de behoefte aan alledaagse steun. Hiermee wordt bedoeld op de vraag in hoeverre het contact in de netwerkjes een gevoel van verbondenheid, waardering of misschien zelfs affectie teweegbracht.

Elf van de veertien respondenten antwoordden bevestigend op de vraag of zij zich verbonden voelen met het groepje vrouwen dat ze met regelmaat ontmoeten (*"Nou, we hebben een soort verbond gekregen. Dat we daar toch mee door willen gaan..."* [ID 141]).

Ook antwoordden bijna alle respondenten positief op de vraag 'Voelt u zich gewaardeerd door de dames in het groepje?' (*"Ja, ik ben de oudste van het stel en ze willen altijd wel dat ik er dus bij ben. ze zeggen gewoon: je komt toch hè, want wij vinden het zo gezellig als je er bent."* [ID 109]).

Ondanks dat de respondenten gemiddeld verbondenheid en waardering ervoeren van het netwerkje, antwoordde geen van de respondenten bevestigend op de vraag: 'Beschouwt u de vrouwen uit het groepje als echte vriendinnen? Over het algemeen bleek de affectieve band in het netwerkje zich ergens 'tussen vriendschap en kennissen' in te bevinden, zoals verwoord in het onderstaande citaat.

"Nou we noemen elkaar GLANS-vriendinnen. In je leven heb je ...zo beschouw ik het...meestal één of twee echte vriendinnen waar je gewoon bijna alles mee delen wilt. En met mensen die ietsje verder van je af staan, dat is toch anders." [ID 01]

Steun in bijzondere gevallen

Naast alledaagse steun is ook uitgevraagd in hoeverre de netwerkjes steun in bijzondere gevallen bieden, zoals een 'luisterend oor' of 'concrete hulp' in geval van problemen. Twee derde van de respondenten antwoordde hier bevestigend op. Zij waren afkomstig uit vier van de zes geïdentificeerde netwerkjes. In vier netwerkjes bleek het contact dus diepgaander en de functie van een sociaal vangnet te vervullen en bij twee netwerkjes leken gezelligheid vooral de reden om samen te komen.

Ervaren meerwaarde

Tot slot is de functie van het blijvende contact tussen medecursisten geanalyseerd door respondenten de vraag te stellen of deel uitmaken van het netwerkje een meerwaarde is in het leven van de respondent. Hier bleek hetzelfde patroon als bij de functie van steun in bijzondere gevallen. De respondenten van vier netwerkjes noemden de meerwaarde (*"Ja, beslist. Ik zou hen niet willen missen."* [ID 03]) en de respondenten van twee netwerkjes niet (*"Nee, nog te gezellig om op te geven, maar niet echt een boei om aan vast te houden."* [ID 144]).

Samenvattend

We interviewden 14 respondenten afkomstig uit elf verschillende G&G cursusgroepen. Hieruit ontstonden zes netwerkjes die op het moment van het interview elkaar nog steeds ontmoeten. De zes netwerkjes hebben de structurele en functionele kenmerken van een Informele Sociale Steun Structuur volgens de in dit onderzoek gekozen afbakening van het begrip ISS. De kenmerken van de zes Informele Sociale Steunstructuren staan geordend in Tabel 4.

Welke factoren verklaren het ontstaan van contact?

In totaal hebben 105 oud-cursisten in de vragenlijst een toelichting gegeven op de vraag: 'Heeft u nog contact met één of meerdere vrouwen van de G&G groepscursus?' Afhankelijk van het antwoord 'ja', 'nee', 'nee, nu niet meer', noemden zij redenen waarom er wel/geen contact (meer) was. Alle genoemde redenen zijn geordend en teruggebracht naar vier terugkerende thema's die een rol spelen bij het al dan niet ontstaan van contact: 1. Gedachten van cursisten, 2. Gedrag van cursisten, 3. Overeenkomsten en verschillen tussen cursisten en 4. Praktische zaken.

Gedachten van cursisten

en terugkerend thema in de toelichtingen van respondenten was dat zij negatieve gedachten hadden over contact. De negatieve gedachten leken het ontstaan van contact te belemmeren. Deze negatieve gedachten waren op te splitsen in gedachten over henzelf (*"Onzeker over mijzelf"* [ID 153]) en gedachten over de anderen (*"Mijn idee was dat de anderen er ook niet in geïnteresseerd waren."* [ID 205]).

Gedrag van cursisten

Het tweede thema dat geïdentificeerd kon worden, was het gedrag van de cursisten in de betekenis van het wel of niet nemen van initiatief tot het ontstaan van contact. Daarbij wordt zowel het zelf niet nemen van initiatief (*"Bij de terugkomochtend kon ik niet aanwezig zijn. Ik heb daarna geen stappen ondernomen"* [ID 176]), als het feit dat anderen geen initiatief namen (*"Enkelen zouden komen koffiedrinken en zeggen wanneer. Niet gebeurd."* [ID 47]) als belemmerende factor aangevoerd.

Tabel 4 Kenmerken van contact in Informele Sociale Steunstructuren

	ISS 1	ISS 2	ISS 3	ISS 4	ISS 5	ISS 6
Grootte	5 (uit 7)	6 (uit 11)	7 (uit 9)	6 (uit 6)	3 (uit 6)	5 (uit 7)
Frequentie contact	2 x per jaar	5 keer per jaar	1 x per maand	1 x per maand	1 x per maand	1 x per maand
Aard activiteiten	GLANS-thema bespreken	Koffie drinken of eten altijd in huis van dezelfde	Koffie drinken afwisselend bij iemand thuis	Lunchen afwisselend bij iemand thuis	Buitenshuis borrelen of eten	Koffie drinken afwisselend bij iemand thuis
Typering	"GLANS vriendinnen"	"Soort zoekt soort"	"Hechte groep"	"Positief gestemden"	"Gezelligheid"	"GLANS-netwerkje"
Alledaagse steun	ID 01	ID 03	ID 100	ID 114	ID 139	ID 141
verbondenheid	+	+	++	++	+	+
waardering	+	+	+	++	+	+
affectie	-	-	-	-	-	-
Steun in bijzondere gevallen	ja	ja	ja	ja	ja	nee
hulp bij ziekte en verhuizing	ja	ja	nee, alleen mijn dochter	ja	ja	nee
Ervaren meer-waarde	"Absoluut, bijzonder dat je mag meelopen op elkaars levenspad"	"Ja, beslist. Ik zou hen niet willen missen."	"Ja. Ik vind dit leuk. Elkaar dingen in vertrouwen vertellen."	"Ja, dat je over en weer elkaar waardeert."	"Ja, saamhorigheid, gezelligheid, luisterend oor."	"Ja, dat ik niet moet zeuren. Er zijn ergere gevallen."
			"Ja, nou ja, tuurlijk. Als ik niet ga, dan kom ik nergens meer"		"Nee, nog te gezellig om op te geven, maar niet echt een boel om aan vast te houden."	"Nee, maar mooi dat het is ontstaan want er zijn toch wel heel veel eenzame mensen"

Overeenkomsten en verschillen tussen cursisten

Het derde thema dat geïdentificeerd kon worden op basis van de toelichtingen van de respondenten in de vragenlijst, bleek het ervaren van gemeenschappelijkheid te zijn (homophily) (*"We hadden een stukje verbondenheid met elkaar door heel veel ellende van ons allen."* [ID 152]). Daarentegen werd het niet ervaren van een band of het gebrek aan overeenkomst qua interesses, bezigheden, leeftijd of opleidingsniveau, genoemd als reden van het niet ontstaan van contact (*"Geen van de vrouwen sprak mij aan wat betreft interesses. Alleen koffiedrinken en veel praten met elkaar ligt mij niet."* [ID 142]).

Praktische zaken

Het vierde en laatste thema dat naar voren kwam uit de toelichtingen van de respondenten, was dat praktische zaken, zoals tijd (*"Te druk met kleinkinderen"* [ID 201]) en fysieke afstand (*"Ze kwamen uit een andere plaats."* [ID 130]) het ontstaan van contact in de weg kon staan.

Welke factoren verklaren het voortbestaan van contact in een netwerkje?

Inzicht in de factoren die het voortduren van contact in netwerkjes bevorderen dan wel belemmeren, is verkregen door middel van een analyse op een deel van de interviews. Het gaat om de negen respondenten die al langere tijd functioneerden in een – volgens de gehanteerde definitie – Informele Sociale Steunstructuur. Uit de analyse kwamen vier factoren naar voren die het voortbestaan van de netwerkjes bevorderden: 1. Praktische zaken, 2. Tevredenheid met de rolverdeling, 3. Gespreksregulatie en 4. (emotionele en materiële) Wederkerigheid.

Praktische zaken

De beschikbaarheid van een fysieke plek om elkaar te ontmoeten bevorderde het voortduren van het contact (*"Zij zei: 'Kom maar bij mij, dat is wel leuk.' Haar huis staat in het midden."* [ID 100]) (*"Als wij bij elkaar zijn, dan spreken we gelijk af voor de volgende keer. Ja, en dat werkt heel goed"* [ID 109])

Rolverdeling

Zowel de netwerkjes waarvan één persoon zich had opgeworpen als de 'leider/organisator' (*"Zij heeft meteen al gezegd: dat wil ik voor de eerste keer wel op me nemen.. en nou ja, dat is zo gebleven"* [ID 03]) en de netwerkjes waar de inbreng en organisatie gelijkelijk verdeeld was over alle deelnemers, konden een lange levensduur hebben (*"Nee, nee wij zeggen gewoon, van eh.. wanneer komen we weer bij elkaar? Ja nou.. Nee, het is niet echt om te zeggen van die organiseert dat, nee hoor. Wij komen gewoon en we zien het wel."* [ID109]).

Gespreksregulatie

Het bewaken van ieders inbreng door middel van gespreksregulatie werd belangrijk gevonden in de netwerkjies (*"Er is één vrouw die neemt gauw het hele gesprek op zich. En dan probeer ik.. tja wie ben ik...het gesprek af te kappen. Dat de degene die wat minder snel kan praten ook vooral aan het woord blijven."* [ID 01]).

Wederkerigheid

In bijna alle netwerkjies deden respondenten uitspraken die duiden op het ontstaan van een vertrouwensband als gevolg van het delen van verhalen tijdens de G&G groepscursus. Wanneer bij volgende ontmoetingen bleek dat – zonder de begeleiding van professionals – dit vertrouwen bleef en men elkaar over en weer een luisterend oor bood, dan werd emotionele wederkerigheid ervaren die het voortduren van het contact leek te bevorderen (*"Ik ben eigenlijk een luisterend oor voor haar.... Maar als ik haar bel en ik heb iets, dan is ze er. Dat is van twee kanten zo."* [ID 100]).

Naast emotionele wederkerigheid konden ook vormen van materiële wederkerigheid worden herkend. Dit varieerde van een eenvoudig bloemetje bij iedere ontmoeting voor de gastvrouw tot feitelijke financiële steun aan degene die dat nodig had.

DISCUSSIE

Dit onderzoek heeft aangetoond dat 40% van de deelnemers aan de G&G groepscursus na afloop contact houdt met mede-cursisten. Elf procent doet dit met één andere mede-cursist (duo) en 29% met twee of meer mede-cursisten (netwerkje). De respondenten die geen contact hielden, bleken niet significant te verschillen van de duo's of de netwerkjies qua achtergrond kenmerken (leeftijd, burgerlijke staat en woonsituatie). Ook konden er – na correctie voor tijd sinds deelname – geen verschillen aangetoond worden qua effecten van de interventie (zelfmanagementvaardigheid, welbevinden en eenzaamheid). Een verklaring hiervoor kan zijn dat mensen die geen contact hebben gehouden met anderen van de groep, wel contacten hebben gezocht buiten de cursusgroep waardoor zij over het geheel genomen niet minder sociale contacten hebben en daarom ook niet eenzamer zijn of minder welbevinden hebben, maar deze interpretatie is speculatief en zou verder onderzocht moeten worden.

Aanvullende diepte-interviews met veertien oud-cursisten, die deel uit maakten van een netwerkje, toonden aan dat uit 11 verschillende G&G cursusgroepen zes Informele Sociale Steunstructuren zijn ontstaan. De grootte varieerde tussen de drie en zeven personen. De gemiddelde levensduur bedroeg ruim twee jaar en varieerde tussen de 22 en 39 maanden.

De frequentie van contact was veelal maandelijks. De rollen van de leden varieerden van 'connector', 'gespreksregulator', 'trouwe deelnemer' tot 'deelnemer naar wens'. De activiteiten varieerden van 'een thematische ontmoeting waarbij een GLANS-onderwerp werd besproken' tot 'buitenshuis een wijntje drinken'. De leden ervoeren verbondenheid en waardering tijdens de ontmoetingen. Zij typeerden hun band als 'iets tussen vriendschap en kennissen in'. Voor een aantal had het contact de functie van een sociaal vangnet. In het kwalitatieve onderzoek naar de factoren die het ontstaan en voortbestaan van contact beïnvloeden zijn verschillende thema's geïdentificeerd. Negatieve gedachten (over zichzelf en anderen) en gebrek aan initiatief belemmeren het ontstaan van contact. Terwijl overeenkomsten tussen cursisten in belangstelling en bezigheden (homophily) het ontstaan van contact bevorderen. Wanneer het contact eenmaal is ontstaan bevorderen de tevredenheid met een natuurlijk gegroeide rolverdeling, gespreksregulatie en (emotionele en materiële) wederkerigheid het voortbestaan ervan. Praktische zaken (zoals nabijheid, tijd en de beschikbaarheid van een ontmoetingsplek) bleken zowel voor het ontstaan als voortbestaan van contact van cruciaal belang.

