Social Network and Social Support

Looking for effective characteristics to increase a social network and social support.

MSc Thesis Health & Society

Cheryl Pasman

920115642030

SOCIAL NETWORK AND SOCIAL SUPPORT

Looking for effective characteristics to increase a social network/social support to decrease health differences

Name: Cheryl Pasman (920115642030)

May 2018

Master Program: Communication, Health and Life sciences

Specialization: Health and Society

Thesis Code: HSO- 80333

Chair group: Health and Society

Supervisors: Sabina Super (HSO) & Lette Hogeling (HSO)

Preface

Dear reader,

In front of you lays my final master thesis. This was the final task I had to do, before I could start my internship and end my 4.5 years here in Wageningen. In the past seven/eight months I put hard work into this thesis to make it a good report. To be honest, these past months were not the easiest ones. Especially at the beginning I was struggling with coming up with a good research question, a good theoretical framework, and a well written method. In fact, I was struggling with everything. However, during the process I came to the realization that it was not about executing the perfect research and writing the perfect thesis. It was about doing research on your own. Making your own decisions (and mistakes) and being able to justify them. This helped me to continue my thesis process in a more relaxed way and in the end I am proud that I have accomplished this task.

Luckily I also got help. First I would like to thank my supervisor Sabina Super for her expertise. I started with two supervisors, but eventually Sabina took over and guided me through the process. She provided me with good feedback and new insights on how to improve my work. She was also a person I could go to if I was struggling again and she pointed me in the right direction. Thank you for that! Also thankyou to Lette Hogeling, who also provided me with feedback and new ideas to improve my work.

Furthermore, I would like to thank Auke, Carlijn, Martin and Steffie. Together we sat in room 4040 for these past months working hard on our thesis. We laughed together a lot, we had lunch together and we also helped each other by listening to one another and provide feedback. This made working on my thesis, and driving two hours every day to be here, a lot easier. Thank you guys! Lastly, I want to thank my boyfriend. For the phone calls, the hugs and his listening ear. You helped me to keep going.

I hope you enjoy reading my thesis.

Cheryl Pasman

Summary

Background: People with a lower SES experience poorer health than people with a higher SES. This means that health differences exists between these two groups. There are several strategies that aim to decrease these health differences. One of these strategies is looking at changing the social network/social support of people with a lower SES. However, a theoretical basis is often missing. It is not known how to effectively increase social network/social support.

Aim: This thesis aims to investigate how a social network/social support can effectively be increased by looking at characteristics of interventions and projects that aim to address a change in social network/social support. By effectively increasing social network/social support, health promotion interventions have the potentiality to decrease health differences.

Method: First a systematic literature was conducted. This was done to identify several characteristics in existing interventions, which aim to address a change in social network/social support. After that, a secondary data analysis was conducted of five ongoing projects from the program "Gezonde Toekomst Dichterbij", to identify several characteristics in current ongoing projects.

Results: The results of the literature review showed that the interventions primarily aimed to increase social support, for example by providing information, regarding the subject of the intervention, during several sessions. These sessions also enabled participants to provide each other with emotional or appraisal support. Since the studies were not set up to measure social support, it was difficult to determine whether the studies were successful at increasing social support. The results of the secondary data analysis showed that the main focus was on increasing the social network of the target group. By organizing activities and setting up project groups, the projects aimed to bring people together and increase the size of their network. The projects implicitly aimed to increase different types of social support. Based on the positive reactions from the target group it can be stated that the projects were successful in increasing the social network, as well as providing social support. However, it should be noted that no instruments were used to measure this increase in social network/social support objectively

Discussion/conclusion: The data analysis showed that it is possible to increase the range and the frequency of a social network by providing opportunities for people to meet each other on a frequent basis. The data also showed that there are different ways to increase the different types of social support. The theoretical framework, that was adopted in this thesis, revealed that not the whole framework is used by both the studies and the projects. The studies puts more emphasis on the functional characteristics of a social network (providing social support), while the projects of "Gezonde Toekomst Dichterbij, focused more on the structural and interactional characteristics of a social network. The results also showed that often a measurement instrument is lacking, which inhibits the studies and projects to objectively measure an increase in social network characteristics/social support.

Future research recommends to make use of proper theory in the design of an intervention. For example, by focusing on all three characteristics of a social network as a whole, or distinguish between different types of social support. Then the intervention is more likely to be successful at increasing a social network/social support. Besides that, it is also recommended to do more research regarding this subject, since knowledge gaps still exist.

Keywords: social support, social network, health promotion, socio-economic status, intervention, secondary data analysis.

Table of contents

Chapter 1: Introduction

This MSc thesis proposal will elaborate on the health differences that occur between different socioeconomic status (SES) groups and the role that a social network/social support can play to reduce the health difference that arise from these difference in SES. This will be done by looking at characteristics of interventions and projects that can address a change in a social network/social support.

1.1 The relationship between SES and health

Research has shown that people with a lower SES experience poorer health than people with a higher SES, which becomes apparent in the higher mortality and morbidity rates for people with a lower SES (Galllo, de Los Monteros, Shivpuri, 2009; House et al., 1990; Newacheck, Butler, Harper, Piontkowski & Franks, 1980; Syme & Berkman, 1976; Williams, 1990). When looking at the relationship between SES and health from the definition of Huber et al (2011), who states that health is: "*the ability to adapt and self-manage in the face of social, physical, and emotional challenges"*, it is reported that individual's with a lower SES are more subjected to chronic stressors (Gallo, 2009). They also have fewer resources available, which can help them to decrease the impact of those stressor (Adler & Ostrove, 1994; Gallo,2009). This can engage these individual's in health behaviors, like smoking or a sedentary lifestyle, that in turn contributes to morbidity and mortality (Adler & Snibbe, 2003). These health behaviors increase when SES decreases (Adler & snibbe, 2003). This results in people with a lower SES being less healthy than people with a higher SES (see figure 1).

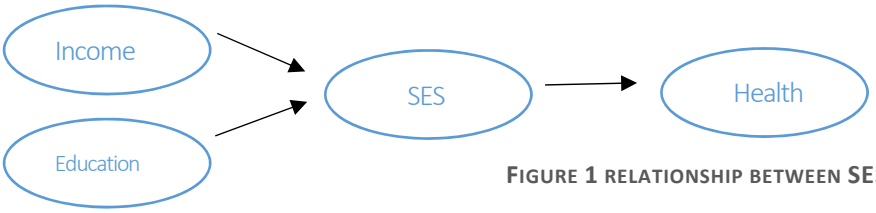

FIGURE 1 RELATIONSHIP BETWEEN SES AND HEALTH.

When looking at statistics in The Netherlands, there are also large differences between health and mortality in relation to SES (Mackenbach et al., 1997; Mackenbach et al., 2008). SES is a measurement that determines the position of an individual on the socioeconomic ladder and is usually measured by looking at education and income (Winkleby, Jatulis, Frank & Fortman, 1992; Adler & Snibbe, 2003). When looking at income, it shows that the higher an individual's income, the higher the (healthy) life expectancy of that individual. People in the lowest income classes feel less healthy and often experience one or more chronic conditions (Knoops & van den Brakel, 2010). When looking at the statistics, the difference in life expectancy for men between the highest income and the lowest income groups is 8.2 years. The difference for women in life expectancy is 6.7 years. The difference increases even more when looking at life expectancy in good health, namely 17.5 years for men and 18.8 years for women (CBS, 2016).

Education is another measurement of socioeconomic status, the higher an individual's educational background, the higher the individual's position on the socioeconomic ladder (Pharos, 2014). The well-educated have more economic resources, due to the fact that they are less likely to be unemployed and more likely to have a fulfilling and full-time job, and therefore a higher income. In addition to having more economic resources, people with a higher education also have more social-psychological resources beneficial for their health (Ross & Wu, 1995). Lastly, the well-educated live healthier lifestyles in comparison to less educated individuals. Well-educated individuals tend to exercise more, receive more preventive medical care, and are also less likely to smoke and drink moderately (Ross & Wu, 1995).

1.2 Using social support to decrease health differences

Minimizing health differences between groups in society is an important target for the Dutch health policy (Ministerie van Volksgezondheid, Welzijn en Sport, 2015). There are several strategies in the Netherlands that aim to decrease these health differences (Mackenbach & Stronks, 2002). Looking at changing the social network/social support of individuals is one of these strategies. It is known that having a social network can be a protective factor for an individual (Mutsaers & Berg, 2010; Asscher & Paulussen-Hogeboom, 2005) and that a social network/social support can influence an individual's health and well-being (Berkman & Glass, 2000). Since people with a lower SES status experience less social support, this group can benefit from this strategy (Adler & Snibbe, 2003). Therefore, this thesis will focus on the concepts of social networks/social support in trying to reduce these health differences, by looking into ways on how to effectively increase/strengthen a social network/social support.

This thesis defines a social network as "a web of social relationships in which an individual is located or as linkages between people that serves particular functions" (Israel, 1982; Heaney, 1991). One of the most important functions of those social relationships/linkages is the provision of social support (Israel, 1982; Heaney, 1991). Social support in turn refers to the functional content of relationships and can be categorized into emotional support, instrumental support, informational support and appraisal support (House, 1981).

1.3 Benefits of a social network/social support

Having a social network can be a protective factor (Mutsaers & Berg, 2010; Asscher Paulussen-Hogeboom, 2005). An active and involved network can, for example, help when there are troubles at home. Families are better able to comprehend such problems when there is practical and emotional support, which are derived from involvement in social networks (Lin, Ye & Ensel, 1999). Social networks also help support an individual's ability to access new information and identify/solve problems, which in turn can give a person a feeling of self-control and purpose in life, which is beneficial for their mental health (Cohen, 2000). Besides that, social support also benefits mental and physical health, because it reduces the impact of stress, by providing a buffer to the individual (Cohen, 2004; Hodnett, Gates, Hofmeyr & Sakala, 2007). Also the perceived availability of social support can lead to better well-being, since an individual can have a more positive appraisal when countering a stressful event. It could reduce the negative emotional reaction or behavioral response within an individual, which can result, for example, in the decision not to smoke (Kawachi & Berkman, 2001). Furthermore, social networks also influence health behaviors, because an individual obtains behavioral guidance through comparison with others in their reference group (Festinger, 1954; Marsden & Friedkin, 1994). Individuals are supported and influenced in certain health behaviors like help-seeking behavior (Mckinlay, 1980; Starret et al., 1990), smoking cessation (Palmer, Baucom & McBride, 2000) and weight loss (Wing & Jeffery, 1990) through the social relationship within their social network. However, having social relations can also contribute to an increase in unhealthy behaviors, like an increase in the consumption of alcohol. Furthermore, research showed that having an obese friend can increase the risk of personal obesity (Cristakis & Fowler, 2007; Crosnoe, Muller & Frank, 2004).

1.4 The relevance of this thesis

The relationship between a social network/social support and health is known through many explanatory research (see Breslow, 1983; Berkman & Glass, 2000; Cohen, 2004, Uchino, 2006; Mutsaers & Berg, 2010; Bartelink & Verheijden, 2015). While these results show the positive effects of social support and their potential to be beneficial for health, a theoretical basis is missing. It is not known how an increase in a social network/social support can be established. Interventions of Brand,

Lakey & Berman (1995), Heaney, Price & Rafferty (1995) and Wing & Jeffery (1999) are examples of health promotion interventions that aimed to increase social support, through social skills training or by adding friends as a social support system. Their results showed that social support was indeed increased and beneficial for health, but all interventions lacked a theoretical framework. The activities in the interventions that aimed to increase social support were not based on a theoretical framework or a theoretical understanding on how to increase a social network/social support. That is why this thesis will investigate how exactly a social network/social support can be increased, by outlining several characteristics, for effectively addressing a change in a social network/social support. This leads to the following main research question:

"What are characteristics of programs effectively addressing a change in a social network/social support?

The following sub-question will help answer the main research questions:

1. *What are characteristics of interventions that aim to increase a social network/social support according to the literature?*

2. *Which characteristics, of increasing a social network/social support, used by the program ''Gezonde Toekomst Dichterbij'' can be identified?*

1.5 ''Gezonde Toekomst Dichterbij''

At the moment also in The Netherlands attention is being paid to the social network/social support of individuals, and several interventions are being designed to decrease health differences. One of them is the program ''Gezonde Toekomst Dichterbij''. This project will be used as a case for this thesis. For providing and analyzing information about the effects of using a social network/social support in an intervention. The project ''Gezonde Toekomst Dichterbij'' is a program from Fonds Nuts Ohra(FNO), which contains 46 projects. The program has the overall aim to increase the chances of socially vulnerable groups, by supporting several projects that try to promote the health of families in disadvantaged situations. The 46 projects are characterized by four different approaches:

1. In ''Gezinnen aan zet'' the main focus is on individual's own ideas, their own strength, and designing structures in which new initiatives can be organized in a sustainable way.
2. In ''Buurt in verbinding'' the main focus is on increasing contact between community members and increasing the livability of the neighborhood. Another important aspects in these projects is that community members and professionals should be able to come more easily in contact with one another in case of problems.
3. In ''Werken in de buurt'' the main focus is on designing new methods for professionals to use in health promotion, including creating networks of professionals of different areas like education, municipality health, and welfare.
4. In ''Naar gezond gedrag'' the main focus is on teaching individuals new skills to improve health. This includes job application training, language lessons, and how to manage a household budget.

Based on the assumption that an increase in a social network/social support can have health benefits, ''Buurt in verbinding'' aims to improve the contact between community members and also increasing the livability in the neighborhood. Since this approach has the most similarities within the focus area of this research, a focus on addressing a change in a social network/social support, several projects of this approach will be used as cases in this thesis.

Chapter 2: Theoretical Framework

The relationship between social network/social support and health has been introduced in the introduction. This theoretical framework will first examine this relationship in more depth in 2.1, to emphasize why this thesis focuses on addressing a change in a social network/social support. In 2.2, the two concepts, a social network and social support, will be defined and explained.

2.1 The relationship between a social network/social support with health

The conceptual model, figure 2 on the right, is a model designed by Heaney & Israel (2008) and shows five pathways in which a social network/social support can have an influence on health. The model depicts a social network/social support as the starting point of a causal flow towards certain health outcomes.

Pathway 1 shows a hypothesized direct effect that a social network/social support can have on health. Regardless of stress levels, meeting basic human needs (e.g. intimacy, sense of belonging), social relationships can have the ability to enhance health and well-being (Berkman & Glass, 2000).

