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BY
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Dissertation submitted 1. July 2022

*"The social self is the civilized man.
It's what makes life worth living"*

(Durkheim, 2001, p. 101)

CV

Lærke Mai Bonde Andersen obtained a Bachelor of Science in Sociology in 2009 followed by a Master of Science in Sociology in 2011 from Aalborg University. During her master education, Lærke specialised in the field of Sociology of Health and Illness. Her master project was based on qualitative methods and explored how women who choose to have a baby by themselves understand and justify this choice.

Lærke has worked and gained solid experience and competences from teaching a variety of courses and supervising students. Before her PhD studies, she taught at the upper secondary education institutions VUC (Adult Education Centre) & HF (Higher Preparatory Examination) and at the Department of Sociology and Social Work at Aalborg University, Denmark. During her PhD study, she has given several lectures and supervised students at the master's programme in Public Health at Aalborg University.

In September 2017, Lærke enrolled as PhD student at the Department of Health Science and Technology and focussed on digital interventions as part of community services to support social relationships and mental health. This thesis is the culmination of her PhD work.

ENGLISH SUMMARY

Social relationships play a central role in people's mental health, and interventions that support people in developing, maintaining and engaging in rewarding relationships form a central part of interventions to promote mental health in several countries.

In Aalborg municipality (Denmark), a web-based citizen-to-citizen platform forms part of the municipality's strategy to promote belonging and mental health in the general population. A growing body of literature has explored the potential of digital technologies to support social relationships and mental health. Even so, further research is needed to determine how, to whom and under what circumstances these technologies may benefit as part of community services to promote the development of rewarding social relationships and mental health. This knowledge is central to the design of effective interventions and to avoid unintendedly causing harm.

The overall objective of this study is to provide an expanded theoretical and empirical basis to inform the development of digital interventions based on social relationships to promote mental health. At the centre of this, the study particularly seeks to contribute to the advancement of understanding of how, to whom and under what circumstances digital interventions may be used as part of community services to promote belonging and mental health.

Sub-study 1: *(Article 1) The social route to mental health – a systematic review and synthesis of theories linking social relationships to mental health* (Andersen, Rasmussen, Reavley, Bøggild, & Overgaard, 2021). In this study, a systematic review and synthesis of six middle-range theories linking social relationships to mental health was performed (ibid.). The aim was to explore key theoretical assumptions in order to explain 1) how social relationships influence mental health and 2) specific circumstances that distinguish beneficial social relationships from relationships that have either no effect or cause harm (ibid.). The study provided an overall theoretical roadmap illustrating the complex mechanisms linking social relationships to mental health, including the interplay of both individual and relational circumstances and the individual's subjective perceptions (ibid.). In relation to general and digital interventions, findings suggested that interventions based on social relationships and group memberships may have the potential for improving mental health in the population (ibid.). When considering digital technologies, the findings indicated both potential benefits and pitfalls of these tools (ibid.). The conclusion was that digital technologies may assist people in building new relationships or maintaining and/or strengthening existing ones; however, a focus on ensuring the content and quality of relationships in intervention design and development is important (ibid.).

Sub-study 2 *(Article 2) The role of social technologies in community care – A realist evaluation of a Danish web-based citizen-to-citizen platform adopted in community care to promote belonging and mental health* (Andersen, Reavley, Bøggild, & Overgaard, 2020). In this study, a realist evaluation of a web-based citizen-to-citizen platform used in community care in a Danish municipality to promote belonging and mental health was performed (ibid.). The study aimed to answer the questions of how, for whom and under what circumstances the platform worked to promote citizens' sense of belonging and mental health (ibid.). Regarding how the platform worked, three mechanisms were identified: a) by expanding users' access to social networks; b) by allowing the users to overcome barriers related to reaching out to new people in real life and c) by providing an improved starting point for identification of a relational match (ibid.). The study showed that both individual circumstances (e.g., needs for belonging) and relational circumstances (e.g., whether relationships were supportive) influenced whether these mechanisms resulted in improved sense of belonging and mental health (ibid.). The findings suggested that web-based platforms aimed at enabling citizens to locate friends and activity partners may potentially benefit interventions to promote mental health in the community (ibid.). Additionally, it indicated that people with previous relational difficulties and people with limited digital literacy may need support to benefit (ibid.).

Sub-study 3 *(Article 3) A web-based platform as means to promote belonging and mental health in vulnerable populations – a critical realist exploration* (Andersen, Thomsen, Reavley, Bøggild, & Overgaard, unpublished). This is a qualitative study based on critical realism performed with the aim of exploring the underlying social structures that influenced users' success with the web-based platform *Boblberg.dk* as well as the targeting of the platform to vulnerable groups (ibid.). The study found that the targeting of the platform to vulnerable groups was influenced by political, financial and public health interests as well as cultural beliefs (ibid.). For the users, getting responses from other users on the platform (i.e., succeeding with getting others to relate) by presenting oneself as an attractive person to relate to was important to success and required relatively complex skills (ibid.). Reflecting social inequalities, findings suggested that due to an intersection of stigmatized circumstances, some users , experienced structural challenges in using the platform to mobilise relationships with more privileged non-stigmatized users (ibid.). The findings suggested the importance of considering people's social context in intervention design and the potential support that some people in disadvantaged positions may need (ibid.).

In conclusion, the findings from this thesis showed that digital technologies such as the web-based platform *Boblberg.dk*, may function as helpful tools in community care services aimed at supporting relationships and mental health in a local community. Quality and content of connections and relationships facilitated through these tools are vital to their positive effects. Digital technologies introduce well-known and new risks that may cause interventions to miss their intended effects or

cause harm. The impact of such tools largely depends on citizens' ability to take advantage of opportunities provided to build new rewarding relationships. Citizens in disadvantaged positions, citizens with limited literacy and citizens with relational challenges may need particular support to benefit. A focus on supporting the quality of relationships and supporting citizens in need for support to benefit from these technologies may be valuable in intervention design and delivery to strengthen potential benefits.

DANSK RESUME

Sociale relationer spiller en afgørende rolle for menneskers mentale sundhed. Baseret herpå udgør interventioner, der understøtter mennesker i at udvikle, bibeholde og engagere sig i meningsfulde sociale relationer et vigtigt element i initiativer til mental sundhedsfremme i adskillige lande, herunder Danmark, hvor kampagnen 'ABC for Mental Sundhed' er et eksempel herpå (Hinrichsen et al., 2020).

I Aalborg Kommune anvendes en web-baseret borger-til-borger platform ved navn *Boblberg.dk* som en del af kommunens strategi til at understøtte borgernes muligheder, for at indgå i meningsfulde sociale fællesskaber samt styrke deres mentale sundhed. I løbet af de seneste ti år, har en voksende mængde forskning udforsket digitale teknologiers potentiale i forhold til at understøtte sociale relationer og mental sundhed. Der mangler imidlertid viden om, hvordan, for hvem og under hvilke betingelser disse teknologier gavner. Denne viden er central for udviklingen og leveringen af effektive interventioner, og for i størst muligt omfang at undgå at digitale interventioner gør mere skade end gavn.

Denne afhandlings overordnede formål var at bidrage til et udvidet teoretisk og empirisk fundament som basis for udviklingen af effektive digitale interventioner til understøttelse af sociale relationer og mental sundhed. Afhandlingen fokuserer særligt på at bidrage til at avancere forståelsen af hvordan, for hvem og under hvilke betingelser digitale teknologier kan anvendes i kommunale sundhedsfremmetilbud til at understøtte borgernes adgang til meningsfulde fællesskaber og styrke deres mentale sundhed. Afhandlingen består af tre forskellige delstudier.

Delstudie 1: *(Artikel 1): The social route to mental health – a systematic review and synthesis of theories linking social relationships to mental health* (Andersen et al., 2021). Dette studie er en systematisk gennemgang og syntese af seks teorier omhandlende forbindelsen mellem sociale relationer og mental sundhed. Studiet havde til formål at belyse spørgsmålene om 1) hvordan sociale relationer påvirker mental sundhed, og 2) hvilke omstændigheder, der adskiller gavnlige sociale relationer fra relationer, der ikke har nogen virkning eller som forårsager skade. Studiets resultater kaster lys over de forskellige måder, hvorpå sociale relationer påvirker menneskers mentale sundhed og illustrerer samtidig kompleksiteten, hvormed dette foregår. Studiet peger på, at kvaliteten af relationerne har afgørende betydning for deres virkning på mental sundhed. Nogle relationer gør mere skade end gavn. Relationer med positiv betydning er fortrinsvist støttende, positive, tætte og sunde relationer. Resultaterne understøtter potentialet af interventioner baseret på sociale relationer og gruppemedlemsskaber til fremme af befolkningens mentale sundhed, men peger på betydningen af at fokusere på at sikre kvaliteten og indholdet af relationerne i interventioners design og udvikling (Andersen et al., 2021).

Delstudie 2: *(Artikel 2) The role of social technologies in community care – A realist evaluation of a Danish web-based citizen-to-citizen platform adopted in community care to promote belonging and mental health* (Andersen et al., 2020). Dette studie er en realistisk evaluering af en webbaseret borger-til-borger platform, *Boblberg.dk,* som anvendes i Aalborg Kommune, til at understøtte borgernes adgang til sociale fællesskaber samt styrke deres mentale sundhed. Undersøgelsen havde til formål at belyse spørgsmålene om, hvordan, for hvem og under hvilke betingelser platformen bidrog til at understøtte borgernes sociale tilhørsforhold og mentale sundhed. Studiet identificerede tre forskellige mekanismer, hvorved platformen understøttede sine brugere i at opfylde deres sociale behov: a) ved at udvide deres adgang til sociale netværk, b) ved at understøtte dem i at overkomme barrierer relateret til at række ud efter andre, og c) ved at give dem et forbedret udgangspunkt i forhold til at identificere et relationelt match. Hvorvidt disse mekanismer resulterede i en øget oplevelse af socialt tilhørsforhold og mental sundhed var afhængig af både individuelle og relationelle omstændigheder. Resultaterne indikerede, at webbaserede platforme, der har til formål at forbedre borgernes muligheder for at lokalisere venner og aktivitetspartnere, kan tjene som nyttige værktøjer i interventioner til mental sundhedsfremme. Dog er det vigtigt at være opmærksom på, at mennesker med relationelle vanskeligheder og borgere med begrænsede digitale færdigheder kan have et særligt behov for støtte, for at realisere de sociale muligheder, som digitale teknologier giver (Andersen et al., 2020).

Delstudie 3: *(Artikel 3) A web-based platform as means to promote belonging and mental health in vulnerable populations – a critical realist exploration* (Andersen et al., unpublished). Dette studie er en kvalitativ undersøgelse baseret på kritisk realisme. Studiet havde til formål at identificere bagvedliggende sociale strukturer, der påvirkede brugernes succes med den web-baserede platform, *Boblberg.dk,* samt målretningen af portalen til særligt sårbare målgrupper. Studiet viste, at det at modtage svar fra andre brugere på platformen (at lykkes relationelt) var vigtigt, for at lykkes med platformen. Det blev hjulpet på vej af brugernes evner til at præsentere sig selv på platformen på en måde, der gav andre brugere oplevelsen af en person, de kunne tænke sig at være sammen med. Det indbefattede at brugerne var i stand til at balancere afsløringen af henholdsvis positiv og negativ information om dem selv, at de kunne matche efterspørgslen fra andre brugere på platformen, at de kunne kommunikere på en venlig måde, og at de kunne give en beskrivelse af dem selv, og det de ledte efter på platformen, som var grundigt nok til at give andre et mentalt billede af, hvem de var. Studiet pegede på, at intersektionaliteten af flere stigmatiserende omstændigheder kan påvirke brugernes muligheder for at gøre sig attraktive for mere privilegerede og ikke stigmatiserede brugere. Underliggende strukturer af sociale uligheder blev identificeret som en drivende faktor. Fundene fra studiet pegede på betydningen af at tage højde for menneskers sociale kontekst i interventioners design. Stigmatiserende omstændigheder kan forme forsøget på at indgå i nye relationer. Nogle sårbare grupper kan have brug for støtte for at opnå de tiltænkte fordele.

Baseret på fundene fra de tre artikler konkluderes, at digitale teknologier, som den web-baserede platform *Boblberg.dk,* kan fungere som hjælpsomme værktøjer i tiltag til understøttelse af borgernes sociale relationer og mentale sundhed. Kvaliteten og indholdet i relationerne er imidlertid centralt for relationernes potentielt positive effekter. Digitale teknologier introducerer gamle og nye risikofaktorer, som kan gøre, at interventioner ikke opnår ønskede effekter, eller producerer utilsigtede negative effekter, hvis de ikke tages højde for. Virkningen af sådanne værktøjer er afhængig at borgernes evne til at benytte sig af de muligheder teknologierne tilbyder til at udvikle meningsfulde relationer. Særligt nogle socialt udsatte borgere, borgere med begrænsede it-færdigheder og borgere med relationelle vanskeligheder kan have brug for ekstra støtte for at få gavn. Et fokus på relationernes kvalitet samt borgere med særligt behov for støtte, kan være værdifuldt, for at højne det positive potentiale ved anvendelsen af sådanne teknologier.

ACKNOWLEDGEMENTS

Over 120 years ago, Durkheim framed the significance of being social for human life and happiness: *the social self is what makes life worth living*. Unaffected by the course of history and societal changes that have taken place since Durkheim's observation, this theory still stands, and the significance of this message is perhaps even greater in modern industrialised societies where loneliness is increasing while mental health is deteriorating.

Durkheim's statement captures the focus of this thesis as well as a basic challenge of being a PhD student: balancing years of intensive work with a social life with friends, family, colleagues and collaboration-partners. I would like to say thank you to all the wonderful people I have met on my road to becoming a PhD. People who have inspired me, supported and encouraged me to grow personally and professionally.

I would especially like to thank the following people and organisations that have helped and supported me during this journey.

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Thank you to *Bettina Bisk Jensen* and *the Centre for Mental Health, Aalborg Municipality* for our collaboration and for taking part in my advisory group with Tine Curtis and my Danish supervisors. I am very grateful for stakeholders in Aalborg

LIST OF ARTICLES

Article 1:   Andersen, L. M. B., Rasmussen, A. N., Reavley, N. R., Bøggild, H. & Overgaard, C. (2021): *The social route to mental health: A systematic review and synthesis of theories linking social relationships to mental health to inform interventions.* SSM – Mental Health. https://doi.org/10.1016/j.ssmmh.2021.100042

Article 2:   Andersen, L. M. B., Reavley, N. J., Bøggild, H. & Overgaard, C. (2020): *The role of social technologies in community care – A realist evaluation of a Danish web-based citizen-to-citizen platform adopted in community care to promote belonging and mental health.* Health Soc Care Community 2020;00:1-10. https://doi.org/10.1111/hsc.13222

Article 3:   Andersen, L. M. B., Thomsen, L. H., Reavley, N. J., Bøggild, H. & Overgaard C. (submitted July 2022): *A web-based platform as means to promote belonging and mental health in vulnerable populations – a critical realist exploration*

Article	Journal	Journal impact factor
Article 1, published	SSM – Mental health	This is a new 2021 specialty journal from Social Science and Medicine. The journal does not yet have an impact factor.
Article 2, published	Health and Social Care in the Community	2.821 (Wiley Online Library)
Article 3, submitted	Social Science and Medicine	4,634 (Social Sciences Biomedical)

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INTRODUCTION

Social relationships playing a vital role in people's mental health has long been recognized (Baumeister & Leary, 1995; Berkman, Glass, Brissette, & Seeman, 2000; Cacioppo, John T. & Patrick, 2008; Cohen, Sheldon & Wills, 1985; Kawachi & Berkman, 2001; Saeri, Cruwys, Barlow, Stronge, & Sibley, 2018; Thoits, 2011; Umberson & Karas Montez, 2010).

This knowledge has led to several studies that have pointed to the value of interventions based on social relationships for improving mental health in the population over the last decade (e.g.,Campion, Javed, Vaishnav, & Marmot, 2020; Cleary, Lees, & Sayers, 2018; Saeri et al., 2018; Umberson Debra & Montez Karas Jennifer, 2010). Interventions promoting social interaction and socialisation, for instance, have been highlighted as important tools to supporting people in living and ageing well over the course of a lifetime (Campion et al., 2020). It has also been suggested that helping people establish and maintain a sense of belonging can improve resilience and communities (Allen, Kelly-Ann, Kern, Rozek, McInerney, & Slavich, 2021).

The COVID-19 pandemic, also referred to as the *pandemic of loneliness* (Shah, Nogueras, van Woerden, & Kiparoglou, 2020), involved periods of lockdowns and social distancing which played a vital role in furthering understanding of how social relationships impact mental health. COVID highlighted the need for communities to help people become and stay socially active. It forced us to rethink the use of digital technologies to improve and maintain mental health.

Besides the special context provided by COVID, other parts of societal development point to the need for action. Sociologists have discussed how social change in Western countries has reduced people's opportunities to benefit from strong communities and social ties since the end of the 19th century (e.g., Durkheim in his work *Le suicide* published in 1897). In a contemporary context, Zygmund Bauman, points out that the warm and safe community has become a *'lost paradise'* no longer available to the individualised person in their desire for freedom and self-determination (Bauman, 2001). Robert Putnam's analysis of American society moreover highlights that people have become more and more disconnected from their relationships with family, friends, and neighbours (Putnam, 2000). Perhaps resulting from these societal changes, loneliness is seen as a growing and serious problem for public health today (Cacioppo, J. T. & Cacioppo, 2018) and is experienced by around 33% of the adult population worldwide (Statista, 2021).

From a mental health promotion perspective concerned with building strengths and capacities in individuals and communities, supporting citizens in developing a sense of belonging with others and in their community or enabling access to social support

strengthens people's capacities to cope, enjoy life and stand strong against the effects of negative life events. (Barry, Clarke, Petersen, & Jenkins, 2019). From this perspective, social belonging and support are considered as social level protective factors for mental health (Barry et al., 2019).

One strategy that supports rewarding social relationships in order to promote mental health is encouraging citizens to take action. In Denmark, The ABCs of Mental Health Campaign (Hinrichsen et al., 2020) is an example of such an approach. This campaign is inspired by the Australian *Act-Belong-Commit Campaign* which is a community-wide mental health promotion intervention designed to support social networks and improve mental health by encouraging people to get engaged in behaviours known to be good for mental health: acting*,* belonging and committing (Donovan, James, Jalleh, & Sidebottom, 2006; Donovan & Anwar-McHenry, 2016; Donovan et al., 2021). *Act* encourages people to keep mentally, socially, spiritually and physically active. *Belong* encourages people to become a member of a group or organisation by e.g., maintaining friendships, joining a book club, participating in community activities and *commit* encourages people to be involved with or commit to activities providing meaning and purpose in life (Donovan et al., 2006). An alternative way to put these three messages is, as Koushede and Donovan (2022) explain: *'do something'*; *'do something with someone'*; *'do something meaningful'*.

The *Act-Belong-Commit Campaign*—especially the *belong* component—serves as an example of the interest and effort in supporting citizens' social relationships to improve mental health. This interest applies in Aalborg Municipality which is the third most populated municipality in Denmark and one of several Danish municipalities actively engaged as a partner in the ABCs of Mental Health campaign partnership (Hinrichsen et al., 2020). In Aalborg municipality, a privately designed web-based platform, www.Boblberg.dk, that facilitates connections between citizens forms part of the municipality's strategy to promote citizens' social lives and mental health. The usage of the platform is an example of how digital technologies have gained popularity in interventions and are being used as part of community service to support social relationships and mental health.

This platform forms the primary basis of the focus of this thesis. To arrive at a further clarification of the study's rationale, objective, and aim, the following sections introduce the background of the study. First, the role of social relationships in mental health promotion is elucidated. After this, digital interventions as novel tools to support social relationships in the community are explored. Three central challenges for the design of interventions based on social relationships to reach their desired goals are then examined. Finally, the Danish context in which this study takes place, including the web-based platform on which this PhD study is primarily centred, is considered.

CHAPTER 1. BACKGROUND

1.1 UNDERSTANDING SOCIAL RELATIONSHIPS

To present the concept of using digital technologies as part of community services for supporting rewarding social relationships and promote mental health, this section starts out by defining social relationships. In the literature, a plethora of conceptualisations of this construct have been used to understand their role in health and mental health (Berkman et al., 2000). Examples of these conceptualisations are *social integration* (Seeman, 1996), *social ties* (Thoits, 2011) *social support* (Uchino & Birmingham, 2011), *social capital* (Almedom, 2005) and *social connectedness* (Saeri et al., 2018) etc.

One way to understand the construct of social relationships is the definition provided by August & Rook (2020). In this definition, social relationships can be understood as the connections that exist between people who have recurring interactions and which participants perceive as having personal meaning (August & Rook, 2020). This definition thus involves a connection that is repeated, and the individual's subjective experience of the relationship as meaningful thus differs from random encounters with strangers (August & Rook, 2020).

A way to further specify what is meant by social relationships is to distinguish between informal and formal relationships. Informal relationships can be understood as the close relationships that people have. These, for instance, could be family relationships, friendships, and partners. Formal relationships cover relationships that people have due to the role they have in society (e.g., teacher, dentist) or relationships with more distant acquaintances (Due, Holstein, Lund, Modvig, & Avlund, 1999).

1.2 WHY SOCIAL RELATIONSHIPS INFLUENCE MENTAL HEALTH

A broad body of literature points to the benefits of social relationships for mental health (e.g., Almedom, 2005; Baumeister & Leary, 1995; Berkman et al., 2000; Cacioppo, John T. & Patrick, 2008; Cacioppo, John T. & Cacioppo, 2014; Ehsan, Klaas, Bastianen, & Spini, 2019; Holt-Lunstad & Smith, 2012; Kawachi & Berkman, 2001; Saeri et al., 2018; Thoits, 2011; Umberson & Karas Montez, 2010). Evidence from a recent systematic review of systematic reviews pointed to findings showing that social capital predicts better mental health (Ehsan et al., 2019)). Memberships in social groups have been found to protect against depression and reduce symptoms of depression (Cruwys et al., 2013; Cruwys et al., 2014). Additionally, a sense of

belonging has been found to give the feeling that life is meaningful (Lambert et al., 2013). Social isolation has been found to promote loneliness and lead to depressive symptoms (Cacioppo, John T. & Hawkley, 2005; Cacioppo, John T., Hawkley, & Thisted, 2010) and rarely having contact with one's friends, lack of network and low levels of support have been found to be associated with poor mental health (Hansen, Pedersen, Overgaard, Torp-Pedersen, & Ullits, 2017).

The influence of social relationships on mental health has prompted researchers to search for and develop explanations regarding why social relationships influence mental health. This has led to researchers unpacking the different aspects of social relationships that matter. As a result of this, a large number of theories and conceptual maps and models now exist in the literature (Andersen et al., 2021; e.g., Baumeister & Leary, 1995; Berkman et al., 2000; Cohen, Sheldon & Wills, 1985; Feeney & Collins, 2015; Jetten et al., 2017; Lakey & Orehek, 2011; Mikulincer & Shaver, 2008; Thoits, 2011).