Dit exploratieve onderzoek naar het ontstaan van Informele Sociale Steunstructuren na afloop van de G&G groepscursus heeft een aantal sterke en zwakke punten. Een sterk punt van dit onderzoek was dat de respons op de vragenlijst 71% was en dus ruim boven de in de literatuur aanbevolen norm van 55% [21]. Hierdoor is het gerechtvaardigd te stellen dat het – door een aantal G&G docenten gesignaleerde – fenomeen van het ontstaan van Informele Sociale Steunstructuren na afloop van de groepscursus daadwerkelijk bestaat. Wel dient rekening te worden gehouden met een geringe overschatting van de schaal waarop dit fenomeen optreedt (29%), omdat het aannemelijk is dat 'contact met mede-cursisten' vaker voorkwam onder de respondenten van dit onderzoek dan onder de non-respondenten. Een ander sterk punt van dit onderzoek is dat de kwalitatieve data door meer dan één beoordelaar zijn geanalyseerd. De tweede beoordelaar was bovendien niet bekend met de theorie en praktijk van de G&G groepscursus. De consensus tussen de twee beoordelaars over de bevorderende en belemmerende factoren van het ontstaan en voortbestaan van contact duidt daarmee op inhoudsvaliditeit van de gepresenteerde resultaten.

Daarnaast zijn er ook een aantal tekortkomingen aan het hier gepresenteerde onderzoek. Ten eerste is er nog geen nadere analyse verricht op de subschaal 'initiatief nemen' van de Self Management Ability Scale, terwijl daar op grond van de uitkomsten van de kwalitatieve analyses wel aanleiding toe bleek. Omdat de interne consistentie van deze subschaal goed is en de subschalen van de SMAS-S verschillende concepten vertegenwoordigen [13], is het aan te bevelen de samenhang tussen deze specifieke zelfmanagementvaardigheid en het houden van contact in een ISS nader te onderzoeken.

Ten tweede hebben we per geïdentificeerde ISS maximaal twee deelnemers gesproken. Dit beperkte aantal geïnterviewden kan ook tot beperkte informatie hebben geleid. Als we alle personen uit de ISS hadden geïnterviewd, had dit wellicht geleid tot het vinden van een grotere diversiteit aan kenmerken. Ook zou uit directe observatie van de ontmoetingen van een aantal Informele Sociale Steunstructuren nieuwe aanvullende informatie kunnen worden verkregen.

Als derde is het 'contact in duo's' niet nader bestudeerd. Omdat duo's een trend in betere zelfmanagementvaardigheden, welbevinden en minder eenzaamheid dan de overige subgroepen rapporteerden, is het interessant dit in vervolgonderzoek nader te verkennen.

CONCLUSIE

Dit exploratieve onderzoek heeft aangetoond dat een substantieel aantal deelnemers (40%) na afloop van de G&G groepscursus contact met elkaar blijft houden. Bij bijna een derde van de deelnemers (29%) en ongeveer één op de twee cursusgroepen heeft dit contact de kenmerken van een Informele Sociale Steunstructuur; zonder tussenkomst van professionals blijft men elkaar in een netwerkje van drie tot zeven personen op regelmatige basis ontmoeten omdat men een band ervaart die zich laat typeren als iets 'tussen vriendschap en kennissen' in. Ook zijn er factoren geïdentificeerd waarmee dit contact kan worden gestimuleerd, zoals cursisten bewust maken van onderlinge overeenkomsten in belangstelling en bezigheden en cursisten leren om negatieve gedachten, die het nemen van initiatief belemmeren, te herkennen. Echter, omdat niet kon worden aangetoond dat contact de primaire uitkomstmaten van de G&G groepsinterventie beïnvloedt, wordt aanbevolen dit in een separate interventie-module te testen. Als van deze module een meerwaarde aangetoond wordt, kunnen ook andere sociale interventies er hun voordeel mee doen.

REFERENTIES

1. Kremers IP, Steverink N, Albersnagel FA, Slaets JP. Improved self-management ability and well-being in older women after a short group intervention. *Aging Ment Health*. 2006;10(5):476-84.
2. Goedendorp MM, Kuiper D, Reijneveld SA, Sanderman R, Steverink N. Sustaining program effectiveness after implementation: The case of the self-management of well-being group intervention for older adults. *Patient Educ Couns*. 2017;100(6):1177-84.
3. Steverink N, Lindenberg S, Slaets JP. How to understand and improve older people's self-management of well-being. *Eur J Ageing*. 2005;2:235-44.
4. Steverink N. Gelukkig en gezond ouder worden: welbevinden, hulpbronnen en zelfmanagementvaardigheden. *Tijdschr Gerontol Geriatr*. 2009;40(6):244-52.
5. Steverink N. Successful development and aging: theory and intervention. In: Pachana NA, Laidlaw K, editors. *The Oxford Handbook of Clinical Geropsychology*. Oxford: Oxford University Press; 2014.
6. Gesell SB, Bess KD, Barkin SL. Understanding the social networks that form within the context of an obesity prevention intervention. *J Obes*. 2012;2012: 749832.
7. Gesell SB, Barkin SL, Valente TW. Social network diagnostics: a tool for monitoring group interventions. *Implement Sci*. 2013;8:116.
8. Koops H, Kwekkeboom MH. Vermaatschappelijking in de zorg. Ervaringen en verwachtingen van aanbieders en gebruikers in vijf gemeenten. Den Haag: Sociaal en Cultureel Planbureau; 2005.
9. van den Berg E, van Houwelingen P, de Hart J. Informele groepen. Den Haag: Sociaal en Cultureel Planbureau; 2011.
10. Nationaal Kompas Volksgezondheid. In: Nationaal Kompas Volksgezondheid. 2014. <http://www.nationaalkompas.nl/gezondheidsdeterminanten/omgeving/leefomgeving/sociale-steun/wat-is-sociale-steun/>. Geraadpleegd op 30 oktober 2014.
11. Kuiper D, Goedendorp MM, Sanderman R, Reijneveld SA, Steverink N. Identifying the determinants of use of the G&G interventions for older adults in health and social care: protocol of a multilevel approach. *BMC Res Notes*. 2015;8:296.
12. Kuiper D, Steverink N, Stewart RE, Reijneveld SA, Sanderman R, Goedendorp MM. Pace and determinants of implementation of the self-management of well-being group intervention: a multilevel observational study. *BMC Health Serv Res*. 2019;19(1):67.
13. Cramm JM, Strating MM, de Vreede PL, Steverink N, Nieboer AP. Validation of the self-management ability scale (SMAS) and development and validation of a shorter scale (SMAS-S) among older patients shortly after hospitalisation. *Health Qual Life Outcomes*. 2012;10:9.

14. Schuurmans H, Steverink N, Frieswijk N, Buunk BP, Slaets JP, Lindenberg S. How to measure self-management abilities in older people by self-report. The development of the SMAS-30. *Qual Life Res.* 2005;14(10):2215-28.
15. Nieboer A, Lindenberg S, Boomsma A, van Bruggen AC. Dimensions of well-being and their measurement: The SPF-IL Scale. *Soc Indicators Res.* 2005;73:313-53.
16. de Jong-Gierveld J, van Tilburg T. A 6-item scale for overall, emotional, and social loneliness confirmatory tests on survey data. *Res Aging.* 2006;28(5):582-98.
17. de Jong-Gierveld J, van Tilburg T. Manual of the Loneliness Scale 1999. https://home.fsw.vu.nl/tg.van.tilburg/manual_loneliness_scale_1999.html, 2019.
18. Vrooman JC, Dykstra PA, Kapteyn P, Leeuw F, Sanders K, Snijders T. Netwerken en sociaal kapitaal: Nijmegen: Nederlandse Sociologische Vereniging; 2001.
19. van Sonderen E. Sociale Steun Lijst-Interacties (SSL-I) en Sociale Steun Lijst-Discrepanties (SSL-D): 2e dr. Groningen: Research Institute SHARE, UMCG, RuG; 2012.
20. Daengbuppha J, Hemmington N, Wilkes K. Using grounded theory to model visitor experiences at heritage sites: Methodological and practical issues. *Qualitat Market Res.* 2006;9(4):367-88.
21. Baruch Y. Response rate in academic studies-A comparative analysis. *Human Relat.* 1999;52(4):421-38.

Chapter 7

General Discussion

The aim of this research project was to identify the determinants and effects of implementation of the Self-Management of Well-being (SMW) interventions for older adults in health and social care. Many older adults could benefit from the SMW interventions when these interventions are routinely provided in health and social care services [1]. However, as long as the interplay between implementation factors at different hierarchical levels is poorly understood, use of the SMW interventions by professionals will remain limited, and the intended impact on the well-being of older adults will not be achieved. A grant from The Netherlands Organisation for Health Research and Development [ZonMw] in 2010, as part of the National Program for the elderly [NPO], allowed us to systematically plan, execute and evaluate the process of implementation of the SMW interventions in health and social care organizations for community-dwelling older adults in the four Northern provinces of the Netherlands.

In total, 60 professionals, employed in 23 different organizations (5 health care organizations, 18 social care organizations), participated in the project. In groups of 6-12 professionals they were trained by the project team to use either the SMW group intervention as a teacher (n=48), or the SMW individual intervention as a coach (n=12). Seven standardized two-day trainings were executed consecutively between May 2010 and October 2012. During training, professionals learned to work according to the SMW intervention manual and make use of the SMW implementation toolkit. After satisfactory completion of the training, professionals were registered as a certified SMW teacher or coach. From that point onward, the project team monitored all certified professionals in their efforts to recruit participants and execute the SMW interventions in the context of their organizations and communities.

Of the two SMW intervention formats in this project, the group intervention has been mostly used. Only one of the 12 SMW coaches delivered the individual intervention to its full extent. The individual format turned out to be too labor-intensive (i.e., six home visits in one client) and thus too costly. Perhaps when implemented in care for institutionalized older adults with higher levels of frailty, there will be a better innovation-task orientation fit. Therefore, evaluation of the individual SMW intervention has not been a further object of study or analysis, and in this discussion, we solely focus on the results regarding the use of the SMW group intervention.

Based on the Fleuren model [2], potential determinants at three executive hierarchical levels (professionals, managers, policymakers) were assessed on three fixed assessment points in two years. To test whether the SMW group intervention remained effective after being transferred to practice, self-management ability and well-being scores were assessed in the participating older adults.

In this concluding chapter, the main findings of the research are presented and interpreted. We also reflect on methodological strengths and limitations. Furthermore, we elaborate on the main findings in lessons learned. The chapter will end with implications for further research and recommendations for policy and practice.

MAIN FINDINGS

Implementation outcomes: use, pace, and performance

The degree of implementation success was operationalized by three parameters: use, pace, and performance. Use discriminates between professionals that used the SMW group intervention at least once and those that remained non-users. Pace indicates the time it took trained professionals to start-up the SMW group intervention and use it for the first time. Performance refers to the frequency of use, operationalized as the number SMW group interventions delivered by a trained professional during the implementation project. The results on use and pace are described in chapter 3. The results on performance are described in chapter 4. Here we present the main findings.

Two third of the SMW teachers ($n=32$) used the SMW group intervention within 7.5 months after certification ($SD\ 4.2$, range 1–17). Three professionals achieved use within three months (early adopters), 14 professionals between 3 and 6 months (early majority), 11 professionals between 7 and 12 months (late majority) and in four professionals it took longer than a year to achieve first use of the SMW group intervention (laggards) (Chapter 3).

At time of the third (and final) assessment, when the SMW teachers had at least two years to use the SMW group intervention, the mean frequency of use was 1.6 SMW group interventions per professional ($SD\ 1.3$, range 0–4). The best performing professionals used the SMW group intervention two times a year; mostly one course in the fall and one in the spring. The poorest performing professionals did not use the intervention at any time and remained non-users. Apart from personal (sick leave) and organizational reasons (discharge due to reorganization), difficulties in recruiting sufficient participants was the main reason why professionals performed poorly or did not use the SMW group intervention during the project (Chapter 4).

Compared to other innovative programs or practices, the outcomes of the SMW implementation project can be labeled as relatively successful. We achieved a 67% utilization-rate (32 out of 48 SMW teachers). Australian community practitioners reported a 72% utilization rate of evidence-based treatments in child welfare services [3]. Two empirical studies on an evidence-based parenting intervention in a – to our study more comparable – health and social care

setting, reported utilization rates of 70% [4, 5] and 63% [6]. In perspective of these self-reported utilization rates, our observed 67% utilization-rate can be improved, but is already relatively successful. Concerning pace, a start-up time of 2-6 months is indicated as optimal in the literature [7]. Although our mean start-up time of 7.5 months was a little longer, other empirical studies on pace report start-up times of nine months or longer [8-10]. Due to a lack of empirical reference data on the frequency of use of other innovative group interventions, we cannot compare the successfulness of this outcome parameter (Chapter 3 and 4).

Given the results on use, pace and performance, financial stakeholders and managers of adopting organizations can plan future implementation efforts of the SMW group intervention and will have a more unobstructed view on the return on their investments. However, based on our determinant analyses, there are aspects that implementers can take into account, in order to increase the frequency of use and improve the return on investment. These aspects are discussed in more detail in the following section and in the implications for policy and practice.

Determinants of use of the SMW group intervention

Determinants of use of the SMW group intervention have been identified on both the professional level and on the organizational level. Regarding this, a distinction has been made between determinants of use in the early stage of initial implementation (Chapter 3) and determinants of use in the subsequent stage of full implementation (Chapter 4).