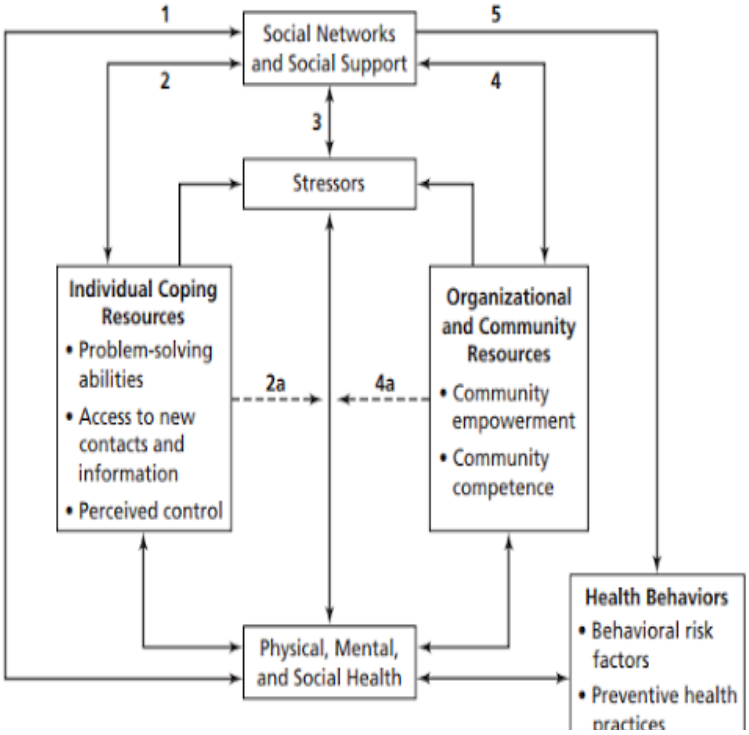

FIGURE 2 CONCEPTUAL MODEL OF THE RELATIONSHIP BETWEEN SOCIAL NETWORK/SOCIAL SUPPORT AND HEALTH BY HEANEY & ISRAEL (2008).

Pathway 2 shows a hypothesized effect of a social network/social support on the coping resources of an individual (Heaney & Israel, 2008). This is often called ''the buffering effect'', which implies that when an individual has enhanced resources, it increases the likelihood that the experienced stressor can be coped with in a way that is reduces the health consequences. By engaging in social networks, the individual enhances his/her ability to access new information and contacts. It also helps an individual by identifying and solving problems (Bartelink & Verheijden, 2015). The provided support, as a result of having a social network, can help reduce uncertainty, which in turn can give the individual a sense of personal control. Cohen (2004) explains that social support benefits mental and physical health, because it reduces the impact of stress. A lack of social support, can in return, decrease the coping resources of an individual, which has a negative influence on health.

Pathway 3 also relates to stressors, but this pathway hypothesizes that a social network/social support have an influence on the duration and frequency of exposure to a stressor (Heaney & Israel, 2008). For example, having a social network provides new information, like a job application, which in turn can

reduce unemployment. Reduced exposure to a stressors is then associated with an enhancement in mental and physical health (Heaney & Israel, 2008).

Pathway 4 shows a hypothesized effect of a social network/social support on organizational and community resources. If the exchange of social support is enhanced, and social networks are strengthened within a community, it may increase the ability of a community to gather its resources and to solve problems. It enhances the capacity and control of a community (Minkler, 2001). According to Ferlander (2007) this pathway is more about building social capital, because by investing in social relationships, norms of reciprocity and trust are strengthened within a community.

Pathway 5 shows a hypothesized effect a social network/social support can have on health behavior. Social relationships can influence health behavior through interpersonal exchange within their social network (Breslow, 1983). This happens because an individual obtains behavioral guidance through comparison with others in their reference group (Festinger, 1954, Marsden & Friedkin, 1994). An individual can therefore be supported to act in health-promoting behavior such as exercise or not smoking (Uchino, 2006). However it can work in two ways, since obtaining behavioral guidance can also mean engaging in less healthy behaviors. Having relationships with risk-taking peers can contribute to an increase in alcohol consumption, or having an obese friend or spouse can increase the risk of personal obesity (Christakis & Fowler, 2007; Crosnoe, Muller & Frank, 2004).

2.2 Defining a social network and social support

As mentioned in the introduction, a social network is "a web of social relationships in which an individual is located, or as linkages between people that serves particular functions" (Heaney & Israel, 2008,p.190). A social network is person-centered and refers to the structure (the links in the overall network), the nature of these linkages, and the functions that it provides (Israel, 1982). It is important to examine the social networks of an individual, because it is a good approach for investigating the relationship between social interactions and health status. Once this has been established, it is possible to adapt the social network of an individual, so it can be beneficial for their health and well-being. Furthermore, a social network that consist of certain characteristics may be more or less effective in providing certain functions (1982). A social network can be categorized into three dimensions: structural characteristics, interactional characteristics and functional characteristics (Israel, 1982).

Structural characteristics refer to all the links in the overall network. There are two structural characteristics:

1. Range: is the number of direct contacts (or the size) an individual has. This can range from a few to many.
2. Density: is a proportion. The proportion of people who could possibly know one another (all the links that could possibly exist), in the relation to the people who do actually know each other (so the links that currently exist).

The interactional characteristics refer to the nature of the relationships within the network. There are several interactional characteristics:

1. Content: refers to the meaning that an individual gives to their relationship within the network. An example of content may be friendship, or a neighbor.
2. Directedness: refers to the reciprocity in a relationship. It is the extent to which affective (e.g. love) and instrumental (e.g. money) are both given and received within the network.

3. Durability: refers to the extent of stability of a person's relations within the network. This can for example refer to how long individuals have known each other.
4. Intensity: refers to the emotional closeness between two individuals. Some people may be co-workers, but individuals can also be best friends, which makes the relation between them stronger and more intense.
5. Frequency: refers to the amount of interaction the individual has with another individual, or simply said: how many times you see a person.
6. Dispersion: refers to how easy an individual can make contact with another individual. For example, an individual might only feel confident to be in contact with close friends, end too shy to open up to new people, which could inhibit expansion of their network.
7. Homogeneity: refers to the degree to which individuals within the network have similarities on certain attributes. Educational level or income level are examples, or shared norms and values.

Lastly there are functional characteristics. The most important functional characteristic of a social network is providing social support. It is important to make a distinction between different types of social support in this theoretical framework, because some types of support might be proven to be more effective than others (Cohen, 2004). Also, not each type of support can be given by every person. This thesis will therefore outline the concept of social support by using the definition of House (1981), who states that: "*social support is the functional content of relationships, that can be categorized into four broad types of supportive behaviors or acts".*

1. Emotional support, which involves providing love, trust caring, and empathy to a person. Emotional support is most often provided by an intimate or confidant other of the individual.
2. Informational support, which involves providing advice, suggestions or information to an individual. In turn this individual can use that to address certain problems.
3. Appraisal support, which involves providing information that is useful for an individual's self-evaluation purposes. This entails constructive feedback and affirmation. Appraisal support help in decision-making, it also helps deciding which course of action to take.
4. Instrumental support, which involves providing tangible aid and service that directly assist in individual who is in need of that. Example are cooking, paying the bills, or getting groceries.

Social support is considered as serving a coping function for an individual. It can act as a buffering factor, which controls interpretations of a certain life event and the following emotional responses to that event by the individual (Lin, Ensel, Simeone & Kuo, 1979). One of the benefits of receiving support from members of your network is maintaining an individual's self-esteem. It also reinforces the sense of intimacy and dependability in the relationship the individual has with the provider of support (Eckenrode & Wethington). Since it is not known how an increase in a social network/social support can be established, and interventions often lack a theoretical framework, this thesis will therefore investigate how to effectively increase a social network/social support. This theoretical framework has defined the characteristics of a social network and the different types of social support. These definitions and their characteristics will provide a basis when analyzing existing interventions that aim to increase a social network/social support, by looking at the activities they employ to aim that change in a social network/social support.

Chapter 3: Methods

This section will show the method that has been used to answer the main research question: *What are characteristics of programs effectively addressing a change in a social network/social support?* Paragraph 3.1 will outline the methods section used to answer sub-question one. Paragraph 3.2 will then outline the methods used to answer sub-question two.

3.1 sub-question one:

What are characteristics of interventions that aim to address a change in a social network/social support, according to the literature?

The aim of this sub-question was to identify the characteristics of current interventions to see via which activities they aimed to change the social network/social support of the targeted population. This sub-question looked at what works when it comes to changing a social network/social support and what does not. This sub-question was answered by doing a systematic literature review, since a systematic literature review can give an overview of a large body of information and is able to answers questions about what works and what does not (Petticrew & Roberts, 2008).

3.1.1 The search

The search started in December 2017 and combined several terms related to (a) social support or (b) social networks, and (c) interventions. Since different researchers use different terms for the same concept, the keywords from other articles were checked to find synonyms for the terms A, B and C. This was done to get a full overview of all the research, that has been done, that use social support and social networks as concepts. Table 1 below provides an overview of the used terms.

TABLE 1 SEARCH TERMS USED IN SCOPUS AND WEB OF SCIENCE.

Search Term	Synonyms
Social support	*peer support, emotional support, instrumental support, informational support, affective support, cognitive support,*
Social network	*social network**
Intervention	*intervention* strateg*, method*, support intervention*

The search was carried out in two databases, namely Scopus and Web of Science. These databases were chosen, because they are the most widespread databases on different scientific fields (Guz & Ryshchitsky, 2009). The full search term that was used in the databases was as follows:

("social support" OR "emotional support" OR "instrumental support" OR "informational support" OR "appraisal support" OR "affective support" OR "cognitive support" OR "social network") AND ("support intervention*") AND (intervention* OR strateg* OR method*) AND (health* OR "well-being" OR wellbeing OR "well being")*

3.1.2 Study criteria

To be included in the review, studies had to meet several criteria. First of all, the studies needed to be written in Dutch or English, since that is the only spoken language of the writer. All studies from 2000 and onwards were taken into account. This was seen by the researcher as a sufficient amount of time to collect enough studies. Only studies that contained an intervention were taken into account, which meant, a quasi-experimental trial or a randomized control trial (RCT), since they have a high standard when it comes to evaluating interventions in health care (Zhong, 2009). With regards to the content of

the trials, the selected trials needed to provide one of the four types of social support as mentioned in the theoretical framework. Articles were excluded if the interventions were pilot studies, feasibility studies, or study protocols, since they do not evaluate effectiveness (Leon, Davis & Kraemer, 2011). Articles were also excluded if they focused on chronic diseases, any type of cancer, mental illnesses (e.g. Alzheimer, Schizophrenia), or HIV. These diseases are very specific and not directly related to the target population of "Gezonde Toekomst Dichterbij", which puts focus on socially vulnerable groups.

3.1.3 The search results

The search term mentioned above resulted in 830 records from the two databases combined. After searching for duplicates, 574 records remained. Next, studies that were not randomized control trials, quasi-experimental studies, or a social network/social support intervention, were deleted. After deleting these records, 154 records remained. These remaining articles were assessed with the help of the exclusion criteria that were set up. First pilot studies, feasibility studies, study protocols, or master thesis studies were deleted which resulted in 79 remaining studies. After that, the exclusion criteria regarding specific diseases was applied, which ultimately resulted in 24 articles eligible for critical appraisal. Figure 3 on the right will present the flowchart of the review process in detail.

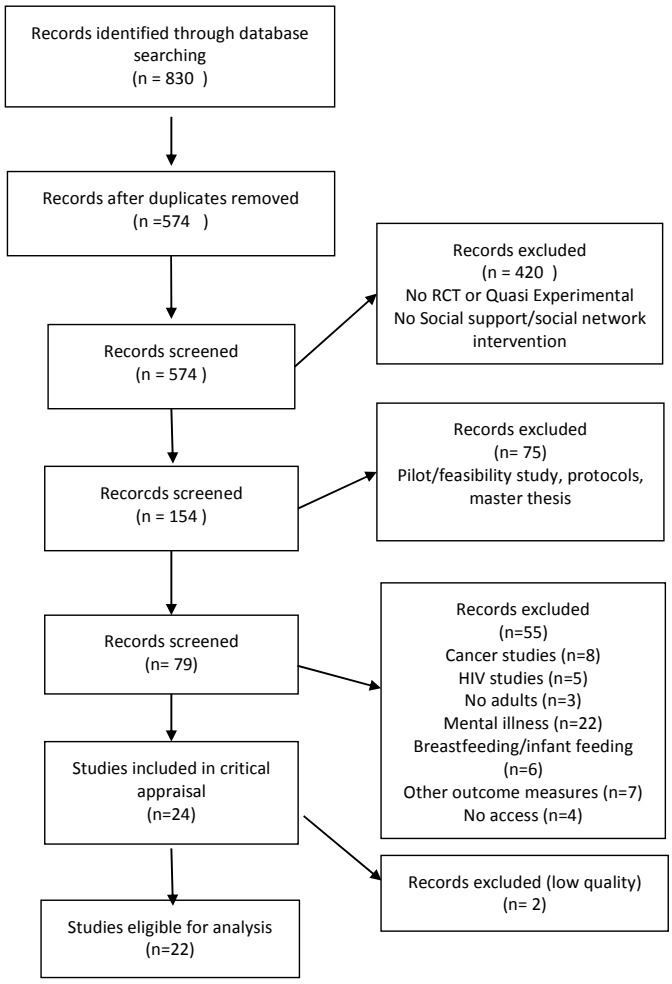

FIGURE 3 THE FLOWCHART.

3.1.4 Critical appraisal

After the search was finished and the articles were selected based on the inclusion and exclusion criteria, the remaining twenty-four studies were critically appraised. This was done to ensure good quality articles were taken into account. The studies were assessed based on their quality with the help of two checklists from the Joanna Briggs institute, which is a research and development Center within the faculty of Health science (Joanna Briggs institute, 2017).

The first checklist that was used was the critical appraisal checklist for randomized controlled trials. This checklist contained 13 questions. These questions covered several components important to take into account in randomized controlled trials. These components were randomization, similarity of treatment groups, blinding, measurement outcomes and appropriateness of the design. The second checklist that was used was the checklist for Quasi-experimental studies. A checklist used when a study did not use randomization or a control group. This checklist contained 9 questions. These questions contained several components important to take into account in non-randomized studies. These components were “cause” and “effect”, similarity of the participants, a possible control group, outcome measurements, and statistical analysis.

Questions could be answered with a Yes (+) or No (-) or unclear (+/-). A study was appraised as good quality if the study passed the mark of 5.5. This meant that eight out of the thirteen questions, for the randomized controlled checklist, and five out of the nine questions, for the quasi-experimental checklist should be answered with a (+). If the study did not pass the mark of a 5.5, the study was deleted from the list. At the end, one article (Nicholas et al. 2012) was deleted after failing to pass the 5.5 mark. This article lacked a detailed description of the method section, contained a very limited analysis, and was not comparable to the other articles with regards to quality. Furthermore, one article (Gísladóttir & Svavarsdóttir, 2011) was deleted, because it turned out to be a pilot study. This resulted in twenty-two articles being eligible for analysis. The table below shows the results from the critical appraisal.