The influence of social relationships can be understood in relation to both their structures and provided functions. The structure of social relationships refers to the quantifiable aspects of a person's network, i.e., how the network is organised (e.g., the density of a person's network, the number and type of contacts, frequency of contacts, etc.) (Aartsen, Veenstra, & Hansen, 2017; Berkman et al., 2000; Due et al., 1999). The function of social relationships refer to the qualitative aspects of what they do for the individual such as providing social support, belonging or perhaps in the negative direction, relational strain (ibid.). The conceptual model provided by Berkman and colleagues (2000) linking social relationships to mental health can be used to illustrate this further. According to this model, people's psychological health (illustrated in the model as a pathway to overall health) is affected by their social networks (located on the meso level) by virtue of a number of psychosocial mechanisms (located on the micro level) for which the network provides opportunities (i.e., social support, social influence, social engagement, person-to-person contact and access to resources and material goods). The structure of the social network (i.e., extent, nature and shape) that people have access to is however conditioned by upstream factors, i.e., social-structural conditions (macro level) such as culture, socioeconomic factors, politics and social change (Berkman et al., 2000). It is particularly in relation to Berkman et al.'s inclusion of the social-structural conditions that we understand how societal conditions such as the global COVID-19 pandemic, changing working conditions or cultural changes have real consequences for the structure of people's networks including their opportunities to access potentially beneficial functions.

Social relationships thus influence mental health due to their structure and provided functions. To explore this concept, several middle range theories from different disciplines have been developed (e.g., The Social Support and Buffering Theory (Cohen, Sheldon & Wills, 1985), Thriving Through Relationships Theory (Feeney &

Collins, 2015), The Social Cure approach (Jetten et al., 2017)). A central explanation for the powerful influence of social relationships on mental health can be found in theory on the need for belonging. It is widely agreed that belonging is a vital human need comparable to other human needs such as the need for food, safety etc. (Baumeister & Leary, 1995; Easterbrook & Vignoles, 2013; Greenaway, Cruwys, Haslam, & Jetten, 2016; Maslow, 1943; Shevellar, Sherwin, & Barringham, 2014). According to the belongingness hypothesis formulated by Baumeister and Leary (1995), humans have a need to form and maintain at least a minimum quantity of lasting, positive and significant interpersonal relationships. Related to this, people experience positive or negative emotional consequences in accordance with whether this need is fulfilled or thwarted, for instance, by social exclusion. According to the definition provided by Hagerty et al., (1992), sense of belonging means personal involvement where the individual considers him or herself as an integral part of that system or environment. Sense of belonging arises when people feel valued, needed, and important to others and when they experience a fit or feel congruent with others through shared or complementary characteristics (Hagerty et al., 1992).

1.3 INEQUALITIES IN THE ACCESS TO REWARDING SOCIAL RELATIONSHIPS

Not everybody has access to rewarding social relationships and due to social inequalities, some people are more prone to loneliness. In Denmark, 9.1 percent of the population often experience being alone involuntarily and 12.4 percent of Danes show signs of loneliness (Rosendahl et al., 2022). In Aalborg Municipality, 13.5 percent of the population are lonely (Udesen, 2020).

There are demographic variations in the quantity and quality of social relationships. For instance, peoples' social network changes over their lifetime (Antonucci, Toni C., Fiori, Birditt, & Jackey, 2010). Illustrating this, older adults tend to have smaller social networks than younger adults (Bruine de Bruin, Parker, & Strough, 2020; Wrzus, Hänel, Wagner, & Neyer, 2013), but their networks often centre around more gratifying and close relationships that tend to hold benefits for well-being (Bruine de Bruin et al., 2020). Gender also matters when it comes to the issue of loneliness. Research has found that men tend to have smaller social networks than women (Fuhrer & Stansfeld, 2002) and tend to be more socially isolated (Vandervoort, 2000). Conversely, women tend to have more close connections in their primary network than men and better access to support (Fuhrer & Stansfeld, 2002). Socio-economic status is another factor that affects people's access to social relationships. Aartsen & colleagues (2017) found that socially disadvantaged people are more likely to have poor relationships and low social support compared to people in more privileged positions (Aartsen et al., 2017). In the Danish context of this study, national health studies show that the proportion of people who are alone involuntarily is higher for

people in lower socio-economic positions compared to people in more privileged socio-economic positions (Rosendahl et al., 2022; Udesen, 2020). Disabilities have also been found to be associated with disadvantages in regard to peoples' access to social networks and social support. Specifically people with intellectual and psychological impairments have been found to be worse off in this regard compared to people without disabilities (Mithen, Aitken, Ziersch, & Kavanagh, 2015).

Whereas loneliness has generally been pointed to as a growing public health problem, social inequalities exist in people's access to rewarding social relationships. Older people, men, people with low socioeconomic position and people with disabilities are at a particularly increased risk of experiencing loneliness with adverse mental health consequences.

1.4 SUPPORTING SOCIAL RELATIONSHIPS IN MENTAL HEALTH PROMOTION STRATEGIES

Whether a person belongs to a social network or community that provides them with social support and a sense of belonging influences their mental health (Barry et al., 2019). Empirically and theoretically, evidence suggests the positive significance of interventions that support social relationships in the promotion of mental health Several studies have specifically pointed to the value of interventions based on social relationships to improve mental health in the population (Almedom, 2005; e.g.,Campion et al., 2020; Cleary et al., 2018; Saeri et al., 2018; Umberson Debra & Montez Karas Jennifer, 2010), and helping people establish and sustain sense of belonging has been suggested to improve resilience and communities worldwide (Allen, Kelly-Ann et al., 2021). The above section indicates the relevance of supporting social relationships in both the general population as well as in certain risk groups such as the socially disadvantaged.

Interventions to support social relationships that promote mental health are different from interventions aimed at supporting relationships for treatment or recovery from mental health problems and diseases. To understand what it means to promote mental health, the term mental health must first be defined.

WHO defines mental health as a *"state of well-being in which the individual realizes his or her own abilities, copes with the normal stresses of life, works productively, and fruitfully, and makes a contribution to his or her community"* (Barry et al., 2019). This definition includes both the individual's subjective experience of well-being and ability to realize their abilities, cope with the stresses of life, work productively and contribute to society (Barry et al., 2019). In other definitions, mental health is understood as resilience (i.e., the *"positive adaption, or the ability to maintain or regain mental health, despite experiencing adversity"* (Herrman, Helen et al., 2011)).

Mental health is also defined as *"the emotional and spiritual resilience which allows us to enjoy life and to survive pain, disappointment and sadness"* (Health Education Authority, 1997).

Mental health promotion focusses on improving population mental health and well-being (Barry et al., 2019; Herrman, H., Saxena, & Moodie, 2004), and thus improves individuals' opportunities to realize their abilities and/or resilience to stand strong through lives ups and downs. In this way, mental health promotion differs from prevention and treatment initiatives. Barry et al., (2019) present four aspects of mental health promotion: *competence; resilience; supportive environments, and empowerment*. Along with interventions for prevention, treatment and maintenance, these aspects form part of a spectrum of interventions which have the overall goal of promoting well-being and quality of life (Barry et al., 2019).

Figure 1.1: The Intervention spectrum (Barry et al., 2019, adapted from Barry 2001)
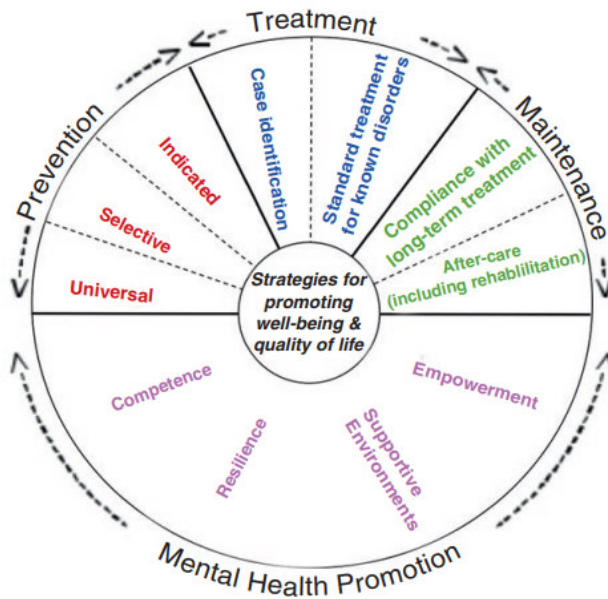
As this figure shows, mental health promotion is concerned with building strengths and competences of individuals and communities. Koushede and Donovan (2022) posit that mental health promotion is focussed on protective factors for mental health and mental health resources e.g., rewarding social relationships. This is of universal relevance and thus relevant for healthy populations, populations at risk and populations with either symptoms of or having mental health problems or disease

(Barry et al., 2019). Thus, when focussing on the population as a whole, mental health promotion differentiates from initiatives for prevention and treatment which normally focusses on those at risk or those diagnosed with disease.

1.5 DIGITAL TECHNOLOGIES TO SUPPORT SOCIAL RELATIONSHIPS AND MENTAL HEALTH IN A COMMUNITY SETTING

In the modern world, social relationships are increasingly formed and maintained via digital technologies (Hootsuite & We Are Social, 2020; Nowland, Necka, & Cacioppo, 2018; Ryan, Allen, Gray, & McInerney, 2017) such as social media as well as matching and connection sites where potential dates, friends, and activity partners can be located. These technologies may enhance people's opportunities to become or stay socially connected. Along these lines, Nowland et al., (2018) writes, *"In today's multimodal social world, when used as a way station, social internet use is a stop along the way to the ultimate destination of social reconnection" (p. 82)*.

Over the last ten years, a growing body of literature has explored the potential of digital technologies to support social relationships and mental health (e.g., Chopik, 2016; Fang, Chau, Wong, Fung, & Woo, 2018; Grieve, Indian, Witteveen, Anne Tolan, & Marrington, 2013; Smith, Leonis, & Anandavalli, 2021; Verduyn, Ybarra, Résibois, Jonides, & Kross, 2017). Much of this literature has dealt with the effects of commercial social media and social network sites on social connectedness and psychological well-being (e.g., Clark, Algoe, & Green, 2018; Glaser, Liu, Hakim, Vilar, & Zhang, 2018; Grieve et al., 2013; Erfani & Abedin, 2018; Wheatley & Buglass, 2019). Existing literature recognises the opportunities that digital technologies afford in terms of supporting social connectedness (i.e., meaningful social interactions (Barbosa Neves, Franz, Judges, Beermann, & Baecker, 2019)) by, for instance, enabling people to develop new relationships and/or strengthen and maintain existing ones (Allen, Kelly A., Ryan, Gray, McInerney, & Waters, 2014; Clark et al., 2018; Grieve et al., 2013; Ryan et al., 2017; Winstone, Mars, Haworth, & Kidger, 2021).

In their study of social media use among adolescents, Winstone et al., (2021) found that social media use enhances the users' existing social resources through increased contact and maintenance of relationships. Among older adults, online social networking has been found to enhance communication with existing relationships and enable the creation of online communities (Chen, E., Wood, & Ysseldyk, 2021). People with limited offline resources— i.e., people with anxiety, loneliness, social awkwardness and geographical barriers— may particularly benefit from the social support found online (Nowland et al., 2018; Winstone et al., 2021). Overall, however,

there seems to be a broad consensus that the impact of digital technologies usage on mental health depends on how the technologies are used and who is using them. In particular, studies suggest that when not used to develop or strengthen meaningful interaction and relationships, these technologies may cause harm (Clark et al., 2018; Glaser et al., 2018; Nowland et al., 2018; Winstone et al., 2021).

Given the potential of strengthening social connectedness and mental health, digital technologies have become increasingly popular tools in interventions. These interventions involve the use of tools such as tablets, internet, computers, apps, video chats, e-mail, social media, virtual rooms etc., (Ibarra, Baez, Cernuzzi, & Casati, 2020). In the literature, a range of different terms have been used to capture and study the effects of digital technologies, e.g., *information and communication technology interventions* (Chen, Y. R. & Schulz, 2016), *technology-based interventions* (Barbosa Neves, Waycott, & Maddox, 2021), *technology-supported interventions* (Ibarra et al., 2020), *technological interventions* (Wister, Fyffe, & O'Dea, 2021) and *e-interventions* (Chipps, Jarvis, & Ramlall, 2017) and *digital interventions* (Barbosa Neves et al., 2021). In this thesis, the term *digital interventions* is used to refer to interventions that use digital technologies to foster or support change.

Roughly speaking, the literature on the use of digital technologies in interventions to support mental health can be divided into three main parts.

One part is literature that focusses on digital technologies as a means to deliver mental health interventions to people with mental health conditions (e.g., Fortuna et al., 2022; Ridout & Campbell, 2018; Valentine et al., 2019).

Another part is literature on digital intervention studies that focusses on the creation of online communities with like-minded and peer-to-peer interactions targeting vulnerable target groups at risk of marginalisation (e.g., people with serious mental illness (Biagianti, Quraishi, & Schlosser, 2018; Naslund, Aschbrenner, Marsch, & Bartels, 2016), cancer patients (Webber et al., 2021) and young mothers (Nowland et al., 2018; Yamashita, Isumi, & Fujiwara, 2022)). These studies highlight potential benefits. Noland et al., (2017), for instance, found that adolescent mothers' use of online groups created as part of health interventions provided them with enhanced social support and social capital.

Yet another part of the literature has focussed on digital interventions to target loneliness and improve social connectedness and well-being. These intervention studies have predominantly focussed on older people as this group is particularly vulnerable to the loss of relationships and social isolation (Choi & Lee, 2021). Studies suggest potential benefits of digital interventions to this population group (e.g., Barbosa Neves et al., 2019; Barbosa Neves et al., 2021; Chen, E. et al., 2021; Ibarra et al., 2020; Isaacson, Cohen, & Shpigelman, 2019; Morton et al., 2018). A systematic review of digital interventions among older adults with reduced mobility showed that digital technologies allowed people to expand their social networks, strengthen

existing ties and provide social support (Ibarra et al., 2020). In a qualitative study, Barbosa Neves and colleagues (2019) found that an iPad-based communication app provided to older adults helped increase their perceived social interaction with social ties. Studies have also demonstrated the potential of digital interventions that support social connectedness contributing positively to mental health and well-being (Isaacson et al., 2019; Morton et al., 2018).

Overall, existing knowledge suggests that digital technologies can provide valuable tools to support people in maintaining and developing social relationships. To date, however, research into the potential of digital interventions to support social connectedness has predominantly focussed on older adults, omitting the potential that may be associated with using these technologies to support social relationships in the general population or in other target groups who are vulnerable to loneliness.

Digital technologies may present helpful tools as a resource for mental health promotion in community care services that support social relationships among citizens in the municipality (e.g., citizens who live close to each other but have never met each other in real life).

Systematic literature searches have only been able to identify sparse research on the potential of digital technologies to support social relationships and mental health among citizens within a local community. Examples are Mote et al., (2021), who explored the impact of a virtual event to promote social connectedness between strangers based on a survey presented to adults over the age of 18 who attended an event, and Liddle et al. (2020), who explored the potential of digital technologies for improving social connections within communities based on interviews with 22 older adults and focussed on these adults' use and perceptions of technology. The latter highlighted the importance of thoughtful consideration of technologies used and local community context (Liddle et al., 2020).

If digital interventions are to be used as part of community care service to support social relationships and mental health, more knowledge on how, to whom and under what circumstances these technologies benefit users is valuable to strengthen potentials and avoid unintendedly causing harm.

1.6 THREE KEY CHALLENGES TO THE DESIGN OF INTERVENTIONS TO SUPPORT SOCIAL RELATIONSHIPS AND MENTAL HEALTH

Important challenges exist in the designing of successful interventions based on social relationships to promote mental health. In this section, three related challenges—each pointing to gaps of knowledge highlighted in the literature relating to both general

and digital interventions—are brought forward in support of the rationale of this study.

1.6.1 THE CHALLENGE OF ONLY SUPPORTING RELATIONSHIPS THAT DO GOOD

A central issue complicating the task of designing interventions based on social relationships to promote mental health is that social relationships also have a negative side (Cohen, S., 2004; Lincoln, 2000; Rook, K. S., 1984; Sani, 2012; Villalonga-Olives & Kawachi, 2017). As Cohen et al., (2004) highlights, social relationships present opportunities for conflict, exploitation, stress transmission, misguided attempts to help, and feelings of loss and loneliness. Although they happen less often than positive experiences, negative exchanges (e.g., being socially excluded or let down by others when expecting to be supported, receiving critical comments, etc., (Rook, Karen, 2014)) may potentially be more harmful than beneficial (Lincoln, 2000; Rook, Karen, 2014). Social exclusion, for example, produces feelings of social anxiety, jealousy, guilt, hurt feelings, loneliness, embarrassment and sadness. Instead of promoting mental health, relationships and groups from which an individual is excluded and rejected from thus end up posing a risk to mental health (Barry et al., 2019; Leary, 2021). Negative effects of digital technologies have been found although these effects have remained largely underexplored (Barbosa Neves et al., 2021). Drawing on three case studies where technology-based interventions were used to address loneliness in older adults, Barbosa Neves et al., (2021) highlight that these technologies may be limiting and have negative effects if there is no meaningful interaction with social ties or if the social ties do not respond to interaction. This point is also highlighted in research on commercial media. For instance, Clark et al., 2018 states *"negative consequences are likely to result from the use of social network sites when individuals engage in social networking behaviors that do not fulfill needs for acceptance and belonging" (p. 33).* This suggests that positive results of digital technologies depend on whether the individual uses the technology to establish and/or maintain meaningful connections and whether they succeed in this 'mission'.

1.6.2 THE CHALLENGE OF KNOWING EXACTLY HOW, TO WHOM AND UNDER WHAT CIRCUMSTANCES INTERVENTIONS TO SUPPORT SOCIAL RELATIONSHIPS PRODUCE POSITIVE VERSUS NEGATIVE CONSEQUENCES

To design interventions and lower the risk of the unintended consequences described above, a solid understanding of the mechanisms that link social relationships to mental health and in what context these mechanisms can be expected to lead to certain

outcomes is needed (Bonell, Chris, Jamal, Melendez-Torres, & Cummins, 2015; Skivington et al., 2021). This practice is encouraged by the UK Medical Research Council (Skivington et al., 2021). As researchers have brought forward repeatedly, precise knowledge on these mechanisms is insufficient (Feeney & Collins, 2015; Lincoln, 2000; Thoits, 2011; Uchino, Bowen, Carlisle, & Birmingham, 2012). Feeney and Collins (2015) specify this clearly in relation to how this lack of knowledge effects the design of interventions to support mental health: *"Public health campaigns should focus on helping people to cultivate high quality relationships. But what should such campaigns look like? What specific features of relationships should be targeted? Unfortunately, the mechanisms linking social relationships to health, and the specific features of relationships that should be cultivated are not well understood." (p. 113).* Findings from studies on commercial social media and on digital interventions suggest that outcomes depend on who is using the technology and how it is being used (Barbosa Neves et al., 2021; Clark et al., 2018). Based on three case studies of interventions to address loneliness in older adults, researchers make the point that both personal dimensions (e.g., participants health status, capabilities and interest, digital literacy) and social dimensions (e.g., the participant's surroundings, responsiveness of the audience and quality of response, existing levels of interaction, stigma, social trust) contribute to the outcome of interventions (Barbosa Neves et al., 2021).

1.6.3 THE LACK OF STRONG THEORETICAL FOUNDATIONS IN INTERVENTIONS

Related to the above point, research has not only highlighted the significance but also the absence of strong theoretical foundations in interventions based on social relationships (Cohen, S., 2004; Feeney & Collins, 2015; Haslam, Cruwys, Haslam, Dingle, & Chang, 2016; Thoits, 2011). Cohen (2004) problematised this issue in relation to the effect of social support interventions when he wrote, *"In sum, the existing intervention literature has been disappointing. In general, investigators have approached a complex problem with good intentions but often without deep theoretical analysis or a strong base of prior research" (p. 682).* The UK Medical Research Council's framework for complex interventions highlights the need for a strong theoretical base informing the design and development of interventions (Skivington et al., 2021) as this may increase effectiveness (Bonell, C. et al., 2013). As Skivington et al. (2021) explain, theories from relevant fields are valuable as they may contribute to informing the so-called programme theories on how, to whom and under what circumstances interventions works to cause different outcomes. In relation to digital interventions, a lack of theoretical foundations has been highlighted to explain varying results (Barbosa Neves et al., 2021; Khosravi, Rezvani, & Wiewiora, 2016).

1.7 A WEB-BASED PLATFORM USED AS PART OF COMMUNITY SERVICES IN A DANISH MUNICIPALITY TO PROMOTE BELONGING AND MENTAL HEALTH

In Aalborg municipality in Denmark, a web-based platform named *Boblberg.dk* is used to support citizens' social lives and promote mental health. In April 2022, *Boblberg.dk* was used in 54 out of 98 Danish municipalities, and nationally the platform had 440,000 both active and inactive users. *Boblberg.dk* facilitates connections between citizens and local organisations, sports clubs and volunteer work based on users' leisure time activities and interests. In April 2022, the gender distribution on the platform was 60% female and 40% male and the average age was 34.6 years. The best way to describe the platform is as an online bulletin board where citizens, local organisations etc., can reach out to others in so called *Bobls* by posting descriptions of themselves and what they are looking for. Examples of this are citizens seeking others for a cup of coffee, someone to go out dancing with or people who would like to be involved with volunteer work. Based on these descriptions, other citizens can choose to initiate a contact by making a response to the *bobl*.

As opposed to other social media platforms such as Facebook and Instagram, *Boblberg.dk* users do not create a personal profile others can search for. This means that users can also choose to anonymously post if they like. Figure 2-4 visualises three different examples of *bobls* developed on *Boblberg.dk* to give an idea of how the platform is used.

Figure 1.2: Example of a *bobl* posted on Boblberg.dk searching for friendship
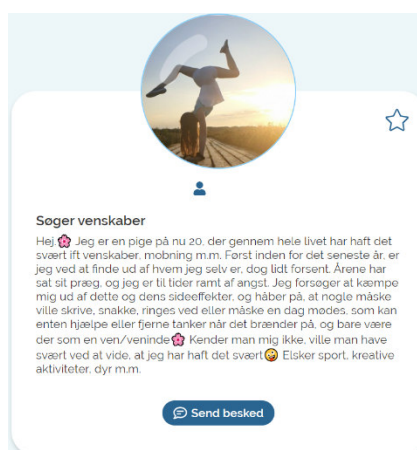
Translated to English the *bobl* says: *"Hi, I'm a girl who is now 20 years old who has struggled my whole life and has had a hard time in regard to friendships, bullying*

etc. It's only been within the last year that I've begun to figure out who I am. A little bit too late. The years have left their mark and sometimes I suffer from anxiety. I'm trying to fight [my way] out of this and its side-effects. I am hoping that someone would perhaps like to write, talk, call or maybe someday meet, who would either help or help take my mind off trouble or who would just be there as a friend. If you didn't know me, it would be hard for you to know that I've been struggling. Love sports, creative activities, animals etc."