Concerning the identification of determinants of first use (initial implementation), the single-level analysis showed 'ownership,' 'relative advantage,' 'support from SMW colleagues' and 'compatibility' to be determinants on the professional level. 'Organizational size' and 'innovation-task orientation fit' showed to be determinants of first use on the organizational level. When the dependency between professionals and organizations was taken into account by employing multilevel modeling, the professionals' perception of compatibility, i.e. whether the SMW intervention was compatible with other tasks, was the only remaining significant determinant of first use (Chapter 3).

Concerning the identification of the determinants of the frequency of use (full implementation), multiple factors showed to be of importance. Eight factors determined the frequency of use in the multilevel analyses: 'formal reinforcement' and 'the presence of an opinion leader' showed to be most decisive with very large effect sizes. Next, 'support from fellow SMW-teachers', 'support from other colleagues' and 'support from supervisor' showed to be significant with large effect sizes. Finally, 'ownership', 'relative advantage' and 'observability of effects' were determinants with medium effect sizes. 'Organizational size', 'self-efficacy', 'support from higher management', 'innovation task-orientation fit', and 'compatibility' were significant in

bivariate analyses, but not in multilevel analyses. More importantly, variation in the frequency of use by professionals was predominantly explained by characteristics of the organization in which they were employed, and only for a minor part by individual differences between professionals (Chapter 4).

Taken together, the results of the multilevel determinant analyses provide the necessary input to build a hypothesized theory of change in the case of implementation of the SMW group intervention, as depicted in Figure 1. Taking into account timing, this may be interpreted such that implementation of the SMW group intervention is especially labor-intensive in the first stage from adoption to initial implementation (e.g. organizing recruitment of participants, course location and materials). A lack of compatibility with other designated tasks of trained professionals affects actual use, and thus the pace of this first use negatively [11]. Next, the frequency of use, and thus the level of full implementation, is mediated by a positive organizational implementation climate, in which professionals are formally reinforced and supported (Chapter 4) [12].

Figure 1 Theory of change in the case of implementation of the SMW group intervention

Successful implementation of the SMW group intervention requires that professionals change their routines. However, the preconditions to mediate this change in professionals should be ready at the organizational level, prior to training professionals. De-implementation of contradicted or unproven entrenched practices should be considered [13] and a dedicated coordinator or opinion leader for implementation should be assigned [6, 14]. More detailed advice on how to improve the current implementation strategy is given in the section on implications for policy and practice.

Sustained effectiveness of the SMW group intervention after implementation

To test whether the SMW group intervention effectiveness sustained after being transferred to practice, we compared self-management ability and well-being scores of participating older adults in the previous performed Randomized Controlled Trial (RCT) and the present Implementation Study (IMP). Also, threats to effectiveness were evaluated by comparing reach, adherence, and program fidelity.

Our results showed that intervention effect sizes were equal for both self-management ability and well-being. Practically the same target group was reached in the IMP as in the RCT, and drop-out rates and session attendance were comparable. Moreover, program fidelity, measured utilizing SMW-teachers self-reported protocol compliance, was high. In other words, no signs of either a 'voltage drop' or 'program drift' [15] could be detected (Chapter 5).

We assume the 'good fit' between the evidence-based and protocolized SMW group intervention and the needs of the field of health and social care for older adults to explain the high comparability of these positive findings. An explanation may be, that due to the trends of decentralization and integration of health and social care in communities [16] and the increasing awareness that implementing evidence-based practice is a shared responsibility [17] professionals and organizations are motivated to try new evidence-based, well-structured and cost-effective means to empower older adults. Since the SMW group intervention is a clear, practical and robust tool to this end, organizations embraced the idea of adopting it and professionals delivered it as intended, without reinvention. We expect the strict training, committing professionals to deliver the intervention as agreed, and the detailed and attractive intervention materials, illustrating the 'core components' of the intervention [18, 19], to contribute to this effect.

Exploration of long-term side-effect of the SMW group intervention

The formation of informal social support structures was not a predetermined aim of the project, but thanks to an additional grant from the Dutch National Knowledge Institute on social issues [Movisie], we could explore this unexpected, or at least unintended, phenomenon among participants of the SMW group intervention. During the implementation project, SMW-

teachers frequently reported that older adults, who participated together in an SMW group intervention, stayed in touch with each other after the course had ended. Some SMW-teachers even labeled them as ‘informal networks’ emphasizing the inherent value of potentially lasting relations and reciprocal support in vulnerable older adults without the interference of professionals. Since this phenomenon was a welcome positive side effect of the SMW group intervention, we decided to perform an explorative mixed-method study (survey and interview) to enhance our understanding.

This additional study showed that about one-third of former participants reported being still ‘in touch’ with each other on a monthly basis. Feelings of connectedness and mutual respect had shaped a bond that can be described as ‘something between friends and acquaintances’. Some respondents stated that the informal network functioned as a social safety net. We could identify some facilitating factors for the formation of these social support networks, such as ‘awareness of homophily’ and ‘recognition of thoughts that hinder taking initiative’, but it cannot be fully concluded that the formation of these social support networks enhanced the self-management ability, well-being or loneliness of the networks members (Chapter 6).

Formation of social networks in individual behavioral change interventions delivered in a group format is not new nor unique. They are also observed and studied in, for example alcohol abuse or obesity prevention programs [20, 21]. Apparently, witnessing each other’s struggles shapes togetherness and a desire to continue to meet and support each other. This phenomenon is valuable in itself, given the high prevalence of loneliness in SMW participants. Development of an extra intervention-module to promote this side-effect should therefore be considered and the potential additional effects should be evaluated.

METHODOLOGICAL CONSIDERATIONS

Strengths and limitations of the separate studies in this research project were discussed in detail, in the various chapters. Here we reflect on the overall strengths and limitations of this implementation study.

One of the main strengths of this project is that we focused on both intervention and implementation outcomes (hybrid effectiveness-implementation design). Many implementation studies confine themselves to the assessment of only implementation outcomes. We set out to assess both the effects of the SMW intervention in participants (intervention outcomes) and the pace and frequency of use of the SMW group intervention (implementation outcomes). This was done because effective implementation practices are

useless without effective intervention practices and vice versa; they are two sides of the same coin.

Another strength of this research project is the prospective monitoring of the implementation outcomes 'pace' and 'frequency of use' of the SMW group intervention. Utilization rates from other comparable implementation studies are commonly self-reported and collected in retrospect. In this project, the team prospectively observed and administered the start date of each SMW group intervention and its number of participants. Therefore, implementation outcome assessments have not been subject to any (un)intentional reporting bias, and are therefore reliable and valid.

Last but not least, a strength of this implementation project has been its multilevel approach in identifying the determinants of use of the SMW group intervention. Not only did we collect data on barriers and facilitators on more than one hierarchical level, we also analyzed them using multilevel modeling. The added value of multilevel analysis is that, unlike traditional statistical analyses, it accounts for variance in use of the SMW intervention both across professionals and across organizations. So, in other words, using multilevel models means that instead of ignoring the dependencies that come along with nested data structures, one explicitly acknowledges them. By choosing to analyze multilevel, we anticipated on the phenomenon that, like children nested in classrooms or schools, the performance of the SMW professionals employed in the same organizations, were likely to be more correlated than the performance of SMW professionals from different organizations [23]. Especially in chapter 4, this hypothesis was confirmed by showing that variation in use across professionals was predominantly explained by the organization they were employed in. Our multilevel approach, therefore, added to the state of the art in implementation science in general, since most determinant studies are qualitative in nature, or single level quantitative studies [24]. More specific, we gained valuable insights that give directions for future SMW intervention implementation strategy development.

The main limitation of this research project is that the instrument that we used to identify the determinants of implementation lacks psychometric robustness. The determinant-questionnaire was self-developed. To attain content validity, item-construction was closely informed by the concepts and definitions of the Fleuren framework [25] and discussed iteratively with colleagues within and outside the project team. To assess internal consistency, Cronbach's alpha's have been calculated for constructs (e.g. appealing to use) that were measured by multiple items and we found five out of six constructs to have a good internal consistency. However, we did not perform factor analysis to assess construct validity of subscales (e.g. job satisfaction) or domains (e.g. work factors). Also, like many other measures developed to assess implementation constructs [26], we did not assess test-retest reliability

or responsiveness to change. By now, a Measurement Instrument for Determinants of Innovations (MIDI) [27] by Fleuren et al. is available and is being used [28, 29]. The first results on reliability are known and promising, but it also still needs further validation.

The relative neglect of psychometrics in implementation science has been diagnosed by Martinez et al. [30] as a core issue in most implementation studies. About half of all instruments used in implementation sciences exhibit any established psychometrics [31, 32] putting the field of implementation science at risk as stated by Martinez et al. [30] of “constructing a magnificent house without bothering to build a solid foundation” (p. 118). Fortunately, by now, valuable recommendations and various courses of action (e.g., decision-making tools for optimal instrument selection) are currently being set out, which are going to benefit future implementation scientists.

The second limitation is that the project had a pre-post intervention design without control condition. In order to advance implementation science, a (cluster) randomized controlled trial has been set as the preferred study design [33]. However, in the case of the SMW group intervention, this would have been hard to realize. Since community-dwelling older adults are the target group of the SMW group intervention, we should have included matched communities in which the intervention was not offered and assessed self-management ability and wellbeing in community-dwelling older adults. Time and financial constraints led us to opt for a comparison of the intervention outcomes in the implementation study with already available RCT-data, as shown in Chapter 5.

A last limitation concerns the sample size to determine implementation outcomes and its determinants. Sufficient sample size is one of the first indications of research quality. However, the lack of power is a well-known and common issue in implementation science. Proctor et al. [24] state: “Implementation research is typically beset by a small ‘n’ problem”(p. 30). Although we achieved to involve more professionals and organizations than initially planned, we did not meet the methodological rule of thumb of at least 50 level-1 units (professionals) and 40 level-2 units (organizations) [34, 35]. Therefore, future implementation projects, that have the aim to analyze data in context, should define a minimum number of clusters to include, taking into account the multilevel nature of the analyses.

LESSONS LEARNED

Implementation science has made tremendous progress over the past decade (2010-2020). Its language and body of knowledge has become increasingly ordered and centralized in high impact journals. In the context of lessons learned, we reflect on two themes: use of theory and strategy in implementation research, in the light of literature published since the set-up of our project in 2010.

Lesson 1: Use of theory, models and frameworks in implementation research

In 2010, only 23% of implementation scientists used some kind of theory, model or framework [36]. By 2017, this had increased to 47% [37]. Among theory-users, the variety of theoretical approaches is, however, overwhelming. A recent international survey in implementation scientists reported the use of more than 100 different theories spanning several disciplines and little consensus on criteria to select a theory [38].

The importance of selecting a theory, model, or framework in running an implementation study cannot be overstated [39]. In any scientific research, and especially in the evolving field of implementation science, use of theory, models or frameworks is without doubt preferable to the use of only common sense or gut feelings. Otherwise, implementation research would remain “an expensive version of trial-and-error” (p. 108) as Eccles et al. already stated in 2005 [40]. Theoretical underpinnings enable insight into the mechanisms that explain why implementation endeavors succeed or fail, make it possible to generalize findings across settings, and ultimately contribute to better outcomes for end-users [38]. However, choosing a theory for implementation research is difficult. Here we try to give researchers some guidance, while reflecting on our choices made in 2010.

In this project, we circumvented the lack of an existing implementation theory by selecting a specific framework that provided us with more detail, than for example Rogers’ generalized theory on diffusion [41]. We also did not search the guidance of a process model, such as for example the Stetler model [42], because it had already been decided that training and facilitation would be our strategy to implement. We opted, as many other implementation scientist have done [43], for the flexibility and adaptability of a determinant framework, since we aimed to investigate determinants and build our own specific ‘theory of change’ in the case of the SMW interventions (as presented in Figure 1).

To facilitate the selection of the correct theoretical approach, in 2015 Nilsen [44] has proposed a taxonomy of theoretical approaches. Although the terms theories, models and frameworks are used interchangeably in the field of implementation science, Nilsen states [44] (p. 3) that theories differ from models and frameworks, because theories attempt to explain the causal mechanisms of change, whereas models are commonly used to guide

the process of implementation. Frameworks, on the other hand, are comprehensive lists of factors, categorized in domains, believed or found to influence implementation outcomes. Frameworks are foundational for building specific theories of change [43] and since this is what we aimed for in our project, in hindsight our approach was appropriate.

Another aspect of our approach that could well be copied, is the choice of a framework that originates from a similar context, i.e. the Dutch health and social care system. We favored the Dutch Fleuren framework [2] over its American counterpart, the Consolidated Framework for Implementation Research (CFIR) by Damschroder et al., 2009 [45], because of its cultural appropriateness (i.e. congruity with the structure, customs and norms of the setting in which the innovation is going to be implemented). Both frameworks are equally comprehensive and share a multilevel and multistage approach. Currently, the major difference is that the CFIR offers applicability to a broader range of interventions, settings and research designs, than the Dutch Fleuren Framework [46]. As a result, the CFIR is more frequently used and cited [47]. A French translation of the CFIR is already available, but not (yet) a Dutch.

We recommend future SMW implementation studies to build upon our adaptations and operationalizations of the Fleuren framework. Studies on other interventions and settings, besides health or social care, could perhaps benefit from the more frequently used and cited CFIR. The Fleuren framework has been a solid backbone and structured guidance in the identification of the determinants of successful implementation of the SMW interventions.

