Loneliness is a subjective, negative experience of a discrepancy between the quality or quantity of one’s actual social relationships and one’s desired social relationships (De Jong Gierveld, 1984; Peplau & Perlman, 1982b). The quality of social relationships refers to the presence of meaningful social relationships. The quantity refers to the number of contacts that an individual has. Loneliness can have severe negative consequences, both mental and physical. These negative consequences have motivated researchers and health care practitioners to develop interventions to assist people who are not able to overcome loneliness by themselves. However, many interventions are not as effective as one would hope (Gardiner et al., 2018; Masi, Chen, Hawkley, & Cacioppo, 2011). An important reason for a lack of effect may be a limited understanding of the relation between loneliness and coping with loneliness. The four studies presented in this dissertation aim to advance thinking about coping with loneliness. The research question this dissertation therefore aims to answer is: how can older adults’ loneliness be alleviated by means of an intervention?

Coping refers to cognitive and behavioral ways in which a person tries to manage specific stressful (or unpleasant) situations. In line with previous research, we distinguish three specific loneliness coping strategies that focus on different goals: (1) improving the quality of relationships or increasing the number of relationships, (2) adapting standards for relationships, and (3) reducing the importance of the discrepancy. Deciding which loneliness coping strategy is most suitable at a given time or in a given situation is not an easy task. People may be unaware of various possibilities to cope with loneliness. Therefore, interventions aiming to educate lonely people about different loneliness coping strategies could be a fruitful way to improve loneliness interventions. To test this idea, an online loneliness intervention is developed in which the three loneliness coping strategies are central. This ‘online Friendship Enrichment Program’ (oFEP) educates participants in the possibility of using all three loneliness coping strategies.

Chapters 2, 4 and 5 of this dissertation focus on the oFEP. However, during the work on this dissertation and in related activities it became clear that a different approach to reflect on loneliness interventions could shed new light on
coping in loneliness interventions. Therefore, in Chapter 3 a new way of looking at elements of loneliness interventions is proposed, reflecting on various coping activities that are addressed in Chapter 2.

The online Friendship Enrichment program

The oFEP is an intervention that aims to reduce loneliness by equipping its participants with multiple coping strategies. The oFEP is an online adaptation of the Friendship Enrichment program (FEP), developed by Stevens and Albrecht (1995). The oFEP is a web-based self-guided individual course. In weekly lessons, participants are encouraged to expand and improve their friendships.

The oFEP is an enrichment course, which means that it is not about making friends online, but about using the tools from the course in daily life to invest in one’s own network. The participant expands and improves his or her network, becomes aware of his or her (friendship) expectations and adjusts them if necessary. The intervention consists of two blocks of five lessons, a full block, and a light (less intensive) block. Five topics are practiced in the full and the light block: making new contacts; maintaining contact and improving relationships; spending time alone; becoming a better friend; and expectations of friends and friendship. The full block consists of the original content developed for the oFEP and aims to activate participants by giving them assignments. The light block consists of content related to the topics with examples, but without assignments. The intention was to test whether the lesson content and assignments of the oFEP contribute to the alleviation of loneliness. In the lessons, textual explanations are given about the topic and examples are given.

Does stimulating various coping strategies alleviate loneliness? Results from an online Friendship Enrichment Program

Chapter 2 describes the study that aims to gain more insight in how engaging in different loneliness coping strategies alleviates loneliness. The central question is: Does stimulating various coping strategies alleviate loneliness? In this chapter, the three loneliness coping strategies in the oFEP are
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assessed: network development, adapting personal standards, and reducing the importance of the discrepancy between actual and desired relationships. Network development entails active maintenance of existing friendships and making new contacts. Adapting standards focuses on adapting one's own demands, desires, goals, or norms toward relationships (Stevens, 1989). Reducing the importance of the discrepancy means that feelings of loneliness are not altered, they persist, but their importance is reduced and attention is withdrawn from the problem (Fokkema & Van Tilburg, 2007).

Participants of the oFEP filled out questionnaires before, during and after participation in the intervention. Furthermore, a social diary is part of the intervention, which provides data as well. Analysis of the data shows that after 6 and 11 weeks and 1 year later, loneliness intensity decreases after baseline for both social and emotional loneliness. The decline is small in some periods. However, the analyses show no individual effects for the three different loneliness coping strategies. Finally, the results indicated that conducting the intervention’s assignments alleviates loneliness (as measured with a measure of ‘today’s loneliness’). Conducting the assignments seems beneficial to relieve feelings of loneliness on a particular day.

Overall, this study shows that the oFEP helps to alleviate loneliness. The average decline in social and emotional loneliness is significant, although the average loneliness scores at the follow-up observations indicate that many participants are still lonely after the course. Stimulating engagement in the intervention’s exercises is an essential element the oFEP, and when conducted successfully these are associated with a decline in loneliness. Results suggest that an online approach is a contribution to the already existing loneliness interventions.

Towards a more focused approach to loneliness: Seven active elements of loneliness interventions

Over the years, a wide range of loneliness interventions for older adults has been developed. The majority of these interventions are not very effective in reducing loneliness. To gain more insight into why many interventions do not
Summary

achieve the desired goal, we identified active elements that are used in interventions aiming to reduce loneliness. Active elements are aspects of an intervention that contribute to the achievement of the main goal of the intervention. Many interventions have been described as a whole, even though they consist of different components. Reducing loneliness is the main goal for all active elements identified in this study. To achieve this goal, one or more of the following subgoals must be met: to have a social network, to have a sense of belonging, to experience intimacy, or experience meaning. To develop a classification of active elements, a qualitative analysis of 119 loneliness interventions described in 22 reviews of interventions was carried out. The result is a classification of seven active elements:

   **Activities:** When people feel that they are meaningfully engaged in a productive activity or in entertainment, they derive satisfaction and pleasure from being busy, by which the feeling of loneliness becomes less important.