Figure 1.3: Example of a *bobl* posted on Boblberg.dk searching for a mentor
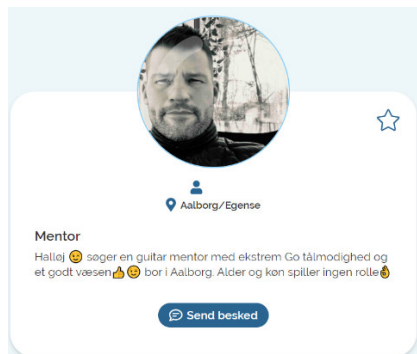
Translated to English the *bobl* says: *"Hi, I'm seeking a guitar mentor who is extremely patient and a nice person. Lives in Aalborg. Age and gender don't matter."*

Figure 1.4: Example of a *bobl* posted on Boblberg.dk searching for volunteers
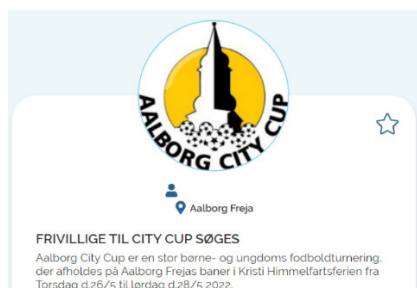
Translated to English the *bobl* says: *"Searching for volunteers for City Cup. Aalborg City Cup is a large football tournament for children and young people which will be held at the Aalborg Freja field during the Ascension Holiday from Thursday 26 May to Saturday 28 May 2022."*

Boblberg.dk serves as an example of how digital technologies have gained popularity in interventions and are being used as part of community service to support social relationships and mental health. This platform, and specifically the use of it in Aalborg Municipality, constitutes a central focal point in this thesis as elaborated on in the following.

1.8 THE STUDY'S RATIONALE

Since much speaks for the positive influence of social relationships on mental health both empirically and theoretically, they are used and encouraged as a lever in interventions to promote public mental health. As discussed above, this applies in Denmark both nationally through e.g., the ABCs of Mental Health Campaign and locally in the Danish Municipalities. This thesis was driven by a strong interest in Aalborg Municipality in Denmark to know more about how social relationships and local communities with positive impacts on mental health are best supported. Based on this as well as the research gaps reviewed above, this thesis focusses on contributing with both theoretical and empirical knowledge to inform the basis for the development of interventions. As such the study seeks to address the point highlighted in the introduction, i.e., that previous interventions in this area have been under theorised.

The idea for this project, including the choice to focus on the web-based platform, *Boblberg.dk*, was developed in close collaboration and with financial support from Aalborg Municipality. In Aalborg Municipality, *Boblberg.dk* is used as a means to support citizen's social lives and mental health in both the general population and vulnerable groups that struggle to belong. As elaborated above, this platform serves as an example of how digital technologies are becoming more commonplace in interventions that support social relationships and mental health.

A survey recently conducted by the Danish organisation Economists Without Borders in collaboration with *Boblberg.dk* had 292 platform users respond. This survey showed that 42.53 percent of the users felt less lonely after having posted a *bobl* on the site, 42.53 percent of the users felt no change in their loneliness and 8.05 percent strongly disagreed that having posted a *bobl* had made them feel less lonely (Sørensen et al., 2021). This survey also showed that 33 percent of the users felt that their self-confidence had improved after using *Boblberg.dk*, 59 felt no change and 3 percent strongly disagreed that their self-confidence had improved after having used the platform (Ibid.).

The introduction section showed that using both general and digital interventions that support social relationships and mental health involves important challenges which, if not considered, increases the risk of the interventions missing their targets or doing

harm. Knowledge on how, for whom and under what circumstances *Boblberg.dk* works is key to ensuring that the desired outcomes are met in the municipality. In a broader research context, the study intends to contribute to knowledge on how, to whom and under what circumstances digital interventions may be used as part of community services to support social relationships and mental health in a local community. This currently missing knowledge is key if digital technologies are to be used in interventions to support citizens both in the general population and vulnerable groups.

Based on the above, and with a special focus on digital interventions, this study seeks to contribute to knowledge about important mechanisms and contextual conditions whereby social relationships lead to various outcomes. Understanding the complexity of how social relationships facilitated with digital technologies leads to various outcomes in mental health is key to designing digital interventions that result in desired outcomes. As such, this study is inspired by the gap that has been repeatedly highlighted in the literature: mechanisms linking social relationships to health are not fully understood (Feeney & Collins, 2015; Thoits, 2011). Specifically, a lack of research in understanding how, for whom and under what circumstances digital technologies may be used as part of community services to support social relationships and mental health in the general population and in vulnerable groups struggling to belong exists.

Besides informing the decisions of policy makers and practitioners in regarding using of digital interventions to support social relationships and mental health, this knowledge is key to informing intervention design and technology designers to ensure the use of digital technology supports mental health and wellbeing.

1.9 STUDY AIM

The overall objective of this study is to provide an expanded theoretical and empirical basis to inform the development of digital interventions based on social relationships to promote mental health. At the centre of this, the study particularly seeks to contribute to the advancement of understanding of how, to whom and under what circumstances digital interventions may be used as part of community services to promote belonging and mental health.

Three sub-studies together contribute to meeting the overall objective.

- **Subs-study 1**: The aim of this study was to explore key theoretical assumptions to explain 1) how social relationships influence mental health and 2) specific circumstances that distinguish beneficial social relationships from relationships that have no effect or cause harm. Results of the synthesis

are discussed in relation to general interventions and implications for the use of digital interventions as novel tools to support social relationships and mental health are elucidated (Andersen et al., 2021) (Article 1).

- **Sub-study 2**: The aim of this study was to explore how, for whom and under what circumstances the web-based platform *Boblberg.dk* adopted within community care in a Danish municipality worked to promote users' sense of belonging and mental health (Andersen et al., 2020) (Article 2).

- **Sub- Study 3:** The aim of this study was to explore the underlying social structures that influenced users' success with the web-based platform *Boblberg.dk* as well as the targeting of the platform to vulnerable groups (Andersen et al., unpublished) (Article 3).

CHAPTER 2. CRITICAL REALISM AS THE PHILOSOPHICAL BACKGROUND

This Ph.D. study is based on the critical realism introduced by Roy Bhaskar in 1975 (Archer, Bhaskar, Collier, Lawson, & Norrie, 2013; Bhaskar, 2013). Critical realism is described as a metatheory which lies between the empiricist and the constructive paradigm (Archer et al., 2013). In the following section central characteristics of critical realism are introduced. Thereafter, realist evaluation as a particular approach to research inspired by critical realism will be presented and both central differences and similarities between this approach and research based on the paradigm of critical realism will be examined. Finally, two research paradigms (i.e., realist evaluation and research based on critical realism) will be related to the thesis' overall objective and aim.

2.1 CENTRAL CHARACTERISTICS OF CRITICAL REALISM

A central characteristic of critical realism is its view on reality as stratified in three layers or so-called domains of varying depth (Bhaskar, 2013; Sayer, A., 1999). Critical realism advocates for a research approach that covers these domains to focus particularly on underlying mechanisms and structures located on the deep layer of reality (Buch-Hansen & Nielsen, 2012). Accessing knowledge about the deep layer requires specific procedures. The following section elaborates on these procedures based on a review of key elements of critical realism's view on reality.

2.1.1 A STRATIFIED REALITY – DEEP ONTOLOGY

Ontologically speaking, critical realism recognizes the existence of an objective reality that exists independent of our experience of said reality. The knowledge produced regarding reality is always shaped by our conceptualisations of that reality. In other words, and as described by Danermark et al. (2019), *"facts are theory-dependent" (p. 19)*. In accordance with this view, critical realism differentiates between objects of reality that are *intransitive,* i.e., processes and mechanisms that exist and act independently of our experience of them (i.e., physical processes and social phenomena) and *transitive* objects which are produced by men and shaped by scientific conceptualisations (i.e., theories, models, paradigms etc.) (Bhaskar, 2013). Critical realism sees reality as being stratified into three different layers or domains consisting of the *1) actual domain* (consisting of events happening irrespective of our

experience of them), *2) empirical domain* (consisting of our experiences of events) and *3) real domain* (consisting of the mechanisms and structures responsible for generating events that take place on the actual domain) (Bhaskar, 2013; Sayer, A., 1999). Based on the this, critical realism also refers to reality having *ontological depth* (Danermark et al., 2019).

2.1.2 ACCESSING THE DEEP LAYERS OF REALITY – IDENTIFYING CAUSAL MECHANISMS

According to critical realism, not all parts of reality are immediately observable for the researcher as a result of stratified reality (Jagosh, 2018b). Critical realism advocates for science accessing the deep layers of reality to identify the mechanisms and structures that may not be immediately observable. Andrew Sayer (2000) posits that explanation in critical realism depends on *"identifying causal mechanisms and how they work and discovering if they have been activated and under what conditions" (p. 14)*. This task relates to one of the key features in critical realism, i.e., objects are seen as having causal powers and liabilities that are activated under certain conditions (Sayer, A., 1999). Identifying causal mechanisms, however, is challenged for a number of reasons. Specifically, events are often shaped by a variety of different mechanisms and several mechanisms are concurrently active although mechanisms are also not always activated. In other words, mechanisms are, so to speak, contingent on specific conditions and sometimes both reinforce and neutralise one another (Danermark et al., 2019; Sayer, A., 1999). Consequently, in the explanatory task of identifying causal mechanisms, there is always a chance of making mistakes. Critical realism therefore recognizes the fallibility of all scientific knowledge (Danermark et al., 2019). Even though critical realism advocates for the identification of causal mechanisms, their view on causality is significantly different from the successionist view on causality known for involving associations among sequences of events. Due to seeing reality as an open system without stable empirical laws, critical realists study causal laws only as powers or tendencies of underlying generative mechanisms (Archer et al., 2013; Buch-Hansen & Nielsen, 2012).

2.1.3 STRUCTURE AND AGENCY

Critical realism emphasises the interplay between social *structure* and human *agency*. According to Bhaskar (1989), human action can be defined as "*lying in the reasons, intentions and plans of human beings* and structures as '*governing the reproduction and transformation of social activities" (p. 203)* (Archer et al., 2013). According to critical realism, the social world is pre-structured which means that '*agents are always acting in a world of constrains and possibilities that they did not produce'*

(introduction) (Archer et al., 2013). Critical realism sees social structures as real objects independent of human activity that have the capability to be identified and explained (Archer et al., 2013; Martin, 2020). Agents, on the other hand, do not produce social structures but are reflexive and hold the capability to produce change through reproduction and transformation of social structures in their activities and social interaction (Archer et al., 2013; Martin, 2020). People are not always aware of the social structures shaping their actions just as they may be more or less unaware of how their actions contribute to reproducing or transforming existing social structures. To address this phenomenon, Archer et al. (2013) explain individuals' accounts are always "*corrigible and limited by the existence of unacknowledged conditions, unintended consequences, tacit skills and unconscious motivations*" *(introduction).* Even so, actors' accounts are recognized as important starting points for social inquiries as they are access points to examine social structures and their influence on people (Archer et al., 2013; Martin, 2020).

2.1.4 RETRODUCTION, ABDUCTION AND THE ROLE OF THEORY IN CRITICAL REALISM

Methodologically, critical realism advocates for the use of abduction and retroduction as central tools for inference. Danermark et al., (2019) defines retroduction as a process of "*advancing from one thing (empirical observations of events) and arriving at something different (a conceptualization of transfactual conditions)*" *(p. 96).* Based on the observation of an empirical event, retroduction thus involves asking what conditions and deep causal relationships must be the case for the event to be what it is or have the effect it has (Buch-Hansen & Nielsen, 2012; Danermark et al., 2019). For critical realists, retroduction and abduction can be understood as two sides of the same coin (Jagosh, 2018b) where abduction has been described as a way of taking one's starting point in a theory to provide a deeper knowledge of particular events (Danermark et al., 2019) and as "*a selective and creative process to examine how the data support existing theories or hypothesis as well as how the data can call for modifications in existing understandings*" *(p. 52)* (Kennedy & Thornberg, 2018). The process of abduction therefore requires an interplay between data and theory (Kennedy & Thornberg, 2018). Social theories are seen as abstractions "*crystallizing the necessary conditions for social structures to be what they are.*" *(p. 138)* (Danermark et al., 2019). Critical realism acknowledges that to explain a phenomenon it might be useful and necessary to combine several different abstractions (Danermark et al., 2019). It sees theories as fallible and changeable and acknowledges the existence of competing theories (Danermark et al., 2019).

2.2 REALIST EVALUATION AND CRITICAL REALISM – COMBINING PARADIGMS IN RESEARCH

In this thesis, a realist evaluation (sub-study 2) was combined with a qualitative study based on the paradigm of critical realism (sub-study 3). Realist evaluation was introduced by Ray Pawson and Nick Tilley (1997) and is an approach to research based on the paradigms of both critical realism and scientific realism (Alderson, 2021; Jagosh, 2018b). While the shared philosophical backgrounds enable the combination of realist evaluation with research based on the paradigm of critical realism (see e.g., Example 1.1: combining paradigms: an evaluation of a community-based integrated care service (Alderson, 2021)), important distinctions also apply. The following section presents a selection of central similarities and differences highlighted by Alderson (2021) and provides a background for understanding how and why the sub-studies differentiate in specific areas.

2.2.1 FOCUS ON INTERVENTIONS AND OTHER TYPES OF RESEARCH

One difference between realist evaluation and research based on critical realism relates to the object of study. Realist evaluation focusses on the study of interventions to understand how and why these work in different contexts (Pawson & Tilley, 2004). In order to do this, realist evaluation makes use of the collection of firsthand data for primary analysis and realist syntheses/reviews (Jagosh, 2018a). Realist evaluation seeks to answer the primary research questions of what works, for whom, in which contexts and why with aims of improving interventions (Alderson, 2021; Pawson, 2013). Conversely, research based on the paradigm of critical realism does not necessarily focus on interventions (Jagosh, 2018b).

2.2.2 THE SIGNIFICANCE OF THEORY

Theory plays a key role both in realist evaluation and in research based on critical realism in different ways. In realist evaluation, theory primarily refers to the hypothesis and assumptions underlying interventions in terms of what these are expected to do and how (Alderson, 2021). As Pawson and Tilley (2004) explain, interventions are understood as theories which "*begin in the heads of policy architects, pass into the hands of practitioners and, sometimes, into the hearts and minds of programme subjects" (p. 3)*. These programmes are, so to speak, "*theories incarnate" (p. 3)* (Pawson & Tilley, 2004). By means of retroduction and abduction, programme theories are elicited and formalised for further investigation in conjunction with the elements C (context); M (mechanism), and O (outcomes) (Pawson, 2013). Middle-range theories may inform programme theories which are

often also based on previous research and stakeholders' knowledge and assumptions of how, to whom and under what circumstances interventions brings about change (Jagosh, 2018b; Pawson & Tilley, 2004). In contrast to this approach, research based on the paradigm of critical realism is not concerned with hypothesis on how and with whom interventions work but with theories as frameworks for explanation and analysis to a larger extent (Alderson, 2021). This is explained by Danermark (2019): *"The theoretical language includes an interpretation of the social reality. We see and understand the world – the meaning and relationships of phenomenon – with the help of theories. Theories serve as interpretative frameworks." (p. 139).* Theories are hence considered as key to provide explanations of society, structures, and mechanisms.

2.2.3 THE TASK OF ACCESSING THE DEEP LAYER OF REALITY – THE INFLUENCE OF SOCIAL STRUCTURES

Both realist evaluation and research based on the paradigm of critical realism advocates for science focussing on moving beyond empirical observations to identify the mechanisms that trigger certain events. Whereas research based on the critical realism paradigm is highly focused on identifying underlying social structures (e.g., political and potentially global influences, socio-economic structures etc.), realist evaluation has been criticized for being unclear about how social structures fit into context, mechanism and outcome configurations and for primarily concerning itself with events on the actual and empirical domain instead of the real domain thus ignoring the influence of social structures (Alderson, 2021). Compared to realist evaluation, research based on critical realism may offer the opportunity to move beyond realist evaluations' focus on contexts, mechanisms, and outcomes (Alderson, 2021).

2.3 APPLYING CRITICAL REALISM IN THIS STUDY

The philosophical approach of critical realism guides this study by means of the three sub-studies designed to provide a theoretical and empirical basis which informs the development of digital interventions based on social relationships to promote mental health. Informed by critical realism, the thesis focusses on not just whether interventions work or not but on uncovering central causal mechanisms and social structures affecting how, to whom and under what circumstances they work.

Despite central differences presented above, combining the research paradigms of realist evaluation and research based on critical realism serves the purpose of providing access points across the three sub-studies for exploring mechanisms and contextual conditions by which digital interventions may work as part of community

services to support social relationships and mental health. Additionally, moving further beyond these mechanisms and contexts to identify underlying social structures is explored. The following section presents designs and methods of the three sub-studies.

CHAPTER 3. METHODS

In this chapter, the chosen designs and methods for the three sub-studies are elaborated on. Sub-study 1 differs from sub-study 2 and sub-study 3 as it is based on pre-existing theoretical literature. Sub-study 2 and sub-study 3 are based on the same qualitative data material. Table 3.1 summarises the three sub-studies according to their different aims, designs, settings, and data.

Table 3.1: Overview of aims, designs, settings, and data of the three sub-studies

	Sub-study 1	**Sub-study 2**	**Sub-study 3**
Aim	To explore key theoretical assumptions in order to explain 1) how social relationships influence mental health and 2) specific circumstances that distinguish beneficial social relationships from relationships that have no effect or cause harm (Andersen et al., 2021).	To explore how, for whom and under what circumstances a web-based platform, *Boblberg.dk*, worked to promote citizens' sense of belonging and mental health (Andersen et al., 2020).	To explore the underlying social structures that influenced users' success with the web-based platform, *Boblberg.dk*, as well as the targeting of the platform to vulnerable groups (Andersen et al., unpublished).
Design	Systematic review and synthesis of theories	Realist evaluation	Qualitative study based on critical realist philosophy
Setting	Not relevant	Aalborg Municipality, Denmark	Aalborg Municipality, Denmark
Data	Theoretical literature identified systematically in five electronic databases.	Qualitative interviews performed with 23 users of *boblberg.dk* and 1 non-user (couple with man and wife). 7 interviews with stakeholders in Aalborg Municipality and *Boblberg.dk*.	Qualitative interviews performed with 22 users of *Boblberg.dk* and four key stakeholders in Aalborg Municipality and Boblberg.dk.

3.1 DESCRIBTION OF THE METHODOLOGY OF SUB-STUDY 1

Aim

The aim of sub-study 1 was to explore key theoretical assumptions in order to explain 1) how social relationships influence mental health and 2) specific circumstances that distinguish beneficial social relationships from relationships that either have no effects or cause harm (Andersen et al., 2021). Based on results of the synthesis, implications were identified and discussed in relation to the use of both general and digital interventions to support social relationships and mental health (Andersen et al., 2021).

The study focussed on already existing theories in order to uncover underlying mechanisms linking social relationships to various outcomes in mental health. This focus is consistent with the philosophical background of critical realism which upholds the importance of theories as a means of shedding light on causal mechanisms and structures that generate observable events as explained in chapter 2.

Design

The study followed the formal search procedures of a systematic literature search with formulation of a structured research question, use of search terms and use of systematic procedures for reviewing identified material. Even though the numbers of systematic reviews of theory have increased (Booth & Carroll, 2015), application of systematic search procedures for identification of theories is still relatively rare. This study was inspired by the methodological advancements made by others and published examples of systematic reviews of theory (Bonell, C. et al., 2013; Booth & Carroll, 2015; Lorenc et al., 2012; Pound & Campbell, 2015; Whitehead et al., 2016) (Andersen et al., 2021).

Methods

To retrieve theories, a search strategy was developed inspired by the BeHAMoTh framework introduced by (Booth & Carroll, 2015) (Andersen et al., 2021). The BeHAMoTh framework has been developed specifically for the systematic identification of theories and has been described as a counterpart to using the PICO search strategy (Booth & Carroll, 2015). To qualify the search, a search expert was consulted. Following research question was formulated: *'Which middle-range theories explain the influence of social relationships on mental health?'* (Andersen et

al., 2021). This was further reframed into the BeHEMoTh question formulation (table 3.2).

Table 3.2: Search strategy and question formulation for the theoretical review and synthesis in sub-study 1. The table is inspired by Table 5. BeHEMoTh question formulation for workplace smoking cessation review provided in Booth & Carrol (2015).

Search Strategy			
Be – Behavior of interest	Mental health	[Mental health OR well-being OR psychological well-being OR psychological health OR psychosocial well-being OR psychosocial health] ±	
H – Health context	Social relationships	[belonging OR social identity OR social identification, OR social integration OR social inclusion OR social group OR group membership OR social capital OR social support OR social ties OR social connectedness OR social network OR social relationship] ±	AND
MoTh – Model or Theories		[theories OR models OR frameworks OR pathway OR mechanism] ±	
E – Exclusions Exclusions were done manually during the screening process.		Theoretical material not covering the influence of social relationships on mental health. Non-theoretical material. Theoretical material not meeting requirements of generalizability. Theoretical material in other languages than English, Danish, Norwegian or Swedish.	NOT

± Thesaurus terms, truncations and quotations were applied according to the options provided by the chosen electronic databases.

The search was performed in the scientific databases Pubmed, Sociological Abstracts, PsycINFO, Cinahl and Embase in June 2018. The search retrieved 4,536 unique references which were screened independently by two researchers in Covidence (Andersen et al., 2021).

The choice was made to include literature as theories based on different aspects of theory highlighted in previous literature. More specifically, the understanding of theory in the study was guided by the understanding of theory provided by Sutton and Staw (1995), Merton's definition of middle-range theories (Merton, 1967) and requirements for theory put forward by Van Run and Heaney (1992). Figure 3.1 visualises the contributions of these different approaches to theory to shed light on how theory was understood in this study.