Lesson 2: Be clear on the strategy used in implementation research and practice

In 2010, only 5% to 30% of implementation scientists described the strategies they used to integrate evidence-based innovations into routine practice. When implementation strategies were described, the terminology used was inconsistent [48]. In 2015 a refined compilation of 73 implementation strategies was published to bring depth and clarity to the subject and to serve as a reference to researchers and stakeholders in the field [22, 49]. In combination with clear reporting guidelines [50] the measurement and reproducibility of implementation strategies have improved substantially over the past decade.

In our implementation project, we used a number of implementation strategies. We used a multifaceted strategy of education and facilitation, according to the terminology of Powell et al., 2012 [22]. The education consisted of training professionals to deliver the SMW intervention and providing them with the necessary materials (manual for professionals and workbook for participants). The facilitation consisted of the availability of an implementation toolkit for the trained professionals with materials to recruit older adults (such as leaflet and PR-materials for local newspapers) and to engage financial and political decision makers

(with an indication of costs and brochure on societal impact). We also provided ongoing consultation through an annual SMW work conference and a site visit on request. Taken together, our implementation strategy was multifaceted, but directed at only one stakeholder level: the frontline-professional, who consequently needed to reach the target group and communicate within their organization themselves.

Next, our strategy appeared to have a number of weaknesses. First, despite providing professionals with facilitating materials, 75% of SMW teachers assessed the willingness of older adults to participate as weak [51]. Reported reasons for non-participation were practical (no time, no transportation, other priorities) or psychological (lack of self-confidence, fear of sharing feelings in a group). To overcome these psychological barriers in potential participants, professionals indicated 'personal communication and persuasion' to be the most effective. Unfortunately, these recruitment methods are also known to be the most labor-intensive [52, 53]. Additionally, professionals reported remarkably often, that potential participants stated: "Useful course, but not for me. However, I do know someone else for whom it may be particularly suitable...". Apparently, older adults recognize the need to improve self-management of well-being more in peers than in themselves. It seems that participation in the SMW group intervention was not appealing for many older adults. For future implementation strategies, it is valuable to include these perceptions of older adults early and directly in the process (see implications for practice).

Second, our facilitating strategy to engage financial and political decision makers did not work as expected. The brochure was the least requested document from the toolkit by professionals and when the financial and political decision makers were interviewed, most of them turned out to be unaware of the SMW interventions being implemented in their community [54]. Only in one out of 18 implementation-sites, a concerted effort of a council member, a strategic decision-maker, the organizational director and an opinion-leading professional led to a meeting with a health insurance company to advocate inclusion, and thus compensation of the SMW interventions in the basic health insurance. In all other sites, we do not know of any self-induced initiatives of professionals to claim formal reinforcement or reimbursement for ongoing implementation of the SMW interventions. For future implementation strategies, it is valuable to engage financial and political decision makers early and directly in the process (see implications for practice).

In conclusion, the lesson learned is that, although we facilitated professionals to reach out to the 'lowest' level of the intended target group and the 'highest' level of the financial political decision makers, this was not sufficiently effective. In future studies, we recommend to transform the current multifaceted SMW-implementation strategy, primarily directed at professionals, into a more blended implementation strategy [22], addressing professionals

and organizations, but also the barriers of older adults to participate and the resources and commitment of financial political decision makers.

IMPLICATIONS

In this paragraph, we outline the implications of our findings for future work of developers, researchers, policymakers and practitioners, based on the main outcomes, but also on the limitations and unanswered questions.

For implementation developers and researchers

Our study has several implications for developers and researchers who would like to perform a future implementation study on the SMW group intervention, or a related implementation study.

Our findings indicate that implementation of the self-management of well-being interventions can be performed relatively successful. Within about eight months, two thirds of trained professionals used the SMW group intervention with an average frequency of almost one course per year per professional. However, the proportion of users, the pace and performance can be improved. Based on the results of our multilevel determinant analyses, we developed a specific theory of change (see Figure 1), that shows the factors that should be adapted to further improve the implementation strategy.

Overall, we found that implementation success, in terms of frequency of use, was explained more by characteristics of the organization than by characteristics of the individual professionals. The organizational climate for implementation should therefore be explicitly targeted, on top of the continued protocolized and systematic training of professionals.

Specifically, we found that 'compatibility' (whether executing the SMW intervention was compatible with other tasks) discriminated between professionals becoming a user or a non-user of the SMW group intervention. Therefore, to ensure that training efforts are not wasted, we recommend developers to design tools that systematically help organizations to decide which unproven or outdated practices can be stopped or de-implemented in favor of time and commitment for SMW implementation. Furthermore, 'formal reinforcement', a dedicated implementation coordinator ('opinion leader') and 'support from colleagues and supervisors' shape a positive organizational implementation climate which enhances the frequency of use. All identified determinants have been positioned in a hypothesized theory of change over time (see Figure 1). We recommend researchers to test this hypothesized

theory of change, preferably in a randomized controlled implementation trial, comparing the current multifaceted implementation strategy with a multilevel blended implementation strategy and applying multilevel analyses-techniques.

Informed by the multilevel and multistage determinant framework of Fleuren et al, 2004 [2], we incorporated the target group (older adults) and the financial political context (policymakers) in the design of our project. However, we did not fully include these two groups of stakeholders in our research. Since it is self-evident that both the 'lowest' and the 'highest' level in the hierarchy influence (sustained) use, we recommend more in-depth research to identify which determinants on these both levels influence implementation success of the SMW group intervention, on top of the professional and organizational levels. When these determinants are identified, they can be added to the hypothesized theory of change, which might improve the implementation of the SMW group interventions even further.

Given its relatively young tradition, implementation science faces many methodological challenges, as did our project. Regarding the implementation of the SMW interventions, we recommend future implementation research projects to take careful consideration of power and psychometric robustness, while fostering the strength of our hybrid effectiveness-implementation design and multilevel approach to data-analyses.

For policy and practice

Our study also has several implications for policymakers, managers and professionals in health and social care organizations who consider adopting the SMW group intervention. First of all, our findings indicate sustained effectiveness of the SMW group intervention after implementation in routine practice of health and social care professionals. Self-management ability and well-being of individual older adults are enhanced and we also observed the formation of informal social networks after participation in about a third of our sample. Taken together, these positive intervention effects warrant implementation of the SMW group intervention at a larger scale.

Our finding of a generally successful implementation of the SMW group intervention implies that further effort in this implementation probably will pay back. This is further supported by the fact that the SMW group intervention has been assessed by an independent expert committee and received the designation 'effective' (<https://www.movisie.nl/interventie/grip-glans-groepscurus>). National coverage is guaranteed by the inclusion of the SMW group intervention in two databases (<https://www.movisie.nl/databank-effectieve-sociale-interventies> and <https://interventies.loketgezondleven.nl>). Continued dissemination, implementation, and scale-up of the SMW interventions is secured by a purveyor-team, consisting of the founder of the SMW theory, researchers, several trainers, and a

communications officer. They are embedded in the academic setting of the University Medical Center (UMCG) and the University of Groningen (RuG) and accessible via a central website (www.gripenglans.nl), which provides a solid foundation for the future.

The suitability of the SMW interventions for local organizations in health and social care implies that they can be tailored excellently into the decentralized set-up of Dutch care, that has been implemented since 2015 [55]. During our project (2010-2014) we found limited commitment at the financial political level for implementation of the SMW interventions. By now, this has improved since local governments in the Netherlands have their own responsibility over the social domain (Social Support Act and the Participation Act) and every four years they have to formulate their public health strategy for the municipality. Combined with an increased awareness for the more dynamic definition of health 'as the ability to adapt and to self-manage in the face of social, physical and emotional challenges' [56, 57], the SMW interventions fit well into the new policy in which citizens are expected to have more self-management abilities concerning their health in an aging society. Besides ongoing promotion of the SMW interventions in Dutch municipalities, we recommend a cost-effectiveness study to be performed, to substantiate long term financial resources from public health systems, such as health care insurers, and to add to the rationale of nation-wide provision in the Netherlands and perhaps, in time, on a European scale.

The results of our multilevel determinant analyses and the hypothesized theory of change have been translated into a list of six crucial consecutive steps that have been visualized in an implementation roadmap (see Figure 2). This can help future adopting organizations with implementation of the SMW interventions.

Figure 2 Infographic Implementation roadmap for organizations

Step 1. Create time and multilevel commitment

Discuss the potential benefits of the SMW group intervention with all local stakeholders involved (target group, professionals, managers, financial decision-makers, local policymakers). Decide and formalize whether other activities/programs can be stopped to create time and space for recruitment and execution of the SMW group intervention. Organize focus groups to identify and overcome barriers for implementation. Activate facilitators, and integrate these in the implementation process of the organization.

Step 2. Assign coordinator/opinion leader

Implementation always implies change. Since change does not happen overnight, but requires effort and stamina, we recommend appointing at least one local coordinator with an eligible mix of content and organizational quality. This person could be either a frontline professional, a supervisor, or even a member of the target group. Either way, he or she has to be proactive, or resourceful to take action when planned activities are not performed as intended (e.g., press release not published) or do not have the anticipated effect (e.g., no target group response to press release). Moreover, the coordinator should act as a liaison officer and be willing and competent to develop linkages between the organization and community resources to promote the ongoing implementation of the SMW intervention.

Step 3. Plan reach of the target group

To seize the momentum of new acquired skills and innovation excitement in professionals, it is highly recommended to plan the reach of the target group prior to the training of the professionals. Redirect existing recruitment strategies at the SMW group intervention. Moreover, it is highly recommended to explore early in the process whether and how to persuade the target group to participate. Preferably, members of the target group are involved in this process.

Step 4. Train professionals to use the new program.

Professionals should subscribe for the standardized SMW-training via www.gripenglans.nl. Recommendations are: professionals' own choice, prior experience in working with groups of (older) people, a proponent of working evidence-based, and inclined to support older adults by increasing their self-management ability (as opposed to solving their problems).

Step 5. Ensure support and follow-up on compatibility

Support of trained professionals should originate from multiple levels and come in various forms in order to make and maintain the use of the SMW group intervention compatible with other designated tasks. Direct colleagues can assist in recruiting eligible older adults. Supervisors should shape the climate for implementation by determining the degree to which use of the SMW intervention is expected, supported, and rewarded. Moreover, supervisors

should act as a linking-pin between the front-line professionals and top management by monitoring the use of the SMW intervention, advocating for sufficient time and resources and rewarding continued and integrated use.

Step 6. Share and celebrate successes

To strengthen professionals' performance and enhance recruitment of potential participants, implementation outcomes (intervention use) and intervention outcomes (effects measured by questionnaires or interviews with participants) should be monitored. It is recommended acknowledging attained milestones (e.g. fifth course delivered this year) and sharing successes publicly (e.g. participant joins volunteer work).

CONCLUSION

Implementation of the evidence-based and societal relevant SMW interventions for community-dwelling middle-aged and older adults has been studied in this project. Our results showed that – given a standardized training and implementation support (website, toolkit, work conferences and site visits) – two out of three trained professionals started using the SMW group intervention in about eight months. Self-management ability and well-being of the participants of the intervention improved, just as in the original RCT. This is a particularly good outcome considering that interventions are traditionally expected to perform worse in real-world practice. Determinants of use were primarily identified on the organizational level, even though the implementation strategy was primarily targeted at professionals. To enhance use, the organizational climate for implementation should be more explicitly addressed in the SMW implementation strategy. Future research should focus on identifying the determinants of successful implementation of the SMW group intervention at the level of the target group and the financial political context.

REFERENCES

1. Kuiper D, Goedendorp MM, Sanderman R, Reijneveld SA, Steverink N. Identifying the determinants of use of the G&G interventions for older adults in health and social care. *BMC Res Notes*. 2015;8(1):296.
2. Fleuren M, Wiefferink K, Paulussen T. Determinants of innovation within health care organizations: literature review and Delphi study. *Int J Qual Health Care*. 2004;16(2):107-23.
3. Thomas R, Zimmer-Gembeck MJ, Chaffin M. Practitioners' Views and Use of Evidence-based Treatment: Positive Attitudes but Missed Opportunities in Children's Services. *Adm Policy Ment Hlth*. 2014;41(3):368-78.
4. Asgary-Eden V, Lee CM. So now we've picked an evidence-based program, what's next? Perspectives of service providers and administrators. *Prof Psychol Res Pr*. 2011;42(2):169-75.
5. Asgary-Eden V, Lee CM. Implementing an Evidence-Based Parenting Program in Community Agencies: What Helps and What Gets in the Way? *Adm Policy Ment Hlth*. 2012;39(6):478-88.
6. Sanders MR, Prinz RJ, Shapiro CJ. Predicting utilization of evidence-based parenting interventions with organizational, service-provider and client variables. *Adm Policy Ment Hlth*. 2009;36(2):133-43.
7. Fixsen DL, Naoom SF, Blase KA, Wallace F. Implementation: the missing link between research and practice. *APSAC Advisor*. 2007;19(1-2):4-11.
8. DeGroff A, Holden D, Goode Green S, Boehm J, Seeff LC, Tangka F. Start-up of the colorectal cancer screening demonstration program. *Prev Chronic Dis*. 2008;5(2):A38.
9. Hall RK, Wang V, Jackson GL, Hammill BG, Maciejewski ML, Yano EM, Svetkey LP, Patel UD. Implementation of automated reporting of estimated glomerular filtration rate among Veterans Affairs laboratories: a retrospective study. *BMC Med Inform Decis*. 2012;12(1):69.
10. Bigham BL, Koprowicz K, Aufderheide TP, Davis DP, Donn S, Powell J, Suffoletto B, Nafziger S, Stouffer J, Idris A. Delayed prehospital implementation of the 2005 American Heart Association guidelines for cardiopulmonary resuscitation and emergency cardiac care. *Prehosp Emerg Care*. 2010;14(3):355-60.
11. Kuiper D, Steverink N, Stewart RE, Reijneveld SA, Sanderman R, Goedendorp MM. Pace and determinants of implementation of the self-management of well-being group intervention. *BMC Health Serv Res*. 2019;19(1):67.
12. Doran D, Haynes BR, Estabrooks CA, Kushniruk A, Dubrowski A, Bajnok I, Hall LM, Li M, Carryer J, Jedras D. The role of organizational context and individual nurse characteristics in explaining variation in use of information technologies in evidence based practice. *Implement Sci*. 2012;7(1):122.
13. Resnick B. De-implementation of care practices and interventions. *Geriatr Nurs*. 2018;39(4):369-70.