TABLE 2 CRITICAL APPRAISAL (RANDOMIZED CONTROL STUDIES)

Author	Randomization	Allocation	Baseline	Blinding	Blinding	Blinding	Treatment	Treatment	Analysis	Outcome	Outcome	Analysis	Design	Total
Krumholz et al. (2002)	+	+	-	+/-	+	+	+	+	+	+	+	+	+	8.8
Anthony & O'Brien (2002)	+	+	+	-	+/-	-	+	+	+	+	+	+	+	8.1
Barrera et al. (2002)	+	+	+	+/-	+/-	+/-	+	+	+	+	+	+	+	8.8
Frosch et al. (2011)	+	+	+	-	+	-	+	+	+	+	+	+	+	8.5
Goldman et al. (2014)	+	+	+	-	+	+	+	+	+	+	+	+	+	9.2
Holt-Lunstad, Birmingham & Light (2008)	+	+	+	-	-	-	+	+	+	+	+	+	+	7.8
Levine et al. (2016)	+	+	+	-	-	-	+	+	+	+	+	+	+	7.8
Lugger et al. (2016)	+	+	+	-	+	+	+	+	+	+	+	+	+	9.2
Martin et al. (2011)	+	+	+	-	+	+	+	+	+	+	+	+	+	9.2
May et al. (2006)	+	+	+	-	-	-	+	+	+	+	+	+	+	7.8
McEwen et al. (2017)	+	+	-	+/-	+/-	+/-	+	+	+	+	+	+	+	8.1
Neil Thomas et al. (2012)	+	+	-	-	+	-	+	+	+	+	+	+	+	7.8
Nicholas et al. (2012)	+	-	-	-	-	-	+	+/-	+/-	+/-	+/-	+/-	+	3.5
Provencher et al. (2007)	+	+	+	-	-	-	+	+	+	+	+	+	+	7.8
Riddel et al. (2016)	+	+	+	-	-	-	+	+	+	+	+	+	+	7.8
Smith et al. (2011)	+	+	+	-	-	-	+	+	+	+	+	+	+	7.8

Author	Randomization	Allocation	Baseline	Blinding	Blinding	Blinding	Treatment	Treatment	Analysis	Outcome	Outcome	Analysis	Design	Total
Sullivan-Boylai et al. (2010)	+	-	+	-	-	-		+	+	+	+	+	+	6.9
Tang et al. (2015)	+	+	+	-	-	+	+	+	+	+	+	+	+	8.5
Valenstijn et al. (2015)	+	+	+	-	-	-	+	+	+	+	+	+	+	7.8
Verheijden et al. (2004)	+	+	+	+	-	+	+	+	+	+	+	+	+	9.2
Wilcox et al. (2011)	+	+	+	-	+	-	+	+	+	+	+	+	+	8.5

TABLE 3 CRITICAL APPRAISAL (QUASI EXPERIMENTAL STUDIES)

Authors	Cause / effect	Similarity	Treatment	Control group	Measurement	Follow up	Measurement	Measurement	Analysis	Total
Letourneau et al. (2015)	+	+	+	-	+	+	+	+	+	8.9
Assah et al. (2015)	+	+	+	+	+	+	+	+	+	10
Gísladóttr, & Svavarsdótti (2011)	+	-	+	-	+	-	+	+	-	5.6

3.1.5 Data abstraction

For the analysis of the included studies, the studies were thoroughly read and an overview was made that consisted of several components. First to set up some baseline characteristics, the aim of the study, the age group, the target population, the sample size, the duration of the intervention, and the country of study were outlined.

With regards to the content of the intervention, it was outlined which network characteristics and which type of social support could be distinguished. If it was not explicitly mentioned which type of support was used, the researcher put her own label of support on it based on the description of the types of support in the theoretical framework. Furthermore the activities within the intervention were analyzed. Especially, which activities were employed in the interventions to aim an increase in social support and social network characteristics and whether these activities showed effectiveness.

3.2 Sub-question two:

Which characteristics of addressing a change in a social network/social support used by the program ´´Gezonde Toekomst Dichterbij´´ can be identified?

The aim of this sub-question was to identify the characteristics of the projects of "Gezonde Toekomst Dichterbij" and to see via which activities they aim to change a social network/social support. This sub-questions looked at the activities employed by the five chosen projects to increase social support and the social network.

3.2.1 Secondary data analysis

This sub-question was answered by doing a secondary data analysis. This method was chosen since the data of the projects have already been collected by a group of researchers, and since the data was suitable to use for answering the question in this thesis. This analysis consisted of analyzing five projects (cases) of the program "Gezonde Toekomst Dichterbij" namely: "Back2balance", "Vaals ontmoet", "Betere gezondheid voor Somalische en Afghaanse Nederlanders", "Wijk in beweging", and "Blijvend gezond en sociaal actief". These cases have been selected, because they fall under the program approach: "Buurt in Verbinding", which also focuses on social support and social network. Therefore, these cases were the most interesting ones for this thesis.

3.2.2 Background of the different cases

The five cases that have been chosen are:"Back2balance", which focuses on multi-problem families in Apeldoorn. With the help of a social neighborhood team they aim to improve after care (which they already receive), but at the same time also the lifestyle and perceived health of the families. "Vaals ontmoet" focuses on households in Vaals living in poverty, and the main goal is to increase the power of the families in a disadvantaged position, so they are able to solve their own problems. This should be achieved by using an integral approach that is focused on "ontmoeten". In "Betere gezondheid Somalische en Afhaanse Nederlanders" the focus is on empowerment of Afghanis and Somalis Dutch citizens, in Rotterdam and Tilburg, who live in poverty. With the help of "popular Education", a method in which the needs and wishes of the target group are a central focus, they aim to break through the "Victim role" and to strengthen the individual is an important goal. In Katwijk there is the project "Wijk in Beweging", and they focus on families, with children that live at home. By using a life course approach they aim to make household aware of the cumulative and longitudinal influence of the risk and protective factors of health, which in turn increase their health and should lead to less

chronic conditions. Lastly, there is a project in Hoogezand/Sappemeer called “Blijvend gezond en sociaal actief”. People who live in this region have a vulnerable socio-economical position and as a result children grow up in disadvantaged neighborhoods. The project has 3 sub-projects, “Gezonde School”, “Welzijn op recept”, and “Meervoudige Waardecreatie” in which they focus on several target groups.

The five chosen projects have several similarities. They all aim to increase the (perceived) health of socially vulnerable families with a lower SES in order to decrease the health differences that exist between the two SES groups. Important in these cases is learning participants new skills, motivate them to make a change in their unhealthy behavior (e.g. smoking and alcohol use) and increase their social support and their social network. Another thing that the cases have in common is that the participants are the central focus in the projects. They are co-designer of the intervention and activities are designed based on their needs and wishes.

3.2.3 The data set

The dataset that was used for this analysis was data from the five projects of “Gezonde Toekomst Dichterbij”. This data was collected by a group of researchers with the aim of setting up the project and evaluating the progress of the project. The overall aim of the projects was increasing the chances of socially vulnerable groups in The Netherlands.

The following data was collected by the researchers themselves.

1. Action plan

The cases all have an action plan, which is designed to gain funding for the project. This plan contains background information on the place in which the projects takes place, the societal relevance, and the reason why this project is designed. It also notes which needs of people in vulnerable families will be targeted, what the target group and their needs are, and how they will be involved in the project.

In the next chapter the course of action is mentioned including which goals want to be achieved, how the results will be assured, and how the results will be spread around other regions. The following chapter, called planning and organization, includes information about which activities will be employed, in which time frame, accompanied by clear goals, the structure of the project, the division of tasks and responsibilities, who are involved in the project and what their roles and expertise are. Next also PR and communication activities are mentioned, followed by the chapter of evaluation, that answers question about how the project will be evaluated and if pre/post measurement will be executed. To finish, the financial chapters provides an overview with all the costs of the intervention.

2. Effect arena.

Next to an action plan, each project has an effect arena. This is a meeting, before the start of the intervention, in which several stakeholders come together to discuss the project and the goals they aim to achieve. This data was collected by the stakeholders and brought in during the meeting. Each effect arena contained an overview of:

- The investors in the projects. Those who put money, resources, time and expertise into the project.
- What the projects aims to achieve and how they aim to achieve that (including the activities that will be executed),
- The direct and secondary effects that the projects aim to achieve
- The “incasseerders” of the project, which refers to those who benefit from the project.

3. Audits

Besides an action plan and an effect arena, each case also provided information with the help of an audit. This audit was a face-to-face group conversation with several stakeholders, sometimes including participants, of the project to talk about the progress of the project. Each audit was led by members of the Wageningen University, one who led the conversation, and one who took notes. All audits were tape recorded. Three audit reports were also accompanied by a timeline, in which the highs and the lows of the intervention were mapped.

Each finished audit report contained information regarding the organization (the composition, role division and experience with collaboration), the target group (are they involved in the organization and execution?), recruitment and reach (how is recruitment going, what work/what does not work?), the effects of the project (which effect are visible?), the context (which factors surrounding the project play a role?), conditions (which resources are crucial for success?), "assurance" (what is being done to make sure the project is secured?), research (how is the research developing?), learning moments (valuable lessons for own project or other project), and the question: how to continue from here?

4. Progress evaluation

Each case has three progress evaluation reports. These evaluation reports are made by the projects themselves and they take place approximately every half year. Each evaluation report contains a summary regarding several subjects: the activities during that period, a potential deviation of the original plan, the stakeholders involved, the participation of the target groups, working factors and obstruction factor, and evaluation methods. Besides that, there is room for other interesting marks regarding that project. The data of the projects will be used for a different purpose in this thesis. To investigate via which pathways the activities that are employed in the cases, aim to increase a social network/social support.

3.2.4 Data collection

Since this is a secondary analysis, the available data was used for a different purpose. The purpose of this data analysis was to use the available information to identify the characteristics of activities that are employed by the program that aim to increase a social network/social support.

All the available data was retrieved by the researcher on March 20th 2018. For each case, the action plan, the effect arena, the audit(s) and the progress evaluation reports were received. First the data was saved on the laptop and put in a separate file, which was only accessible by the researcher. A copy of the documents was saved on a USB stick. Anonymity of the data will be guaranteed by deleting all the names of potential participants.

3.2.5 Data abstraction

The secondary data analysis of the cases consisted of a similar approached as systematic literature review. Of all the cases, the available files were thoroughly read. First an overview of the baseline characteristics of the different cases was outlined. The aim of the project, the sample size, the duration of the intervention, the target group and the setting were listed.

With regards to the content of the projects, it was outlined which type of support and which network characteristics could be distinguished. If it was not explicitly mentioned which type of support was used, the researcher put her own label of support on it based on the description of the types of support in the theoretical framework. Furthermore the activities within the projects were analyzed. Especially, which activities were employed in the projects to aim an increase in social support and social network characteristics and whether these activities were effective or not.

Chapter 4: The results

This chapter will present the result of the two sub-questions. This chapter will start with the results from the literature review. After that, the results of the secondary data analysis will be presented.

Sub-question one: The literature review

The results of the literature study will be divided into different parts. In paragraph 4.1 the study characteristics will be presented to provide an overview of the different studies. Next, in paragraph 4.2, the network characteristics will be discussed. Paragraph 4.2.1 will look at the structural characteristics and paragraph 4.2.2 at the interactional characteristics. Paragraph 4.2.3 will look at the functional characteristics (providing social support).

4.1 Study characteristics

With regards to the characteristics of the studies (see table 4), the results showed that the studies all aimed to examine/test the effect of a social support intervention on several primary and secondary health outcomes. The aim was to test the social support intervention against usual care, or to test the social support intervention against another existing intervention. Furthermore, the age groups in the different studies all consisted of adults. They ranged from samples of 18 year old adults to samples targeting 65+ elderly.

The studies differed from each other with regards to the target group. The studies targeted, amongst others, people with diabetes (n=8), elderly (n=4) and women (n=4). Furthermore other target groups were people low on social support, smokers, veterans with depression, healthy married couples, undergraduates, and adults with an increased risk for cardiovascular disease.

The studies also differed when looking at sample size. The smallest sample that was used was 57, and the largest sample used was 700. Besides that, the studies differed with regards to duration, with the shortest intervention being four weeks and the longest intervention two years. More than half of the interventions (n=12) were shorter than six months. A few (n=4) interventions lasted between half a year and a year and there were six interventions lasting more than a year.

The countries in which the interventions took place varied between several countries in the world, with half of the studies taking place in The United States (n=11). Other countries where interventions took place were Canada (n=4), Australia (n=2), Ireland, Austria, England, Cameroon and China.

TABLE 4 STUDY CHARACTERISTICS.

Title and Author(s)	Aim of the study	Age + target group	Sample Size	Duration of the intervention	Country of study
1. Anthony & O'Brien (2002) **The effects of a group-based social support intervention on cardiovascular reactivity**	To improve on prior social support intervention, by specifically investigating the effect of social support on cardiovascular reactivity	Undergraduate students	57	4 weeks	U.S.
2. Assah et al. (2015) **Community-based peer support significantly improves metabolic control in people with Type 2 diabetes in Yaoundé, Cameroon**	To examine effectiveness of a community-based multilevel peer support intervention in addition to usual diabetes care.	Adults with poorly controlled type 2 diabetes (HbA >7%)	192	6 months	Cameroon
3. Barrera et al. (2002) **Do Internet-Based Support Interventions Change Perceptions of Social Support?: An Experimental Trial of Approaches for Supporting Diabetes Self-Management**	To determine if a computer-based intervention is successful in changing participants' perception of social support	Mature adults with type 2 diabetes.	160	3 months	U.S.
4. Goldman et al. (2014) **Support from hospital to home for elders: A randomized trial**	To examine if a peridischarge,nurse-led intervention decreased emergency department visits or readmissions among ethnically and linguistically diverse older patients admitted so a safety-net hospital	Hospitalized adults aged 55 or older with anticipated discharge to the community	700	6 months	U.S.
5. Holt-Lunstad, Birmingham & Light (2008). **Influence of a "warm touch" support enhancement intervention among married couples on ambulatory blood pressure, oxytocin, alpha amylase, and cortisol**	To investigate whether a support intervention (warm touch enhancement) influences physiological stress systems.	Healthy married couples.	68	4 weeks	U.S.
6. Krumholz et al. (2002). **Randomized trial of an Education and Support intervention to Prevent Readmission of Patients with Heart Failure**	To assess the effect on an education and support intervention on one-year readmission or mortality and costs of care for patients hospitalized with Heart Failure	Patients aged 50 years and over who met criteria for presence of heart failure.	88 patients	One year	U.S
7. Letourneau et al. (2015) ***Quasi-experimental evaluation of a telephone-based peer support intervention for maternal depression**	To evaluate the effect of telephone-based peer support on maternal depression and social support	Mothers with depression up to 24 month after delivery	64	12 weeks	Canada
8. Levine et al. (2016) **Preventing Postpartum smoking Relapse: A randomized clinical trial**	To evaluate the relative efficacy of two different approaches to prevent postpartum smoking relapse	Pregnant women, who recently quit smoking.	300	24 weeks	U.S.