Figure 3.1: Three approaches to theory informing the understanding of theory in sub-study 1
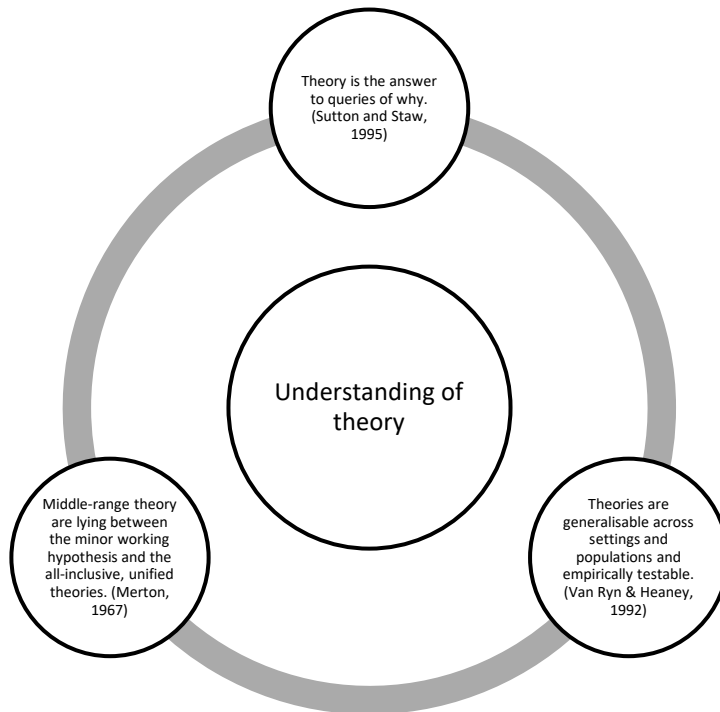
Based on this, middle-range theories were included if they presented original explanations for the influence of social relationships on mental health and if they were furthermore testable and generalisable (Andersen et al., 2021). Exclusions were made based on the criteria described in table 3.2. The flowchart in Figure 3.2 visualises the screening process.

Figure 3.2: Flowchart provided in Andersen et al. (2021) visualising the screening process
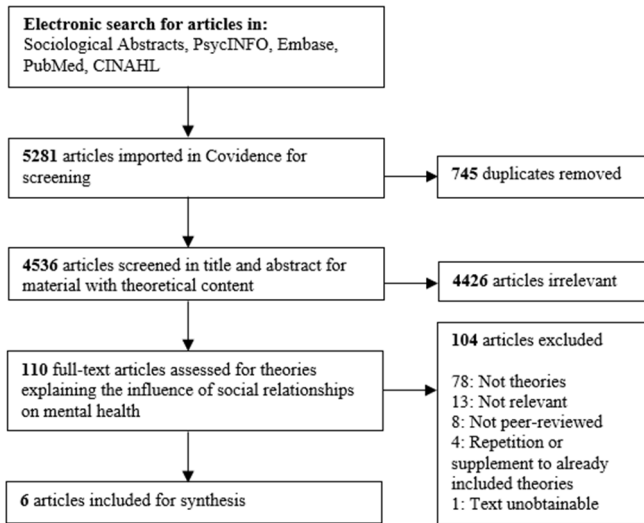
The screening process resulted in six theoretical frameworks that were included in the theoretical synthesis (Andersen et al., 2021). The synthesis was performed with inspiration from the three stages for synthesis suggested by Pound and Campbell (2015) and visualised in figure 3.3 (Andersen et al., 2021).

Figure 3.3: Three stages of theory synthesis based on Pound and Campbell (2014):
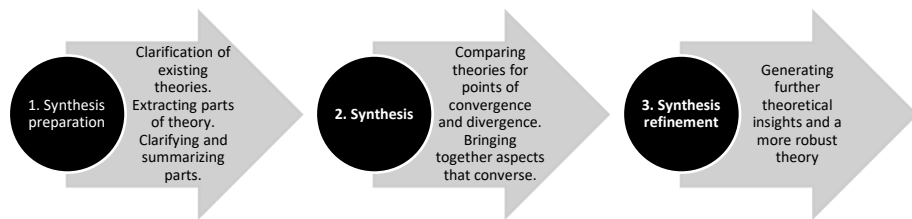
This process involved relevant parts of theories being first extracted and summarised, compared for points of convergence and divergence and then explored for further theoretical insights (Andersen et al., 2021). Box 3.1 (also provided in Andersen et al., (2021)) describes the six key aspects around which theories were compared in the synthesis. For synthesis, all theories were imported into the qualitative data analysis software Nvivo 12 Pro for Windows.

Box 3.1: Key aspects around which the theories were compared for points of convergence and divergence provided in Andersen et al., (2021).

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1. The types of social relationships that the theories focus on to explain the influence on mental health.
2. Overall explanation of the positive influence of social relationships on mental health, including
   2.1: How social relationships influence mental health positively in times of adversities.
   2.2: How social relationships influence mental health positively irrespective of adversities.
3. The character of social relationships that may positively influence mental health.
4. The character of social relationships that may either negatively influence mental health or have no effect.
5. How subjective perceptions influence the impact of social relationships on mental health.
6. How individual differences influence the impact of social relationships on mental health.

3.2 DESCRIBTION OF THE METHODOLOGY OF SUB-STUDY 2

Aim

The aim of this study was to explore how, to whom and under what circumstances a web-based platform, *Boblberg.dk,* adopted within community care in a Danish municipality worked to promote citizens' sense of belonging and mental health (Andersen et al., 2020).

Design

The study used a realist evaluation design informed by the research approach introduced by Nick Tilley and Ray Pawson (1997) and followed the realistic evaluation cycle (Pawson & Tilley, 1997). It was designed according to the three phases of 1) Development of programme theories, 2) Testing programme theories against data and 3) Analysis and specification of programme theories (Andersen et al., 2020). Figure 3.4 visualises the evaluation process that took place in the study including data collected for phase 1 and phase 2.

Figure 3.4: Visualising the evaluation process in sub-study 2 and data collected for phase 1 and phase 2 inspired by the realistic evaluation cycle presented in Pawson & Tilley (1997).
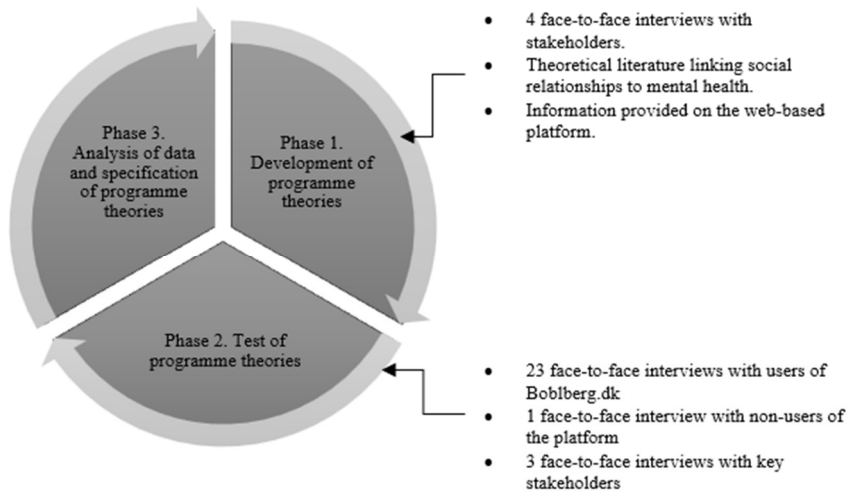
Methods

In phase 1, initial programme theories were developed for subsequent test in phase 2. Programme theories were seen as abstractions of demi-regularities (i.e., semi-predictable patterns (Jagosh et al., 2012)) in relation to how the platform worked to promote belonging and mental health and included for whom and under what circumstances the platform worked (Andersen et al., 2020). These abstractions were expressed in so-called context, mechanism, outcome configurations (CMOc) defined by Pawson (2013) as "*a hypothesis that the programme works (O) because of the action of some underlying mechanisms (M) which only comes into operation in particular contexts (C). If the right processes operate in the right conditions, then the programme will prevail.*" *(Pp. 21-22).* The study used the definitions of context, mechanism, and outcome provided in table 3.3 (Andersen et al., 2020).

Table 3.3: Definitions of context, mechanism and outcome used in study 2 provided in Andersen et al., (2020).

Context:	Mechanism:	Outcome:
The conditions and circumstances into which a programme is introduced and which affect the operation of programme mechanisms (e.g., place, interpersonal and social relationships, biology, technology, economic conditions etc.) (Pawson & Tilley, 2004).	Mechanisms make programmes bring about change. It is not the programme that brings about change, but the processes of how people interpret and act upon the resources offered by the programme (Pawson & Tilley, 2004). Mechanisms consist of the resources introduced by a programme *and* the participants' reasoning (Dalkin, Greenhalgh, Jones, Cunningham, & Lhussier, 2015). M (Resources) + C → M (Reasoning) = O	The intended and unintended outcomes generated by combinations of programme mechanisms and contextual circumstances (Pawson & Tilley, 2004)

For the development of programme theories, various material can be used (Pawson & Tilley, 2004). The choice of material in this study was based on the main premise that the material should provide access to theories about how, to whom and under what circumstances the web-based platform worked to improve belonging and mental health. The following data was chosen:

- Middle-range theory explaining the causal relationship between social relationships and mental health. The literature was identified systematically in study 1 (theoretical review).

- Four face-to-face interviews conducted with key stakeholders at *Boblberg.dk* and Aalborg Municipality which focused on exploring the stakeholder's expectations as well as their experiences with how, to whom and under what circumstances the web-based platform worked to promote belonging and mental health or conversely caused unintended negative consequences.

- Information provided on the web-based platform.

All interviews were transcribed and reviewed to extract demi-regularities for subsequent tests in phase 2. This was merged with the explanatory insight from middle-range theory linking social relationships to mental health into the testable programme theories presented in table 3.4.

Table 3.4: Initial CMOcs developed in sub-study 2 provided in Andersen et al., (2020)

CMOc	By increasing the visibility and accessibility of potential social connections and communities (M), the web-based platform encourages municipality citizens (C) to meet their needs for belongingness thus supporting mental health (O).
CMOc	By providing an opportunity for citizens to make contact and communicate with others online (M), the web-based platform encourages citizens who experience difficulties with face-to-face communication (C) to reach out to others to meet their needs for belongingness thus supporting mental health (O).
CMOc	Platform users who are already well enmeshed in social relationships (C) may be less likely to use the platform to search for new social relationships (O) compared to users with limited social networks (C1) due to the experience of saturated needs for belongingness respectively versus unsaturated needs (M). In line with this, the formation of new social bonds facilitated by the platform may have less impact on mental health (O) to the group of users who are already well enmeshed in social relationships (C) compared to users with limited social networks (C1) due to differences in belongingness needs (M).
CMOc	Compared to younger citizens (C1), older citizens may be less likely to use the platform to meet their needs for belongingness to improve mental health (O) due to lack of experience with digital communication technologies (M).
CMOc	If citizens with needs for belongingness (C) reach out to other users in the platform without success (e.g., if not responded to or socially rejected) (M), then belongingness needs are thwarted, and negative mental health effects may occur (O).
CMOc	Citizens with prior experiences of social exclusion (C) may be disadvantaged in terms of benefitting from the platform's resources to meet their needs of belongingness (O) compared to other citizens (C1) due to challenges in terms of establishing new social bonds (M). Negative mental health effects may occur (O).
CMOc	If contacts facilitated by the platform between users with needs for belonging (C) develop into longer term relationships with frequent interaction perceived by users as temporally stable and enduring, positive/free of conflict, and accepting (M), these relationships will promote belonging and mental health (O).
CMOc	If contacts between users (C) facilitated by the platform develop into negative relationships (characterised by feelings of lack of acceptance, conflict, unsupportive behavior etc.) (M), these contacts and relationships will not meet belongingness needs and may cause negative mental health effects (O).

In phase 2 of this study, data was collected to test the programme theories (Table 3.4). In general, critical realism recognises the use of a plurality of research methods (Haigh, Kemp, Bazeley, & Haigh, 2019). This also applies to realistic evaluation. Here, the choice of methods must be guided by the programme theories for tests (Pawson, 2014; Pawson & Tilley, 1997). The primary method used for data collection was semi-structured face-to-face interviews based on the realistic approach to interviewing. Guided by Emmel (2013), participants were recruited based on the programme theories developed in phase 1. A total of 24 interviews were conducted with users of *Boblberg.dk* and people within the target group of the initiative. Three interviews conducted with key stakeholders were further used. Figure 3.5 visualises the multifaceted recruitment strategy used in the study.

Figure 3.5: Visualising the multifaceted recruitment strategy for data collection to test programme theories provided in Andersen et al., (2020)

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Interviewing users of the web-based platform provided an opportunity to drill into the generative mechanisms that made the web-based platform work (Andersen et al., 2020). Interviewing users of a social program or intervention is suitable as Ray Pawson explains: *"They (program recipients) can say what it was about a program that made them act one way or the other"* (Pawson, 2014). For the interviews conducted in this study, a semi-structured interview-guide was constructed based on the programme theories. The approach to interviewing was guided by realist interview techniques suggested by Pawson and Tilley (1997), which meant that ideas about how the platform worked were openly discussed with the participants during

the interviews for them to verify, falsify and refine (Andersen et al., 2020). The semi-structured approach to interviewing provided an opportunity to pursue topics raised by the participants during the interviews while providing flexibility to explore the generative mechanisms (Andersen et al., 2020).

Interviewing stakeholders provided the opportunity to explore different contexts influencing how the platform worked. According to Ray Pawson, interviewing practitioners is especially suitable for providing knowledge on contexts because "*often they have an array of subjects before them, and rather like a teacher they know that some people will listen, and some people won't listen. Some people will take on the message of a programme and some don't*" (Pawson, 2014). Stakeholders were purposefully sampled, and interview-guides were developed with the purpose of exploring their experiences regarding users' use of the platform.

For analysis, all data was imported into Nvivo 12 Pro for Windows where it was first transcribed and then coded into categories. According to Pawson and Tilley (2004) "*the main purpose of the analysis is to see if the model will explain the complex footprint of outcomes left by the program*". The purpose of the analysis conducted for this study, was to explore the extent to which data matched the initial programme theories.

In phase 3 (Figure 3.4), the initial CMO configurations developed in phase 1 were compared to the patterns of CMO configurations derived from the empirical material in phase 2 with the purpose of refining and possibly adding new programme theories. According to the realist evaluation cycle (Pawson & Tilley, 1997), this may have been the starting point for a further round in the evaluation wheel. This was not, however, pursued in this study.

3.3 DESCRIBTION OF THE METHODOLOGY OF SUB-STUDY 3

Aim

In relation to sub-study 2 which examined how, for whom and under what circumstances the web-based platform *Boblberg.dk* worked to promote belonging and mental health, this study aimed to provide a deeper insight into the underlying social structures that influenced users' success with the platform and the targeting of the platform to vulnerable groups (Andersen et al., unpublished).

Design

The study was a qualitative study based on the paradigm of critical realism. It was informed by the argument of Bhaskar (2013) that in order to arrive at causal explanations, we need to focus on the generative mechanisms and structures that work under different circumstances to produce observable events. In relation to the realist evaluation in sub-study 2, sub-study 3 placed more emphasis on identifying underlying social structures which shaped the actions of agents (in this case, users of the platform) and thus aimed to move further beyond the CMO' configurations identified in sub-study 2. The difference in focus is in-line with the differences in research paradigms described in section 2.2.

Methods

The study was based on the same qualitative data as the realist evaluation performed in sub-study 2 with the exception that only interviews with private users who had used the platform and interviews with central stakeholders were included. The data therefore included interviews with 22 users of the platform and four interviews with key platform stakeholders as well as stakeholders in Aalborg Municipality. A more detailed description of the strategy for recruitment of participants and the interview process is provided in the section 3.2.

The qualitative data collected were well suited as they enabled the uncovering of causal powers and social structures as explained by Martin (2020):*"Causal powers can be active within multiple strata, be operating, be latent, or be entirely unobservable. Qualitative research focuses on the lived experiences and world-view of participants, and it is within their experiences that agential causal powers and social structures can be uncovered" (p. 162).* Even though people may not be consciously aware of the social structures that influence and shape their actions, their explanations provide a valuable starting point for exploring this phenomenon (Archer et al., 2013; Martin, 2020).

Data were analysed with use of abduction and retroduction with the aim of identifying the causal mechanisms and structures that influenced the users' experiences with the web-based platform. Whereas retroduction involved the process of identifying causal mechanisms and conditions for events to occur (Fletcher, Amber J., 2017), abduction - following Danermark et al., (2019) - involved a process where theory was used to interpret the findings to gain a deeper understanding of underlying structures and causal powers.

Sub-study 2 led to the identification of a central demi-regularity (i.e., an imperfect pattern or trend that indicate a probable operation of a causal mechanism (Fletcher,

A., 2020)): *users' benefit from the web-based platform in relation to their mental health largely depended on the platform matching their expectations of connecting with others and forming new rewarding relationships*. Two CMO-configurations identified in sub-study 2 put words to this trend.

'CMOc 4: Especially for people with needs for belongingness (context) the ability to locate and reach out to other users provided by the platform (resource) promotes mental health (outcome) if contacts initiated on the platform develops info social relationships that feels positive, accepting and mutual (reasoning) (thus relationships with capacity to fulfill belongingness needs' (Andersen et al., 2020)).

'CMOc 5: For people experiencing severe lack of belongingness (context), the ability to reach out to other users on the platform (resource) may trigger feelings of disappointment and sadness (outcome) when they experience a lack of positive feedback or otherwise feel socially rejected by other users (reasoning)' (Andersen et al., 2020)

Based on this, the coding and analysis was guided by the four stages of analysis suggested by Martin (2020) which involved 1) identifying initial codes and categorising the data 2) grouping initial codes into related causal categories, 3) developing causal explanation and 4) writing up the logic of the explanation offering a causal account that best fits the available data (Andersen et al., unpublished).

In this study, this process meant that causal codes were developed in relation to the broader social structures and cultural beliefs influencing how the platform was used by the municipality and by individual users. Causal codes were also developed related to the users' experiences with the platform. Figure 3.6 provides an overview of the categories identified in this study.

Figure 3.6: Causal categories identified in sub-study 3 (Andersen et al., unpublished).
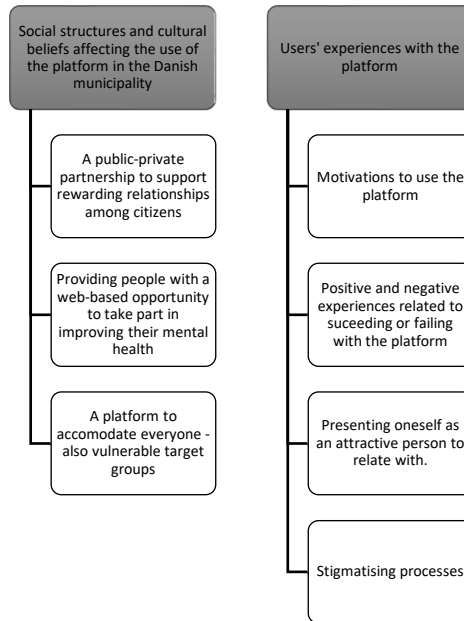
Analysis based on the causal categories (Figure 3.6) provided access points for the real domain to further identify social structures that provide causal explanation. Referencing Danermark et al., (2019), the process of abduction in the study involved recontextualizing the findings from the analysis of the empirical data within theoretical frameworks. As described by Danermark, we need existing theories to answer the question: *"what structures are fundamental for this phenomenon to exist to and to be what it is"* (Danermark et al., 2019). In this study, theories were needed to answer the question *"what structures are fundamental for the findings to be what they are".* For this theoretical recontextualising, a combination of theory on interpersonal relationships and the need for belonging (Baumeister & Leary, 1995; Leary, 2010) and Fundamental Cause Theory (Hatzenbuehler, Phelan, & Link, 2013; Phelan, Link, & Tehranifar, 2010) was used (Andersen et al., unpublished). Theory on belonging and interpersonal relationships provided the theoretical lens to interpret peoples' motivations and experiences with reference to their needs for acceptance and belongingness. In relation to this, Fundamental Cause Theory provided a structural perspective through which people's actions and outcomes of these actions could be interpreted with reference to fundamental causes of health inequalities (Andersen et al., unpublished). Bringing these theoretical perspectives together provided a theoretical framework to study the interplay between users' agency in terms of their motivation and experiences with using *Boblberg.dk*, and the

social structures that shaped their experiences (Andersen et al., unpublished). The practice of combining different theories that complement each other while focusing on different structures and mechanisms is in accordance with research based on critical realism as explained by Danermark et al. (2019).

3.4 ETHICAL CONSIDERATIONS

Ethical considerations were examined in relation to the collection of qualitative data used in sub-study 2 and sub-study 3.

In accordance with the Danish national ethical requirements, qualitative research involving the use of interviews or observations cannot be submitted for authority approval from The National Committee on Health Research Ethics (Danish Health Research Ethics Committee, 2018). According to the Danish Health Research Ethics Committee, this project was not subject to requirements for notification and approval by the ethics committee.

Prior to participation in the study, all participants were provided with information about the study both verbally and in writing. For users of *Boblberg.dk,* material was provided in a leaflet describing the purpose of the study, how information that participants chose to share in the interviews would be used as well as background and contact information on the researcher (Appendix B). Following the ethical principles laid out by the Helsinki declaration (The World Medical Association, 2013), all participants were informed that their participation was anonymous and voluntary and that they had the right to withdraw from the study at any time without reprisals. All participants gave written consent to participate in the study. Participants were furthermore encouraged to contact the researcher if questions should arise regarding the project or the person's participation after the interviews was made.

In accordance with principles laid out by The European Code of Conduct for Research Integrity (ALLEA - ALL European Academies, 2017) and the General Data Protection Regulation legislation (The European Union, 2016) all data was stored during the research process. This data was deleted when storing it for the purpose of the Ph.D was no longer needed.

CHAPTER 4. RESULTS

In this section, findings from the three sub-studies are first elucidated and summarized. This is followed by a cross reading of the results.

4.1 SUMMARY OF FINDINGS FROM THE THREE SUB-STUDIES

4.1.1. FINDINGS FROM SUB-STUDY 1

In Sub-study 1, theories linking social relationships to mental health were reviewed and synthesised to explain 1) how social relationships influence mental health and 2) specific circumstances that distinguish beneficial social relationships from relationships that have no effect or cause harm (Andersen et al., 2021). Six middle-range theories were identified: *Social Support and Buffering Theory* (Cohen, Sheldon & Wills, 1985), *Need to Belong Theory* (Baumeister & Leary, 1995), *Adult Attachment Theory* (Mikulincer & Shaver, 2008), the *Social Cure* approach (Jetten et al., 2017), *Thriving Through Relationships Theory* (Feeney & Collins, 2015) and *Relational Regulation Theory* (RRT) (Lakey & Orehek, 2011) (Andersen et al., 2021).

Based on the synthesis, an overall roadmap was provided that showed how various social relationships intersect through life to influence people's mental health as they confront adverse circumstances and without adversities (Andersen et al., 2021). In adverse situations, social relationships may benefit mental health by providing support that protects the individual against potentially harmful consequences of the encounter with these adversities and by enabling the individual to build up resilience (Andersen et al., 2021). Social support, for instance, provided by others encountering with stressful situations may help buffer stress and build up strength and resilience needed to face future threats and challenges (Andersen et al., 2021). Additionally, without adversities, social relationships may positively influence mental health e.g., by meeting the individuals' needs for belonging and/or encourage them to fully participate in life opportunities (Andersen et al., 2021).