14. Urquhart R, Sargeant J, Porterm GA. Factors related to the implementation and use of an innovation in cancer surgery. *Curr Oncol*. 2011;18(6):271-9.
15. Chambers DA, Glasgow RE, Stange KC. The dynamic sustainability framework: addressing the paradox of sustainment amid ongoing change. *Implement Sci*. 2013;8(1):117.
16. Reijneveld SA. The return of community-based health and social care to local government: governance as a public health challenge. *Eur J Public Health*. 2017;27(1):1.
17. van der Zwet RJM. Implementing evidence-based practice in social work: A shared responsibility. Dissertation. Tilburg: Tilburg University; 2018.
18. Dane AV, Schneider BH. Program integrity in primary and early secondary prevention: are implementation effects out of control? *Clin Psychol Rev*. 1998;18(1):23-45.
19. Durlak JA, DuPre EP. Implementation matters: A review of research on the influence of implementation on program outcomes and the factors affecting implementation. *Am J Community Psychol*. 2008;41(3-4):327-50.
20. Gesell SB, Bess KD, Barkin SL. Understanding the social networks that form within the context of an obesity prevention intervention. *J Obes*. 2012;2012: 749832.
21. Gesell SB, Barkin SL, Valente TW. Social network diagnostics: a tool for monitoring group interventions. *Implement Sci*. 2013;8:116.
22. Powell BJ, McMillen JC, Proctor EK, Carpenter CR, Griffey RT, Bunger AC, Glass JE, York JL. A compilation of strategies for implementing clinical innovations in health and mental health. *Med Care Res Rev*. 2012;69(2):123-57.
23. Peugh JL. A practical guide to multilevel modeling. *J School Psychol*. 2010;48(1):85-112.
24. Proctor EK, Landsverk J, Aarons G, Chambers D, Glisson C, Mittman B. Implementation research in mental health services: an emerging science with conceptual, methodological, and training challenges. *Adm Policy Ment Health*. 2009;36(1):24-34.
25. Fleuren M, Wiefferink K, Paulussen T. Checklist determinanten van innovaties in gezondheidszorgorganisaties. *TSG*. 2010;88(2):51-4.
26. Clinton-McHarg T, Yoong SL, Tzelepis F, Regan T, Fielding A, Skelton E, Kingsland M, Ooi JY, Wolfenden L. Psychometric properties of implementation measures for public health and community settings and mapping of constructs against the Consolidated Framework for Implementation Research: a systematic review. *Implement Sci*. 2016;11(1):148.
27. Fleuren MA, Paulussen TG, Van Dommelen P, Van Buuren S. Towards a measurement instrument for determinants of innovations. *Int J Qual Health Care*. 2014;26(5):501-10.
28. Verberne LM, Kars MC, Schepers SA, Schouten-van Meeteren AY, Grootenhuis MA, van Delden JJ. Barriers and facilitators to the implementation of a paediatric palliative care team. *BMC Palliat Care*. 2018;17(1):23.
29. Konijnendijk AA, Boere-Boonekamp MM, Kaya AH, Haasnoot ME, Need A. In-house consultation to support professionals' responses to child abuse and neglect: Determinants of professionals' use and the association with guideline adherence. *Child Abuse Negl*. 2017;69:242-51.

30. Martinez RG, Lewis CC, Weiner BJ. Instrumentation issues in implementation science. *Implement Sci.* 2014;9(1):118.
31. Chor KHB, Wisdom JP, Olin SS, Hoagwood KE, Horwitz SM. Measures for predictors of innovation adoption. *Adm Policy Ment Hlth.* 2015;42(5):545-73.
32. Chaudoir SR, Dugan AG, Barr CH. Measuring factors affecting implementation of health innovations: a systematic review of structural, organizational, provider, patient, and innovation level measures. *Implement Sci.* 2013;8(1):22.
33. Eccles MP, Foy R, Sales A, Wensing M, Mittman B. Implementation Science six years on - our evolving scope and common reasons for rejection without review. *Implement Sci.* 2012;7:71.
34. Maas C, Hox J. Robustness issues in multilevel regression analysis. *Stat Neerl.* 2004;58:127-37.
35. Paccagnella O. Sample size and accuracy of estimates in multilevel models, new simulations results. *Methodology.* 2011;7(3):111-20.
36. Davies P, Walker AE, Grimshaw JM. A systematic review of the use of theory in the design of guideline dissemination and implementation strategies and interpretation of the results of rigorous evaluations. *Implement Sci.* 2010;5:14.
37. Liang L, Bernhardsson S, Vernooij RW, Armstrong MJ, Bussieres A, Brouwers MC, Gagliardi AR. Use of theory to plan or evaluate guideline implementation among physicians: a scoping review. *Implement Sci.* 2017;12(1):26.
38. Birken SA, Powell BJ, Shea CM, Haines ER, Kirk MA, Leeman J, Rohweder C, Damschroder L, Presseau J. Criteria for selecting implementation science theories and frameworks: results from an international survey. *Implement Sci.* 2017;12(1):124.
39. Tabak RG, Khoong EC, Chambers DA, Brownson RC. Bridging research and practice: models for dissemination and implementation research. *Am J Prev Med.* 2012;43(3):337-50.
40. Eccles M, Grimshaw J, Walker A, Johnston M, Pitts N. Changing the behavior of healthcare professionals: the use of theory in promoting the uptake of research findings. *J Clin Epidemiol.* 2005;58(2):107-12.
41. Rogers EM. *Diffusion of innovations*: 5th ed. New York: Free press; 2003.
42. Stetler CB. Stetler model. In: Rycroft-Malone J, Bucknall T, editors. *Models and Frameworks for implementing Evidence-Based Practice: Linking Evidence to Action*. Oxford: Wiley-Blackwell; 2010. p. 51-82.
43. Damschroder LJ. Clarity out of Chaos: Use of Theory in Implementation Research. *Psychiatry Res.* 2020;283:112461.
44. Nilsen P. Making sense of implementation theories, models and frameworks. *Implement Sci.* 2015;10(1):53.
45. Damschroder LJ, Aron DC, Keith RE, Kirsh SR, Alexander JA, Lowery JC. Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. *Implement Sci.* 2009;4:50.

46. Kirk MA, Kelley C, Yankey N, Birken SA, Abadie B, Damschroder L. A systematic review of the use of the consolidated framework for implementation research. *Implement Sci.* 2015;11(1):72.
47. Skolarus TA, Lehmann T, Tabak RG, Harris J, Leczy J, Sales AE. Assessing citation networks for dissemination and implementation research frameworks. *Implement Sci.* 2017;12(1):97.
48. Michie S, Fixsen D, Grimshaw JM, Eccles MP. Specifying and reporting complex behaviour change interventions: the need for a scientific method. *Implement Sci.* 2009;4:40.
49. Powell BJ, Waltz TJ, Chinman MJ, Damschroder LJ, Smith JL, Matthieu MM, Proctor EK, Kirchner JE. A refined compilation of implementation strategies: results from the Expert Recommendations for Implementing Change (ERIC) project. *Implement Sci.* 2015;10:21.
50. Proctor EK, Powell BJ, McMillen JC. Implementation strategies: recommendations for specifying and reporting. *Implement Sci.* 2013;8(1):139.
51. Kuiper D. Presentation work conference: First results from the northern SMW implementation-project. [In Dutch: Eerste resultaten uit het GRIP&GLANS noordelijke implementatieproject]. Zwolle, 2013.
52. McCann J, Ridgers ND, Carver A, Thornton LE, Teychenne M. Effective recruitment and retention strategies in community health programs. *Health Promot J Austr.* 2013;24(2):104-10.
53. Matthews A, Brennan G, Kelly P, McAdam C, Mutrie N, Foster C. "Don't wait for them to come to you, you go to them". A qualitative study of recruitment approaches in community based walking programmes in the UK. *BMC Public Health.* 2012;12(1):635.
54. Witteveen RJ. Grip op implementatie van de GRIP&GLANS groepscursus. De belemmerende en bevorderende factoren bij de implementatie van de GRIP&GLANS groepscursus in gemeenten nader bekeken. Groningen: Rijksuniversiteit Groningen, Vakgroep Sociologie; 2015.
55. Grootjans SJ, Stijnen M, Kroese M, Vermeer A, Ruwaard D, Jansen M. Positive Health beyond boundaries in community care: design of a prospective study on the effects and implementation of an integrated community approach. *BMC Public Health.* 2019;19(1):248.
56. Huber M, Knottnerus JA, Green L, van der Horst H, Jadad AR, Kromhout D, Leonard B, Lorig K, Loureiro MI, van der Meer JW, Schnabel P, Smith R, van Weel C, Smid H. How should we define health? *BMJ.* 2011;343:d4163.
57. Huber M, van Vliet M, Giezenberg M, Winkens B, Heerkens Y, Dagnelie PC, Knottnerus JA. Towards a 'patient-centred' operationalisation of the new dynamic concept of health: a mixed methods study. *BMJ Open.* 2016;6(1):e010091.

Appendix

Supporting Information

Summary

Samenvatting

Dankwoord

About the author

SHARE | Previous dissertations

SI-1: QUESTIONNAIRE PROFESSIONALS

BACKGROUND CHARACTERISTICS PROFESSIONAL

- 1 What is your gender?
 - 1 female
 - 2 male
- 2 What is your date of birth?
 - day month year
- 3 What is your formal job description?
free text
- 4 What is the name of the formal organization you are employed in by contract?
free text

FACTORS RELATED TO COMPETENCIES PROFESSIONALS

SKILLS [24b, T1 item]

- 5 Do you have prior experience in working with groups of older adults?
 - 1 no
 - 2 yes

RECODE SKILLS_24b (2=1) (1=0) INTO SKILLS_D24

KNOWLEDGE [25, T1 item]

- 6 What is the highest level of education that you have completed?
 - 1 No education
 - 2 Vocational education
 - 3 Secondary professional education
 - 4 University / tertiary education

RECODE KNOW_25 (1=0) (2=0) (3=1) (4=1) INTO KNOW_D25.

SELFFEFICACY [26acd] Cronbach's alpha = .67

- 7 To what extent are you able to perform the recruitment of participants for the SMW group intervention? (Regardless of the return on your investments)? Do you feel ...
 - 1 extremely confident
 - 2 very confident
 - 3 reasonably confident
 - 4 little confident
 - 5 hardly confident
 - 6 not at all confident

- 8 To what extent are you able to practically organize the SMW intervention sessions?
Do you feel ...

- 1 extremely confident
- 2 very confident
- 3 reasonably confident
- 4 little confident
- 5 hardly confident
- 6 not at all confident

- 9 To what extent are you able to supervise the SMW group intervention according to protocol?

- 1 extremely confident
- 2 very confident
- 3 reasonably confident
- 4 little confident
- 5 hardly confident
- 6 not at all confident

<p>COMPUTE SE_26acd=SE_26a + SE_26c + SE_26d. RECODE SE_26acd (3 thru 6=1) (7 thru Highest=0) INTO SE_D26acd.</p>

FACTORS RELATED TO THE INNOVATION

OWNERSHIP [27b]

- 10 To what extent do you feel responsible for SMW intervention start-up/implementation?

- 1 completely
- 2 quite
- 3 reasonably
- 4 somewhat
- 5 barely
- 6 not at all

CLEARNESS PROCEDURES [34]

- 11 To what extent is the SMW manual clear in its procedures?

- 1 completely
- 2 quite
- 3 reasonably
- 4 somewhat
- 5 barely
- 6 not at all

<p>RECODE OWN_27b CLEAR_34 (1=1) (2=1) (3 thru 6=0) (ELSE=SYSMIS) INTO OWN_D27 CLEAR_D34.</p>

RELATIVE ADVANTAGE [37ab], Cronbach's alpha = .94

- 12 To what extent does the supervision of the SMW group intervention contribute to your professional growth?
- 1 completely
 - 2 quite
 - 3 reasonably
 - 4 somewhat
 - 5 barely
 - 6 not at all
- 13 To what extent does the supervision of the SMW group intervention contribute to your jobsatisfaction?
- 1 completely
 - 2 quite
 - 3 reasonably
 - 4 somewhat
 - 5 barely
 - 6 not at all

COMPUTE RELADV_37ab=RELADV_37a + RELADV_37b. RECODE RELADV_37ab (1 thru 4=1) (5 thru Highest=0) (ELSE=SYSMIS) INTO RELADV_D37ab.