Title and Author(s)	Aim of the study	Age + target group	Sample Size	Duration of the intervention	Country of study
9. Lugar et al. (2016) **Effects of a Home-Based and Volunteer-Administered Physical Training, Nutritional, and Social Support Program on Malnutrition and Frailty in Older Persons: A Randomized Controlled Trial**	To examine effect of a home-based and volunteer-administered physical training and nutritional intervention compared with a social support intervention on nutritional and frailty status	Pre-frail and frail adults aged 65 or older	80	12 weeks	Austria
10. Martin et al. (2011) **A Randomised Controlled Trial of a Social Support Intervention**	To develop and evaluate a new social support intervention which takes account of the stress-buffering and direct effect models	Adults who scored low on social support	81	10 weeks	Australia
11. May et al. (2016) **Randomized controlled trial of a social support ('buddy') intervention for smoking cessation**	To assess the effectiveness of including a social support intervention ('buddy system') in a group treatment program to aid smoking cessation	Smokers aged 18 or older	563	26 weeks	England
12. McEwen et al. (2017) **Effects of a Family-based Diabetes Intervention on Behavioral and Biological Outcomes for Mexican American Adults**	To investigate the effect of a family-based self-management support intervention for adults with type 2 diabetes	Adults with type 2 diabetes and their family members	157	12 weeks	U.S.
13. Neil Thomas et al. (2012) Health promotion in older Chinese: A 12-month cluster randomized controlled trial of pedometry and peer support	To assess the impact of pedometry and buddy support to increase physical activity	Chinese adults aged 60 or older	399	One year	China
14. Provencher et al. (2007) **Short-Term Effects of a "Health-At-Every-Size" Approach on Eating Behaviors and Appetite Ratings**	To assess the effects of a "health-at-every-size intervention on eating behavior and appetite ratings in premenopausal overweight woman	Premenopausal women with overweight or obesity	144	4 months	Canada
15. Riddel et al. (2016) **Cardiovascular risk outcome and program evaluation of a cluster randomised controlled trial of a community-based, lay peer led program for people with diabetes**	To evaluate the "real world" peer support program that aims to improve the control and management of type 2 diabetes	Adults with type 2 diabetes.	273	One year	Australia
16. Smith et al. (2016) **Peer support for patients with type 2 diabetes: Cluster randomized controlled trial**	To test the effectiveness of peer support for patients with type 2 diabetes	Patients with type 2 diabetes	395	Two years	Ireland

Title and Author(s)	Aim of the study	Age + target group	Sample Size	Duration of the intervention	Country of study
17. Sullivan-Bolyai et al. (2010) **Social Support to Empower Parents (STEP) An Intervention for Parents of Young Children Newly Diagnosed With Type 1 Diabetes**	To test the efficacy of a social support intervention with parents of children <13 years newly diagnosed with type 1 diabetes	Mothers with a child that has type 1 diabetes (dad participated in a pilot study)	60	One year	U.S.
18. Tang et al. (2015) **Peer-led, empowerment-based approach to self-management efforts in diabetes (PLEASED): A randomized controlled trial in an African American community**	To compare a 3-month diabetes self-management education (DSME) program followed by a 12-month peer support intervention with a 3-month DSME program alone in terms of initial and sustained improvements in glycated hemoglobin	Community-dwelling African-American adults with type 2 diabetes	106	15 months	Canada
19. Valenstijn et al. (2015) **Augmenting ongoing depression care with a mutual peer support intervention versus self-help materials alone: A randomized trial**	To assess the impact of a telephone-based mutual peer-support intervention on depressive symptoms, functional status, QoL, and recovery orientation for patients in ongoing depression treatment	Patients receiving ongoing depression treatment from the U.S. department of Veterans Affairs	443	24 weeks	U.S.
20. Verheijden et al. (2004) **Web-based targeted nutrition counselling and social support for patients at increased cardiovascular risk in general practice:**	To evaluate the impact of web-based nutrition counseling and social support on social support measures, anthropometry, blood pressure, and serum cholesterol in patients at increased cardiovascular risk	Patients with increased cardiovascular risk 40 years and older	146	8 months	Canada
21. Wilcox et al. (2011) **A randomized trial of a diet and exercise intervention for overweight and obese women from economically disadvantaged neighborhoods: Sisters Taking Action for Real Success (STARS)**	To test a culturally appropriate, group-based behavioral and social support intervention on body weight and waist circumference in women from financially disadvantaged neighborhoods	English speaking woman between 25-50 years who have a BMI of at least 25kg/m2.	155	24 weeks	U.S.
22. Frosch, Uy, Ochoa & Mangione (2011) **Evaluation of a behavior support intervention for patients with poorly controlled diabetes**	To evaluate the impact of a behavior support intervention in combination with telephone coaching	Patients with poorly controlled type 2 diabetes mellitus	201	6 months	U.S.

4.2 Network characteristics

A social network can be categorized into several dimensions. There are structural characteristics, interactional characteristics and functional characteristics (see table 5). This analysis will show, for each characteristic, which activities the projects employed to aim an increase in that characteristic. The analysis will also look whether these activities are effective in changing that characteristic.

TABLE 5 OVERVIEW OF THE NETWORK CHARACTERISTICS.

Structural characteristics	Interactional characteristics	Functional characteristic
"The range" **= Study 1 & 10** **None of the studies focused on changing "density"**	None of the studies focused on changing any of the interactional characteristics	**Informational support:** = All studies **Emotional support:** = All studies **Appraisal support:** = Study 1, 4, 5, 6, 8, 12, 14, 15, 16, 17, 18, 20, 22 **Instrumental support:** = study 1 & 21

4.2.1 Structural characteristics

Only a few studies aimed to increase the network size of the participants. This means that these studies focused on changing the characteristic "range", which refers to the number of direct contacts an individual has. No data has been found on the other structural characteristic "Density". Therefore this section will only provide data regarding the "range" of the network.

The Range (1)

There were two studies that aimed to change the range of a social network.

Study 1 aimed to change the "range" by discussing the beneficial effect of social support on stress and health through didactic presentations and discussions. During the session the importance of an increase in the size of one's social network was discussed, as well as the importance to engage in social activities. Furthermore homework assignment were given to the participants. This was done to further reinforce the social support concepts(1). The participants were instructed to further engage in new social activities and to solicit help from their social network. The assignment aimed to increase the participant's awareness of their social network and to increase the amount of activities in which the participant was involved(1). The results section did not report any information whether the network size of the participants was increased after receiving this information.

The other study, study 10 investigated whether a social support intervention was effective on several social support outcomes. This study also mentioned that they aimed to change the "range". This was done by providing a session of 90 minutes in a group format, with a maximum of 8 participants. The session was called "Developing social support- building networks and breaking barriers (10). No further information or details were provided. The results section mentioned that no significant differences were found for structural support. This structural support refers to the integration of an individual in one's social network and looks at social ties (10).

4.2.2 Interactional characteristics

No information regarding the change of any of the interactional characteristics was found. Therefore this section cannot provide results regarding the interactional characteristics.

4.2.3 Functional characteristics

The most important functional characteristic is the provision of social support. Therefore the analysis will look at the different types of social support in the next section. The main focus of the studies was increasing the amount of social support. The analysis will show, for each type of support, which activities are employed that aim to increase that type of support. The analysis will also look at whether some activities have proven to be more successful than others.

Informational support (1)

The first type of support is informational support. Informational support involves providing advice or information to an individual, which an individual can use to address a certain problem. Most studies have in common that the intervention consisted of providing information to the participants. Most often this was information regarding the subject of the intervention. How this information was provided, differed between studies.

Informational support provided on the computer

Study 3, which investigated whether an internet based intervention could change perceptions of support for diabetes patients, provided the participants with access to a computer. Here they could look up articles that concerned medical, nutritional, and lifestyle aspects regarding diabetes (3).

Although the results showed an increase in perceived support, it was not mentioned whether this was due to the informational support they received or due to another component of the intervention. So no data was provided regarding the effectiveness of this computer access.

Informational support provided during sessions

Informational support was also provided during the sessions, which were part of the intervention plan.

Another study, which also focused on diabetes, employed six educational sessions. In these sessions, a Nurse provided information about managing diabetes. They focused on improving glycemic control and on preventing complications, by looking at food, stress management and physical activity (12).

Furthermore, another diabetes study installed a trained peer supporter, who held nine meetings at a general practice. Each meeting had its own subject. For example, there was an introductory meeting, a meeting regarding blood sugar levels, and also a meeting regarding the intake of medication. Each meeting focused partly on the content, but also left room for discussion and to ask questions (16).

There were also studies that focused on a different subject like study four. This study investigated whether social support could decrease emergency department visits and readmission to the hospital. In this study a registered nurse provided disease-specific patient education. This education included symptom recognition, medication reconciliation and strategies to navigate the health systems. The verbal instructions were supplemented with written materials.

With regards to the effectiveness of these informational elements, no information can be provided, since the result section of the studies did not provide any data about informational support separately.

Informational support provided on the phone

Information was also provided through phone contact.

In study 12, a study on health promotion in older Chinese, the participants could contact the project leader in case they experienced any problems or required addition information regarding the intervention. This information was then provided to the participants on the phone (12).

In another study, that investigated a community-based peer program for people with diabetes, informational support was also provided through the phone. The method section stated that prior to the sessions, a phone call was made to the participants to remind them of the upcoming session (14).

In both studies no information was provided on whether this phone call support was effective in providing information or on increasing participation in the sessions.

Emotional support (2)

The second type of support is emotional support. Emotional support involves providing love trust and empathy to a person. Besides informational support, a large amount of studies also provided emotional support to their participants. How this type of social support was provided differed between studies.

Using a buddy system

Several studies used a buddy system to provide emotional support.

One study, regarding frailty and malnutrition in older persons, mentioned in the method section that the participants were visited by a buddy two times per week. This buddy could support the older person, by having a chat or show interest. Furthermore they could get out together and do a fun activity (9). The results showed that the provided social support alone resulted in improvements in nutritional status and frailty status. In the discussion it was mentioned that *"A buddy system can be an important element in the maintenance of several health behaviors" (9).*

Another study used a buddy system to help quite smoking. The method section mentioned that this buddy system was chosen as it is standard procedure in group clinics using withdrawal-oriented model, which was done here. During the second session of the intervention, the participants chose another participant to be their buddy. They swapped names and phone numbers, and arrange a time to make a call for the first time. No advice was provided on the content of the phone calls. They simply mentioned it was to provide support to each other. The results section showed that there was no significant benefit of this buddy system, however the data showed that there was an increase in the perception of social support. Members of the groups mentioned that they *"experienced a greater sense of having someone to turn to on their quit dates" (11).*

Emotional support provided during intervention sessions

As mentioned before, interventions contained sessions in which information was provided. Several of these sessions also enabled people to provide emotional support to each other.

Study 18, an intervention regarding diabetes self-management, provided intervention sessions in which participants were provided with the opportunity to share their feelings about their journey, but also their struggles. Furthermore, participants could talk about the challenges they faced regarding the self-management of diabetes (18).

In another study, participant were informed by the group leader that one of the purposes of the sessions was to provide social support to each other. This meant that the participants listened when others were talking, and they were also encouraged to share their own personal experience. Besides that, participants were also given a list of phone numbers of the other group members, so that they were also able to provide support to others outside of the group sessions (1).

With regards to the effectiveness of the provided support, no data has been found. No significant increase in social support was mentioned in comparison to the control group. Also no specific data regarding emotional support was available.

Emotional support provided through the internet

Emotional support was also provided through the internet.

As mentioned before, study 3 provided the participants with computer access to look up information regarding diabetes. This study also designed a forum, which participants could use to interact with others by posting messages. They could express their concerns and frustrations with regards to their day-to-day coping with diabetes. However, they could also talk about the successes they had achieved, so others could learn from this. Furthermore, the intervention also provided the opportunity to have real-time live chat discussions. Participants could ask questions, and also talk about their feelings (3).

With regards to the effectiveness, the results showed that participants in the social support only condition, experienced the greatest increase in perceived social support. However no data was provided on whether this could be attributed to the provision of emotional support or to other elements in the intervention.

Appraisal support (3)

The third type of support is appraisal support, this type of support involves providing information to an individual that is useful for their self-evaluation purposes. For example, providing constructive feedback or affirmation. This type of support was also provided in the interventions.

Appraisal support through feedback sessions

As mentioned before, a large amount of intervention contained sessions in which the participants participated. Besides providing informational or emotional support, these sessions also provided appraisal support.

In study six, which investigated the effective of social support on hospital readmission, patients were provided with knowledge regarding chronic illness. After that, the participants were supported in applying that knowledge. The support provided was designed to reinforce the information that was provided. They aimed to empower the participants in actively managing the domains of their chronic illness and seeking access to care. Furthermore they offered patients strategies to improve compliance, in case they were experiencing troubles (6).

The results showed that the intervention was highly effective in reducing readmission, and that the study extends previous work by evaluating the impact of education and support without medication management. However it was noted that the trial did not explicitly test the mechanisms of the intervention. So no data regarding the effectiveness of appraisal support was found.

In study 14, a peer led program for people with diabetes, several sessions were held. The main objective was to provide social support by the group itself. During the sessions, the food diaries were discussed. There was also a discussion in the group to facilitate the recognition of internal cues of hunger and satiety, as well as the identification of external influences. Other theme's that were discussed were enjoyment of physical activity and a healthy nutrition. Furthermore, acceptance of the own body, and the body image of others was discussed. Participants could tell their own stories and provided feedback to others (14).

The results showed that women in the intervention group presented a larger decrease in susceptibility to hunger and external hunger compared to the control group (14). However, no data was found on whether that decrease could be attributed to this element, or other elements in the intervention.

Another study that provided appraisal support was study 17. This was a study that investigated social support for parents, who had a child with diabetes. In this study, sessions were provided, in which the parent mentor came together with the participants. The parent mentor provided feedback and helped parents to identify and address the needs that were not met (e.g. problems with other children within the family). Furthermore, the parent mentor helped the mother to identify the existing source of support she already has within her own family and community. Accompanied by that was help to make more use of these support sources (17).

The results showed an increase in social support in both groups. However, no significant difference between the intervention group and the target group was found. Parent mentors were identified as helpful in giving advice on growth and development of the child, community agencies, and sleep- and eating related issues. It was also mentioned that parent mentors showed great interest and that mothers saw them as someone to whom they felt close to (17).

Appraisal support provided at home and by phone

Appraisal support could also be provided at home or by phone calls.

In study 12, which tested a family based diabetes intervention, participants received home visits and phone calls. During the informational group sessions, that were also held, SMART goals were developed. During the home visits these goals were evaluated and, if necessary, redefined. Furthermore, the home visits built on the knowledge and skills that were acquired during the group sessions, and they were tailored to the family context. The participants were also called once every week. The progress and barriers in meeting the goals was discussed during these phone calls. The participants were provided with feedback to help them overcome those barriers.

Instrumental support (4)

The last type of support is instrumental support. This type of support involves the provision of tangible aid and services, to directly assist someone who is in need of that. Only two studies mentioned providing instrumental support. These two studies provided very limited data.

There was one study that mentioned in the method section that they provided tangible support in their sessions. However, no example could be found that showed how this support was provided. Furthermore, nothing was mentioned regarding the effectiveness of this tangible support (1).

Lastly, the other article mentioned they provided instrumental support by making sure there was child-care available, and that participants could ask for transportation costs. This was done to increase participation. However no information was provided on how many participants made use of this type of support and whether this was proven to be effective in increasing participation (21).

Sub-question two: The secondary data analysis

The results of this secondary data analysis will answer the second sub-question of this thesis: *Which characteristics of addressing a change in a social network/social support used by the program "Gezonde Toekomst Dichterbij" can be identified?*

The background information of the projects will be presented in 4.1 to provide an overview of the project. After that, in 4.2, the network characteristics will be discussed. Paragraph 4.2.1 will look at the structural characteristics and paragraph 4.2.2 will look at the interactional characteristics. Paragraph 4.2.3 will look at the functional characteristics (providing social support).