The study showed how the beneficial potential of social relationships was shaped in a complex interplay involving both the individual in question (individual context), relationship in question (relational context) and the individual's subjective perceptions (Andersen et al., 2021). While some social relationships may benefit mental health, others may pose a threat to mental health or have no effects (Andersen et al., 2021). Figure 4.1 illustrates the complexity of these processes.

Figure 4.1: Illustrating the interlinkage of the individual and relational context and the individual's subjective perceptions in shaping the influence of social relationships on mental health.
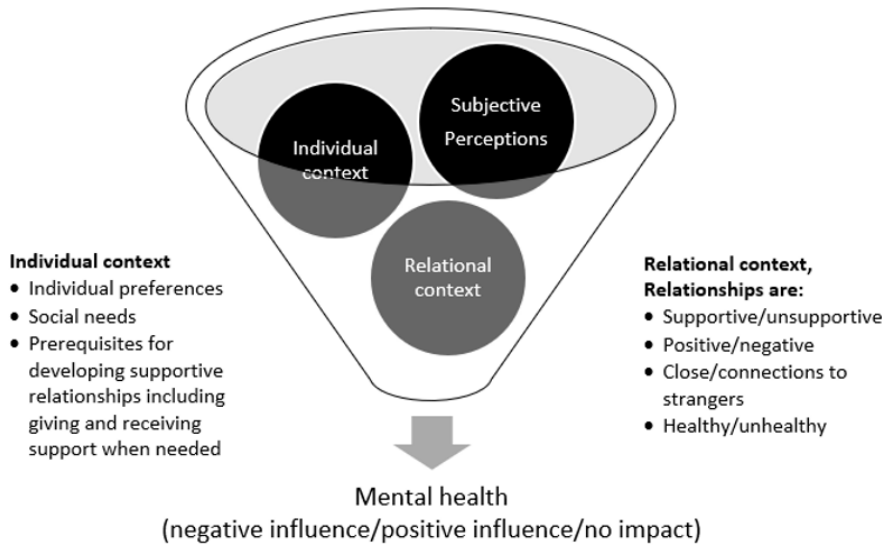
Quality and content of social relationships was found to be key to separating beneficial relationships from those that are unbenefical (Andersen et al., 2021). Beneficial relationships differ from unbeneficial ones by being supportive, positive, close and healthy (Andersen et al., 2021). Connections to strangers may for instance not influence mental health, and likewise, unsupportive relationships may, instead of benefitting mental health, pose a threat (Andersen et al., 2021).

Based on the study's results and the empirical literature, it was argued that digital technologies that increase people's opportunities to form and maintain social relationships may potentially benefit mental health as these technologies may increase people's opportunities to meet their needs for belongingness, gain access to social support, join and engage in social groups and communities for positive social identities, and interact with others for emotional regulation (Andersen et al., 2021).

Overall, the results from sub-study 1 suggested potential benefits of interventions based on social relationships to promote mental health in the population (Andersen et al., 2021). For development of interventions, considering the circumstances in which social relationships may cause more harm than good is important (Andersen et al., 2021). Formal theories may be used to inform such considerations and thus may lead to a higher chance of interventions to succeed in supporting mental health

(Andersen et al., 2021). This is relevant in interventions in which digital technologies are used. Although these technologies may hold potential to improve social relationships (e.g., increasing people's opportunities to build and/or maintain relationships), providing people with or training them to use digital technologies is no guarantee that relationships with positive influence on mental health will emerge (Andersen et al., 2021). To maximize potential benefits, a special focus on ensuring the content and quality of relationships may be valuable (Andersen et al., 2021).

4.1.2. FINDINGS FROM SUB-STUDY 2

Sub-study 2 explored how, to whom and under what circumstances the web-based platform, *Boblberg.dk*, worked to promote users' sense of belonging and mental health (Andersen et al., 2020). The findings from the study showed that depending on the user and the relational context, the platform supported its users in meeting their social needs. In order to make this work, three important mechanisms were identified. Specifically the platform worked by a) expanding the users' access to social networks; b) allowing users to overcome barriers related to reaching out to new people in real life and c) providing users with an improved starting point for the identification of a relational match (Andersen et al., 2020).

Whether these mechanisms resulted in improved belongingness and mental health was strongly affected by individual circumstances (i.e., individuals' access to social networks, belongingness needs, digital literacy, previous social experiences, and social skills) and relational circumstances (e.g., whether relationships were supportive vs. unsupportive/positive vs. conflicting etc.,) (Andersen et al., 2020).

Overall, findings from this study suggested that people with belongingness needs may benefit from the platform's resources in terms of improved belonging and mental health *if* they are able to use the platform, *if* they are able to identify a relational match, *if* they receive positive feedback from other users and *if* this leads to development of relationships that feels mutual, positive and accepting (Andersen et al., 2020).

The study showed that benefitting from the platform depended on people's ability to transform the opportunities it offered into the formation of social relationships capable of fulfilling their needs for belonging (Andersen et al., 2020). When this did not happen e.g., if a person with belongingness needs reached out and was rejected, did not receive a response on the platform or had otherwise negative relational experiences with the facilitated relationships, then the positive mental health benefits were missed, and negative emotions sometimes arose (Andersen et al., 2020).

Two groups who may be in need of further support to benefit from the platforms resources were identified in the study, i.e., people with relational difficulties who had been struggling to achieve feelings of belonging and citizens with no or limited digital literacy (Andersen et al., 2020).

Overall, the results from sub-study 2 suggested that web-based platforms that aim to enable citizens to locate friends and activity partners can serve as helpful tools in interventions striving to promote mental health in the community as they may support people in fulfilling their needs for belongingness (Andersen et al., 2020). Findings also suggested the need for awareness that providing online opportunities for citizens to connect and form social relationships is no guarantee for improving mental health (Andersen et al., 2020). Citizens who have relational difficulties and citizens with limited digital literacy in particular may need assistance to achieve benefits (Andersen et al., 2020). Therefore, supportive initiatives are recommended.

4.1.3. FINDINGS FROM SUB-STUDY 3

Sub-study 3 explored how underlying social structures influenced users' success with the web-based platform, *Boblberg.dk,* as well as the targeting of the platform to vulnerable groups (Andersen et al., unpublished). The findings showed how usage of the platform in the municipality was affected by social structures, e.g., political, financial, and public health interests as well as cultural beliefs about health promotion. This contributed to shape, e.g., the actual user groups of the platform (both citizens in the general population and people with mental and social vulnerabilities) (Andersen et al., unpublished).

For users to benefit from the platform's resources, the findings showed that getting responses on the platform (getting others to relate) was a key mechanism (Andersen et al., unpublished). To increase the likelihood of getting responses, the study pointed to the significance of users' ability to provide self-presentations on the platform that others found attractive (Andersen et al., unpublished).

This was seen to require a complex set of skills including users' abilities to match the demands on the platform, balance negative self-disclosure, communicate in a friendly manner and provide thorough descriptions to give others a picture of who they were and what they were searching for on the platform (Andersen et al., unpublished).

The findings showed that users' abilities to present themselves as attractive relational partners to privileged non-stigmatised users differed and were affected by the intersection of stigmatised conditions related to psychosocial vulnerabilities (Andersen et al., unpublished). Findings indicated that users with multiple intersecting stigmatised circumstances such as mental health issues, turbulent

relationships, poor social skills, and social isolation were disadvantaged when it came to mobilising contact with more privileged, non-stigmatized users (Andersen et al., unpublished). These users sometimes found others in similar disadvantaged positions via the platform instead (Andersen et al., unpublished). While this disparity between the privileged and stigmatised led to a reproduction of social inequalities it also allowed users in disadvantaged positions to gain access to social support and improved sense of belonging and thriving, suggesting a complex duality (Andersen et al., unpublished).

Overall, the results from sub-study 3 suggested that when using digital technologies in interventions to support social relationships and mental health, interpersonal processes between users' - not just the technology - are key to success or failures (Andersen et al., unpublished). Considering people's social context, particularly the stigmatising conditions that may shape their attempts to enter new rewarding relationships is important. Some vulnerable target groups may need extra support (e.g., to formulate descriptions of themselves, communicate with others) to benefit (Andersen et al., unpublished). The results suggested the need for engagement of both private companies and public institutions in delivering interventions based on solid considerations regarding how these are to bring about change, whom they may benefit and circumstances that may influence their effect (Andersen et al., unpublished).

4.2 CENTRAL FINDINGS ACROSS THE THREE SUB-STUDIES

In this section findings from a cross-reading of the three sub-studies will be presented. Table 4.2 illustrates four central themes which applied across the studies.

Table 4.2: Overview of findings based on cross-reading of the three sub-studies

Findings based on cross-reading of the three sub-studies	Sub-study 1	Sub-study 2	Sub-study 3
4.2.1 Digital technologies as resources in community-based interventions with potential benefits	X	X	X
4.2.2 The importance of relational aspects for the beneficial influence on mental health	X	X	X
4.2.3 Risks that may cause digital technologies to miss desired goals of supporting mental health	X	X	X
4.2.4 Differences in who benefits from a digital solution	X	X	X

4.2.1 DIGITAL TECHNOLOGIES AS RESOURCES IN COMMUNITY-BASED INTERVENTIONS WITH POTENTIAL BENEFITS TO SUPPORT MENTAL HEALTH

Findings across the three sub-studies pointed to an overall positive potential of digital technologies used as part of community services in supporting social relationships and mental health.

Sub-study 1 extracted the beneficial potential of supporting social relationships with digital technologies based on theoretical explanations provided in middle-range theories and previous findings from empirical studies. It was argued that digital technologies may increase people's opportunities to build new relationships and/or maintain and strengthen existing ones (Andersen et al., 2021). This may benefit

mental health by enabling people to gain access to social support, fulfilling their needs for belonging, helping them join and engage in social groups and communities to build social identity, and facilitating interaction with others for emotional regulation (Andersen et al., 2021).

Empirically, the realist evaluation of the web-based platform, *Boblberg.dk*, performed in sub-study 2 confirmed this potential benefit. Findings showed that with variations, the platform supported its users in meeting their social needs by expanding their access to social networks, allowing them to overcome barriers normally related to reaching out to new people in real life and providing them with an improved starting point for the identification of a relational match (Andersen et al., 2020).

Across the three studies, the findings indicated that individuals' sense of belonging influences the impact of social relationships on mental health and thus also impacts digital interventions which aim to support citizens in building new relationships for improved mental health (Andersen et al., unpublished; Andersen et al., 2020; Andersen et al., 2021). Since belonging is a vital human need, severe consequences in mental health arise when needs for belonging are not met, as this young female user of the platform who felt socially isolated and sad about going to school described:

Participant: 'When I found Boblberg, I was like…I might as well not go to school, you know, I don't have any friends there (…)'

Interviewer: 'Does it make you feel sad to be talking about this now?'

Participant: 'kind of' (Interview 6)

Accordingly, findings showed that building new relationships has capability to fulfill needs for belonging, especially in people with lack of belongingness, strongly affected users subjective sense of thriving (Andersen et al., 2020). The strength of this was evident in a platform user who described how she was normally reluctant to contact others in real life due to the fear of being rejected. She felt that *Boblberg.dk* helped her to dare to reach out with success:

'(…) well, I really feel that Boblberg has saved me, kind of, and I really mean that' (Interview 3).

Although the influence of developing new positive relationships seemed most predominant in citizens who lacked a feeling of belonging, citizens who felt socially fulfilled sometimes also experienced benefits from the development of positive relationships facilitated through the platform as this allowed them, e.g., to access social support (Andersen et al., 2020).

4.2.2 THE IMPORTANCE OF QUALITY AND RELATIONAL ASPECTS FOR THE BENEFICIAL INFLUENCE ON MENTAL HEALTH

Across the three sub-studies, it became evident that relational aspects play a key role in affecting whether interventions using digital technologies to support rewarding relationships are successful in promoting mental health. This finding indicated that using technologies to facilitate social connections between people is not a guarantee for improving mental health (Andersen et al., 2020).

In sub-study 1, relationship quality was highlighted as central to separating beneficial relationships from non-beneficial ones in terms of their impact on mental health (Andersen et al., 2021). Overall, relationships with beneficial effects on mental health were characterised as being supportive versus unsupportive, causing positive rather than negative affect, being with someone the individual feels connected to versus relationships with strangers and being healthy versus unhealthy (Andersen et al., 2021).

Sub-study 2 confirmed the significance of the quality of the relationships for improvements in mental health. The study showed that people with a lack of belongingness may primarily benefit from the *Boblberg.dk's* resources for improved belonging and mental health if this leads to the development of relationships that feels mutual, positive, and accepting (Andersen et al., 2020). Social contact alone with a changing sequence of people is not enough to satisfy belongingness needs (Andersen et al., 2020). Talking about a situation where the relationship had not felt mutual, a female user of the platform explained how interaction with another user had made her feel:

'It was constantly being emphasised how I am number 800 in line. I really don't need that because it sets things in motion inside me' (Interview 12).

In comparison with this, another female user told how feeling valued and accepted in a friendship facilitated on the platform made her really appreciate this:

'(...) you can just be yourself in her company, you know. That's what I like about her, that you don't have to be someone else than you really are (...)' (Interview 22)

Relational elements were also prominent in sub-study 3 which showed that users' opportunities to succeed with the platform and gain benefits depended highly on other users' interests in relating with them (Andersen et al., unpublished).

4.2.3 RISKS THAT MAY CAUSE DIGITAL TECHNOLOGIES TO MISS DESIRED GOALS OF PROMOTING MENTAL HEALTH

Although the three sub-studies pointed out potential benefits of digital technologies to supporting social relationships and mental health, challenges related to ensuring the quality of relationships also applied, i.e., the risk of online ostracism and social isolation, risk of people joining communities with unhealthy norms such as pro-anorexia groups or pro-suicide groups, risk of cyberbullying or people displacing time which could be spent in more beneficial face-to-face interactions (Andersen et al., 2021).

Based on the theoretical review and synthesis, Table 4.3 highlights additional risks that designers of digital interventions based on social relationships may consider for improving the effectiveness of interventions thus reducing the risk of harm.

Table 4.3: Potential benefits and risks that designers of digital interventions based on social relationships should be aware of extracted from theories. Developed for the thesis as a supplement to Table 3 presented in Andersen et al., 2021.

	Potentials **Digital interventions may:**	**Risks** **Digital interventions may:**
Need to belong theory	- Increase people's opportunities to maintain and engage in existing social relationships and social groups and/or build new social relationships to fulfill needs to belong - Enable people to interact more frequently with each other to fulfill needs to belong.	- Not foster relationships that satisfy people's needs to belong - Cause threats to belongingness due to experiences of e.g., online ostracism and rejection.
Social Cure approach	- Increase people's opportunities to maintain and engage in existing social groups or build/join new groups that provide positive social identities - Increase people's opportunities to identify social groups they consider relevant and meaningful thus providing a basis for shared social identity - Improve people's ability to be part of multiple social groups for more resources	- Provide people with improved access to join and engage in harmful social groups with negative impacts on mental health.
Relational Regulation Theory	- Increase people's access to interactions with others on a day-to-day basis for regulation of affect, thought, and action - Increase the diversity and availability of potential relationships and thus people's opportunities to localize a match for the most effective emotional regulation and support.	- Facilitate social interactions that elicit negative thinking and affect and thus lead to dysregulation of emotions.

Social Support Theory	- Increase people's opportunities to maintain and engage in existing supportive relationships or to build new supportive relationships - Improve people's access to join communities for social support and social integration - Improve people's opportunities to identify social relationships and communities that match their individual needs for support for effective stress buffering.	- Not foster social support that benefits mental health.
Adult Attachment Theory	- Increase people's opportunities to maintain and engage in existing attachment relationships for support and regulation of emotions (e.g., distance relationships with parents or partners) and build new attachment relationships.	- Facilitate relationships and interactions that are not supportive - Not benefit people who are disadvantaged regarding seeking support effectively when needed or in ability to create rewarding relationships.
Thriving Through Relationships Theory	- Provide people with increased opportunities to maintain and engage in existing close and caring relationships or to build new ones for support in times with and without adversities to facilitate thriving.	- Not foster close and caring relationships that benefit thriving if, for instance, people use them only to interact repeatedly with strangers for brief periods - Facilitate relationships that offer poor quality support and thus hinder thriving.

Sub-study 2 and sub-study 3 confirmed that digital interventions based on social relationships involve risks. These studies showed that real-life social risks such as rejection and lack of response, well-known for its potentially harmful effect, was common in the digital context causing especially people with vulnerabilities and high needs for belonging to feel negative emotions such as disappointment and sadness (Andersen et al., 2020, Andersen et al., unsubmitted).

Together, findings from the three studies highlight the importance of receiving responses and positive feedback from others when risking the outreach as an important mechanism and potential barrier to achieving positive outcomes (Andersen et al., unpublished; Andersen et al., 2020; Andersen et al., 2021). With lack of response and thus success with relating, negative consequences may arise instead, and positive consequences are also missed (Andersen et al., 2020, Andersen et al., unsubmitted).

4.2.4 DIFFERENCES IN WHO BENEFITS FROM A DIGITAL SOLUTION

Although many of the interviewed users were happy with the resources provided by *Boblberg.dk* (Andersen et al., 2020), results from the three sub-studies pointed to

differences in people's abilities to transform the social opportunities provided by such a platform into the development of rewarding relationships that had positive impact on mental health. Overall, findings from sub-study 1 suggested that individual differences and subjective perceptions play a significant role in the complex interplay to determine the influence of social relationships on mental health both in general and concerning digital interventions. Examples of individual differences are differences in the need to belong, attachment security and attachment style, and the need and preferences for receiving social support (Andersen et al., 2021).

Sub-study 2 and sub-study 3 confirmed that individual differences in the user's needs for belonging influenced their potential gains from getting contact with others via the platform. Whereas people with high needs for belonging seemed to have the largest potential benefit from the platform if they succeeded in getting contact with others and meeting their needs for belonging, they were also particularly vulnerable to the negative consequences arising from experiences of rejection and lack of response (Andersen et al., unpublished; Andersen et al., 2020).

Sub-study 2 and sub-study 3 also pointed to aspects related to digital inequalities and social inequalities influencing the users' potential gain from using the platform. Sub-study 2 highlighted the digital barriers that users with limited digital literacy were sometimes experiencing. This also became evident in an interview with a 51-year-old female user who was experiencing difficulties both navigating and identifying a relational match on the platform. She had been unable to find the search function provided on the platform and experienced difficulties in locating a relational match as she explained:

'(...) Perhaps it has something to do with the age, I don't know because I can see, I haven't found or used the search function that you are talking about. I'm just scrolling and some of them are down to 16-18 years old, you know. It's very young people' (Interview 8)

Having been introduced to the search function during the interview for the study, she talked about how having found a match now triggered an interest in contacting that person:

"But her, she sounds like me, except that she is seven years older. [The following she reads up loud] "I'm a little challenged by back pains and such but unfortunately, related to that, I've come to experience loneliness". That sure is like me. I will write to her (...)" (Interview 8)

Besides digital challenges, sub-study 3 pointed to structural challenges shaping the users' experiences with the platform. Findings from sub-study 3 indicated that users experiencing multiple intersecting stigmatised conditions could be particularly disadvantaged in mobilising contact to more privileged, non-stigmatised users but

sometimes found others in similar disadvantaged positions (Andersen et al., unpublished).

Supplementing these results, findings from sub-study 2 showed that platform users with previous relational difficulties who were experiencing negative memory bias and lack of social skills were sometimes challenged in building new close relationships to fulfill needs for belongingness (Andersen et al., 2020).

CHAPTER 5. DISCUSSION

This chapter first presents a discussion of the central findings of the study in relation to the overall aim of the thesis. Secondly, the methodology of the three sub-studies in relation to strengths and weaknesses is discussed.

5.1 DISCUSSION OF FINDINGS

As presented in the introductory section of this thesis, theorising interventions has been recommended by the UK Medical Research Council as an important aspect of intervention development (Skivington et al., 2021) that may increase the effectiveness of interventions and reduce the risk of causing harm unintendedly (Bonell, Chris et al., 2015).

Based on this, and the three key challenges highlighted in the introductory section, the overall objective of this study was to provide an expanded theoretical and empirical basis to inform the development of interventions based on social relationships to promote mental health. At the centre of this, the study sought to particularly contribute to advancing the understanding of how, to whom, and under what circumstances digital interventions may be used as part of community services to promote rewarding social relationships and mental health. The three sub-studies in the thesis were designed to individually and collectively contribute to knowledge to reach this objective with the following aims:

Sub-study 1: to explore how social relationships influence mental health and the specific circumstances that distinguish beneficial social relationships from those that cause harm (Andersen et al., 2021).

Sub-study 2: to explore how, to whom and under what circumstances the web-based platform, *Boblberg.dk* worked to promote sense of belonging and mental health in citizens (Andersen et al., 2020).

Sub-study 3: to explore the underlying social structures influencing the users' success with the web-based platform *Boblberg.dk* as well as the targeting of the platform to vulnerable groups (Andersen et al., unpublished).

5.1.1 THE ROLE OF DIGITAL TECHNOLOGIES AS MEANS TO SUPPORT SOCIAL RELATIONSHIPS AND MENTAL HEALTH IN COMMUNITY-BASED INTERVENTIONS

Interventions supporting social relationships have been encouraged as means to promote mental health (e.g., Campion et al., 2020; Cleary et al., 2018; Saeri et al., 2018; Umberson Debra & Montez Karas Jennifer, 2010).

As a tool to facilitate this, the finding of an overall beneficial potential of digital technologies to support social relationships between citizens in this study is in line with the previous literature which also highlights the role of technology in supporting social connectedness (Allen, Kelly A. et al., 2014; Clark et al., 2018; Ibarra et al., 2020; Ryan et al., 2017; Winstone et al., 2021).

By expanding citizen's access to social networks, allowing them to overcome barriers related to reaching out to new people in real life and providing them with an improved starting point for the identification of a relational match, the platform allowed users to develop new connections and relationships to meet their social needs (Andersen et al., 2020). These findings are in accordance with previous literature on the use of digital technologies in interventions to support connectedness in older adults. A study by Ibarra et al., (2020) e.g., highlighted the benefits of digital technologies in terms of their resources to facilitate more channels for interaction, provide access to a larger audience, enable participants to expand social networks, strengthen existing ties, provide social support and build social relationships.

Older populations may be at particular risk of isolation due to loss of relationships and physical impairment. Along these lines, sub-study 2 showed that people in the general population may also experience barriers that prevent them from reaching out to others to fulfill their social needs e.g., difficulties in locating where to find new friends or a community to become part of, awkwardness of asking strangers for friendship, shyness and social anxiety issues (Andersen et al., 2020). This is also in accordance with previous research which has shown that, e.g., low trust and fear of rejection are barriers that prevent people from making friends (Apostolou & Keramari, 2020).