APPEALING TO USE [39abc], Cronbach's alpha = .72

- 14 To what extent is the SMW pie chart, representing the five dimensions of well-being, an attractive means to stimulate self-management and well-being in older people?
- 1 completely
 - 2 quite
 - 3 reasonably
 - 4 somewhat
 - 5 barely
 - 6 not at all
- 15 To what extent is the SMW manual easy to use?
- 1 completely
 - 2 quite
 - 3 reasonably
 - 4 somewhat
 - 5 barely
 - 6 not at all
- 16 To what extent is the workbook for participants easy to use?
- 1 completely
 - 2 quite
 - 3 reasonably
 - 4 somewhat
 - 5 barely
 - 6 not at all

```
COMPUTE APPEAL_39abc=APPEAL_39a + APPEAL_39b + APPEAL_39c.
RECODE APPEAL_39abc (1 thru 6=1) (7 thru HIGHEST=0) (ELSE=SYSMIS) INTO APPEAL_D39abc.
```

OBSERVABILITY OF EFFECTS [38]

- 17 To what extent do you observe positive effects in SMW participants?
- 1 completely
 - 2 quite
 - 3 reasonably
 - 4 somewhat
 - 5 barely
 - 6 not at all

```
RECODE OBSEFF_38 (1=1) (2=1) (3=0) (4=0) (5=0) (6=0) (7=0) (ELSE=SYSMIS) INTO OBSEFF_D38.
```

FACTORS RELATED TO WORK SITUATION

SUPPORT FROM SMW colleagues [19]

- 18 To what extent do you feel supported by your fellow SMW colleagues in preparing the SMW intervention?
- 1 completely
 - 2 quite
 - 3 reasonably
 - 4 somewhat
 - 5 barely
 - 6 not at all
- 19 How would you assess the collaboration with fellow SMW colleagues during the supervision of the SMW group intervention?
- 1 excellent
 - 2 good
 - 3 reasonable
 - 4 poor
 - 5 bad
 - 6 very bad

SUPPORT FROM other colleagues [20]

- 20 What is the attitude of colleagues (other than your fellow SMW colleagues) towards the implementation of the SMW group intervention in your organization
- 1 very positive
 - 2 positive
 - 3 somewhat positive
 - 4 neutral
 - 5 somewhat negative
 - 6 negative
 - 7 very negative

- 21 To what extent do you experience interest and/or practical support from colleagues (other than your fellow SMW colleagues) in executing the SMW group intervention?
- 1 completely
 - 2 quite
 - 3 reasonably
 - 4 somewhat
 - 5 barely
 - 6 not at all

SUPPORT FROM supervisor [21]

- 22 What is the attitude of your direct supervisor towards the implementation of the SMW group intervention in your organisation
- 1 very positive
 - 2 positive
 - 3 somewhat positive
 - 4 neutral
 - 5 somewhat negative
 - 6 negative
 - 7 very negative
- 23 To what extent do you experience interest and/or practical support (in terms of time and/or resources) from your supervisor in executing the SMW group intervention?
- 1 completely
 - 2 quite
 - 3 reasonably
 - 4 somewhat
 - 5 barely
 - 6 not at all

SUPPORT FROM higher management [22]

- 24 What is the attitude of your higher management towards the implementation of the SMW group intervention in your organization
- 1 very positive
 - 2 positive
 - 3 somewhat positive
 - 4 neutral
 - 5 somewhat negative
 - 6 negative
 - 7 very negative

- 25 To what extent do you experience interest and/or practical support (in terms of prioritizing and/or funding) from your higher management in executing the SMW group intervention?
- 1 completely
 - 2 quite
 - 3 reasonably
 - 4 somewhat
 - 5 barely
 - 6 not at all

RECODE SUP_19a (1=1) (2=1) (3 thru 6=0) (ELSE=SYSMIS) INTO SUP_D19a.
 RECODE SUP_19b (1=1) (2=1) (7=SYSMIS) (3 thru 6=0) (ELSE=SYSMIS) INTO SUP_D19b.
 RECODE SUP_20a (1=1) (2=1) (3=1) (4 thru 7=0) (ELSE=SYSMIS) INTO SUP_D20a.
 RECODE SUP_20b (1=1) (2=1) (3 thru 6=0) (ELSE=SYSMIS) INTO SUP_D20b.
 RECODE SUP_21a (1 thru 3=1) (4 thru 7=0) (ELSE=SYSMIS) INTO SUP_D21a.
 RECODE SUP_21b (1=1) (2=1) (3 thru 6=0) (ELSE=SYSMIS) INTO SUP_D21b.
 RECODE SUP_22a (1 thru 3=1) (4 thru 7=0) (ELSE=SYSMIS) INTO SUP_D22a.
 RECODE SUP_22b (1=1) (2=1) (3 thru 6=0) (ELSE=SYSMIS) INTO SUP_D22b.

MODELLING [23]

- 26 Are you motivated when colleagues working in other organizations also implement the SMW group intervention?
- 1 completely
 - 2 quite
 - 3 reasonably
 - 4 somewhat
 - 5 barely
 - 6 not at all

RECODE MOD_23 (1 thru 2=1) (3 thru 6=0) (ELSE=SYSMIS) INTO MOD_D23

INNOVATION TASK ORIENTATION FIT [28]

- 27 To what extent is the SMW method in line with your view on senior work?
- 1 completely
 - 2 quite
 - 3 reasonably
 - 4 somewhat
 - 5 barely
 - 6 not at all
- 28 To what extent does executing the SMW group intervention fit in with the way you see your job?
- 1 completely
 - 2 quite
 - 3 reasonably
 - 4 somewhat
 - 5 barely
 - 6 not at all

```
RECODE FIT_28a FIT_28b (1 thru 2=1) (3 thru 6=0) (ELSE=SYSMIS) INTO FIT_D28a FIT_D28b
```

WORK RELATED STRESS [31]

- 29 How many hours do you have to work per week by contract?
- 30 How many hours did you work per week in the past year, expressed in an average number?

```
COMPUTE Overwerk_31ab=STRSS31_2 - STRSS31_1.  
RECODE Overwerk_31ab (0=0) (1 thru 4=1) (5 thru Highest=2) INTO overwerk_REC.  
RECODE overwerk_REC (0=1) (1 thru 2=0) INTO STRSS_D31a.
```

- 31 Have you been on sick leave in the past year?
- 1 yes
 - 2 no

```
RECODE 31b (2=1) (1=0) INTO STRSS_D31b.
```

Job satisfaction, Cronbach's alpha = .73

- 32 To what extent do you enjoy your work?
- 1 completely
 - 2 quite
 - 3 reasonably
 - 4 somewhat
 - 5 barely
 - 6 not at all
- 33 To what extent do think of your work as meaningful?
- 1 completely
 - 2 quite
 - 3 reasonably
 - 4 somewhat
 - 5 barely
 - 6 not at all

```
COMPUTE JOBSATISFACTION = 31c + 31 d  
RECODE JOBSATISFACTION (1 thru 4=1) (5 thru Highest=0) (ELSE=SYSMIS) INTO JOBSATISFACTION_D31cd
```

Work pressure, Cronbach's alpha = .74

- 34 To what extent do you experience work pressure?
- 1 completely
 - 2 quite
 - 3 reasonably
 - 4 somewhat
 - 5 barely
 - 6 not at all

35 To what extent do you experience your work as mentally burdensome?

- 1 completely
- 2 quite
- 3 reasonably
- 4 somewhat
- 5 barely
- 6 not at all

```
RECODE 31e 31f (1=6) (2=5) (3=4) (4=3) (5=2) (6=1) INTO D_31e D_31f
COMPUTE WORKPRESSURE = D_31e + D_31f
RECODE WORKPRESSURE (1 thru 4=1) (5 thru Highest=0) (ELSE=SYSMIS) INTO WORKPRESSURE_D31ef
```

COMPATIBILITY [35], Cronbach's alpha = .77

36 Is preparing and executing the SMW group intervention part of your formal task description?

- 1 yes
- 2 no
- 3 partial

37 Do you have enough time to prepare and execute the SMW group intervention?

- 1 yes
- 2 no
- 3 partial

```
RECODE COMPA_35a (1=1) (2=3) (3=2) INTO COMPA_R35a.
RECODE COMPA_35b (1=1) (2=3) (3=2) INTO COMPA_R35b.
COMPUTE COMPA_R35ab=COMPA_R35a + COMPA_R35b.
RECODE COMPA_R35ab (2=1) (3 =1)(4 thru Highest=0) (ELSE=SYSMIS) INTO COMPA_DR35ab.
```

SI-2: INTERVIEW MANAGERS

BACKGROUND CHARACTERISTICS MANAGER

- 1 What is your gender?
 - 1 female
 - 2 male
- 2 What is your date of birth?
day month year
- 3 What is your formal job description?
free text
- 4 How many hours do have to work per week by contract?
[number of hours]
- 5 How many employees do you supervise?
[number of employees]
- 6 How many organizational layers does your organisation have?
 - 1 four layers (higher, middle, lower management and professionals)
 - 2 three layers (higher, middle management and professionals)
 - 3 two layers (higher and professionals)
 - 4 other, namely
- 7 To which organizational layer does your job description belong?
 - 1 higher
 - 2 middle
 - 3 lower
- 8 What is the name of the formal organization you are employed in by contract?
free text

FACTORS RELATED TO CHARACTERISTICS ORGANIZATION

ORGANIZATIONAL SIZE [10]

- 9 How many people are employed in your organization in total?
[number]

RECODE T3aantalwerknemersorg (Lowest thru 150=0) (151 thru Highest=1) INTO SizeOrg_D10.

- 10 How many Ftu does your organizational unit have?
[number of Ftu's]

RECODE T3aantalFte_orgeenheid (Lowest thru 10=0) (10 thru Highest=1) INTO SIZEORGUNIT_D10b.

FUNCTIONAL STRUCTURE [11]

- 11 How would you describe the working methods of your employees?
- 1 they coordinate preconditions, but outsource the actual executing of interventions
 - 2 they coordinate preconditions and execute interventions
 - 3 they execute interventions with administrative and/or logistic support of colleagues

RECODE T3functionelestructuur (1=0) (2=1) (3=1) INTO FunctStruct_D11.

SETTING

- 12 In which context does your organisation function?
- 1 social work setting
 - 2 health care setting

RECODE T3setting (1=1) (2=0) INTO Setting_D11.

STAFF TURN-OVER [14]

- 13 Has there been any staff turn-over in your organizational unit within the last year?
- 1 yes
 - 2 no

RECODE T3personeelsverloop (1=0) (2=1) INTO StaffTurnover_D14.

STAFF CAPACITY [15]

- 14 Is your staff capacity sufficient to spend time on integrating the SMW interventions in routine practice?
- 1 completely
 - 2 quite
 - 3 reasonably
 - 4 somewhat
 - 5 barely
 - 6 not at all

RECODE T3personele_capaciteit (1=1) (2=1) (3 thru 6=0) INTO StaffCapacity_D15.

INNOVATION TASK-ORIENTATION FIT [28a]

- 15 To what extent does the SMW approach fit the needs of older adults, in your opinion?
- 1 completely
 - 2 quite
 - 3 reasonably
 - 4 somewhat
 - 5 barely
 - 6 not at all

- 16 To what extent does the SMW approach fit the view of the management of your organization? [28b]
- 1 completely
 - 2 quite
 - 3 reasonably
 - 4 somewhat
 - 5 barely
 - 6 not at all

RECODE T3aansluitingbijvisieouderenwerk_leidinggevende T3aansluitingbijvisieouderenwerk_directie (1=1) (2=1) (3 thru 6=0) (ELSE=SYSMIS) INTO INNTASKFITT_D28a INNTASKFITT_D28b.

EXPECTATIONS COOPERATION TARGETGROUP [29]

- 17 To what extent do you expect the target group will be interested in participating in the SMW group intervention?
- 1 completely
 - 2 quite
 - 3 reasonably
 - 4 somewhat
 - 5 barely
 - 6 not at all

EXPECTATIONS SATISFACTION TARGETGROUP [30]

- 18 To what extent do you expect the target group will be satisfied with participation in the SMW group intervention?
- 1 completely
 - 2 quite
 - 3 reasonably
 - 4 somewhat
 - 5 barely
 - 6 not at all

RECODE T3verwachtingbelangstellingGLANS T3verwachtingtevredenheidGLANS (1=1) (2=1) (3 thru 6=0) (ELSE=SYSMIS) INTO EXPCOOP_D29 EXPSATIS_D30.

FACTORS RELATED TO DECISION-MAKING

Decision making process and procedures [7]

- 19 Who has been involved in the adoption-decision of the SMW group intervention?
- 1 both professionals and management participated
 - 2 professionals (bottom-up)
 - 3 management (top-down)

RECODE DECISION_D7 (1=1) (2=0) (3=0) INTO DECMIX_D7.

Hierarchical structure [8]

- 20 How would you describe the hierarchical structure of your organization?
- 1 short communication channels
 - 2 average communication channels
 - 3 long communication channels

RECODE T3besluitvormingsstructuur (1=1) (2=0) (3=0) INTO HIERARCH_D8.

Formal reinforcement [9]

- 21 Is implementation of the SMW group intervention included in the annual plan of your organization?
- 1 yes
 - 2 no

RECODE T3jaarplanditjaar (1=1) (2=0) INTO REINFORCE_D9.

FACTORS RELATED TO COLLABORATION**Relationship with other organizations [12]**

- 22 To what extent is your organization open to collaboration with other organizations with respect to the implementation of the SMW group intervention?
- 1 completely
 - 2 quite
 - 3 reasonably
 - 4 somewhat
 - 5 barely
 - 6 not at all

Nature of collaboration internally [13]

- 23 How would you assess the collaboration between professionals internally?
- 1 excellent
 - 2 good
 - 3 reasonable
 - 4 poor
 - 5 bad
 - 6 very bad

RECODE T3samenwerkingsbereidheid_tbv_GenG T3samenwerking_professionals_onderling (1=1) (2=1) (3 thru 6=0) (ELSE=SYSMIS) INTO RELORGS_D12 COLLINT_D13.

