

UNIVERSITY OF TWENTE.

Relatedness and Well-Being in Nursing Home Residents: A Systematic Review Outside a Basic Psychological Need Framework

Faculty of Behavioural, Management and Social Sciences

Master Programme Positive Psychology and Technology

Master Thesis (10 ECTS)

Dr. N. Kloos

Dr. C. Bode

Joke F. Werner

2253917

17.08.2020

Abstract

Background: Nursing Homes (NH) are institutions intended to support older adult's needs and well-being. One factor considered contributing to well-being is relatedness, a term popularized in 2000 in Deci and Ryan's Basic Psychological Need Theory (BPNT). However, no review has systematically addressed the association between relatedness satisfaction and well-being in NH residents outside the BPNT framework. Therefore, this systematic review aimed to find more support for this association outside the BPNT framework and to identify the factors that support relatedness satisfaction in NH residents.

Method: The electronic databases Scopus, ScienceDirect, EBSCOhost, Web of Science, and PubMed were systematically searched for publications in English, targeting samples of cognitively healthy NH residents aged 65 and above, including measurements for relatedness and well-being, or related terms. From the 217 articles reviewed, 11 titles met the inclusion criteria.

Results: Social support was found to be positively associated with NH residents' well-being, quality of life, and satisfaction with life. Factors contributing to residents' satisfaction with social support were relationships with peer residents, family, and staff, residents perceived social competency, and social identification with others in the nursing home.

Conclusion: Perceived social support is a vital aspect to nursing home residents' well-being, quality of life, and satisfaction with life. The BPNT definition of relatedness could be enhanced by including the term perceived social support. Further longitudinal research is needed to investigate changes in the association between relatedness satisfaction and well-being over time.

Key Words: relatedness, well-being, basic psychological needs, nursing home residents

Relatedness and Well-Being in Nursing Home Residents: A Systematic Review Outside a
Basic Psychology Need Theory Framework

Many Western countries are facing an aging population, leading to a greater demand for care for older adults (Meijer, van Kampen, & Kerkstra, 2000). A growing number of older adults now live in public or private residential homes, so called *nursing homes* (NH), that support their needs (Bonvalet, 2007). Many studies in this age group and context have focused on depression, stress, and distress, rather than on the positive aspects of *well-being* (Ferguson & Goodwin, 2010). However, with the rise of an aging population, understanding the well-being of older adults becomes more important in order to provide quality care and enable this group a good life. Research about well-being has grown in the past decades, but the definition of well-being has caused debates (Dodge, et al., 2012). Well-being has been defined as presence of positive affect, and absence of negative affect, as happiness, and satisfaction with life (e.g. Diener, 1984), as well as optimal human functioning and development (e.g. Waterman, 1993), and an assessment of a person's quality of life (Shin & Johnson, 1978). Considering these perspectives, this paper adopts a broad understanding of the term, including satisfaction with life and quality of life, when addressing NH residents' well-being.

One factor considered to contribute to well-being is *relatedness*, defined as a feeling to be "personally accepted by and significant to others, and to feel cared for by others and caring of them" (Deci & Ryan, 2014, p. 53). Relatedness is further described as a sense of belongingness and connectedness to others in the social environment (Ryan, Huta, & Deci, 2008). The term relatedness has been coined by Ryan and Deci's Basic Psychological Need Theory (BPNT) which postulates that humans have fundamental psychological needs that need to be satisfied in order to experience well-being (2000; 2001). In BPNT, relatedness is considered to be one of three basic psychological needs, alongside the need for autonomy and the need for competence. The need for autonomy is described as the "sense of choice and volition in the regulation of behavior" (Ryan, Huta, & Deci, 2008, p. 153). The need for competence determines how effective individuals perceive themselves in ongoing social interactions and experience opportunities to use their capabilities. The term *need* in this theory is not meant as a desire or preference but is defined as a psychological nutrient that is essential for the individual's integrity and well-being (Ryan, 1995). In BPNT, well-being is referred to as optimal human functioning and experience (Ryan & Deci, 2001). The central

claim of BPNT is that need satisfaction is related to higher levels of well-being, while, in turn, need frustration is thought to lead to ill-being (Ryan & Deci, 2000; 2001; 2008).