Digital technologies play a potentially beneficial role as a means of increasing the accessibility of social networks (Andersen et al., 2020). This speaks to the importance of ensuring the availability of social relationships and social groups which was also observed by Allen and colleagues (2021). In that particular study, the researchers focused on individuals' opportunities for belonging as one of four core elements needed for experiencing a sense of belonging. This included individuals' motivations, capacities, and perceptions of belonging. It is reasonable to conclude that other beneficial functions of social relationships besides the sense of belonging (e.g., social

support, emotional regulation, social identity) first and foremost require the availability of social networks.

Increasing the availability of social networks may be particularly important for socially isolated people, including those for whom developing a social network in real life in order to experience a sense of belonging has been challenging. Used in community care services, increasing the accessibility of social networks may hold the potential to increase the range of others that can be potentially contacted and thus the likelihood of finding a relational match to meet belongingness needs. One of the platform stakeholders put words to this: *"If you have found it difficult to build relationships in a school class with 30 students, it's a bit easier in a network of 110.000* [referring to the social network on *Boblberg.dk*]". This was evident in sub-study 3 which showed that people in vulnerable positions who were struggling to belong sometimes benefitted from the platform's resources for building relationships with people in similar positions to escape social isolation and loneliness (Andersen et al., unpublished). Along these lines, Lakey and Orehek (2011) highlighted the potential of the internet to increase peoples abilities to find a match for effective affect regulation for improved mental health.

In addition to the previous studies in this area, the current study shows that in the general population digital technologies may offer resources in interventions used as part of community services to support people in overcoming barriers for reaching out and developing social relationships that potentially benefit their mental health. However, challenges also apply and need to be considered to ensure benefits.

5.1.2 USING DIGITAL TECHNOLOGIES AS PART OF COMMUNITY SERVICES TO SUPPORT QUALITY RELATIONSHIPS

Findings from the three sub-studies suggested that using digital technologies that support social relationships do not necessarily result in improved mental health. This is consistent with literature on commercial social media in which the importance of the way in which technology is used as well as the person using it for its positive or negative effects on relationship development and well-being has been highlighted (Clark et al., 2018; Nowland et al., 2018; Smith et al., 2021).

As findings from the three sub-studies showed, in some incidents using technologies as means to support social relationships may cause unintended negative consequences (Andersen et al., unpublished; Andersen et al., 2020; Andersen et al., 2021). These findings are consistent with studies which has pointed to both the potentially negative consequences of social relationships in general (Lincoln, 2000; Rook, Karen, 2014) and the potential negative consequences of digital technologies when used in

interventions to foster social connectedness in older adults (Barbosa Neves et al., 2021).

In public health interventions there is always the risk that these interventions may cause both positive and negative unintended consequences (Merton, 1936). This happens e.g., because of limitations regarding our abilities to correctly anticipate the consequences of our actions (i.e., the impact of the intervention) due to e.g., lack of knowledge (Merton, 1936). To anticipate the ramifications of both general and digital interventions based on social relationships to improve mental health, there is a need for exact knowledge regarding the pathways linking social relationships to mental health. A lack of this knowledge has been highlighted previously, e.g., by Thoits (2011) to explain varying results of social support interventions.

From the integration of theories in sub-study 1, it was evident that the pathways linking social relationships to their various outcomes in mental health is highly complex as individual differences (e.g., individual needs for belonging or preferences for social support), relational matters (e.g., whether relationships offered support or not) and individual perceptions are interlinked (Andersen et al., 2021).

The finding from this study showed that quality and content of social relationships matter to impact on mental health (Andersen et al., 2020; Andersen et al., 2021) suggesting that special focus needs to be paid to supporting the quality, not just quantity, of social relationships when using digital technologies as part of community services to support social relationships and mental health. Feeney and Collins (2015) have previously highlighted the emphasis of supporting quality relationships as they explain: *"Public health campaigns should focus on helping people to cultivate high quality relationships" (p. 113).*

Sub-study 1 highlighted important characteristics of relationships that benefit as opposed to those that have no effects or cause harm (i.e., positive vs. conflicting, supportive vs. unsupportive, close vs. relationships with strangers, and healthy vs. unhealthy (Andersen et al., 2021)) that developers and users of interventions to support rewarding social relationships may consider in order to achieve attended effects of interventions and to avoid unintended consequences. Table 4.3 provide risk to benefitting from digital interventions to be considered.

To strengthen belonging and mental health, it is important to ensure that people have access to becoming part of positive relationships and/or a community as also highlighted by Allen et al., (2021). Challenges arise for community services in making sure that the relationships developed are quality relationships. This challenge may especially apply in interventions that use digital technologies, e.g., *Boblberg.dk*, which is accessible to all citizens (above 15 of age), and where citizens themselves, are responsible for their social outcomes. The findings suggest the importance of ensuring that the digital technologies used for the purpose of supporting rewarding

social relationships and mental health to the widest possible extend consider the potential risk factors that may prevent relationships from having desired positive effects. Additionally, more research is needed to find out how quality relationships can be ensured when digital interventions are used to support social relationships and mental health.

5.2.3 THE IMPORTANCE OF MAKING SURE THAT PEOPLE HAVE THE DIGITAL SKILLS TO BENEFIT FROM A DIGITAL SOLUTION

The study showed that citizens differed in their abilities to benefit from the platform's resources. Sub-study 2 highlighted the importance of digital skills to use and navigate on the platform for benefitting users' experience (Andersen et al., 2020). Sub-study 3 elaborated on the observation that getting responses from others was more likely if users had the skills set to match demands on the platform, balance negative self-disclosure, communicate in a friendly manner, and provide through descriptions to give others a picture of a person they would like to connect with (Andersen et al., unpublished).

It is well-known from previous literature that people vary in their access and abilities to use and take advantage of digital technologies (also referred to a digital inequalities (Robinson et al., 2015) or the digital divide (van Dijk, 2006)). Even though in Denmark, a large percentage of the population have basic digital skills (70 percent of the population (EU average is 56 percent)) (European Commission, 2021), a report on digital skills in the Nordic countries highlighted vulnerable groups i.e., older adults and adults who lack basic digital skills, e.g., unemployed people in particular, to whom these technologies may not be readily accessible (Anthony et al., 2020).

This was confirmed in sub-study 2 which showed that the users varied in their digital literacy, and that users who did not have digital experience, e.g., from their work lives, sometimes experienced challenges in using and benefitting from the platform (Andersen et al., 2020). In a very simple definition digital literacy means *'having the skills you need to live, learn, and work in a society where communication and access to information is increasingly through digital technologies like internet platforms, social media, and mobile devices' (Western Sydney University Library, 2017)*

In Denmark it is estimated that above 17-22 percent of the population experience challenges in using digital technologies (Digitaliseringsstyrelsen & KL, 2021). Previous literature has highlighted how social inequalities in digital skills is related to other forms of social inequalities, e.g., socioeconomic status, class, gender, status, and education (Ramalingam & Hernandez, 2016; Robinson et al., 2015).

In general, the study's findings suggested that when using digital technologies as part of community services to support social relationships and mental health, ensuring that these citizens have the necessary digital skills to benefit from the technology is important. Regarding the targeting of people in vulnerable positions who have needs for belonging, it may be important to recognise that this target group may have the largest need for benefitting but may also be particularly challenged in relation to having the necessary digital skills and therefore may need support and guidance to use the platform to their benefit (e.g., IT support).

5.2.4 SUPPORTING CITIZENS WHO EXPERIENCE CHALLENGES IN RELATING

The finding that relational matters influenced the platforms potential to promote mental health is in accordance with previous research which has found that lack of meaningful connections and interactions presents an important barrier to positive effects of digital technologies and a potential catalysator to negative effects (Barbosa Neves et al., 2021; Clark et al., 2018).

This speaks to the social risk of having one's belongingness thwarted (Baumeister & Leary, 1995; Baumeister, Brewer, Tice, & Twenge, 2007). Contrary to feeling accepted, included, and welcomed, which tend to lead to positive feelings, the feeling of being rejected by others, excluded, or ignored may cause negative feelings such as anxiety, grief, and loneliness (Baumeister & Leary, 1995). This may, in turn, cause negative consequences for mental health (Leary, 2010).

The fact that relational aspects matter directs attention to the importance of considering the differences or inequalities in peoples' abilities to develop social connections and build new rewarding relationships when using digital technologies in community care services to support social relationships and mental health. Especially people with previous relational difficulties and poor social skills may be disadvantaged in this matter (Andersen et al., unpublished; Andersen et al., 2020).

To support rewarding social relationships and mental health in community care services, it may be valuable to focus on multiple aspects. In the integrative framework proposed by Allen et al. (2021), the researchers suggest that a focus on individuals' competencies (skills and abilities), motivations (inner drive), opportunities (reducing barriers, enabling) and perceptions (cognitions, attributions, feedback mechanisms, positive or negative experiences when connecting) of belonging is needed in strategies to support belongingness.

Based on this framework and results from this study which showed that people vary in their abilities to build rewarding relationships, supporting citizens' skills to belong may present a valuable approach.

5.2 DISCUSSION OF RESEARCH DESIGNS AND METHODS

In the following section, the methodology of the thesis will be discussed to allow for the critical assessment of the trustworthiness of the research undertaken. In the section, sub-study 1 and sub-study 2 and 3, respectively, will be critically assessed separately since differences in research design and methods require the use of specific assessment criteria.

5.2.2 CRITICAL ASSESSMENT OF SUB-STUDY 1

Sub-study 1 involved a systematic review and synthesis of theories linking social relationships to mental health. In the following assessment, design and method will be discussed concerning how this contributed to ensuring the *reliability* and *validity* of the study.

Most often systematic reviews are used to review empirical evidence (Booth & Carroll, 2015) but using systematic search strategies for identifying theories has been encouraged (e.g., Campbell et al., 2014). In this study, systematic search procedures were applied to ensure that if repeated, e.g., by other researchers, producing similar results, also referred to as the *reliability* (Roberts & Priest, 2006), was possible. Systematic search procedures were chosen to make sure that included theories were not exclusively those already known by the researcher to ensure the *validity* of the study (i.e., measuring what was intended (Roberts & Priest, 2006)).

The systematic search procedure involved the use of a specific and focussed research question, explication of specific inclusion and exclusion criteria, and application of a detailed search strategy (i.e., the BeHEMoTh framework proposed by Booth & Carrol (2015)). Following PRISMA guidelines, all search strategies were provided in appendix to the article to ensure high transparency which will enable other researchers to repeat the search with similar results. The systematic search for theories was not supplemented with citation chasing to identify further theories and neither empirical material that mentioned nor used theory as a framework for interpretation was used as entry points for identification of further theories (Andersen et al., 2021). This choice was largely made due to constrained resources and may have had the consequence of narrowing the number of identified theories (e.g., The Convoy Model of social relations (Antonucci, T. C., Birditt, & Ajrouch, 2011) as

mentioned in Andersen et al., (2021)). The choice of searching exclusively via the electronic databases supported the possibility of replicating the study and thus the study's reliability.

A central challenge was in the review and synthesis of theories related to developing a search strategy which, as far as possible, captured theories regarding the influence of social relationships. Since social relationships have been conceptualised in multiple ways in the research (Berkman et al., 2000), this caused a risk of omitting important theoretical perspectives if important terms were excluded. This challenge was sought to be overcome with initial literature searches which helped identify the various terms used in the research (e.g., social ties, belonging, social support, social identity, social network etc.,) which were then included in an encompassing search strategy (Andersen et al., 2021). Another challenge was related to the identification of theories in the literature. As also mentioned by Campbell et al., (2014), whether literature has the character of a theory is not necessarily mentioned in the title or abstract which introduces the risk of omitting important theoretical perspectives if not considered. To meet this challenge, the choice was made to search for theories in the content of the literature identified in the electronic databases with the use of index terms (i.e., MeSH, Thesaurus, Emtree). To overcome the fact that the theories were not necessarily indexed as such in the databases, the search was also combined with a search for *mechanisms* and *pathways* in title and abstract since these terms were proposed by Campbell (2014) as search terms to capture theory. Overall, these procedures were taken to ensure that important theoretical perspectives, as far as possible, were included in the synthesis and thus to ensure the validity of the study.

Another central challenge to ensuring both high transparency and that results could be replicated was related to the question of determining what was meant by theory. Campbell et al., (2014) mentions this challenge. Guided by their reflections, a choice was made to set certain criteria for when literature was to be considered and included as a theory. This drew on a combination of Merton's (1967) definition of middle-range theory, Sutton & Staw's (1995) understanding of theory, and Van Ryb & Heaney's (1992) characteristic of theories (Figure 3.1.). To reduce the risk of selection bias and thus ensure the validity of the study, all materials were screened independently by two reviewers based on predefined criteria (Andersen et al., 2021). In practice, it proved challenging to distinguish middle-range theories from other explanations, hypotheses, and conceptual models presented in the literature. This introduced a risk of making incorrect assessments of what to include as theory and thus the risk of omitting important theoretical perspectives. To overcome this challenge, a joint assessment by the two reviewers was made in all cases of doubt based on the chosen definitions of theory.

In the analytical phase of the study, reliability was ensured by making each step taken explicit by using the three stages of theory synthesis proposed by Pound and Campbell (2015). Points based on which data was extracted from the theories were

also made explicit (Box 3.1). Importing the theoretical materials into NVivo 12, normally known for its strengths in qualitative research, and extracting parts of theories with the use of this program ensured an overview and supported a systematic approach to the predefined data extraction which reduced the risk of bias. Although it cannot be ruled out that other researchers could draw other conclusions regarding e.g., the similarities and differences between the included theories, the transparency of the study opens the possibility of evaluation the interpretations made.

In all, the systematic approach and the transparency by which the study was performed has provided the opportunity for ensuring that the study meets the research requirements of reliability and validity.

5.2.3 CRITICAL ASSESSMENT OF SUB-STUDY 2 AND SUB-STUDY 3

Since sub-study 2 and sub-study 3 involved studies of qualitative data, the methodological approach applied for these studies was critically assessed in relation to the studies' trustworthiness. For this, methodological reflections are drawn forward in this section and discussed in relation to four typical criteria for qualitative research proposed by Guba: *dependability, credibility*, *confirmability,* and *transferability* (Guba, 1981).

Dependability is similar to reliability in quantitative studies, but in qualitative research it may refer to whether future researchers would be able to repeat the work undertaken in the study but not necessarily with the same results (Shenton, 2004). To ensure high dependability, each of the sub-studies strove to report the steps undertaken in the research process in detail as proposed by Shenton (2004). This meant that methodological considerations and choices regarding philosophical background of the study, study design, recruitment of participants, the analysis of data etc., was described as transparently as possible to enable others to be able to critically assess these choices.

Credibility in qualitative studies is similar to internal validity in quantitative research, and its assessment can be understood as a question of whether the study has accurately registered the studied phenomenon. In other words, are the findings concurrent with reality (Shenton, 2004) To ensure credibility, methodological guidelines were followed throughout the study. This was evident in sub-study 2, which primarily followed the well-defined and extensively described methodological guidelines provided by Pawson and Tilley (e.g., Pawson & Tilley, 2004; Pawson, 1996; Pawson & Tilley, 1997; Pawson, 2013) and other researchers with expertise within this field (e.g., Dalkin et al., 2015; Emmel, 2013; Jagosh, 2018c). Sub-study 3 was additionally guided by methodological descriptions for qualitative research based on critical

realism provided by Martin (2020), Fletcher (2020) and Danermark (2019) specifically.

Illustrating this, participants in the study were recruited based on the overall guideline that this should be theory-based proposed by Pawson and Tilley (1997). As explained by Emmel (2013): *"The trick in choosing cases is to assemble the optimal configuration of ingredients to refine a theory and then to repeat the trick within the resource constrains of the research project. Within any research it is theories that inform the choice of sample, and the sampling strategies that are used to test theory." (chapter 4, p. 2)*. For sub-study 2, this meant that the recruitment of participants strove for the *optimal* sample of participants to test the central programme theories developed in the study and outlined assumptions of how, for whom and under what circumstances the platform was expected to work to bring about specific outcomes in belonging and mental health.

In practice, this task proved challenging and required the use of several different recruitment strategies. To test the programme theory, platform users were thus recruited directly on the platform, at marketing events hosted by platform stakeholders, with use of snowball sampling (i.e., users who knew others that would be interested in participating) and based on stakeholders' knowledge of platform users that would be willing to share their experiences with the platform. Challenges in recruiting participants resulted in a composition of the participant group where mostly female users were represented (i.e., 16 female/six male users). Only one participant was of other ethnic origin than Danish; furthermore, even though the participants differed in age (between 12 and 73 years), only few senior users of the platform were represented. This basis was not considered solid enough to draw conclusions about the use of the platform specifically related to the gender and age of the participants and was not chosen. In other ways, however, the diversity of the participant group allowed for central comparisons between cases (e.g., between participants' experiences with the platform) which enabled the test of programme theories.

Since this study involved collaboration with Aalborg Municipality and Boblberg, important risks to the impartial research process must be reviewed and discussed. Collaborating with stakeholders in research endangers credibility if it means that the research is not a neutral representation of the data but instead shaped, e.g., to support a political position as proposed by Oliver et al., (2019). In realist evaluation, the researcher often seeks a middle position between an insider perspective and an external perspective as described by Pawson and Tilley (2004). For sub-study 2, stakeholders were involved in contributing valuable knowledge to inform initial programme theories about how, to whom and under what circumstances the platform worked as guided by the realist evaluation approach (Pawson, R. & Tilley, 2004). Furthermore, they contributed to the recruitment of participants, e.g., by suggesting users known to be willing to share their experiences with the platform. The risk of

this is summarized by Emmel (2013) *"gatekeepers have liabilities (...), through refusing introductions or ensuring the researchers talk to particular kinds of people or access particular resources, which allow them to control the sample in particular ways" (chapter 4, p. 6).* Thus, the risk of this strategy may have been that participants with favorable views or experiences with the platform were prioritised, omitting participants with less favorable experiences. The choice to involve stakeholders in the recruitment of participants was made as a compromise to ensure a sufficiently large and diverse group of participants and resulted in three extra participants whose experiences with the platform contributed important knowledge to test the programme theories. In general, this was very helpful and did not compromise the data largely due to the fact that participants with various experiences, (both success and failures with the platform) for the most part were also sampled in various other ways. Neither Aalborg Municipality or Boblberg influenced the data collection, analysis or dissemination of the research.

Confirmability in qualitative research is the counterpart to objectivity in quantitative studies and may be understood as when the findings of the study is based on data, not researchers' preferences. Regarding the question of objectivity, research based on the realist evaluation approach outlined by Pawson and Tilley (1997) and research based on critical realism differ in their approach to the role of the researchers' values in research. Whereas realist evaluation researchers reject that normative values should influence research and rely on research to inform considerations e.g., for politicians on how to act (Pawson, 2016), research based on critical realism encourages that research should strive for a critical approach to social inequalities with emancipatory concerns as Porter & O'Halloran (2012) propose. According to Alderson (2021) concerning health promotion, this includes *"changing structures to advance justice and human flourishing generally" (Chapter 1, p. 23, EPUB edition)* (Alderson, 2021). Differences in these approaches are evident in sub-study 2 and sub-study 3 in which sub-study 3, in accordance with what Porter & O'Halloran (2012) propose, focusses on highlighting the structural challenges that may be associated with reaching out via the web-based platform and achieving the building of new social relationships for improved mental health. It is important to say, that the research carried out in this thesis has been guided by the aim to contribute to advancing the understanding of how, to whom, and under what circumstances digital interventions may be used as part of community services to promote rewarding social relationships and mental health and that due to the critical realist approach, focus has been on identifying context and underlying structures and mechanisms causing events to happen. The research was also driven by the data, not personal values.

Transferability in qualitative research is similar to external validity in quantitative research and refers to whether results from the study are applicable in other contexts e.g., in other situations or populations (Shenton, 2004). Research based on critical realism recognises that whether mechanisms are activated and produce certain outcomes depends on the context (Greenhalgh & Manzano, 2021). As proposed by

Astbury & Leeuw (2010), mechanisms are context sensitive. In realist evaluation, the ability to generalise lies in the opportunity to generalise the CMO-configurations across practice, organisational and policy areas (Pawson & Tilley, 2004) as Greenhalgh & Manzano (2021): *"while it is not possible to make generalisations about what constitutes 'context' in isolation, it is possible to form generalizable, middle range causal explanations about the ways in which contexts interact with mechanisms to produce outcomes." (p. 3).* Given that a similar platform is implemented in a similar environment, it is reasonable to believe that the CMO-configurations identified in sub-study 2 are transferable. To increase transferability, contextual information about the research, i.e., the context in which the work has been undertaken as well as the studied phenomenon, has been provided as proposed by Shenton (2004). In this thesis, as well as in sub-study 2 and sub-study 3 efforts have been made to describe the context in which this study has taken place and the characteristics of the platform. For example, following RAMESES II reporting standards for realist evaluation (Wong et al., 2016), descriptions were made of the environment in which the evaluation took place and the web-based platform which was evaluated in sub-study 2. Furthermore, sub-study 3 described in more detail the social and political context characterising the environment in which the platform was used and in which the study took place. To summarise, for transferability of the results and conclusions drawn from this research, it is important that contexts that are likely to be essential for how digital interventions may work to support relationships and mental health are considered.

CHAPTER 6. IMPLICATIONS

The following section presents implications based on the study's findings to inform policy, practice, and research.

Overall, findings from this study highlight potential benefits of using digital interventions as part of community care to support rewarding social relationships and mental health. To strengthen these potentials, strategies to ensure that the opportunities provided by these technologies are transformed into rewarding connections and social relationships may be valuable.

In the development of digital interventions and in using digital interventions as part of community care services, the findings point to the need to consider the possible pathways through which these interventions may work to produce positive, negative, or neutral outcomes in mental health. Given the significance of the relational aspects in terms of influencing the impact of digital technologies on mental health, it may be argued that knowledge of how relationships can influence mental health, for better or worse may provide valuable knowledge. This may, if incorporated into the digital context, provide an opportunity to meet potential challenges and support the positive effects. The knowledge that having one's belongingness needs thwarted (e.g., by social rejections or exclusion) may negatively affect mental health as opposed to promoting it and could perhaps be accommodated in the intervention design by ensuring that all users receive positive feedback based on their social outreach.

The findings from the study highlight the importance of collaborations between private developers of digital interventions and public care service of the mutual engagement in considerations regarding how these interventions work, who they may benefit and circumstances that may influence their effect (Andersen et al., unpublished). This is central to ensuring that interventions that may have worked well in one group are not targeted to other groups, perhaps more vulnerable groups, without careful considerations of the circumstances that may influence the effect.

Although digital technologies may provide helpful tools in interventions to support social relationships, it is important to recognize that people differ in their abilities to transform the opportunities provided into rewarding relationships for improved mental health (Andersen et al., 2020). Based on this, when presenting citizens with a digital solution it is important to consider who may be expected to be able to bring themselves into new rewarding relationships based on this opportunity and who might be in need for extra support to benefit. The study indicated that citizens with limited digital skills and citizens with relational challenges may particularly need support to succeed. Practitioners can support citizens' success with the platform by, for example, offering IT-support to help them navigate on the platform or by supporting them in performing on the platform (i.e., developing descriptions of themselves and

what they are searching for and communicating with other users) (Andersen et al., unpublished; Andersen et al., 2020). It is important to consider which citizens may need other types of interventions to develop meaningful relationships for improved mental health (e.g., efforts where professionals facilitate activities and meetings and support citizens in building positive relationships).