FACTORS RELATED TO RESOURCES

Available expertise [16]

- 24 To what extent do your professionals have the expertise to implement the SMW group intervention?
- 1 completely
 - 2 quite
 - 3 reasonably
 - 4 somewhat
 - 5 barely
 - 6 not at all

RECODE T3expertise (1=1) (2=1) (3 thru 6=0) (ELSE=SYSMIS) INTO EXP_D16.

Logistical procedures [17]

- 25 Is there any PR-support available for recruitment and execution of the SMW group intervention?
- 1 yes
 - 2 no

Administrative support available [46]

- 26 Is there any administrative support available for recruitment and execution of the SMW group intervention?
- 1 yes
 - 2 no

RECODE T3PR_ondersteuning T3ADM_ondersteuning (1=1) (2=0) (ELSE=SYSMIS) INTO LOGPROC_D17
ADMSUP_D46.

Other (material) resources available [45]

- 27 Do you have enough funds to meet the material preconditions for recruitment and execution of the SMW group intervention?
- 1 yes
 - 2 no
 - 3 partially

RECODE T3budget (1=1) (2=0) (3=0) (ELSE=SYSMIS) INTO MATRESOURCES_D45.

Time available [47]

- 28 Is the time that professionals have to spend recruiting and executing the SMW group intervention included in their formal task description?
- 1 yes
 - 2 no
 - 3 partially

RECODE T3tijdprofessionals_formeletakenpakket (1=1) (2=0) (3=0) INTO TIME_D47.

Coordinator available [48]

- 29 Is there someone within your organization appointed as coordinator of the implementation of the SMW group intervention?
- 1 yes, that is me
 - 2 yes, that is a SMW-teacher
 - 3 yes, that is another employee
 - 4 no

```
RECODE T3coordinatieGenG (1=1) (2=1) (3=1) (4=0) (ELSE=SYSMIS) INTO COORDINATOR_D48.
```

FACTORS RELATED TO MOTIVATORS**Reimbursement [44]**

- 30 Is your organization being reimbursed for implementation of the SMW group intervention?
- 1 yes
 - 2 partially
 - 3 no

```
RECODE T3extrageld2011 (1=1) (2=0) (3=0) (ELSE=SYSMIS) INTO REIMBURS_D44.
```

Opinion leader [50]

- 31 Does your organization have an influential person who promotes the implementation of the SMW group intervention?
- 1 yes
 - 2 no

```
RECODE T3opinionleader (1=1) (2=0) (ELSE=SYSMIS) INTO OPINION_D50.
```

SUMMARY

Worldwide people live longer and the proportion of older people in the population is growing. This aging of the population is putting pressure on the sustainability of social security provisions and the affordability of care. Societies would benefit from older people who are able to adapt as long and as independently as possible to the social, physical and emotional challenges associated with ageing. Despite loss, illness or limitations, many older people are able to (continue to) self-manage their well-being, but this is not the case for everyone. The theory-driven Self-management of Well-being (SMW) interventions offer a solution here. The SMW interventions are aimed at strengthening self-management skills and well-being and are both preventive and reactive in nature. Broad and sustainable use of these proven effective interventions can alleviate the concerns of a greying society and turn it towards a more positive perspective on a silvering society. However, the problem is that, despite availability in national databases, the SMW interventions are hardly used in routine practice of health and social care. Knowledge on the implementation of the SMW interventions is the missing link between science and practice.

To improve our understanding of the process of implementation of the SMW interventions in health and social care and enhance current implementation strategies, an implementation project was set up in the four Northern provinces surrounding the University Medical Center of Groningen. The scientific research linked to the project had the following objectives: (1) to describe the implementation outcomes; the pace and frequency of use of the SMW interventions by trained professionals, (2) to identify the determinants of successful implementation on multiple stakeholder levels and (3) to verify intervention-effectiveness in older adults after implementation.

Societally relevant returns are only achieved if there is both an effective intervention and an effective implementation strategy. Therefore, the research was based on a hybrid effectiveness implementation design. The effectiveness of the SMW interventions after implementation was determined in a pre-post intervention design, in which participants' scores on self-management ability and well-being, collected using the SMAS-30 and SPF-ILS questionnaires, were compared with participants' scores of the earlier performed randomized controlled trial (RCT). The determinants of successful implementation have been identified in a longitudinal design. Based on the Fleuren framework, potentially influencing factors were assessed on three fixed measurement points in three years by means of digital questionnaires for professionals and telephone interviews with managers and policy makers. Pace and frequency of use of the SMW interventions was determined by administration of training dates of professionals and continuous monitoring of the start date of each intervention performed.

Sixty professionals, employed in 23 different organizations (five health care and 18 welfare organizations), participated in the implementation project. Together they recruited 287 older adults participating in the SMW group intervention. Little interest - from both organizations and potential participants - in the individual intervention format ('the G&G home visits') caused the research to focus solely on the effectiveness and implementation of the group format ('the G&G group course').

Implementation outcomes

Two thirds of the professionals achieved first use of the SMW group intervention within 8 months after their training. The fastest pace was use within 3 months. For some it took longer than a year, with a maximum of 17 months (*Chapter 3*). On average, trained professionals used the SMW group intervention 1.5 times. The best performing professionals delivered the SMW group interventions twice a year; usually one course in spring and one in autumn. The worst performing professionals never succeeded in realizing a course (*Chapter 4*). In addition to personal reasons (sick leave) and organizational measures (dismissal due to reorganization), difficulties in recruiting participants were mentioned as an important reason for 'non-use'.

The measured user-ratio of 67% for the SMW group intervention is comparable to other innovative social programs. The average start-up time of eight months is longer than considered optimal in the implementation literature, being six months, but is faster compared to other innovations (*Chapter 3*).

These descriptive results provide organizations or municipalities, considering to adopt the SMW group intervention, a clear indication that one should train at least three professionals in order to be able to offer two courses per year.

Determinants of successful implementation

Based on the Fleuren framework, factors potentially determining the use of the SMW group intervention have been assessed at three stakeholder levels (professionals, organizations and financial political context) (*Chapter 2*). Due to a lack of power at the financial political context level, analyses were restricted to the professional and organizational level.

Six determinants were identified that affected first actual use of the SMW group intervention after training. At the professional level, these were 'ownership', 'relative advantage', 'support from colleagues' and 'the extent to which the innovation can be combined with existing tasks' ('compatibility'). At the organizational level, these were the 'size of the organization' and the 'extent to which the innovation fits the task orientation of the organization'. When the nested structure of the data, professionals employed within organizations, was taken into account

by means of multilevel modeling, professionals' perception of compatibility showed to be the key determinant of whether or not the SMW group intervention was used (*Chapter 3*).

Many factors, at both the individual professional and organizational level, determined the frequency of use of the SMW group intervention in professionals. Eight out of thirteen determinants remained significant when the dependency between professionals and organizations was taken into account by means of multilevel modeling. In order of effect size these were: 'formal reinforcement', 'presence of an opinion leader', 'support from fellow SMW colleagues', 'support from other colleagues', 'support from supervisor', 'ownership', 'relative advantage' and 'observability of effects in participants'. Overall, variation in the frequency of use was predominantly explained by organizational differences rather than by differences between professionals (*Chapter 4*).

The results of the multilevel determinant analyses provided the necessary input to build a 'theory of change' with regard to the implementation of the SMW group intervention. Standardized training enables professionals to deliver the SMW intervention as intended. However, for actual successful implementation (relatively fast and with an optimal frequency), it is necessary to work on a compatible and supportive organizational climate before training professionals. Concrete measures recommended are: de-implementation of unproven interventions, and assignment of a dedicated implementation coordinator.

Effects in older adults

It cannot be assumed that evidence-based interventions, actually remain effective after implementation in routine practice, such as health and social care. Comparison of the SMW intervention effects in the implementation project with the original RCT, however, yielded comparable significant improvements in both self-management ability and well-being in older adults. Moreover, the characteristics of the target group reached, session attendance and dropout rates during the course proved to be virtually the same. These are favorable outcomes associated with a - also measured - high degree of protocol compliance among trained professionals (*Chapter 5*).

Furthermore, a positive unintended side effect of the SMW group intervention was identified: a substantial number of participants stayed in touch with each other, long after the course had ended. In small networks of three or more participants, they kept meeting on a regular basis without any professional interference. During these meetings, they experienced appreciation and connectedness, and therefore these networks could be labelled as Informal Social Support Structures. A network enabling factor was 'awareness of similarity (homophily)', while 'negative thoughts about making contact' hindered network formation. Given the

high prevalence of loneliness in SMW intervention participants, development of an extra intervention-module to promote this beneficial side effect is recommended (*Chapter 6*).

Conclusion

Results of the studies in this dissertation demonstrate that systematic training of health and social care professionals result in relatively fast and regular use of the SMW group intervention in two out of three trained professionals. The proportion of users and the frequency of use can be improved by an implementation strategy that pays more attention to a compatible, supportive and formally reinforcing organizational climate for implementation, in addition to - and preferably prior to - the standardized training of professionals. Participating older adults continue to benefit with an increase in their self-management ability and well-being. As a favorable side effect, there is also a chance of reducing loneliness through network formation among participants afterwards. Future research should focus on the factors that determine the reach of the target group and the commitment of the financial political context.

SAMENVATTING

Wereldwijd leven mensen langer en groeit het aandeel ouderen in de bevolking. Deze vergrijzing zet de houdbaarheid van sociale zekerheidsvoorzieningen en de betaalbaarheid van de zorg onder druk. Samenlevingen zijn gebaat bij ouderen die zich zo lang en zo zelfstandig mogelijk aanpassen aan de sociale, fysieke en emotionele uitdagingen die horen bij het ouder worden. Veel ouderen zijn, ondanks verlies, ziekte of beperkingen goed in staat hun welbevinden te (blijven) managen, maar dit geldt niet voor iedereen. Hier bieden de theorie gestuurde GRIP&GLANS (G&G) interventies uitkomst. De G&G interventies zijn gericht op de versterking van zelfmanagementvaardigheid (GRIP) en welbevinden (GLANS) en kunnen zowel preventief als reactief ingezet worden. Breed en duurzaam gebruik van deze bewezen effectieve interventies kunnen de zorgen rond een 'vergrijzende' samenleving lenigen en ombuigen in een positiever perspectief op een 'verzilverende' samenleving. Echter, het probleem is dat de G&G interventies, ondanks beschikbaarheid in landelijke databases, in de praktijk van welzijn en zorg voor ouderen nog amper worden gebruikt. Kennis van de implementatie van de G&G interventies vormt de ontbrekende schakel tussen wetenschap en praktijk.

Om het proces van implementatie van de G&G interventies in de praktijk van welzijn en zorg beter te leren begrijpen en aanknopingspunten te ontdekken voor verbetering van de gehanteerde implementatie strategieën, is een implementatie project opgezet in de vier Noordelijke provincies rond het Universitair Medisch Centrum Groningen. Het aan het project gekoppelde wetenschappelijke onderzoek had de volgende doelen: (1) het beschrijven van de implementatie-uitkomsten; het tempo en de mate waarin getrainde professionals de G&G interventies gaan gebruiken, (2) het identificeren van de determinanten van succesvolle implementatie op meerdere niveaus van belanghebbenden en (3) het verifiëren van de effectiviteit van de interventies voor ouderen na implementatie.

Maatschappelijk relevante opbrengsten worden alleen bereikt indien er sprake is van zowel een effectieve interventie als een effectieve implementatiestrategie. Daarom is het onderzoek gebaseerd op een hybride effectiviteit-implementatie ontwerp. De effectiviteit van de G&G interventies na implementatie is bepaald in een pre-post interventie design, waarin de scores van deelnemers op zelfmanagementvaardigheid en welbevinden, verzameld met behulp van de SMAS-30 en SPF-ILs vragenlijsten, zijn vergeleken met de scores van deelnemers aan de eerder uitgevoerde gerandomiseerde gecontroleerde studie (RCT). De determinanten van succesvolle implementatie zijn geïdentificeerd in een longitudinaal design. Gebaseerd op het raamwerk van Fleuren, zijn de potentieel beïnvloedende factoren gemeten op drie vaste momenten in drie jaar projecttijd met behulp van digitale vragenlijsten voor professionals en telefonische interviews voor managers en beleidsmakers. Het tempo en de mate waarin de

G&G interventies werden gebruikt, is bepaald door administratie van de trainingsdatum van de professionals en continue monitoring van de startdatum van elke uitgevoerde interventie.

Zestig professionals, werkzaam bij 23 verschillende organisaties (vijf zorg- en 18 welzijnsorganisaties), namen deel aan het implementatie-project. Gezamenlijk werven zij 287 ouderen die deelnamen aan de G&G groepsinterventie. Geringe belangstelling – van zowel organisaties als potentiële deelnemers – voor de individuele interventievariant ('de G&G huisbezoeken') maakte dat het onderzoek zich uitsluitend heeft gericht op de effectiviteit en implementatie van de groepsvariant ('de G&G groepscurcus').

Implementatie uitkomsten

Twee derde van de professionals gebruikte de G&G groepsinterventie binnen acht maanden na hun training. Het snelste tempo was gebruik binnen drie maanden. Bij enkelen duurde het langer dan een jaar, met een maximum van 17 maanden (*Hoofdstuk 3*). Gemiddeld gebruikten de getrainde professionals de G&G groepsinterventie anderhalf keer. De best presterende professionals voerden de groepsinterventie twee keer per jaar uit; veelal één in het voorjaar en één in de herfst. De slechtst presterende professionals lukte het op geen enkel moment om tot uitvoering te komen (*Hoofdstuk 4*). Naast persoonlijke redenen (ziekteverlof) en organisatorische maatregelen (ontslag wegens reorganisatie), worden problemen met de werving van deelnemers genoemd als een belangrijke reden om niet tot uitvoering te komen.