4.1 Background information

All project have in common that they focus on socially vulnerable groups. Table 6 shows that project 1 focuses on multi- problem families, while project 3,4, and 5 focus on residents with a low SES. Project 2 focuses on families that deal with poverty. Another thing that the projects have in common is that they aim to increase the (perceived) health of these socially vulnerable groups. In the project plan of project 4, for example, it is stated that they aim to "increase the (perceived) health and health of all family members". Project 5 also stated in their project plan that they aimed to "increase and preserve the health and well-being of the residents".

The projects differ from each other on several characteristics. One of those characteristics is the size of the project (see table 6). In project 1, ten to twelve participants are active, while in project 3 around 39 participants are active. An even bigger project is project 5, in which both students and other citizens from the neighborhood are active, resulting in around 900+ participants in this project. There are also differences between projects with regards to intervention components (see table 6). Some projects focus on one target group, like project 1, which focuses on multi-problem families . Other projects, like project 3, focus on both families as well as youths (health promotion in primary schools, kindergarten and day-care). Furthermore, the last 3 projects, number 3,4 and 5 also focus on people in the surrounding neighborhood. These projects do not only design activities for the participating families in the workgroup, but they also design activities in which the whole neighborhood can participate.

TABLE 6 PROJECT CHARACTERISTICS.

Name of the project	*Aim of the project*	*Participants In the intervention*	*Duration of the intervention*	*The target group*	*The setting*
Project 1.	Improve lifestyle and perceived health of multi-problem families.	So far, 10-12 people participate in the intervention	Participation in the intervention is with a maximum of six months. Project runs from April 2016 until September 2019	Multi-problem families	Relative small intervention with an control group
Project 2.	To increase the "oplossingskracht" of vulnerable families by meeting each other To create a sustainable network of professionals around the families in poverty.	So far, 10-12 families active in the workgroup. Participation in activities varies per activity	Participation in project as long as they want Project runs from July 2016 until June 2020	Families and socially vulnerable families who deal with poverty.	Use of "meeting each other" to increase health of population
Project 3.	To increase the health and the network of Somalis And Afghanis people, and to make health organizations more involved and accessible to them.	Not clear. August 2017: around 39 people (incl. children) are active in 5 separate groups.	Participation in the project as long as they want. Project runs from January 2016 until May 2019	Somalis residents with a low SES Afghanis residents with a low SES	Focus on empowerment to increase health of population
Project 4.	To increase the (perceived) health and health behaviors of all family members by paying attention to the family as a whole and taking into account its psychosocial and societal context	Not clear. Participation in activities varies per activity	Participation in the project as long as they want. Project runs from June 2016 until December 2019	Families and low SES families, with children living at home, who experience one or more illnesses. Professionals	Focus on life-course approach to increase health of population
Project 5.	To increase and preserve the health and well-being of residents. Make care affordable. Strengthening and sustaining collaboration between citizens, volunteers and professionals.	Three schools (around 870 students) participate in "Gezonde School" November 2017: -30 people in "Welzijn op Recept" -113 requests on website in "Betrokken Bewoners"	Participation in the project as long as they want. Project runs from July 2016 until December 2019	Citizens and socially vulnerable families.	Focus on co-creation as the key to success.

4.2 Network characteristics

With regards to the network characteristics (see table 7), all projects have in common that they aim to increase the size of the network of the participants. Therefore all project focus on changing the structural characteristics "range". Furthermore, all project also aim to change the interactional characteristics "frequency" and "homogeneity". Besides that, project 3 is the only one that aims to change the characteristics "dispersion", while project 5 the only one who aims to change the characteristics "directedness". No data has been found on the characteristics "density", "durability", "content" and "intensity". With regards to type of social support (see table 7), all projects have in common that they focus on the same types of social support. All projects tried to incorporate activities that aim to increase informational support, emotional support and appraisal support. There is only one project that also aims to increase instrumental support, and that is project 5.

TABLE 7 OVERVIEW OF THE NETWORK CHARACTERISTICS.

Name of project	Type of support (functional characteristic)	Other Network characteristics	Components of the intervention	Employed activities in the intervention	Effectiveness*
Project 1.	-Informational support -Appraisal support -Emotional support	-structural characteristics: = *Range* -interactional characteristics: *= Frequency* *= Homogeneity*	1. teaching health skills through themed group courses 2.motivational interviewing through one-on-one counselling to change behavior 3.buddy system to increase network size and together work on different health goals.	-cooking together once per month. -Escape room for the youth. -going to the market in Apeldoorn. -walking group (preferably) once per week. -communication through website, flyers and a news-letter.	+ for "range" and informational support + for "range", "frequency" and emotional support
Project 2.	-informational support -emotional support -appraisal support	-Structural characteristics: *= range* Interactional characteristics: *= Frequency* *= Homogeneity*	Three separate components: 1.youth: focus on health promotion in primary schools, kindergarten, and day care 2.family: focus on families, workgroups for families to design and execute activities 3.professionals: To increase the network of professional around families.	- a poll, study days for schools, adjustments on schoolyards, workshop regarding "move norm". - regularly participating in workgroup, neighborhood meetings, Photo-voice, proposal writing to municipality, Recommendations to municipality, "beweegmakelaar", (organizing) flea market, "neighbour Day", designing a "trade shop". -network meetings, interviews with professionals, creation of network analysis tool + analysis, contact between families and formal networks.	Not applicable + for "range" and "frequency" + for informational support

Project 3.	-informational support -emotional support -appraisal support	-Structural characteristics: *= Range* -Interactional characteristics *= Frequency* *= Homogeneity*	1.Course for Community workers: *working with popular education.* 2.Community workers recruit their own target group within the community to design and execute activities for them. 3.Members of the work group design and execute their own plans, community workers facilitate the process.	-sports activities: walking, football, volleyball, swimming. -cooking, eating together, role playing, storytelling, making music. -workshop/ info meeting regarding self-chosen theme's. -women's day, boat ride, "slachtfeest", christmas celebrations.	+ for "range" + for "range" and emotional support + for informational support + for "range"
Project 4.	-informational support -emotional support -appraisal support	-structural characteristics: *= Range* Interactional characteristics: *= Frequency* *= Homogeneity*	Three components: 1.family on the move= designing and participating in activities. 2.Training professionals to work with life-course approach. 3.Making a life course plan with, and for families.	Weekly meetings, coffee mornings, info sessions, cooking lessons, crafting, summer carnival, Salsa/Tango lessons, adults physical activities. Life-course consortium, meetings, re-training professionals, training development. Compile developmental group, expanding network, working together on life-course planning.	+ for "range" +/- success depends on professional + for "range" Success depends on experience of professional
Project 5.	-informational support -appraisal support -emotional support -instrumental support	Structural characteristics: *= Range* -Interactional characteristics *= Directedness* *= Frequency* *= Homogeneity*	Three separate projects: -"Gezonde School" = health promotion for children. -"Welzijn op Recept"= attention for psychosocial problems and social isolation. -"Betrokken Bewoners" = activation and societal participation of vulnerable families.	Designing school health plans and year activity plans, train-the trainer course for school teams, "verdiepingsproject", action program "sporty, healthy school", extra movement opportunities, during/after school. Set up of workgroup, info evening for residents, "Grip and Glance" course for "Welzijnscoach" and volunteers, House visits, guidance with participation in activities or voluntary work. A digital platform from "WeHelpen", district service point, development of a social map, training volunteers, Opening of natural playground, info meetings for citizens, "wijkdiner", "burendag".	Not applicable + for "range" + for appraisal support + for "range" + for instrumental support

The analysis will now show, for each characteristics, which activities are employed that aim to change that characteristic, and whether this was successful. This will be done by comparing the different activities.

4.2.1 Structural characteristics

The projects all have in common that they focus on increasing the size of the network of the target group. This means that the projects focus on changing the characteristic "range", which refers to the number of direct contacts an individual has.

The range (1)

Focusing on the range is, for example, directly reflected in the aim of project 3, which aims to: "jointly create interventions and motivate people to participate to ultimately increase their health and their social network". Also the effect arena report of project 1 provided similar information regarding the size of the network by stating that the activities that are employed should lead to strengthening of the network of the participants. How the "range" of the network is increased differs per project. Several different elements will be outlined to show how the different projects aimed to increase the "range".

A buddy system

The project plan of project 1 mentions that the project incorporated a "buddy system". Here clients, families, or even children, who live in the same neighborhood, are being coupled up, so that the social network of these people can be strengthened.

For example in project 1, children can go outside together and play on the playground. The audit that was held mentioned that the participants enjoyed doing things with other people and sharing their stories

Participating in organized activities

Projects also employed several activities to increase the range of the network. Participants can join these activities and meet new people.

For example, in the interim report of project 1 it was mentioned that the project employed activities like a cooking class, in which participants cook and eat a heathy meal together once per month. Besides that, participants also did an escape room activity, developed a walking group, and went to the market together.

In the audit of the project, which was held together with some of the participants, it was reported that *"meeting others and sharing stories"* was positively valued. Due to the fact that the project only has a few participants so far, the participants received a lot of personal attention, which they valued. However they also noted that *"some outside activities could be a bit more exciting",* and that some activities could connect even better to what the target group is able to do and would like to do.

In project 2 also several activities are employed to increase the range of the network. These activities are designed for the whole neighborhood, since this project focuses on the whole neighborhood. These activities were found in the interim report.

An example of such an activity was the organization of a flea market. The first flea market was visited by 35 people. After the first flea market, people came together to evaluate what worked, and what could be improvement the next time. It showed that the PR could be improved. The second flea market was visited by 150 people. After the second flea market a script was made, which enabled the participants to execute the flea market more independently in the future. Furthermore an "burendag" [neighbours day] was organized. On this day, around 120 people came together to enjoy a game of dodgeball. Besides that, they could also enjoy some foods and drinks. The interim report mentioned that the participants were very enthusiastic, and really appreciated this day.

One of the interim reports mentioned that the project also organized a meeting with the target group to collect new ideas and wishes for activities. Unfortunately only 5 out of the 600 people that were invited showed up. In one of the interim reports, it was mentioned that the project team thinks that the target group is more interested in "doing things". This was also mentioned by the project leader in an interview, where it was mentioned that participants in the target group are more "do-ers" instead of "thinkers". The project team thinks that organizing meetings to talk about certain subjects does not appeal to the target group. This could inhibit the increase of the range, since this inhibits the opportunity for people to meet each other.

While several projects, like the ones mentioned above, organize activities with the help of other professionals, project 3 uses community workers to work with the target group. The plan of action explains that Community Workers (CW's) are people within the target group, who fulfil a key position in their community. Together with the target group, the CW's decide which activities are being organized. They also help the target group to execute several of these activities.

Several activities that are employed in this project focus on being physically active, like swimming, walking, or playing football. Other activities focus on cooking together, storytelling or role play. Furthermore, this project also uses music in their activities, which is not employed in the other projects. With the help of singing, the target group can express their daily struggles. By using role play and theatre also subjects that are seen as taboo in this religion are being discussed, however the audit report did mention that talking about problems in a plenary manner continues to be difficult.

Also in this project, the men and women participate separately from each other in Tilburg, which is being appreciated by the group. The activities show a lot of positive effects. The audit of the project reports that people gained more confidence in themselves, but also in others. The contact between the participants increased, but also the contact between the participants and the CW's. People are being more active and are coming out of their depression. The activities are seen as fun. People want to go outside more often and participate in activities. The last interim report mentioned that the enthusiasm of the participants is continuously growing. Participants feel that they can contribute to society again, with one of the participants saying: *"We now have the possibility again to do something. We can mean something for others in our community again".* This enthusiasm can have a positive influence on the range, since participants will participate in more activities if they experience it as positive.

Project 4 has also employed several activities in which participants could participate. The project aimed to apply the life-course approach into these activities.

Examples of activities were a summer carnival festival, weekly Salsa and Tango lessons, a physical activity for adults and a meal prepared by, and for the neighborhood. There was a lot of enthusiasm of children in the neighborhood for cooking activities. Furthermore enthusiasm of parents for activities, in which they had to work together with children.

Due to the fact that the project aims to implement the life-course approach into their activities, the project experiences difficulties. The interim report mentions that this approach requires knowledge and skills. Citizens in the neighborhood who volunteer lack this knowledge and skills. Extra education and support for volunteers is needed. This does not directly inhibit the increase of the range, but can have an impact on the effectiveness of the program, and thus the overall goal. Furthermore, the report also mentions that professionals are not always motivated to take part in the execution of activities (even though they said they would), so commitment to the project varies.

In an interview with the project leader, it was also mentioned that the preparation, and eventually coming to the execution of an activity requires a lot of time, which they did not expect beforehand. This could indicate a negative element for the increase of the range, since due to time, less activities can be organized. And these activities could have facilitated a meeting between individuals.

Participation in a Project group

Another way the projects aim to increase the size of the network is by using project groups. A project group often consist of participants from the target group and other stakeholders (e.g. professionals). These project groups come together during organized meetings, in which they think of, and develop, new activities. This means that some participants do not just participate in the organized activities, but they are also part of the development and execution of the activities.

The project group in project 2 consist of participating families, and is led by a coordinator. The effect arena of project 2 mentions that through these project groups new initiatives can be developed (bottom-up) and existing initiatives can be adapted. This project consist of two project groups. According to the project leader, one group is doing very well. They are really focused on how they can work together to create a safe, clean, and pleasant neighborhood. Together they walked through the neighborhood, took pictures, and send a letter with recommendations to the municipality. The municipality responded by adding changes to the neighborhood, by repainting a crossroads, adding flower baskets, and by making adjustments so a playground was more safe. Furthermore, they are now working with other partners in the neighborhood. Together they look at what the project group is already doing, what the other partners are doing, and what else they can do together.

On the other hand, the second project group in this project is not working so well according to an interview with the project leader. He mentioned that the people in this group are not used to working together in a format like this, and that the groups consist of people with different personalities. This group is, according to the project leader, better in executing tasks than at taking initiative and designing the steps to come to the execution of the tasks. According to the project leader, the success of the first group can be attributed to two women in that group, who are very motivated. This group is also better at taking initiative. Furthermore, another important factor for success is the coordinator of the group. According to the project leader and the coordinator of the second group, the coordinator of the first group has more experience with the job and with working with this target group. Therefore she is better able to motivate the group. The other coordinator mentioned that he/she struggles with finding the balance between what the group can do themselves (bottom-up) and what he/she should do as the coordinator of the group. This could indicate a negative element for the increase of the range, since less activities will be organized when the group is struggling, which leads to less opportunities for people to come together and meet each other.

Project 5, also incorporated project groups. The interim report stated that an active role of the target group is a key to a successful approach. Therefore it is important that the target group is not just participating in activities, but that they are also involved in the development and execution of the activities. For each new task/innovative idea there is a separate project group.

For example, there is a project group that consist of people in the neighborhood. Currently they are working on developing a plan to create a separate space in a park, where people can be physically activity. The plan is not yet executed. However, the interim report states that when the plan will be executed, the project will rely on the self-efficacy of the people in that neighborhood. So the target group is part of the execution. There was also another project group, consisting of children and parents. Together they were working on a plan to develop more opportunities for children to do sports and other physical activity at a school playground.