In relation to previous studies regarding the influence of digital technologies on social connectedness, this study shed light on how digital technologies may be used as part of community service to support social relationships and mental health between citizens in a local community – both in the general population and with citizens in vulnerable positions. To support the potential benefit of technologies used for this purpose, more research is needed. In particular, research is needed to understand how social relationships develop and evolve based on online opportunities into rewarding commitments to promote mental health. Surveys may be helpful to shed further light to users' experiences as well as the contextual conditions that may influence the success of interventions (e.g., age, gender, socioeconomic position etc.). Furthermore, there is a need for more research to examine the mechanisms by which digital technologies may contribute to the development of high-quality relationships that benefit. Finally, and especially if such initiatives are to be targeted to highly vulnerable target groups, more studies are needed to investigate whether the positive consequences outweigh the negative (Andersen et al., 2020).

CHAPTER 7. CONCLUSION

The objective of this study was to provide an expanded theoretical and empirical basis to inform the development of digital interventions based on social relationships to promote mental health. The study sought to particularly contribute to advancing the understanding of how, to whom and under what circumstances digital interventions may be used as part of community services to promote belonging and mental health.

To reach this objective, three sub-studies were performed. Sub-study 1 identified and synthesised theories linking social relationships to mental health in order to explore how social relationships influence mental health and the circumstances distinguishing beneficial social relationships from relationships that have no effect or cause harm (Andersen et al., 2021). Sub-study 2 explored how, to whom and under what circumstances, the web-based platform, *Boblberg.dk*, worked to promote users' sense of belonging and mental health (Andersen et al., 2020), and sub-study 3 explored underlying social structures shaping users' success with the platform as well as the targeting of the platform to vulnerable groups (Andersen et al., unpublished).

Findings from this study suggest potential benefits of using digital technologies as part of community services to support social relationships and mental health as these may increase peoples' access to social networks, reduce the barriers for social outreach and improve peoples' starting point for the identification of a relational match.

However, the use of digital technologies does not guarantee the development of relationships that benefits mental health. In particular, the quality and content of these are crucial. Beneficial social relationships may especially be those that are supportive, positive, close, and healthy. In relation to this, the digital context introduces both well-known and new risks which may produce unintended negative consequences if not considered in the intervention design and usage (e.g., risk of rejection or online ostracism).

Benefitting from digital technologies depends to a large extent on peoples' abilities to transform the opportunities they provide into rewarding relationships for improved mental health. To effectively intervene to support social relationships and mental health with the use of digital technologies, the findings suggest the importance of supporting citizens who are disadvantaged due to, e.g., limited digital skills, relational challenges and poor social skills.

Finally, it may be important to recognize that relational development outside of the interest of the person that seeks to relate, takes the interest of at least one other person and that social inequalities may exist in people's abilities to attract others to access the resources of rewarding social relationships for mental health promotion.

REFERENCE LIST

Aartsen, M., Veenstra, M., & Hansen, T. (2017). Social pathways to health: On the mediating role of the social network in the relation between socio-economic position and health. *SSM - Population Health, 3*(C), 419-426. doi:10.1016/j.ssmph.2017.05.006

Alderson, P. (2021). *Critical realism for health and illness research: A practical introduction* Policy Press.

ALLEA - ALL European Academies. (2017). *The european code of conduct for research integrity.* Berlin: ALLEA - All European Academies. Retrieved from https://allea.org/code-of-conduct/

Allen, K. A., Ryan, T., Gray, D. L., McInerney, D. M., & Waters, L. (2014). Social media use and social connectedness in adolescents: The positives and the potential pitfalls. *The Australian Educational and Developmental Psychologist, 31*(1), 18-31. doi:10.1017/edp.2014.2

Allen, K., Kern, M. L., Rozek, C. S., McInerney, D. M., & Slavich, G. M. (2021). Belonging: A review of conceptual issues, an integrative framework, and directions for future research. *Australian Journal of Psychology, 73*(1), 87-102. doi:10.1080/00049530.2021.1883409

Almedom, A. M. (2005). Social capital and mental health: An interdisciplinary review of primary evidence. *Social Science & Medicine, 61*(5), 943-964. doi:10.1016/j.socscimed.2004.12.025

Andersen, L. M. B., Rasmussen, A. N., Reavley, N. J., Bøggild, H., & Overgaard, C. (2021). The social route to mental health: A systematic review and synthesis of theories linking social relationships to mental health to inform interventions. *SSM - Mental Health, 1*, 100042. doi:10.1016/j.ssmmh.2021.100042

Andersen, L. M. B., Reavley, N. J., Bøggild, H., & Overgaard, C. (2020). The role of social technologies in community care - A realist evaluation of a danish web-based citizen-to-citizen platform adopted in community care to promote belonging and mental health. *Health & Social Care in the Community,* doi:10.1111/hsc.13222

Andersen, L. M. B., Thomsen, L. H., Reavley, N. J., Bøggild, H., & Overgaard, C. (unpublished). A web-based platform as means to promote belonging and mental health in vulnerable populations – a critical realist exploration .

Anthony, S., Gígja Guðmundsdóttir, A., Kuokkanen, M., Skoglöf, M., Størset, H., Valgeirsdóttir, H., & Sandell, S. (2020). Basic digital skills for adults in the nordic countries.

Antonucci, T. C., Birditt, K. S., & Ajrouch, K. (2011). Convoys of social relations: Past, present, and future. In Fingerman, K. L. Berg, C. A. Smith, J. Antonucci, T. C. (Ed.), *Handbook of life-span development* (pp. 161-182) Springer Publishing Company.

Antonucci, T. C., Fiori, K. L., Birditt, K., & Jackey, L. M. H. (2010). *Convoys of social relations: Integrating Life-Span and Life-Course perspectives*. Hoboken, NJ, USA: John Wiley & Sons, Inc. doi:10.1002/9780470880166.hlsd002012

Apostolou, M., & Keramari, D. (2020). What prevents people from making friends: A taxonomy of reasons. *Personality and Individual Differences, 163*, 110043. doi:10.1016/j.paid.2020.110043

Archer, M., Bhaskar, R., Collier, A., Lawson, T., & Norrie, A. (2013). *Critical realism: Essential readings* Routledge.

Astbury, B., & Leeuw, F. L. (2010). Unpacking black boxes: Mechanisms and theory building in evaluation. *American Journal of Evaluation, 31*(3), 363-381. doi:10.1177/1098214010371972

August, K. J., & Rook, K. S. (2020). Social relationships. In M. D. Gellman (Ed.), *Encyclopedia of behavioral medicine* (pp. 2095-2098). Cham: Springer International Publishing. doi:10.1007/978-3-030-39903-0_59

Barbosa Neves, B., Franz, R., Judges, R., Beermann, C., & Baecker, R. (2019). Can digital technology enhance social connectedness among older adults? A feasibility study. *Journal of Applied Gerontology; J Appl Gerontol, 38*(1), 49-72. doi:10.1177/0733464817741369

Barbosa Neves, B., Waycott, J., & Maddox, A. (2021). When technologies are not enough: The challenges of digital interventions to address loneliness in later life. *Sociological Research Online,* 13607804211029298. doi:10.1177/13607804211029298

Barry, M. M., Clarke, A. M., Petersen, I., & Jenkins, R. (2019). *Implementing mental health promotion* (2nd ed.). Cham: Springer. doi:10.1007/978-3-030-23455-3

Bauman, Z. (2001). *Community : Seeking safety in an insecure world*. Cambridge: Polity Press.

Baumeister, R. F., Brewer, L. E., Tice, D. M., & Twenge, J. M. (2007). Thwarting the need to belong: Understanding the interpersonal and inner effects of social

exclusion. *Social and Personality Psychology Compass, 1*(1), 506-520. doi:10.1111/j.1751-9004.2007.00020.x

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 117*(3), 497-529. doi:10.1037/0033-2909.117.3.497

Berkman, L. F., Glass, T., Brissette, I., & Seeman, T. E. (2000). From social integration to health: Durkheim in the new millennium. *Social Science & Medicine, 51*(6), 843-857. doi:10.1016/S0277-9536(00)00065-4

Bhaskar, R. (2013). *A realist theory of science* Routledge.

Biagianti, B., Quraishi, S. H., & Schlosser, D. A. (2018). Potential benefits of incorporating peer-to-peer interactions into digital interventions for psychotic disorders: A systematic review. *Psychiatric Services (Washington, D.C.), 69*(4), 377-388. doi:10.1176/appi.ps.201700283

Bonell, C., Fletcher, A., Jamal, F., Wells, H., Harden, A., Murphy, S., & Thomas, J. (2013). Theories of how the school environment impacts on student health: Systematic review and synthesis. *Health & Place, 24*, 242-249. doi:10.1016/j.healthplace.2013.09.014

Bonell, C., Jamal, F., Melendez-Torres, G. J., & Cummins, S. (2015). 'Dark logic': Theorising the harmful consequences of public health interventions. *Journal of Epidemiology and Community Health (1979), 69*(1), 95-98. doi:10.1136/jech-2014-204671

Booth, A., & Carroll, C. (2015). Systematic searching for theory to inform systematic reviews: Is it feasible? is it desirable? *Health Information and Libraries Journal, 32*(3), 220-235. doi:10.1111/hir.12108

Bruine de Bruin, W., Parker, A. M., & Strough, J. (2020). Age differences in reported social networks and well-being. *Psychology and Aging, 35*(2), 159-168. doi:10.1037/pag0000415

Buch-Hansen, H., & Nielsen, P. (2012). Kritisk realisme. *Samfundsvidenskabernes videnskabsteori: En indføring* (pp. 277-318) Hans Reitzels Forlag.

Cacioppo, J. T., & Cacioppo, S. (2018). The growing problem of loneliness. *The Lancet, 391*(10119), 426. doi:10.1016/S0140-6736(18)30142-9

Cacioppo, J. T., & Hawkley, L. C. (2005). People thinking about people: The vicious cycle of being a social outcast in one's own mind. *The social outcast: Ostracism, social exclusion, rejection, and bullying* (pp. 91-108). New York, NY, US: Psychology Press.

Cacioppo, J. T., Hawkley, L. C., & Thisted, R. A. (2010). Perceived social isolation makes me sad: 5-year cross-lagged analyses of loneliness and depressive symptomatology in the chicago health, aging, and social relations study. *Psychology and Aging, 25*(2), 453-463. doi:10.1037/a0017216

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. doi:10.1111/spc3.12087

Cacioppo, J. T., & Patrick, W. (2008). *Loneliness: Human nature and the need for social connection* WW Norton & Company.

Campbell, M., Egan, M., Lorenc, T., Bond, L., Popham, F., Fenton, C., & Benzeval, M. (2014). Considering methodological options for reviews of theory: Illustrated by a review of theories linking income and health. *Systematic Reviews, 3*(1), 114. doi:10.1186/2046-4053-3-114

Campion, J., Javed, A., Vaishnav, M., & Marmot, M. (2020). Public mental health and associated opportunities. *Indian Journal of Psychiatry, 62*(1), 3-6. doi:10.4103/psychiatry.IndianJPsychiatry_687_19

Chen, E., Wood, D., & Ysseldyk, R. (2021). Online social networking and mental health among older adults: A scoping review. *Canadian Journal on Aging, ,* 1-14. doi:10.1017/S0714980821000040

Chen, Y. R., & Schulz, P. J. (2016). The effect of information communication technology interventions on reducing social isolation in the elderly: A systematic review. *Journal of Medical Internet Research, 18*(1), e18. doi:10.2196/jmir.4596

Chipps, J., Jarvis, M. A., & Ramlall, S. (2017). The effectiveness of e-interventions on reducing social isolation in older persons: A systematic review of systematic reviews. *Journal of Telemedicine and Telecare, 23*(10), 817-827. doi:10.1177/1357633X17733773

Choi, H. K., & Lee, S. H. (2021). Trends and effectiveness of ICT interventions for the elderly to reduce loneliness: A systematic review. *Healthcare (Basel), 9*(3), 293. doi:10.3390/healthcare9030293

Chopik, W. J. (2016). The benefits of social technology use among older adults are mediated by reduced loneliness. *Cyberpsychology, Behavior and Social Networking; Cyberpsychol Behav Soc Netw, 19*(9), 551-556. doi:10.1089/cyber.2016.0151

Clark, J. L., Algoe, S. B., & Green, M. C. (2018). Social network sites and well-being: The role of social connection. *Current Directions in Psychological Science, 27*(1), 32-37. doi:10.1177/0963721417730833

Cleary, M., Lees, D., & Sayers, J. (2018). Friendship and mental health. *Issues in Mental Health Nursing, 39*(3), 279-281. doi:10.1080/01612840.2018.1431444

Cohen, S. (2004). Social relationships and health. *American Psychologist, 59*(8), 676-684. doi:10.1037/0003-066X.59.8.676

Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin, 98*(2), 310-357. doi:10.1037/0033-2909.98.2.310

Cruwys, T., Alexander Haslam, S., Dingle, G. A., Jetten, J., Hornsey, M. J., Desdemona Chong, E. M., & Oei, T. P. S. (2014). Feeling connected again: Interventions that increase social identification reduce depression symptoms in community and clinical settings. *Journal of Affective Disorders, 159*, 139-146. doi:10.1016/j.jad.2014.02.019

Cruwys, T., Dingle, G. A., Haslam, C., Haslam, S. A., Jetten, J., & Morton, T. A. (2013). Social group memberships protect against future depression, alleviate depression symptoms and prevent depression relapse. *Social Science and Medicine, 98*, 179-186. doi:10.1016/j.socscimed.2013.09.013

Dalkin, S. M., Greenhalgh, J., Jones, D., Cunningham, B., & Lhussier, M. (2015). What's in a mechanism? development of a key concept in realist evaluation. *Implementation Science : IS, 10*(1), 49. doi:10.1186/s13012-015-0237-x

Danermark, B., Ekström, M., & Karlsson, J. C. (2019). *Explaining society: Critical realism in the social sciences* Routledge.

Danish Health Research Ethics Committee. (2018). Act on research ethics review of health research projects. Retrieved from https://en.nvk.dk/rules-and-guidelines/act-on-research-ethics-review-of-health-research-projects

Digitaliseringsstyrelsen, & KL. (2021). *Digital inklusion i det digitaliserede samfund.*

Donovan, R. J., Koushede, V. J., Drane, C. F., Hinrichsen, C., Anwar-McHenry, J., Nielsen, L., . . . Santini, Z. I. (2021). Twenty-one reasons for implementing the act-belong-Commit—'ABCs of mental health' campaign. *International Journal of Environmental Research and Public Health, 18*(21), 11095. doi:10.3390/ijerph182111095

Donovan, R. J., & Anwar-McHenry, J. (2016). *Act-belong-commit*. Los Angeles, CA: SAGE Publications. doi:10.1177/1559827614536846

Donovan, R. J., James, R., Jalleh, G., & Sidebottom, C. (2006). Implementing mental health promotion: The act-belong-commit mentally healthy WA campaign in western australia. *International Journal of Mental Health Promotion, 8*(1), 33-42. doi:10.1080/14623730.2006.9721899

Due, P., Holstein, B., Lund, R., Modvig, J., & Avlund, K. (1999). Social relations: Network, support and relational strain. *Social Science & Medicine, 48*(5), 661-673. doi:10.1016/S0277-9536(98)00381-5

Easterbrook, M., & Vignoles, V. L. (2013). What does it mean to belong? interpersonal bonds and intragroup similarities as predictors of felt belonging in different types of groups. *European Journal of Social Psychology, 43*(6), 455-462. doi:10.1002/ejsp.1972

Ehsan, A., Klaas, H. S., Bastianen, A., & Spini, D. (2019). Social capital and health: A systematic review of systematic reviews. *SSM - Population Health, 8*, 100425. doi:10.1016/j.ssmph.2019.100425

Emmel, N. (2013). *Sampling and choosing cases in qualitative research: A realist approach*. 1 Oliver's Yard, 55 City Road, London EC1Y 1SP United Kingdom : SAGE Publications Ltd. doi:10.4135/9781473913882

Erfani, S. S., & Abedin, B. (2018). Impacts of the use of social network sites on users' psychological well-being: A systematic review. *Journal of the Association for Information Science and Technology, 69*(7), 900-912. doi:10.1002/asi.24015

European Commission. (2021). *Digital economy and society index (DESI) 2021.*

Fang, Y., Chau, A. K. C., Wong, A., Fung, H. H., & Woo, J. (2018). Information and communicative technology use enhances psychological well-being of older adults: The roles of age, social connectedness, and frailty status. *Aging & Mental Health, 22*(11), 1516-1524. doi:10.1080/13607863.2017.1358354

Feeney, B. C., & Collins, N. L. (2015). A new look at social support: A theoretical perspective on thriving through relationships. *Personality and Social Psychology Review, 19*(2), 113-147. doi:10.1177/1088868314544222

Fletcher, A. (2020). Critical realism: Philosophical and methodological considerations. *Qualitative Analysis: Eight Approaches for the Social Sciences,* , 174-191.

Fletcher, A. J. (2017). Applying critical realism in qualitative research: Methodology meets method. *International Journal of Social Research Methodology, 20*(2), 181-194.

Fortuna, K. L., Myers, A. L., Ferron, J., Kadakia, A., Bianco, C., Bruce, M. L., & Bartels, S. J. (2022). Assessing a digital peer support self-management intervention for adults with serious mental illness: Feasibility, acceptability, and preliminary effectiveness. *Journal of Mental Health (Abingdon, England), ahead-of-print*(ahead-of-print), 1-9. doi:10.1080/09638237.2021.2022619

Fuhrer, R., & Stansfeld, S. A. (2002). How gender affects patterns of social relations and their impact on health: A comparison of one or multiple sources of support from "close persons". *Social Science & Medicine, 54*(5), 811-825. doi:10.1016/S0277-9536(01)00111-3

Glaser, P., Liu, J. H., Hakim, M. A., Vilar, R., & Zhang, R. (2018). Is social media use for networking positive or negative? offline social capital and internet addiction as mediators for the relationship between social media use and mental health. *New Zealand Journal of Psychology, 47*(3), 12-18.

Greenaway, K. H., Cruwys, T., Haslam, S. A., & Jetten, J. (2016). Social identities promote well-being because they satisfy global psychological needs. *European Journal of Social Psychology, 46*(3), 294-307. doi:10.1002/ejsp.2169

Greenhalgh, J., & Manzano, A. (2021). Understanding 'context' in realist evaluation and synthesis. *International Journal of Social Research Methodology, 0*(0), 1-13. doi:10.1080/13645579.2021.1918484

Grieve, R., Indian, M., Witteveen, K., Anne Tolan, G., & Marrington, J. (2013). Face-to-face or facebook: Can social connectedness be derived online? *Computers in Human Behavior, 29*(3), 604-609. doi:10.1016/j.chb.2012.11.017

Guba, E. G. (1981). Criteria for assessing the trustworthiness of naturalistic inquiries. *Educational Communication and Technology, 29*(2) doi:10.1007/BF02766777

Hagerty, B. M. K., Lynch-Sauer, J., Patusky, K. L., Bouwsema, M., & Collier, P. (1992). Sense of belonging: A vital mental health concept. *Archives of Psychiatric Nursing, 6*(3), 172-177. doi:10.1016/0883-9417(92)90028-H

Haigh, F., Kemp, L., Bazeley, P., & Haigh, N. (2019). Developing a critical realist informed framework to explain how the human rights and social determinants of health relationship works. *BMC Public Health, 19*(1), 1571. doi:10.1186/s12889-019-7760-7

Hansen, L. R., Pedersen, S. B., Overgaard, C., Torp-Pedersen, C., & Ullits, L. R. (2017). Associations between the structural and functional aspects of social relations and poor mental health: A cross-sectional register study. *BMC Public Health, 17*(1), 860-x. doi:10.1186/s12889-017-4871-x [doi]

Haslam, C., Cruwys, T., Haslam, S. A., Dingle, G., & Chang, M. X. L. (2016). Groups 4 health: Evidence that a social-identity intervention that builds and strengthens social group membership improves mental health. *Journal of Affective Disorders, 194*, 188-195. doi:10.1016/j.jad.2016.01.010

Hatzenbuehler, M. L., Phelan, J. C., & Link, B. G. (2013). Stigma as a fundamental cause of population health inequalities. *American Journal of Public Health, 103*(5), 813-821. doi:10.2105/AJPH.2012.301069

Health Education Authority. (1997). *Mental health promotion: A quality framework* Health Education Authority London.

Herrman, H., Saxena, S., & Moodie, R. (2004). *Promoting mental health: Concepts, emerging evidence, practice: Summary report.* Geneva: World Health Organization.

Herrman, H., Stewart, D. E., Diaz-Granados, N., Berger, E. L., Jackson, B., & Yuen, T. (2011). *What is resilience?.* Los Angeles, CA: SAGE Publications. doi:10.1177/070674371105600504

Hinrichsen, C., Koushede, V. J., Madsen, K. R., Nielsen, L., Ahlmark, N. G., Santini, Z. I., & Meilstrup, C. (2020). Implementing mental health promotion Initiatives—Process evaluation of the ABCs of mental health in denmark. *International Journal of Environmental Research and Public Health, 17*(16), 5819. doi:10.3390/ijerph17165819

Holt-Lunstad, J., & Smith, T. B. (2012). Social relationships and mortality. *Social and Personality Psychology Compass, 6*(1), 41-53. doi:10.1111/j.1751-9004.2011.00406.x

Hootsuite & We Are Social. (2020). *Digital 2020: Global digital overview.* Retrieved from https://datareportal.com/reports/digital-2020-global-digital-overview

Ibarra, F., Baez, M., Cernuzzi, L., & Casati, F. (2020). A systematic review on technology-supported interventions to improve old-age social wellbeing: Loneliness, social isolation, and connectedness. *Journal of Healthcare Engineering, 2020*, 1-14. doi:10.1155/2020/2036842

Isaacson, M., Cohen, I., & Shpigelman, C. N. (2019). (2019). Leveraging emotional wellbeing and social engagement of the oldest old by using advanced communication technologies: A pilot study using uniper-care's technology. Paper presented at the *3rd IET International Conference on Technologies for Active and Assisted Living (TechAAL 2019),* doi:10.1049/cp.2019.0102

Jagosh, J. (2018a). *Introduction to realist evaluation and synthesis. advanced study of realist methodology course*

Jagosh, J. (2018b). *Philosophical foundations of realist evaluation. advanced study of realist methodology course*

Jagosh, J. (2018c). *Realist qualitative interviewing. advanced study of realist methodology course*

Jagosh, J., Macaulay, A. C., Pluye, P., Salsberg, J., Bush, P. L., Henderson, J., . . . Herbert, C. P. (2012). Uncovering the benefits of participatory research: Implications of a realist review for health research and practice. *The Milbank Quarterly, 90*(2), 311-346.