De gemeten gebruikers-ratio van 67% voor de G&G groepsinterventie is vergelijkbaar met andere innovatieve sociale programma's. De gemiddelde opstarttijd van acht maanden, is langer dan in de implementatie-literatuur als optimaal wordt beschouwd, namelijk zes maanden, maar is sneller in vergelijking met andere innovaties (*Hoofdstuk 3*).

Deze beschrijvende resultaten leveren organisaties of gemeenten, die overwegen de G&G groepsinterventie op te nemen in hun zorg- of welzijnsaanbod, de concrete indicatie dat men minimaal drie professionals moet (laten) trainen om twee cursussen per jaar aan te kunnen bieden.

Determinanten van succesvolle implementatie

Op basis van het Fleuren raamwerk, zijn er op drie niveaus (professionals, organisaties en financieel politieke context) factoren gemeten die het gebruik van de G&G groepsinterventie potentieel beïnvloeden (*Hoofdstuk 2*). Vanwege een gebrek aan power op het financieel politieke context niveau, hebben de analyses zich beperkt tot het niveau van de professionals en de organisaties.

Er konden zes determinanten geïdentificeerd worden die het eerste daadwerkelijke gebruik van de G&G groepsinterventie na training bepaalden. Op het niveau van de professionals waren dit 'eigenaarschap', 'relatief voordeel', 'steun van collega's' en 'de mate waarin de vernieuwing gecombineerd kon worden met bestaande taken' ('compatibility'). Op het niveau van de organisatie waren dit de 'grootte van de organisatie' en de 'mate waarin de vernieuwing past bij de taakopvatting van de organisatie'. Nadat door middel van multilevel analyse rekening is gehouden met de geneste structuur van de data, professionals zijn namelijk genest binnen de organisatie waarin ze werken, bleek dat de mate waarin de professional denkt het werken met de vernieuwing te kunnen combineren met overige bestaande taken ('compatibility'), de doorslaggevende determinant is voor wel of geen gebruik van de G&G groepsinterventie (*Hoofdstuk 3*).

Vele factoren, zowel op het individuele professional als het organisatorische niveau, bleken de frequentie van het gebruik van de G&G groepsinterventie door professionals te bepalen. Acht van de 13 determinanten bleven significant nadat rekening was gehouden met de afhankelijkheid tussen professionals en organisaties door middel van multilevel analyse. In volgorde van effect grootte waren dit: 'formele bekrachtiging', 'aanwezigheid van een opinie leider', 'steun van directe G&G collega's', 'steun van overige collega's', 'steun van leidinggevende', 'eigenaarschap', 'relatief voordeel' en 'zichtbaarheid van effecten bij deelnemers'. Over het geheel genomen werd de variatie in de frequentie van het gebruik van de G&G groepsinterventie voornamelijk verklaard door verschillen tussen organisaties, in plaats van verschillen tussen professionals (*Hoofdstuk 4*).

De resultaten van de multilevel determinanten analyses leverden de noodzakelijke input voor het opstellen van een 'theory of change' met betrekking tot de implementatie van de G&G groepsinterventie. Gestandaardiseerde training stelt professionals in staat de G&G groepsinterventie uit te voeren zoals zij is bedoeld. Echter, voor daadwerkelijke succesvolle implementatie (relatief vlot en met een optimale frequentie) is het nodig dat er reeds voorafgaand aan de training van professionals gewerkt wordt aan een compatibel en ondersteunend organisatieklimaat. Concrete maatregelen die kunnen worden getroffen zijn: de implementatie van onbewezen interventies en het aanwijzen van een toegewijde implementatie coördinator.

Effecten bij ouderen

Het is niet vanzelfsprekend dat wetenschappelijk bewezen effectieve interventies, daadwerkelijk effectief blijven na implementatie in de dagelijkse praktijk van bijvoorbeeld zorg en welzijn. Vergelijking van de G&G interventie-effecten in het implementatieproject met de originele RCT, leverde echter, zowel qua zelfmanagementvaardigheid als welbevinden bij ouderen, een vergelijkbare significante verbetering op. Bovendien bleken de kenmerken van

de bereikte doelgroep, hun aanwezigheid of uitval tijdens de cursus nagenoeg hetzelfde. Dit zijn gunstige uitkomsten die samenhangen met een – eveneens gemeten – hoge mate van protocol-compliance bij de getrainde professionals (*Hoofdstuk 5*).

Ook is een gunstig onbedoeld neveneffect van de G&G groepsinterventie geïdentificeerd. Een substantieel aantal deelnemers bleef lang na afloop van de cursus contact houden met elkaar. In een netwerkje van drie of meer mede-cursisten bleef men elkaar op regelmatige basis ontmoeten zonder tussenkomst van professionals. Tijdens deze ontmoetingen ervaart men waardering en verbondenheid, waardoor de netwerkjes gelabeld konden worden als 'Informeel Sociale Steunstructuren'. Een factor die netwerkvorming bevorderde is 'het besef van overeenkomsten' (homophily), terwijl 'negatieve gedachten over het maken van contact' netwerkvorming hinderde. Gegeven de hoge prevalentie van eenzaamheid bij G&G interventie deelnemers, wordt de ontwikkeling van een extra interventiemodule ter bevordering van dit gunstige neveneffect aanbevolen (*Hoofdstuk 6*).

Conclusie

De resultaten van de studies in dit proefschrift tonen aan dat systematische training van zorg- en welzijnsprofessionals leidt tot relatief vlot en regelmatig gebruik van de G&G groepsinterventie bij twee op de drie getrainde professionals. De proportie gebruikers en de frequentie van gebruik kan worden verbeterd door in de implementatiestrategie meer aandacht te hebben voor een compatibel, ondersteunend en formeel bekrachtigend organisatorisch klimaat voor implementatie, bovenop – en bij voorkeur voorafgaand aan – de geprotocolleerde training van professionals. Deelnemende ouders profiteerden onverminderd van deelname aan de G&G groepsinterventie met een toename in zelfmanagementvaardigheid en welbevinden. Als gunstig neveneffect, is er tevens kans op het verminderen van eenzaamheid door netwerkvorming onder cursisten na afloop. Toekomstig onderzoek dient zich te richten op de factoren die het bereik van de doelgroep en het commitment van de financieel politieke context bepalen.

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ABOUT THE AUTHOR

Daphne Kuiper (1961) was born in Oldenzaal, the Netherlands. After graduating from the Twents Carmel Lyceum (Gymnasium β), she attended the Hanze University of Applied Sciences in Groningen to become a physical education teacher. From 1983 until 1988, she worked as a PE-teacher in Leek and Haren, where she developed a special interest in children with developmental coordination disorders (DCD). From 1984, she combined her work as a teacher with a graduate studies in Human Movement Sciences at the University of Groningen, which she completed in 1988.

After a short period as Clinical Trial Monitor at the Trial Coordination Center (TCC) of the University Hospital Groningen (AZG), Daphne accepted a position as university lecturer in the Department of Human Movement Sciences of the University of Groningen in 1990. She spent about 10 years teaching various topics related to Sports and Physical Education and supervising multiple scientific student-projects. The positive scientific work climate in this department encouraged Daphne to enhance her scientific skills.

In 2001, she switched to the division of Applied Health Research of the Department of Health Sciences of the University Medical Center Groningen (UMCG). Performing various research projects, commissioned by public and/or private health organizations, she developed a special interest in issues concerning the gap between science and practice.

Drawn by the societal relevance of the Self-Management of Well-being (SMW) interventions and the importance of their successful implementation in practice, Daphne applied for the PhD-position, offered by the division Health Psychology Research in 2010. The implementation studies linked to this SMW implementation project form the building blocks of this thesis.

Daphne now works as a policy advisor at the Service Desk Clinical Research Office of the UMCG, where she aims to contribute to keeping the procedural quality of all scientific research in the UMCG appropriate and manageable within the dynamic context of changing rules and regulations.

International peer reviewed articles

Kuiper D, Steverink N, Stewart RE, Reijneveld SA, Sanderman R, Goedendorp MM. Pace and determinants of implementation of the self-management of well-being group intervention: a multilevel observational study. *BMC health services research*. 2019;19(1):67.

Goedendorp MM, Kuiper D, Reijneveld SA, Sanderman R, Steverink N. Sustaining program effectiveness after implementation: The case of the self-management of well-being group intervention for older adults. *Patient Educ Couns*. 2017;100(6):1177-84.

Kuiper D, Goedendorp MM, Sanderman R, Reijneveld SA, Steverink N. Identifying the determinants of use of the G&G interventions for older adults in health and social care: protocol of a multilevel approach. *BMC Res Notes*. 2015;8:296.

Van der Mei, Sijrike F, Kuiper D, Groothoff JW, van den Heuvel, Wim JA, van Son WJ, Brouwer S. Long-term health and work outcomes of renal transplantation and patterns of work status during the end-stage renal disease trajectory. *J Occup Rehabil*. 2011;21(3):325-34.

Visser A, Dijkstra GJ, Kuiper D, de Jong PE, Franssen CF, Gansevoort RT, Izaks GJ, Jager KJ, Reijneveld SA. Accepting or declining dialysis: considerations taken into account by elderly patients with end-stage renal disease. *J Nephrol*. 2009;22(6):794-9.

National peer reviewed articles

Kuiper D, Pool M, Visser A, & Steverink N. GRIP en GLANS – Toolkit. *Tijdschrift over Kwaliteit en Veiligheid in zorg*, 2, 16-17, 2011

Kuiper D, Dijkstra G J, Tuinstra J, & Groothoff J W. The influence of dementia care mapping (DCM) on behavioural problems of persons with dementia and the job satisfaction of caregivers: A pilot study. *Tijdschrift voor Gerontologie en Geriatrie*. 2009; 40(3), 102-112.

Kuiper D, Dijkstra G J, Sijtsma F & Groothoff J W. Twee modellen voor taakdelegatie naar een nurse practitioner op het consultatiebureau. *Tijdschrift voor Jeugdgezondheidszorg*. 2008; 40, 74-79.

Kuiper D, Niemeijer A, Reynders K. Toepasbaarheid Test of Gross Motor Development in Nederland. *Bewegen en Hulpverlening*. 2000; 17 (1), 3-14.

Van Rossum JHA, Kuiper D. Het motorisch functioneren van kinderen: Movement ABC en MOT'97 vergeleken. *Bewegen en Hulpverlening*. 1997; 14 (3), 194-202.

Drost G, Mes C, Kuiper D, Stevens M. Miniatrithlon: op je slossen of op je tandvlees? *Lichamelijke Opvoeding*. 1996; 84 (9), 393-397.

Kuiper D. 'Sport Voorrang': wel of geen succes? *Lichamelijke Opvoeding*. 1995; 83 (3), 100-105.

Kuiper D, Rispens P, Westerhof R. Vernieuwingsbereidheid en bewegen & muziek II. *Lichamelijke Opvoeding*. 1993; 81 (12), 584-589.

Kuiper D, Rispens P, Westerhof R. Vernieuwingsbereidheid en bewegen & muziek I. *Lichamelijke Opvoeding*. 1993; 81 (11), 540-543.

Reports and (chapters in) books

Kuiper D, Goedendorp MM, Steverink N. Contact houden met elkaar: Een onderzoek naar Informele Sociale Steunstructuren na de GRIP&GLANS groepscursus. 2015, Movisie, 22, Utrecht.

Kuiper D, Brouwer S, Groothoff JW, & van der Mei SF. Arbeidsparticipatie na niertransplantatie: een prospectieve studie. Groningen: Universitair Medisch Centrum Groningen / Toegepast Onderzoek, 2009.

Holwerda A, Kuiper D, Dijkstra GJ. Evaluatie UWV Verburg Assessment Meervoudige Handicap. Groningen: Sectie Toegepast Onderzoek Noordelijk Centrum voor Gezondheidsvraagstukken, Universitair Medisch Centrum Groningen, 2007.

Kuiper D, Holwerda A & Dijkstra GJ. Non-response bij bevolkingsonderzoek naar baarmoederhalskanker. Groningen: Sectie Toegepast Onderzoek Noordelijk Centrum voor Gezondheidsvraagstukken, Universitair Medisch Centrum Groningen, 2005.

Bakker RH, Scaf-Klomp W, Kuiper D, Dijkstra GJ & Groothoff JW. De huisarts en de vermoei(en)de patiënt. Groningen: Sectie Toegepast Onderzoek Noordelijk Centrum voor Gezondheidsvraagstukken, Universitair Medisch Centrum Groningen, 2005.

Visscher C, Kuiper D. Jeugdige verschillen in uithoudingsvermogen. In: Reynders K, de Greef MHG, Brunsting JR. Moveo ergo sum, Bewegingswetenschappen, Stichting Kinderstudies, Groningen, 1998.

Kuiper D. Sportstimulering bij kinderen in sociaal economische achterstandsituaties. In: Bos JG, Hendrickx HME, Reynders K, Schaperclaus GA. Terugblikken en Vooruitzien. Werkgroep Bewegingswetenschappen. Stichting Kinderstudies, Groningen, 1995.

Visscher C, Noordijk E, Knol JA & Kuiper D. Onderwijs en Sport samen naar de top. Universitair Centrum Sportresearch. Groningen, 1995.

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