No data was found regarding the effectiveness of these separate workgroups. However, the project leader mentioned in an interview that often the more motivated people, who are already a member of a different association, are the ones who sign up for these tasks. The project still struggles to reach the people who need it the most.

"Digital" meeting

As mentioned before, the focus of the projects is on increasing the range of the network. So far, all activities that are mentioned are activities that are based on face-to-face interactions. However there is also one project, project 5, that aimed to bring people in contact with each other, by designing a website. This website was designed in collaboration with another organization. Thanks to this website, citizens who are in need of help, or citizens who want to offer their help, are better able to come in contact with each other. People could, for example, go to the website and ask for a buddy to work out with, or to cook with. So far, the website has reached 683 visitors. The interim report mentioned that several people have already been helped and that several opportunities to meet have taken place. Like in this example from the interim report:

"An organization made a few theatre tickets available for people, who do not leave the house that much. With the supply of help messages that were offered on the site, a few companions were found, who in turn gave these people a very nice afternoon".

Density (2)

The other structural characteristic is density. Density is a proportion, the proportion of people who could possibly know each other (all the links that could exist), in relation to the people who do actually know each other (the links that currently exist). Although the density might increase if the range increases, no information could be found on this characteristic. Therefore this results section cannot provide any results on density.

4.2.2 Interactional characteristics

With regards to the interactional characteristics of a social network, the projects have aimed to change the "directedness", "frequency", and "homogeneity".

Directedness (1)

Directedness refers to the reciprocity in a relationship. As mentioned before, project 5 instated both a digital platform (a website) and a neighborhood service center. Here, people could ask for help or provide their expertise to someone who needs help. As a thank you for receiving help, people dedicate part of their time by doing something in return. This short story from the interim report provides an example of how the website increases the directedness within a social network:

"A man with health problems and a very limited social network, lives in a small and expensive room. The man experiences loneliness and financial problems, which inhibits him to take part in fun activities. The general practitioner referred the man to the "welzijnscoach". Together they had several conversations at the practice. The "welzijnscoach" also posted a message on the website that was designed. Within a week, someone gave the man a free bike. Now the man has the ability to visits his two friends, who live in nearby villages. In return, the man regularly goes grocery shopping for elderly or other people in need. Within two months, with support from the neighborhood service point, a bank, and another organizations, the man received an addition on his payment. They also arranged a small apartment in which he could live".

Frequency (2)

Frequency refers to how many times an individual sees another person. As seen in the previous section about the "range" of the social network, the projects all employ different elements to increase the "range". All projects employ several activities to increase the size of the network, and therefore the frequency in all the project can also increase, since people who participate in these activities have the opportunity to see each other multiple times.

In project 4, for example, the target group can participate in a life-course consortium (similar to a project group). This means that they frequently have meetings with each other to come up with new activities and execute them. Furthermore, they can also participate in these activities. Both participating in a project group and participating in activities can increase the frequency between individuals, since they encounter each other multiple times.

In project 5, a commission of citizens designed a plan for a natural playground called Vos&Bos [Fox&woods]. They were helped by citizens and volunteers (parents and children), who helped with the development and construction. The results were amazing according to the interim report. Dozens of children and youth are now having fun on the playground each day. This activity can be seen as a structural activity, since it is not participating in an activity for one day, like a cooking class. People can decide for themselves how many times they want to go to the playground, and therefore can increase the frequency.

While these different activities can increase the frequency, no data has been found on whether participating in multiple activities as well as in project groups (also developing and executing the activity) results in more frequency, since it is not mentioned which people participate and if the same people participate in multiple activities and project groups.

Homogeneity (3)

Homogeneity refers to similarities between individuals on certain attributes. The projects all focus on socially vulnerable groups and employ activities to increase the social network of these groups. This results in activities in which people meet others who have similar attributes, like a similar educational background, or a similar income level. This has the opportunity to increase the homogeneity in a social network.

An example can be seen in project 3, which focuses on Somalis and Afghanis citizens with a low SES, who deal with poverty. This project employs several activities. Examples are workshop on a subject of choice, or playing football or volleyball. Here women and men participate separately. During participation in these activities, people with a similar background meet each other. This increases the homogeneity of their social network. Participating in activities with similar others enables the target group to talk with each about their problems (e.g. some women perceived stress, while other were in debt) and how to handle this. The audit report of the project mentioned that coming together, and talking with each other about the problems they were experiencing, was valued by the participants.

Other interactional characteristics

With regards to the other characteristics, the characteristics "content, "durability", "intensity", and "dispersion" are not explicitly mentioned in the data. These characteristics might also change if the "range" of the network changes, however no data was found on this.

4.2.3 Functional characteristics

The most important functional characteristic is the provision of social support. Therefore, the analysis will look at the different types of social support in this section. The analysis will show , for each type of social support, which activities are employed to aim an increase in that type of support. The analysis will also show if some activities have proven to be more successful than others. The main focus of the projects was on increasing the size of the network. This was explicitly mentioned. Providing social support is not explicitly mentioned, but is embedded in the activities that were employed in the project.

Informational support (1)

The first type of social support is informational support. Informational support involves providing advice or information to an individual, which an individual can use to address a certain problem. This type of support was, amongst other things, provided on a social map, a website, and during the employed activities.

Information provided through a social map and the internet

Several projects state that there is still a gap between the professional and the target group. The interim report from project 2, for example, states that there should be an increase in trust between the professionals and the target group. Therefore two projects, project 2 and 5, designed a social map. This social map aims to bridge the gap between the target group and the professional.

This map provides information on which organizations are active in the neighborhood. They also mentioned which problems these organizations treat, so that the target group knows where to go to in case they need help. No information regarding the effectiveness of these social maps has been mentioned. Furthermore, project 5 also designed a digital platform (website). This platform created the ability for people to meet each other, but is also created as an opportunity for people to look up, and ask for information. Project 5 also put the social map on their designed website.

Information provided through activities

Besides information on a website, also information was provided to the target group during participation in activities.

Project 1, for example, employed activities like a cooking class in which participants learned how to cook a heathy meal together once per month. This resulted in participants "being more aware of what they eat", and they appreciated the fact that they could share tips regarding healthy eating. Also in project 4, participants participated in activities that focused on healthy eating. Here, the target group could participate in a parent-child cooking class to receive information regarding healthy eating, since this is an important subject in the projects.

However not only information regarding healthy eating is provided. Also information about professionals was delivered.

Project 3, for example, aimed to provide information regarding professional organizations by talking face-to-face (compared to providing it on a website in projects 2 and 5). The interim report of the project states that, due to their background, the target group in this project has limited trust in professionals. By talking to them, the CW's aimed to convince the target group that the professionals in this country are not the same as in their country of origin, and that the professionals here can indeed be trusted and help them with certain problems. Furthermore, the CW's also referred the target group to these professionals when they themselves could not provide the information that was needed. Besides that, the male group in this project has organized and participated in an info evening. They invited a general practitioner from Somalia, who was there to answer questions the target group had regarding their health.

Emotional support (2)

The second type of support is emotional support. Emotional support involved providing love trust and empathy to a person. This type of support is provided through several elements. A few examples will be mentioned here. Emotional support can be provided by participating in activities, a course, or by the neighborhood service center.

Participating in activities

As mentioned before, project 1 has employed several activities in their project (e.g. an escape room or a walking group). Part of these activities is meeting other people and connecting with them. The audit report of the project states that the participants share stories with each other. This support is mentioned to be appreciated by the participants.

Project 3 uses elements, like music and storytelling, to talk about taboo subjects.

The people in the group can provide emotional support to each other by talking about these taboo subjects, but also about other problems the target group encounters in their daily life. This is helpful, since people value coming together and talk about these problems (being in debts, experiencing a lot stress). However, the audit report of the project states that trust within the group is needed to make it acceptable to talk about these kinds of problems.

A course

Project 5 also provided a course Grip&Glans [Grip&Shine].

In this course people could receive emotional support. By participating in activities, participants could get more in control of their own life. According to the project interim report, the group courses are of great value to citizens that need a little bit more time and help to get clear how they can get more control of their own life, and to also get clear which things they want to attack and change, to give their life a bit more flair.

Neighborhood service center

Also the Neighborhood service center that has been developed in project 5 is able to provide emotional support, next to providing informational support for the target group. This is an example of a request for informational support, that in turn led to emotional support.

"An old man posted a message asking for help to put holiday pictures on his USB stick. A volunteer responded and went to his house to help him. It turned out the man just lost his wife, and that she was the one who had arranged the holiday for him and his daughter. The volunteer and the man connected so well that they decided to arrange phone numbers, and now they regularly talk to each other".

Appraisal support (3)

The third type of support is appraisal support. This type of support involves providing information to an individual that is useful for the self-evaluation purposes of that individual. Also this type of support is provided within the projects. Appraisal support has been provided by a "welzijnscoach", but also by participants within the projects.

Support provided by the "Welzijnscoach"

Project 5 for example, stated in an interim report that they hired a "welzijnscoach" [welfare coach]. This person is trained to help people with psychosocial problems. Together with the patient, the "welzijnscoach" looks at several daytime activities to help the patient. Examples are, house visits by a buddy, and participation in fun activities. The interim report mentioned that the coach is really able to connect with the patients and that the coach is able to make the patients aware of their own talents and possibilities. Appointments with the "welzijnscoach" can be made at the reception of the general practitioner. It is reported that this is an important element for success. This short story provides an example of the success of the "welzijnscoach".

"An elderly husband is cognitively weak, has a new hip and painful knees. He has retired early. For a few years now he is sitting at home and watching television. His wife, also living at home, has several conditions, for which she has been admitted to the hospital a few times. The hospitals picks up signs of domestic violence, which turn out to be true. Through referral of the general practitioner, the couple comes in contact with the "welzijncoach". The coach proposes to look at suitable daytime activities for the both of them. The husband is very enthusiastic about the neighborhood center, so he decides to go there for 2.5 days a week. The wife is very happy, since now she has more time for herself and is able to rest more. They are not at each other's throats anymore, since they both do fun things, independently from each other. This means that they have something to tell each other again after a long day of being apart. They are less likely to hurt one another now".

Furthermore, project 2 also provides a good example of appraisal support.

Through participating in the project groups, participants are responsible for both the development and execution of an activity. The project leader mentions that it is very important to start with small activities. These small activities can result in quick success, which motivates the participants to keep going. It is also important to celebrate these small successes, because it gives the participants the feeling that they have achieved something on their own. The interim report of the project states that the success of one of the projects group provided them with a good vibe, because the participants felt that they approached the municipality with success.

Support provided by the participants

Appraisal support can also be provided by the participants themselves.

This can, for example, be seen in project 4. People responded very positively to the volunteers, who organized the "Burendag", and complimented them with their organization skills. A child gave his/her mother a compliment by saying: "Mom, I did not even know that you could do that".

Also in project 1, participants provided each other with appraisal support. As an activity, a walking group was developed. If possible, every week a few participants walk together. The audit reported that, during this walking group, the participants provided each other with tips on how to relax more. This was valued by the participants.

Instrumental support (4)

The fourth type of social support is instrumental support. This type of support involves the provision of tangible aid and services, to directly assist someone who needs that. The data shows that only one project, number 5, provides instrumental support in their project. Therefore project 5 is unique, since it provides all the four types of social support. It is not mentioned why other projects do not provide instrumental support.

The participants/volunteers within the project provide each other with instrumental support. This is done with the help of the digital platform (the website) and the neighborhood service center that was designed. These two elements have been mentioned before, since they also have the ability to increase the size of the social network, and to provide emotional and informational support. The digital platform and the neighborhood service center is available to people who need help. In return they can do other task to help others. The center is being run by citizens and volunteers. So far, the digital platform has already received 55 request for help, and 58 people have offered their help. The interim report of the project states that the platform and the service center are being positively valued.

An example of a success story (from the interim report) is mentioned below:

"A man, who receives a payment due to the fact that he is unable to work, wants to be more active and has a preference for working with greenery. A neighborhood center called "the Badde" is looking for a gardener to maintain the community garden, the greenery, and the square around the building. Through "WeHelpen" the man has come in contact with "de Badde". After an introductory meeting, the man immediately got to work. The man really feels at home in "the Badde". He sleeps a lot better at night, since he is doing something useful during the day. This spring he wants to involve the children, who come to the center, in working in the community garden. He is looking forward to it".

Chapter 5: Discussion and Conclusion

The first part of this chapter will summarize the aim and the results of both the review and the project analysis. Followed by that is paragraph 5.1, which will discuss the answers of the two sub-questions of this thesis. After that, in paragraph 5.2, the strengths and weaknesses of this thesis will be discussed. Paragraph 5.3 will provide recommendations for future research and practice. Lastly a short conclusion will end this chapter.

The aim of this thesis was to identify characteristics of interventions and projects that effectively address a change in a social network/social support. This was done by doing a systematic literature review and a secondary data analysis.

The results of the review showed that there was a large diversity in studies. The studies contained a variety of target groups and these studies also differed on duration. With regards to the country of origin, the review results showed that more than half of the studies came from the U.S. With regards to increasing a social network, the review results showed that a large amount of studies did not focus on increasing the social network of the participants. Increasing the size of the network was only mentioned in two studies, while the results from the projects showed that there was a large focus on increasing the social network. The projects focused on increasing the range, the frequency and the homogeneity of a social network. This project analysis showed that a few characteristics, like participating in activities and joining a project group, has the potential to increase the range and frequency of a social network. By focusing on one specific target group the homogeneity of the network also increases, due to the fact that more people with a similar background come in contact with each other. With regards to increasing the different types of social support, the results of both the review and the projects showed that emotional support and informational support were provided most often. The review showed that instrumental support was only mentioned in two studies and the results of the projects showed similar results, since instrumental support was only used in one project. Both the review and the projects provided no explanation on why instrumental support was used so little. Informational support was often provided by educating the target group on several different subjects, both in the review and the project analysis. This was most often done by a professional. The results of the review and the project analysis also showed that emotional support was often provided by other co-participants, by providing a listening ear. Participants enjoyed talking to others and sharing their own personal story. Although this thesis initially aimed to inventory the effects of different interventions on increasing social support, it was found that most of the included studies did not use social support as a an outcome measurement.

5.1 The Results

Increasing a social network.

To repeat, a social network contains the structural characteristics (range and density) and the interactional characteristics (content, directedness, durability, intensity, frequency, dispersion and homogeneity).

The results of the project analysis showed that an increase in the range of a social network could be achieved by designing several activities in which people have the opportunity to meet each other. Participating in fun activities, or help designing them by being part of a project group, provides the participants the opportunity to do something fun and to meet new people. They could exchange information or stories with each other. These results also showed that for an increase in the range, it was not relevant what kind of activity was organized. The fact that people could participate and do something was already valued as positive. This could enable them to increase the size of their network. Research has suggested that it is important to increase the range (size) of a network, since

less social relations make people feel lonely resulting in loneliness or social isolation (Cacioppo & Cacioppo, 2014). Research of Hawkley & Cacioppo (2010) showed that loneliness predicts increased morbidity and mortality. For example, loneliness has been associated with increased systolic blood pressure (Hawkley & Cacioppo, 2010). Therefore increasing the range of the network can be seen as an important element to increase the health of a target group.