Jetten, J., Haslam, S. A., Cruwys, T., Greenaway, K. H., Haslam, C., & Steffens, N. K. (2017). Advancing the social identity approach to health and well-being: Progressing the social cure research agenda. *European Journal of Social Psychology, 47*(7), 789-802. doi:10.1002/ejsp.2333

Kawachi, I., & Berkman, L. (2001). Social ties and mental health. *Journal of Urban Health, 78*(3), 458-467. doi:10.1093/jurban/78.3.458

Kennedy, B. L., & Thornberg, R. (2018). Deduction, induction, and abduction. *The SAGE Handbook of Qualitative Data Collection, *, 49-64.

Khosravi, P., Rezvani, A., & Wiewiora, A. (2016). The impact of technology on older adults' social isolation. *Computers in Human Behavior, 63*, 594-603. doi:10.1016/j.chb.2016.05.092

Koushede, V., & Donovan, R. (2022). Applying salutogenesis in community-wide mental health promotion. *The handbook of salutogenesis* (pp. 479-490) Springer, Cham.

Lakey, B., & Orehek, E. (2011). Relational regulation theory: A new approach to explain the link between perceived social support and mental health. *Psychological Review, 118*(3), 482-495. doi:10.1037/a0023477

Lambert, N. M., Stillman, T. F., Hicks, J. A., Kamble, S., Baumeister, R. F., & Fincham, F. D. (2013). To belong is to matter: Sense of belonging enhances meaning in life. *Personality and Social Psychology Bulletin, 39*(11), 1418-1427. doi:10.1177/0146167213499186

Leary, M. R. (2010). *Affiliation, acceptance, and belonging: The pursuit of interpersonal connection*. Hoboken, NJ, USA: John Wiley & Sons, Inc. doi:10.1002/9780470561119.socpsy002024

Leary, M. R. (2021). Emotional reactions to threats to acceptance and belonging: A retrospective look at the big picture. *Australian Journal of Psychology, 73*(1), 4-11. doi:10.1080/00049530.2021.1883410

Liddle, J., Pitcher, N., Montague, K., Hanratty, B., Standing, H., & Scharf, T. (2020). Connecting at local level: Exploring opportunities for future design of technology to support social connections in age-friendly communities. *International Journal of Environmental Research and Public Health, 17*(15), 5544. doi:10.3390/ijerph17155544

Lincoln, K. D. (2000). Social support, negative social interactions, and psychological Well-Being. *The Social Service Review (Chicago), 74*(2), 231-252. doi:10.1086/514478

Lorenc, T., Clayton, S., Neary, D., Whitehead, M., Petticrew, M., Thomson, H., . . . Renton, A. (2012). Crime, fear of crime, environment, and mental health and wellbeing: Mapping review of theories and causal pathways. *Health and Place, 18*(4), 757-765. doi:10.1016/j.healthplace.2012.04.001

Martin, L. (2020). Critical realism in theory and practice. *Qualitative Analysis: Eight Approaches for the Social Sciences,* , 155.

Maslow, A. H. (1943). A theory of human motivation. *Psychological Review, 50*(4), 370-396. doi:10.1037/h0054346

Merton, R. K. (1936). The unanticipated consequences of purposive social action. *American Sociological Review, 1*(6), 894-904. doi:10.2307/2084615

Merton, R. K. (1967). On sociological theories of the middle range. *Classical Sociological Theory,* , 39-72.

Mikulincer, M., & Shaver, P. R. (2008). Adult attachment and affect regulation. In J. Cassidy & P. R. Shaver (Ed.), *Handbook of attachment: Theory, research, and clinical applications* (Second edition ed., pp. 503-531). New York: The Fuilford Press.

Mithen, J., Aitken, Z., Ziersch, A., & Kavanagh, A. M. (2015). Inequalities in social capital and health between people with and without disabilities. *Social Science & Medicine, 126*, 26-35. doi:10.1016/j.socscimed.2014.12.009

Morton, T. A., Wilson, N., Haslam, C., Birney, M., Kingston, R., & McCloskey, L. (2018). Activating and guiding the engagement of seniors with online social networking: Experimental findings from the AGES 2.0 project. *Journal of Aging and Health, 30*(1), 27-51. doi:10.1177/0898264316664440

Mote, J., Gill, K., & Fulford, D. (2021). "Skip the small talk" virtual event intended to promote social connection during a global pandemic: Online survey study. *JMIR Formative Research, 5*(9), e28002. doi:10.2196/28002

Naslund, J. A., Aschbrenner, K. A., Marsch, L. A., & Bartels, S. J. (2016). The future of mental health care: Peer-to-peer support and social media. *Epidemiology and Psychiatric Sciences, 25*(2), 113-122. doi:10.1017/S2045796015001067

Nowland, R., Necka, E. A., & Cacioppo, J. T. (2018). Loneliness and social internet use: Pathways to reconnection in a digital world? *Perspectives on Psychological Science, 13*(1), 70-87. doi:10.1177/1745691617713052

Oliver, K., Kothari, A., & Mays, N. (2019). The dark side of coproduction: Do the costs outweigh the benefits for health research? *Health Research Policy and Systems, 17*(1), 33. doi:10.1186/s12961-019-0432-3

Pawson, R. (2014). *Realist evaluation short overview*

Pawson, R., & Tilley, N. (2004). Realist evaluation., 1-36. Retrieved from https://pdf4pro.com/view/realist-evaluation-ray-pawson-and-nick-tilley-2004-376c83.html

Pawson, R. (1996). Theorizing the interview. *The British Journal of Sociology, 47*(2), 295. doi:10.2307/591728

Pawson, R. (2013). *The science of evaluation : A realist manifesto* SAGE.

Pawson, R. (2016). Realist evaluation caricatured: A reply to porter. *Nursing Philosophy, 17*(2), 132-139. doi:10.1111/nup.12118

Pawson, R., & Tilley, N. (1997). *Realistic evaluation*. London: SAGE.

Phelan, J. C., Link, B. G., & Tehranifar, P. (2010). Social conditions as fundamental causes of health inequalities: Theory, evidence, and policy implications. *Journal of Health and Social Behavior, 51 Suppl*, 28. doi:10.1177/0022146510383498

Porter, S., & O'Halloran, P. (2012). The use and limitation of realistic evaluation as a tool for evidence-based practice: A critical realist perspective. *Nursing Inquiry, 19*(1), 18-28.

Pound, P., & Campbell, R. (2015). Exploring the feasibility of theory synthesis: A worked example in the field of health related risk-taking. *Social Science and Medicine, 124*, 57-65. doi:10.1016/j.socscimed.2014.11.029

Putnam, R. D. (2000). Bowling alone: America's declining social capital. *Culture and politics* (pp. 223-234) Springer.

Ramalingam, B., & Hernandez, K. (2016). 11. the multiple forms of digital inequality. *World Social Science Report, 2016: Challenging Inequalities; Pathways to a just World,* , 68.

Ridout, B., & Campbell, A. (2018). The use of social networking sites in mental health interventions for young people: Systematic review. *Journal of Medical Internet Research, 20*(12), e12244. doi:10.2196/12244 [doi]

Roberts, P., & Priest, H. (2006). Reliability and validity in research. *Nursing Standard, 20*(44), 41-45. doi:10.7748/ns2006.07.20.44.41.c6560

Robinson, L., Cotten, S. R., Ono, H., Quan-Haase, A., Mesch, G., Chen, W., . . . Stern, M. J. (2015). Digital inequalities and why they matter. *Information, Communication & Society, 18*(5), 569-582. doi:10.1080/1369118X.2015.1012532

Rook, K. S. (1984). The negative side of social interaction: Impact on psychological well-being. *Journal of Personality and Social Psychology, 46*(5), 1097-1108. doi:10.1037//0022-3514.46.5.1097

Rook, K. (2014). The health effects of negative social exchanges in later life. *Generations (San Francisco, Calif.), 38*(1), 15-23.

Rosendahl, H., Davidsen, M., Møller, S. R., Román, J. E. I., Kragelund, K., Christensen, A. I., & Ekholm, O. (2022). Danskernes sundhed: Den nationale sundhedsprofil 2021.

Ryan, T., Allen, K. A., Gray, D. L., & McInerney, D. M. (2017). How social are social media? A review of online social behaviour and connectedness. *Journal of Relationships Research, 8* doi:10.1017/jrr.2017.13

Saeri, A. K., Cruwys, T., Barlow, F. K., Stronge, S., & Sibley, C. G. (2018). Social connectedness improves public mental health: Investigating bidirectional relationships in the new zealand attitudes and values survey. *Australian & New Zealand Journal of Psychiatry, 52*(4), 365-374. doi:10.1177/0004867417723990

Sani, F. (2012). Group identification, social relationships, and health. In J, Jetten, C. Haslam, & S. A. Haslam (Ed.), *The social cure: Identity, health and well-being* (pp. 21-37). New York, US: Psychology Press.

Sayer, A. (1999). *Realism and social science* Sage.

Sayer, R. A. (2000). *Realism and social science*. London: Sage.

Seeman, T. E. (1996). Social ties and health: The benefits of social integration. *Annals of Epidemiology, 6*(5), 442-451. doi:10.1016/S1047-2797(96)00095-6

Shah, S. G. S., Nogueras, D., van Woerden, H. C., & Kiparoglou, V. (2020). The COVID-19 pandemic: A pandemic of lockdown loneliness and the role of digital technology. *Journal of Medical Internet Research; J Med Internet Res, 22*(11), e22287. doi:10.2196/22287

Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information, 22*(2), 63-75. doi:10.3233/EFI-2004-22201

Shevellar, L., Sherwin, J., & Barringham, N. (2014). The human search for belonging. *Journal of Spirituality in Mental Health, 16*(1), 2-18. doi:10.1080/19349637.2014.864541

Skivington, K., Matthews, L., Simpson, S. A., Craig, P., Baird, J., Blazeby, J. M., . . . Moore, L. (2021). A new framework for developing and evaluating complex interventions: Update of medical research council guidance. *BMJ (Online), 374*, n2061. doi:10.1136/bmj.n2061

Smith, D., Leonis, T., & Anandavalli, S. (2021). Belonging and loneliness in cyberspace: Impacts of social media on adolescents' well-being. *Australian Journal of Psychology, 73*(1), 12-23. doi:10.1080/00049530.2021.1898914

Sørensen, F. F., Harmsen, H. J., Løjmand, M. R., Scheel-Bech., J., Madsen, M. H., & Wedel-Heinen, N. E. (2021). *Boblerg: Socio-economic value and social return on investment.* Economists Without Boarders.

Statista. (2021). Loneliness among adults worldwide by country 2021. Retrieved from https://www.statista.com/statistics/1222815/loneliness-among-adults-by-country/

Sutton, R. I., & Staw, B. M. (1995). What theory is not. *Administrative Science Quarterly, 40*(3), 371-384. doi:10.2307/2393788

The European Union. (2016). General data protection regulation (GDPR). Retrieved from https://gdpr-info.eu/

The World Medical Association. (2013). *WMA - the world medical association-WMA declaration of helsinki – ethical principles for medical research involving human subjects.* (). Retrieved from https://www.wma.net/policies-post/wma-declaration-of-helsinki-ethical-principles-for-medical-research-involving-human-subjects/

Thoits, P., A. (2011). Mechanisms linking social ties and support to physical and mental health. *Journal of Health and Social Behavior, 52*(2), 145-161. doi:10.1177/0022146510395592

Uchino, B. N., Bowen, K., Carlisle, M., & Birmingham, W. (2012). Psychological pathways linking social support to health outcomes: A visit with the "ghosts" of research past, present, and future. *Social Science & Medicine (1982), 74*(7), 949-957. doi:10.1016/j.socscimed.2011.11.023

Uchino, B. N., & Birmingham, W. (2011). Stress and support processes. In R. J. Contrada & A. Baum (Ed.), *The handbook of stress science: Biology, psychology, and health* (pp. 111-121). New York, NY, US: Springer Publishing Co.

Udesen, C. H. (2020). *Social ulighed i sundhed og sygdom: Udviklingen i danmark i perioden 2010-2017* Sundhedsstyrelsen.

Umberson Debra, & Montez Karas Jennifer. (2010). Social relationships and health: A flashpoint for health policy. *Journal of Health and Social Behavior, 51*(1_suppl), S54-S66. doi:10.1177/0022146510383501

Umberson, D., & Karas Montez, J. (2010). Social relationships and health: A flashpoint for health policy. *Journal of Health and Social Behavior, 51*, S54-S66. doi:10.1177/0022146510383501

Valentine, L., McEnery, C., D'Alfonso, S., Phillips, J., Bailey, E., & Alvarez-Jimenez, M. (2019). Harnessing the potential of social media to develop the next generation of digital health treatments in youth mental health. *Current Treatment Options in Psychiatry,* doi:10.1007/s40501-019-00184-w

van Dijk, J. A. G. M. (2006). Digital divide research, achievements and shortcomings. *Poetics (Amsterdam), 34*(4), 221-235. doi:10.1016/j.poetic.2006.05.004

Van Ryn, M., & Heaney, C. A. (1992). What's the use of theory? *Health Education Quarterly, 19*(3), 315-330. doi:10.1177/109019819201900304

Vandervoort, D. (2000). Social isolation and gender. *Current Psychology, 19*(3), 229-236. doi:10.1007/s12144-000-1017-5

Verduyn, P., Ybarra, O., Résibois, M., Jonides, J., & Kross, E. (2017). Do social network sites enhance or undermine subjective well-being? A critical review. *Social Issues and Policy Review, 11*(1), 274-302. doi:10.1111/sipr.12033

Villalonga-Olives, E., & Kawachi, I. (2017). The dark side of social capital: A systematic review of the negative health effects of social capital. *Social Science & Medicine (1982), 194*, 105-127. doi:10.1016/j.socscimed.2017.10.020

Webber, M., Ngamaba, K., Moran, N., Pinfold, V., Boehnke, J. R., Knapp, M., . . . Morris, D. (2021). The implementation of connecting people in community mental health teams in england: A quasi-experimental study. *The British Journal of Social Work, 51*(3), 1080-1100. doi:10.1093/bjsw/bcaa159

Western Sydney University Library. (2017). *What is digital literacy.* Retrieved from https://www.westernsydney.edu.au/studysmart/home/study_skills_guides/digit al_literacy/what_is_digital_literacy

Wheatley, D., & Buglass, S. L. (2019). Social network engagement and subjective well-being: A life-course perspective. *The British Journal of Sociology, 70*(5), 1971-1995. doi:10.1111/1468-4446.12644

Whitehead, M., Pennington, A., Orton, L., Nayak, S., Petticrew, M., Sowden, A., & White, M. (2016). How could differences in 'control over destiny' lead to socio-economic inequalities in health? A synthesis of theories and pathways in the living environment. *Health & Place, 39*, 51-61. doi:10.1016/j.healthplace.2016.02.002

Winstone, L., Mars, B., Haworth, C. M. A., & Kidger, J. (2021). Social media use and social connectedness among adolescents in the united kingdom: A qualitative exploration of displacement and stimulation. *BMC Public Health, 21*(1), 1-1736. doi:10.1186/s12889-021-11802-9

Wister, A., Fyffe, I., & O'Dea, E. (2021). Technological interventions for loneliness and social isolation among older adults: A scoping review protocol. *Systematic Reviews, 10*(1), 1-217. doi:10.1186/s13643-021-01775-6

Wong, G., Westhorp, G., Manzano, A., Greenhalgh, J., Jagosh, J., & Greenhalgh, T. (2016). RAMESES II reporting standards for realist evaluations. *BMC Medicine, 14*(1), 96. doi:10.1186/s12916-016-0643-1

Wrzus, C., Hänel, M., Wagner, J., & Neyer, F. J. (2013). Social network changes and life events across the life span: A meta-analysis. *Psychological Bulletin, 139*(1), 53-80. doi:10.1037/a0028601

Yamashita, A., Isumi, A., & Fujiwara, T. (2022). Online peer support and well-being of mothers and children: Systematic scoping review. *Journal of Epidemiology, 32*(2), 61-68. doi:10.2188/jea.JE20200079

APPENDICES

APPENDIX A: INFORMED CONSENT FORM FOR USERS OF BOBLBERG.DK

Kære _____

Du har givet mig lov til at interviewe dig til min forskning om sociale fællesskabers betydning for mental sundhed.

Med din underskrift giver du mig lov til at bruge interviewet i min forskning.

Det betyder, at jeg må have lov til at bruge interviewet med dig som grundlag for min forskning og i formidlingen af den.

Det er vigtigt, at du ved, at de personoplysninger, du videregiver til mig, såsom dit navn, adresse, beskæftigelse m.m. holdes fortroligt, og at de ikke vil blive videregivet til andre.

Jeg underskriver hermed, at jeg er blevet gjort bekendt med projektets formål samt anvendelsen af mine oplysninger, og at jeg under de betingelser giver Lærke Mai Bonde Andersen lov til at bruge interviewet med mig i hendes forskning og i formidlingen af denne.

Jeg har i forbindelse med underskrivelsen af denne samtykkeerklæring fået en kopi af erklæringen til eget brug.

Dato_____Underskrift(deltager)_____

Dato_____Underskrift(projektansvarlig)_____

APPENDIX B: INFORMATION LEAFLET FOR USERS OF BOBLBERG.DK

FORSKNINGSPROJEKT

Lærke Mai Bonde Andersen

Om betydningen af at høre til og indgå i sociale fællesskaber – for mental sundhed

AALBORG UNIVERSITET

AALBORG UNIVERSITY

Institut for Medicin og Sundhedsteknologi
Frederik Bajers Vej 7D
9220 Aalborg

Phone: 41440103
E-mail: lmba@hst.aau.dk

Forskningsprojekt om betydningen af at høre til og indgå i sociale fællesskaber – for mental sundhed

Baggrund for projektet

Vi har brug for at høre til. Det har alle mennesker, og forskning viser da også, at vores oplevelse af at høre til i sociale fællesskaber og i sociale relationer med andre, har stor betydning for, hvordan vi går og har det, både fysisk og mentalt.

I et samfund, hvor vores sociale relationer sættes på prøve af friheden til at være os selv, udfordres vores oplevelse af at høre til. Ligesom også begivenheder, der naturligt indtræffer igennem livet, såsom at flytte til en ny by i forbindelse med uddannelse, at blive arbejdsløs, eller at stoppe på arbejdsmarkedet kan true vores oplevelse af at høre til.

Sociale netværkssider vinder i stigende grad frem, hvor sociale kontakter kan skabes og opretholdes nemt og fleksibelt. Et eksempel er Boblberg.dk.

På hvilke præmisser kan sådanne sider være med til at understøtte sociale fællesskaber med positiv betydning for oplevelsen af at høre til, og for at have det godt?

Det er den viden, som du er med til at skabe.

FORMÅLET MED PROJEKTET

Formålet med projektet er at blive klogere på hvordan sociale fællesskaber med positiv betydning for oplevelsen af tilhørsforhold og mental sundhed kan fremmes.

Særligt undersøges det for hvem og under hvilke betingelser sociale netværkssider, som eksempelvis Boblberg.dk, kan medvirke til at skabe sociale fællesskaber med positiv betydning for mental sundhed

Information om projektet og anvendelsen af dine oplysninger

DINE OPLYSNINGER

Dit interview udgør ét interview ud af en række interviews med brugere af Boblberg.dk.

De personoplysninger, du videregiver til mig i forbindelse med dit interview, såsom dit navn, din adresse, beskæftigelse m.m., vil blive holdt fortroligt og vil ikke blive videregivet til andre.

Projektet foregår i samarbejde med Aalborg Kommune, Center for Mental Sundhed og Boblberg.dk. Du kan læse mere om projektet på Boblbergs hjemmeside: https://boblberg.dk/Projekter/Phd-projekt.aspx

Projektet løber frem til d. 31.08.2020

KORT OM MIG?

Jeg er 35 år gammel og bosat i Gug i Aalborg sammen med min mand og vores to børn på 7 og 4 år.

Jeg blev uddannet sociolog fra Aalborg Universitet i 2011, og siden har jeg arbejdet med forskellige projekter i private virksomheder og med undervisningsopgaver i tilknytning til VUC & hf Nordjylland og Aalborg Universitet.

Du er altid velkommen til at kontakte mig, hvis du har nogle spørgsmål til projektet og din deltagelse. Mine kontaktoplysninger fremgår herunder.

Tak for din deltagelse.

AALBORG UNIVERSITY

Frederik Bajers Vej 7D

Phone: 41440103
E-mail: lmba@hst.aau.dk

APPENDIX C: *BOBL* FOR RECRUITING USERS OF BOBLBERG.DK FOR THE STUDY

Forskningsprojekt om fællesskaber

Rediger din bobl

Lærke Mai Bonde Andersen

Hej!

Har du lyst til at deltage i et forskningsprojekt der belyser betydningen af at høre til og indgå i sociale fællesskaber?

Mit navn er Lærke Mai Bonde Andersen. Jeg er ph.d. studerende på Aalborg Universitet, hvor jeg forsker i folkesundhed med særlig fokus på sociale fællesskabers betydning for mental sundhed.

Er du bosat i Aalborg Kommune og har du brugt Boblberg.dk til at komme i kontakt med andre, så vil jeg meget gerne lave et interview med dig.

Måske har du fået kontakt til andre via Boblbergs hjemmeside, måske har du ikke. Måske har I kun mødtes enkelte gange eller måske har I aldrig mødtes. Måske har du fundet et venskab for livet eller måske kun en kortvarig kontakt. Uanset hvad, så er jeg interesseret i at høre fra dig.

Interviewene foregår i perioden fra marts til slutningen af juni 2019. Du bestemmer tid og sted. Jeg kommer gerne hjem til dig, men vi kan også mødes på en café eller benytte os af rammerne på Aalborg Universitet. Det kan blive, når det passer dig.

Jeg passer godt på dine oplysninger og jeg sørger for, at de oplysninger som vil kunne bruges til at identificere dig, eksempelvis dit navn, din adresse, beskæftigelse m.m., bliver holdt fortroligt. Ligesom de heller ikke videregives til andre.

Om mig selv kan jeg fortælle, at jeg er 35 år. Jeg er bosat i Aalborg med min mand og mine to børn på 4 og 7 år. Jeg er uddannet sociolog med et særligt fokus på sundhed og sygdom.

Har du lyst til at deltage, så kontakt mig via Boblberg.dk, på telefon: 41 44 01 03 eller alternativt på mail: lmba@hst.aau.dk. Du kan også kontakte mig, hvis du har spørgsmål.

Du kan også læse mere om projektet på: https://boblberg.dk/Projekter.aspx

Jeg glæder mig til at høre fra dig.

APPENDIX D: MATERIAL FOR RECRUITING USERS OF BOBLBERG.DK AT MARKETING EVENTS