   **Meet-up:** People have the opportunity for social interactions or to engage in new social contacts, engage in (satisfactory) contacts with others and develop feelings of belonging. By forming new contacts, the social network is expanded.

   **Practical support:** An individual is supported in practical matters and therefore feels that he or she is embedded in a larger, caring context. If an individual knows that he or she can (easily) ask for help, this contributes to the feeling that he or she is not alone.

   **Meaningful contact:** In meaningful contact, a bond of trust is created; such contact is regular and lasting contact with a person who cares enough to put time and energy into the relationship. The individual experiences a sense of understanding that another person is there for him or her.

   **Social skills:** An individual who enhances his or her social skills is more likely to engage in conversation and is more likely to be able to keep a conversation going, which makes interaction easier. He or she can build intimacy in relationships (e.g., by listening carefully and giving supportive reactions) and prevent and overcome problems within relationships.

   **Realistic expectations:** An individual with unrealistic expectations
about social relations can experience disappointment. This can lead to negative interpretations of the social behavior of others ("they don’t want me"), which makes it difficult for the individual to take the initiative to make new contacts and leads to a tendency to withdraw socially, which in turn leads to an increase in loneliness. Being able to adjust unrealistic expectations leads to gaining positive (learning) experiences in social situations and relationships.

Meaningful role: An individual who does something for others (in any form) feels that he or she is relevant, that he or she matters, and that he or she is part of a greater whole. Doing something for someone else or for society increases one’s self-confidence, which makes a person better capable of coping with his or her situation.

Most interventions combine multiple active elements. Some combinations of active elements occur often. By mapping out interventions based on separate components, the effectiveness of each element can be evaluated. By using a combination of active elements, the effectiveness of interventions might be increased.

Do resources and expectations play a role in the alleviation of loneliness?

In an attempt to increase understanding of how to reduce loneliness by means of an intervention, Chapter 4 examines two conditions that has received little attention so far: resources and expectations. We aim to gain insight in whether a loneliness intervention is more effective when a person has more resources (psychological, social and health related) to cope with their loneliness and have positive relationship expectations. Furthermore, we studied whether resources and expectations mutually reinforce each other.

We distinguish three categories of resources relevant for coping with loneliness: social resources, psychological resources, and health resources. Resources enable a participant to take advantage of opportunities to improve the quality and quantity of his or her relationships. The second condition regards the expectations that people have towards the number or the quality of social relationships. High expectations motivate lonely people to keep trying to
improve their social relationships aiming to develop a situation that fits their own ideal regarding network size, quality, composition and functioning (Hall, 2014). Relationship expectations specify the benefits that people hope to derive from their social contacts. High expectations may motivate people to take action to make their situation meet their expectations.

Data were collected among eighty participants of the oFEP. The results of the analyses show that in the oFEP, a high baseline level of personal resources (psychological, social and health) and friendship expectations (related to fellowship and to status) did not contribute to the alleviation of loneliness assessed immediately after completion of the intervention. Potential explanations for this lack of findings are possible past disappointments in coping with loneliness. Furthermore, the expectations of participants might not have been high enough to motivate large investments in improving their situation. The null-result of the present study challenges researchers and intervention developers to gain more insight in how loneliness can be alleviated.

Attrition in an online loneliness intervention for adults aged 50 years and older: Survival analysis

In Chapter 5 the factors affecting attrition in the oFEP are studied. Online interventions can be as effective as in-person interventions. However, attrition in online intervention is high and potentially biases the results. Participants who drop out of the intervention do not benefit from the intervention optimally. Therefore, it is important to study which factors affect adherence to the oFEP. Data were collected from 352 participants who subscribed to the oFEP. Attrition is defined as not completing all 10 intervention lessons. All 10 lessons were completed by 82 participants (35%). We tested the effect of severity of loneliness, coping preference, activating content, and engagement on attrition by applying survival analysis. Results of the analysis show, among others, that people with a preference to actively cope with loneliness, who thus are more motivated to tackle the loneliness problem, stayed in the intervention longer. Participants who are more engaged with the intervention, meaning they participated in the lessons at
the intended pace and filled out diaries, are less likely to drop out of the OFEP. Severity of loneliness is not related to attrition.

These findings imply that it seems to be beneficial to pay attention to coping preference, stimulate more active coping and monitor engagement during the interventions. Future online loneliness interventions might try to lower attrition by stimulating active behavior, for example by offering a variety of exercises and an active approach toward participants with a slow pace in conducting intervention activities.

**Concluding remarks**

Combined, the findings in this dissertation show that it is possible to alleviate an individual’s loneliness by means of an intervention such as the OFEP: a broadly focused, self-guided, online program. The OFEP reached a large group of (lonely) participants and offered them knowledge of different loneliness coping strategies to equip them to take action on or reevaluate their situation. The lessons from the OFEP, combined with the identification of the active elements in loneliness interventions offer intervention developers and policy makers insight in the different options there are in combatting loneliness. We advise intervention developers and policy makers to look beyond merely facilitating meeting opportunities, as they will not be sufficient for all lonely individuals.

Intervention developers, policy makers and researchers should keep in mind that loneliness is not an easy problem to combat and that loneliness interventions are likely to benefit from a theoretical foundation and a focus on multiple active elements. Loneliness interventions may benefit from evaluation and reconsideration of which active elements are offered and should be offered. An intervention containing a single active element may not be sufficient to reduce loneliness. Further research into the effectiveness of the individual active elements and combinations of active elements is needed to improve loneliness interventions’ effectiveness.