The project analysis also provided results regarding a change in the frequency of contact between people in a social network. Frequency refers to the amount of times people see each other. By participating in several different organized activities people have the opportunity to meet each other more frequently. Also being part of a project group, that comes together several times per period, increases the frequency. It is important to also focus on the frequency of a social network, since it can have beneficial effects. The research of Kearnes et al. (2015) showed in their study that frequency of contact with family and immediate neighbors has the strongest association with loneliness and that more neighborly behavior may be important for preventing loneliness. Less frequent social contacts, combined with more feelings of loneliness, can also increase the risk of developing dementia according to the research of Kuiper et al. (2015). Furthermore, the frequency of interaction with friends has also been shown to have a positive association with happiness according to the studies of berry & Hansen (1996), and Camfield, Choudhury & Devine (2009).

In the end, the results showed that it is important to increase the size of the network. However, it is also important to increase the frequency of contact between people in that network, since it can be beneficial. Therefore it should be recommended to focus on increasing the size of the network, by bringing people together and by providing the opportunity to meet others, but to also make sure that those relationships become strong by increasing the frequency of contact between these people. When these two factors are combined, an intervention is more likely to achieve effectiveness for the target group. Lastly, while the results provide new insights in how a social network can be increased, it should be noted that both the components frequency and size have not been measured objectively. Therefore the results should be interpreted with some caution.

Increasing social support

To repeat, social support refers to informational support, emotional support, appraisal support and instrumental support. The results of the review and the project analysis showed that informational support was most often provided. This type of support is often provided by a health professional. This professional provides information to the target group regarding a specific subject of interest. For example, information regarding diabetes management, or information regarding the negative health effects of smoking. This is in line with research that showed that informational support for students is most often provided by the teacher, also a professional (Malecki & Demaray, 2003). The review showed that the provision of informational support is often accompanied by emotional support or appraisal support. For example, the participants receive information regarding diabetes self-management and during the intervention sessions that are set up, the participant have the opportunity to share their story with each other and talk about the received information. They can talk about their journey, their struggles, and receive feedback on how they are doing. Research of Thomas (2009) showed that the total amount of received social support can be a strong predictor for well-being. Therefore it can be good to combine different types of support to increase the total amount of support, since this shows promise for health and well-being. With regards to instrumental support, both the review results and the project analysis showed that this type of support is not provided that often. Only two review studies mentioned it shortly, but gave no explanation, and only one project incorporated activities (e.g. the neighborhood service center, in which people could ask for help or provide their help) to increase instrumental support. The results did no show why this type of support

was provided so little. Also the literature could not help explain why this type of support was provided so little.

While the results show that there are several types of social support and that there are several ways to provide these different types of support, it should be noted that the majority of the review studies and the projects could not conclude whether social support was indeed increased with the help of the activities that were set up. Both the review and the projects were not set up to measure whether social support was increased. The majority of the review studies and all the projects did not use social support as an outcome measurement. Instead, social support was most often used to increase or improve other outcome measurements related to the subject of interest. This result is in line with results from a literature review by Van Dam et al. (2016), who stated that social support interventions often measure the effect of an intervention on the well-being of the target group, and that only a few studies examine the outcome of social support, due to a lack of instruments to measure these concepts. Future research should incorporate a social support measurement to be able to draw conclusions on whether social support was indeed increased. Furthermore it is also recommended to make a distinction between the several types of support, since each type of support may have an independent effect on health and each type of support may produce a different outcome in the target group (Schaefer, Coyne & Lazarus, 1981). So by distinguishing between different types of support, an intervention is able to provide information on effective elements within the intervention, which can in turn be used when designing a new health promotion intervention or project.

Theoretical framework

With regards to the theoretical framework that was adopted in this thesis, the results showed that both the review studies and the projects did not use all of the characteristics of a social network as mentioned in the theoretical framework. The review focused more on providing social support, which are the functional characteristics of a social network. The projects, on the other hand, focused more on increasing the size and the frequency of the social network, which fall under the structural and the interactional characteristics of a social network. These results are in line with research from other authors who claim that health promotion programs lack a theoretical basis (Bauer et al., 2003; Whitehead, 2004; Whitehead, 2010). It is important to use theory, since the use of a theory can help explain why it is necessary to design an intervention (Raingruber, 2014). Furthermore, theories provide a map and a step-by-step explanation of what factors are important to take into consideration when designing, implementing and evaluating a health promotion program (Raingruber, 2014). This will give more power to an intervention and can contribute to better effectiveness of an intervention. Therefore this thesis recommends that future research makes use of theory or a theoretical framework when designing an intervention, to optimize both the foundation and the effectiveness of an intervention.

Use of professionals

The results from this thesis indicated another important element for effectively increasing a social network/social support. It became clear from the projects that working with professionals in executing and implementing activities is pivotal to successfully execute activities that aim to increase a social network/social support. The results of the projects showed that one of the project groups was working better together and also produced more input, due to the fact that this group was led by a more experienced project leader. It is important to make sure that the intervention makes use of professionals, since they can bring a wide range of expertise and skills into an intervention (Planas, 2008). This will help them to better work with the target group and gain more input from this group. Therefore this thesis recommends to make sure there is professional involvement in the design and execution of an intervention, since this can potentially increase the effectiveness of an intervention.

5.2 Strengths and limitations

This thesis can be seen as the first step in investigating effective elements to increase a social network/social support, which in turn can improve health and well-being. This thesis contains both strengths and limitations.

Strengths

This thesis has a few strengths. One of the strengths is that a systematic literature review was executed. A systematic review can give an overview of a large body of information (Petticrew & Roberts, 2008). This review provided a broad overview of the available literature regarding the existing social support/social network interventions. Furthermore, this review also contained a critical appraisal. A critical appraisal is the process of carefully and systematically examining research evidence to judge its trustworthiness. It helps to determine whether the research evidence is true and free of bias (Mhaskar et al., 2009). By deleting bad quality studies, this critical appraisal aimed to provide good quality studies in the review to ensures that the evidence is more reliable. Another strength was the secondary data analysis. This enabled the researcher to gain a large body of information in a short period of time. This saves time and money in comparison to conducting a new research (Boslaugh, 2007).

Limitations

This thesis also has several limitations. They are mostly with regards to missing information. With regards to the literature review, it can be reported that the search string was only used in two widely known databases, namely Web of science and Scopus. This thesis did not look at data regarding the topic that is available in the grey literature. As a consequences, interesting data might have been missed. Furthermore, the results of the review are based on 22 articles, which might be a relatively small sample to make clear statements. Besides that, there is also a chance at publication bias. It has been stated that research with non-significant results, are less likely to be published than statistically significant results. Publication bias constrains the efforts of research to assess the current state of knowledge on a particular subject (Dickersin, 1990; Franco, Malhotra & Simonovits, 2014). Assessing the current state regarding social support/social network interventions was the aim of the literature review. Therefore, it could be possible that interesting data could have been missed, due to the fact that the review is not able to detect unpublished articles. Lastly, there is also a disadvantage with regards to the secondary data analysis. While this type of analysis might be cost and time sufficient, the available data is not collected for the same research purpose as this thesis, which means that data, that could have been important for this thesis, could be missing (Boslaugh, 2007).

5.3 Recommendations for practice

This thesis has already made a few recommendations for future research. However, this thesis also wants to make some recommendations regarding future practices, meaning future health promotion interventions.

The first recommendation is regarding the design of a new social network/social support intervention. The results of both the review and the projects showed that a theoretical framework to increase a social network/social support was lacking. So when designing an intervention it is recommended to make use of a theory/theoretical framework. This will help identify what the key components of the intervention are (Raingruber, 2014). In this thesis the key components are social network/social support. With the help of this theoretical framework it is possible to distinguish between different network characteristics and different types of social support. After that, it is important to design activities that aim to increase that specific network characteristic or type of social support. This thesis, for example, showed that providing opportunities to meet others, and building a neighborhood

service center where people can ask for help and offer their help, are activities that have the ability to increase the size of the network and provide instrumental support. Lastly, it is important to evaluate the designed activities adequately. A theoretical model can also help with decisions regarding the evaluation, by helping to identify potential shortcomings or effective components of the intervention (Koepsell et al, 1992). This new information will then be useful to optimize effect in the design of a new health promotion intervention.

Another recommendation is regarding the timing of the intervention. The results of the project analysis mentioned information regarding the importance of the start of the intervention. In the literature it was found that health promotion strategies have the tendency to assume that people are totally blank and ready to be receptive to health promotion messages (Baum & Fisher, 2014). However, it can be stated that unhealthy behavior is not related to unawareness regarding healthy behavior, but due to several constraints in their life, and accumulations across their course of life, these people are often unable or unwilling to change their behavior (Gatrell, Popay & Thomas, 2004). The literature also shows that people are only able to work on health behavior when people have satisfied their basic needs like social contacts, autonomy and self-reliance (Acton & Malathum, 2000). Therefore this thesis recommends, before the start of the intervention, to do preliminary research on where the target groups is at the moment. So doing research regarding whether the target group is ready, which means when they are ready to make a change in their behavior and lifestyle. Then the intervention is more likely to be effective for the target group.

Lastly, based on the results of both the review and the project analysis, that showed that intervention are not always evaluated on all components in the intervention, this thesis wants to make a recommendation regarding the evaluation of a health promotion intervention/project. As mentioned before, a theoretical underpinning can also help with evaluation, but it is also important to do a process evaluation. A process evaluation can be seen as an essential part of testing and designing a complex intervention, which is an intervention that consist of multiple components, similar to the interventions used in this thesis (Moore et al., 2015). A process evaluation will help with investigate how the intervention was delivered to the target group. This can help provide information about the replication of the intervention in another setting (Carol et al., 2007; Montgomery et al., 2013). A process evaluation will also provide more confidence about drawing conclusions regarding the effectiveness, by assessing both the quality and quantity of what was delivered. In the end, understanding the causal assumption that underpin an intervention, and the evaluation of how an intervention works in practice, is vital in building an evidence base that can inform both practice and policy (Moore et al., 2015).

Conclusion

The aim of this thesis was to identify effective characteristics to increase a social network/social support. This was done by reviewing the literature on this topic and by analyzing several projects from the program “Gezonde Toekomst Dichterbij”.

In conclusion it can be stated that this thesis provides new insights on how to increase a social network, by designing interventions that provide fun activities for people, in which they can meet others on a regular basis. This can increase both the size of the network as well as the frequency of contact between people. These activities also enable people to provide each other with different types of social support. Both the review and project analysis also provided data regarding the lack of instruments to measure the concepts of a social network/social support adequately. Therefore, this thesis also showed that more research on this subject is needed, in order to optimize health promotion.

Reference list

Acton, G. J., & Malathum, P. (2000). Basic need status and health-promoting self-care behavior in adults. *Western Journal of Nursing Research*, *22*(7), 796-811.

Adler, N. E., & Ostrove, J. M. (1999). Socioeconomic status and health: what we know and what we don't. *Annals of the New York academy of Sciences*, *896*(1), 3-15.

Adler, N. E., & Snibbe, A. C. (2003). The role of psychosocial processes in explaining the gradient between socioeconomic status and health. *Current Directions in Psychological Science*, *12*(4), 119-123.

Anthony, J. L., & O'Brien, W. H. (2002). The effects of a group-based social support intervention on cardiovascular reactivity. *Small Group Research*, *33*(2), 155-180.

Assah, F. K., Atanga, E. N., Enoru, S., Sobngwi, E., & Mbanya, J. C. (2015). Community-based peer support significantly improves metabolic control in people with type 2 diabetes in Yaoundé, Cameroon. *Diabetic Medicine*, *32*(7), 886-889.

Asscher, J. J., & Paulussen-Hoogeboom, M. C. (2005). De invloed van protectieve en risicofactoren op de ontwikkeling en opvoeding van jonge kinderen. *Kind en adolescent*, *26*(1), 16-24.

Barrera, M., Glasgow, R. E., Mckay, H. G., Boles, S. M., & Feil, E. G. (2002). Do Internet-based support interventions change perceptions of social support?: An experimental trial of approaches for supporting diabetes self-management. *American Journal of community Psychology*, *30*(5), 637-654.

Bartelink, C., & Verheijden, E. (2015). *Wat werkt bij het versterken van het sociale netwerk van gezinnen?* Utrecht: Nederlands JeugdInstituut

Bauer, G., Davies, J. K., Pelikan, J., Noack, H., Broesskamp, U., & Hill, C. (2003). Advancing a theoretical model for public health and health promotion indicator development: proposal from the EUHPID consortium. *European Journal of Public Health*, *13*(suppl_3), 107-113.

Baum, F., & Fisher, M. (2014). Why behavioural health promotion endures despite its failure to reduce health inequities. *Sociology of Health & Illness*, *36*(2), 213-225.

Berkman, L. F., & Glass, T. (2000). Social integration, social networks, social support, and health. In L, F. Berkman, & I. Kawachi (Eds.), *Social epidemiology* (pp.137-173). New York: Oxford university press.

Berry, D. S., & Hansen, J. S. (1996). Positive affect, negative affect, and social interaction. *Journal of Personality and Social Psychology*, *71*(4), 796-809

Brand, E. F., Lakey, B., & Berman, S. (1995). A preventive, psychoeducational approach to increase perceived social support. *American Journal of Community Psychology*, *23*(1), 117-135.

Cacioppo, J. T., & Cacioppo, S. (2014). Social relationships and health: The toxic effects of perceived social isolation. *Social and Personality Psychology Compass*, *8*(2), 58-72.

Camfield, L., Choudhury, K., & Devine, J. (2009). Well-being, happiness and why relationships matter: Evidence from Bangladesh. *Journal of Happiness Studies*, *10*(1), 71-91.

Carroll, C., Patterson, M., Wood, S., Booth, A., Rick, J., & Balain, S. (2007). A conceptual framework for implementation fidelity. *Implementation Science*, *2*(1), 40.

CBS. (2016). Gezonde levensverwachting; Inkomensklasse. Retrieved November 16, 2017, from http://statline.cbs.nl/Statweb/publication/?VW=T&DM=SLNL&PA=80298ned&D1=1-5&D2=a&D3=0,6,14&D4=a&D5=0&D6=l&HD=180607-0904&HDR=T&STB=G1,G2,G3,G4,G5

Cohen, S. (2004). Social relationships and health. *American Psychologist*, *59*(8), 676.

Dickersin, K. (1990). The existence of publication bias and risk factors for its occurrence. *The Journal of the American Medical Association*, *263*(10), 1385-1389.

Eckenrode, J., & Wethington, E. (1990). The process and outcome of mobilizing social support. *Personal Relationships and Social Support*, 83-103.

Franco, A., Malhotra, N., & Simonovits, G. (2014). Publication bias in the social sciences: Unlocking the file drawer. *Science Magazine*, *345*(6203), 1502-1505.

Frosch, D. L., Uy, V., Ochoa, S., & Mangione, C. M. (2011). Evaluation of a behavior support intervention for patients with poorly controlled diabetes. *Archives of Internal Medicine*, *171*(22).

Gallo, L. C. (2009). The Reserve Capacity Model as a framework for understanding psychosocial factors in health disparities. *Applied Psychology: Health and Well-Being*, *1*(1), 62-72.

Gallo, L. C., & Matthews, K. A. (2003). Understanding the association between socioeconomic status and physical health: do negative emotions play a role?. *Psychological Bulletin*, *129*(1), 10.

Gallo, L. C., de los Monteros, K. E., & Shivpuri, S. (2009). Socioeconomic status and health: what is the role of reserve capacity?. *Current Directions in Psychological Science*, *18*(5), 269-274.

Gartner, A. J., & Riessman, F. (1982). Self-help and mental health. *Psychiatric Services*, *33*(8), 631-635.

Gatrell, A. C., Popay, J., & Thomas, C. (2004). Mapping the determinants of health inequalities in social space: can Bourdieu help us?. *Health & place*, *10*(3), 245-257.

Goldman, L. E., Sarkar, U., Kessell, E., Guzman, D., Schneidermann, M., Pierluissi, E., Walter, B., Vittinghoff, E., Critchfield, J., & Kushel, M. (2014). Support from hospital to home for elders: a randomized trial. *Annals of Internal Medicine*, *161*(7), 472-481.

Green, H. E. (2014). Use of theoretical and conceptual frameworks in qualitative research. *Nurse Researcher (2014+)*, *21*(6), 34.

Guz, A. N., & Rushchitsky, J. J. (2009). Scopus: A system for the evaluation of scientific journals. *International Applied Mechanics, 45*(4), 351-362.

Hawkley, L., Thisted, R., Masi, C., & Cacciopo, J. (2010). Loneliness predicts increase blood pressure: 5-Year cross-lagged analyses in middle-aged and older adults. Psychology and Aging, 25(1), 132-141.

Heaney, C. A. (1991). Enhancing social support at the workplace: Assessing the effects of the caregiver support program. *Health Education Quarterly*, *18*(4), 477-494.

Heaney, C. A., & Israel, B. A. (2008). Social networks and social support. In K. Glanz, B, K. Rimer, & K. Viswanath (Eds.), *Health behavior and health education: Theory, Research, and Practice* (pp.189-210). San Francisco, CA: John Wiley & Sons.

Heaney, C. A., Price, R. H., & Rafferty, J. (1995). Increasing coping resources at work: A field experiment to increase social support, improve work team functioning, and enhance employee mental health. *Journal of Organizational Behavior*, *16*(4), 335-352.

Holt-Lunstad, J., Birmingham, W. A., & Light, K. C. (2008). Influence of a "warm touch" support enhancement intervention among married couples on ambulatory blood pressure, oxytocin, alpha amylase, and cortisol. *Psychosomatic Medicine*, *70*(9), 976-985.

House, J. S. (1981). *Work stress and social support*. Reading, MA: Addison-Wesley

House, J. S., Kessler, R. C., & Herzog, A. R. (1990). Age, socioeconomic status, and health. *The Milbank Quarterly*, *68*(3), 383-411.

Huber, M., Knottnerus, J. A., Green, L., Van Der Horst, H., Jadad, A. R., Kromhout, D., . . . Smid, H. (2011). How should we define health?. *British Medical Journal*, *343*.

Israel, B. A. (1982). Social networks and health status: Linking theory, research, and practice. *Patient counselling and health education*, *4*(2), 65-79.

Kearns, A., Whitley, E., Tannahill, C., & Ellaway, A. (2015). Loneliness, social relations and health and well-being in deprived communities. *Psychology, Health & Medicine*, *20*(3), 332-344.

Knoops, K., & van den Brakel, M. (2010). Rijke mensen leven lang en gezond. *Tijdschrift voor Gezondheidswetenschappen*, *88*(1), 17-24.

Koepsell, T. D., Wagner, E. H., Cheadle, A. C., Patrick, D. L., Martin, D. C., Diehr, P. H., . . . Dey, L. J. (1992). Selected methodological issues in evaluating community-based health promotion and disease prevention programs. *Annual review of public health*, *13*(1), 31-57.

Krumholz, H. M., Amatruda, J., Smith, G. L., Mattera, J. A., Roumanis, S. A., Radford, M. J., & Vaccarino, V. (2002). Randomized trial of an education and support intervention to prevent readmission of patients with heart failure. *Journal of the American College of Cardiology*, *39*(1), 83-89.

Kuiper, J. S., Zuidersma, M., Oude Voshaar, R. C., Zuidema, S. U., Van Den Heuvel, E. R., Stolk, R. P., & Smidt, N. (2015). Social relationships and risk of dementia: a systematic review and meta-analysis of longitudinal cohort studies. *Ageing Research Reviews*, *22*, 39-57.

Leon, A. C., Davis, L. L., & Kraemer, H. C. (2011). The role and interpretation of pilot studies in clinical research. *Journal of Psychiatric Research*, *45*(5), 626-629.

Letourneau, N., Secco, L., Colpitts, J., Aldous, S., Stewart, M., & Dennis, C. L. (2015). Quasi-experimental evaluation of a telephone-based peer support intervention for maternal depression. *Journal of Advanced Nursing*, *71*(7), 1587-1599.

Levine, M. D., Cheng, Y., Marcus, M. D., Kalarchian, M. A., & Emery, R. L. (2016). Preventing postpartum smoking relapse: a randomized clinical trial. *JAMA Internal Medicine*, *176*(4), 443-452.

Levine, M. D., Marcus, M. D., Kalarchian, M. A., & Cheng, Y. (2013). Strategies to Avoid Returning to Smoking (STARTS): A randomized controlled trial of postpartum smoking relapse prevention interventions. *Contemporary Clinical Trials*, *36*(2), 565-573.

Lin, N., Ensel, W. M., Simeone, R. S., & Kuo, W. (1979). Social support, stressful life events, and illness: A model and an empirical test. *Journal of Health and Social Behavior*, *20*(2), 108-119.

Luger, E., Dorner, T. E., Haider, S., Kapan, A., Lackinger, C., & Schindler, K. (2016). Effects of a home-based and volunteer-administered physical training, nutritional, and social support program on malnutrition and frailty in older persons: a randomized controlled trial. *Journal of the American Medical Directors Association*, *17*(7), 671.e9-671.e16

Mackenbach, J. P. (1992). Socio-economic health differences in the Netherlands: a review of recent empirical findings. *Social science & medicine*, *34*(3), 213-226.

Mackenbach, J. P., & Stronks, K. (2002). A strategy for tackling health inequalities in the Netherlands. *British Medical Journal*, *325*(7371), 1029-1032

Mackenbach, J. P., Kunst, A. E., Cavelaars, A. E., Groenhof, F., Geurts, J. J., & EU Working Group on Socioeconomic Inequalities in Health. (1997). Socioeconomic inequalities in morbidity and mortality in western Europe. *The Lancet, 349*(9066), 1655-1659.

Mackenbach, J. P., Meerding, W. J., & Kunst, A. E. (2011). Economic costs of health inequalities in the European Union. *Journal of Epidemiology & Community Health*, *65*(5), 412-419.

Mackenbach, J. P., Stirbu, I., Roskam, A.-J. R., Schaap, M. M., Menvielle, G., Leinsalu, M., & Kunst, A. E. (2008). Socioeconomic inequalities in health in 22 European countries. *New England Journal of Medicine*, *358*(23), 2468-2481.

Malecki, C. K., & Demaray, M. K. (2003). What type of support do they need? Investigating student adjustment as related to emotional, informational, appraisal, and instrumental support. *School Psychology Quarterly*, *18*(3), 231-252

Martin, P. R., Reece, J., Lauder, S., & McClelland, A. (2011). A randomised controlled trial of a social support intervention. *Applied Psychology: Health and Well-Being*, *3*(1), 44-65.

May, S., West, R., Hajek, P., McEwen, A., & McRobbie, H. (2006). Randomized controlled trial of a social support ('buddy') intervention for smoking cessation. *Patient Education and Counseling*, *64*, 235-241.

McEwen, M. M., Pasvogel, A., Murdaugh, C., & Hepworth, J. (2017). Effects of a Family-based Diabetes intervention on behavioral and biological outcomes for mexican american adults. *The Diabetes Educator*, *43*(3), 272-285.

McLeroy, K. R., Bibeau, D., Steckler, A., & Glanz, K. (1988). An Ecological Perspective on Health Promotion Programs. *Health Education Quarterly*, *15*(4), 351-377.

Mhaskar, R., Emmanuel, P., Mishra, S., Patel, S., Naik, E., & Kumar, A. (2009). Critical appraisal skills are essential to informed decision-making. *Indian Journal of Sexually Transmitted Diseases*, *30*(2), 112.

Ministerie van Volksgezondheid, Welzijn en Sport. (2015). Landelijke nota gezondheidsbeleid 2016-2019. Retrieved November 30, 2017, from: https://www.kenniscentrumsport.nl/publicatie/?is-continuering-van-het-gezondheidsbeleid genoeg&kb_id=16636&kb_q=Is%20continuering%20van%20het%20gezondheidsbeleid%20genoeg?

Montgomery, P., Underhill, K., Gardner, F., Operario, D., & Mayo-Wilson, E. (2013). The Oxford Implementation Index: a new tool for incorporating implementation data into systematic reviews and meta-analyses. *Journal of Clinical Epidemiology*, *66*(8), 874-882.

Mutsaers, K., & Berg, T. (2010). *Risicofactoren en beschermende factoren voor kindermishandeling.* Utrecht: Nederlands Jeugdinstituut.

Neil Thomas, G., Macfarlane, D. J., Guo, B., Cheung, B. M., McGhee, S. M., Chou, K. L., . . . Tomlinson, B. (2012). Health promotion in older Chinese: A 12-month cluster randomized controlled trial of pedometry and peer support. *Medicine and science in sports and exercise*, *44*(6), 1157-1166

Newacheck, P. W., Butler, L. H., Harper, A. K., Piontkowski, D. L., & Franks, P. E. (1980). Income and illness. *Medical care*, *18*(12), 1165-1176.

Pappas, G., Queen, S., Hadden, W., & Fisher, G. (1993). The increasing disparity in mortality between socioeconomic groups in the United States, 1960 and 1986. *New England journal of medicine*, *329*(2), 103-109.

Petticrew, M., & Roberts, H. (2008). *Systematic reviews in the social sciences: A practical guide*. Malden, MA: Blackwell.

Pharos (2014). *Factsheet: Sociaaleconomische Gezondheidsverschillen (segv).* Retrieved November 21, 2017, from http://www.pharos.nl/documents/doc/factsheet_sociaal_economische_gezondheidsverschillen.pdf

Planas, L. G. (2008). Intervention design, implementation, and evaluation. *American Journal of Health-System Pharmacy*, *65*(19), 1854-1863.

Provencher, V., Bégin, C., Tremblay, A., Mongeau, L., Boivin, S., & Lemieux, S. (2007). Short-term effects of a "Health-At-Every-Size" approach on eating behaviors and appetite ratings. *Obesity*, *15*(4), 957-966.

Raingruber, B. (2014). Health promotion theories. *Contemporary Health Promotion in Nursing Practice*, *53*, 53-94.

Riddell, M. A., Dunbar, J. A., Absetz, P., Wolfe, R., Li, H., Brand, M., Aziz, Z., & Oldenburg, B. (2016). Cardiovascular risk outcome and program evaluation of a cluster randomised controlled trial of a community-based, lay peer led program for people with diabetes. *BMC Public Health*, *16*(1), 864.

Rosenstock, I. M. (1966). Why people use health services. *The Milbank Memorial Fund Quarterly*, *44*(3), 94-127.

Ross, C. E., & Wu, C. L. (1995). The links between education and health. *American Sociological Review*, *60*(5), 719-745.

Schaefer, C., Coyne, J. C., & Lazarus, R. S. (1981). The health-related functions of social support. *Journal of behavioral medicine*, *4*(4), 381-406.

Smith, S. M., Paul, G., Kelly, A., Whitford, D. L., O'Shea, E., & O'Dowd, T. (2011). Peer support for patients with type 2 diabetes: cluster randomised controlled trial. *Britisch Medical Journal*, *342*, d715.

Sullivan-Bolyai, S., Bova, C., Leung, K., Trudeau, A., Lee, M., & Gruppuso, P. (2010). Social Support to Empower Parents (STEP). *The Diabetes Educator*, *36*(1), 88-97.

Syme, S. L., & Berkman, L. F. (1976). Social class, susceptibility and sickness. *American journal of epidemiology*, *104*(1), 1-8.

Tang, T. S., Funnell, M. M., Sinco, B., Spencer, M. S., & Heisler, M. (2015). Peer-led, empowerment-based approach to self-management efforts in diabetes (PLEASED): a randomized controlled trial in an African American community. *The Annals of Family Medicine*, *13*(Suppl 1), S27-S35.

The Joanna Briggs Institute. (2017). About us. Retrieved December 11, 2017, from: http://joannabriggs.org/about.html/

Thomas, P. A. (2009). Is it better to give or to receive? Social support and the well-being of older adults. *Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *65*(3), 351-357.

Uchino, B. N. (2006). Social support and health: a review of physiological processes potentially underlying links to disease outcomes. *Journal of behavioral medicine*, *29*(4), 377-387.

Valenstein, M., Pfeiffer, P. N., Brandfon, S., Walters, H., Ganoczy, D., Kim, H. M., Cohen, J. L., Benn-Burton, W., Carroll, E., Henry, J., Garcia, E., Risk, B., Kales, H. C., Piette, J. D., & Heisler, M. (2015). Augmenting ongoing depression care with a mutual peer support intervention versus self-help materials alone: A randomized trial. *Psychiatric Services*, *67*(2), 236-239.

Verheijden, M., Bakx, J. C., Akkermans, R., Van Den Hoogen, H., Godwin, N. M., Rosser, W., . . . Van Weel, C. (2004). Web-based targeted nutrition counselling and social support for patients at increased cardiovascular risk in general practice: randomized controlled trial. *Journal of Medical Internet Research*, *6*(4).

Whitehead, D. (2004). Health promotion and health education: advancing the concepts. *Journal of Advanced Nursing*, *47*(3), 311-320.

Whitehead, D. (2010). Health promotion in nursing: a Derridean discourse analysis. *Health promotion international*, *26*(1), 117-127.

Wilcox, S., Sharpe, P. A., Parra-Medina, D., Granner, M., & Hutto, B. (2011). A randomized trial of a diet and exercise intervention for overweight and obese women from economically disadvantaged neighborhoods: Sisters Taking Action for Real Success (STARS). *Contemporary Clinical Trials*, *32*(6), 931-945.

Williams, D. R. (1990). Socioeconomic differentials in health: A review and redirection. *Social Psychology Quarterly*, *53*(2), 81-99.

Wing, R. R., & Jeffery, R. W. (1999). Benefits of recruiting participants with friends and increasing social support for weight loss and maintenance. *Journal of Consulting and Clinical Psychology*, *67*(1), 132-138.

Winkleby, M. A., Jatulis, D. E., Frank, E., & Fortmann, S. P. (1992). Socioeconomic status and health: how education, income, and occupation contribute to risk factors for cardiovascular disease. *American Journal of Public Health*, *82*(6), 816-820

Zhong, B. (2009). How to calculate sample size in randomized controlled trial?. *Journal of Thoracic Disease*, *1*(1), 51-54