On the one hand, the three basic psychological needs are considered universally important (Ryan, 2009) and relevant for individuals regardless of gender or age (Ryan & Deci, 2017). On the other hand, the attitude towards relatedness might change with age. While young adults are thought to be more interested in novelty and experience expansion, for older adults deep and meaningful relationships are considered important (Luong, Charles, & Fingerman, 2011). As people age, they become aware of the fact that they have less time to live and meaningful relationships are increasingly valued (Carstensen, 1992; Carstensen et al., 1999). Nevertheless, age has been shown to be negatively related to network size and closeness to network member, and older age is often associated with a negative influence on social connectedness (Cornwell et al., 2008). However, this does not imply that older adults desire for relatedness diminishes with age. A study by Custers et al. (2012) investigated the importance of the three basic psychological needs in the caring relationship in a NH context, and found that residents rated relatedness to be the most important of the three. Therefore, the need for relatedness satisfaction should receive more attention in higher age groups, especially in a NH context.

Previous research shown that satisfaction of relatedness is considered to be challenged for older adults living in nursing homes (e.g. Custers et al., 2010). Relatedness satisfaction may stay unfulfilled due to various factors (e.g. Custers et al., 2010). The institutional restrictions may not allow much time for social staff-resident interaction, and the contact with other residents might be limited due to physical or mental decline. In addition, fragile older adults might experience less social support from institutional peers, who may avoid bonding with someone who has a feared disease, such as dementia (Carpenter, 2002). Residents might also perceive less social support from family members who may be disconcerted by some of residents' behaviour awkward, like emotional lability or incontinence. The nursing home might therefore be an environment where relatedness satisfaction could be challenged.

While there is a considerable amount of literature addressing the detrimental effects of relatedness frustration in older adults, such as lack of relationships and loneliness, on well-being (e.g. Trybusińska & Saracen, 2019; Drageset, Kirkevold, & Espenhaus, 2010), less research has addressed the associations between relatedness satisfaction and well-being in NH residents. Relatedness satisfaction was found to be positively associated with well-being indicators (Custers et al., 2011; 2012; Vanhove-Meriaux, Martinent, & Ferrand, 2017), and with purpose in life (Ferrand, Martinent, & Durmaz, 2014), in cognitively healthy NH

samples. A recent review by Tang, Wang, and Guerrien (2020) within the BPNT framework found basic psychological need satisfaction in NH residents to be positively associated with well-being indicators (such as life satisfaction and positive affect) and to be negatively associated with negative indicators of well-being (such as depression). These studies show a positive association between relatedness satisfaction and well-being, as proposed in Ryan and Deci's theory (2001), within the BPNT framework. However, to the authors knowledge no review has investigated how the association between relatedness satisfaction and well-being in NH residents is depicted in studies without a BPNT framework. The afore-mentioned studies are missing a linkage between the association found within BPNT literature and additional literature without a BPNT background. Such additional literature, for example from nursing journals, could provide valuable contributions by confirming or denying the in BPNT proposed positive association between relatedness satisfaction and well-being. In sum, a systematic review is needed to address the association between relatedness satisfaction and well-being outside a BPNT framework.

Reviewing additional literature about this association could also illustrate which factors are need-supportive for relatedness satisfaction in NH practice, which is a second concern of this research. While need satisfaction is postulated to contribute to well-being, the factors supporting need satisfaction largely remain unexplained in BPNT. This is especially surprising given that Ryan and Deci (2002) postulate need satisfaction might change with social context. Humans are considered social beings (Baumeister & Leary, 1995), and, thus, need satisfaction is intertwined with the social context they live in (Niemic, Soenens, & Vansteenkiste, 2014). That being said, social contexts and relational partners can either provide support or thwart relatedness satisfaction (Niemic, Soenens, & Vansteenkiste, 2014). The afore mentioned studies within the BPNT framework also do not provide sufficient information about those factors. Some of the BPNT studies have focused on need fulfillment in the caring relationship between residents and staff (e.g. Custers et al., 2010; Custers et al., 2012), but the factors that support relatedness satisfaction largely remain unexplained. Therefore, it is important to gain more knowledge about how others in the social environment can support need satisfaction, or more generally speaking, which factors in a social context contribute to need satisfaction. In order to provide high quality care to a growing older adults population, the factors contributing to NH resident's relatedness satisfaction must be examined.

A practical concern to address these aims is that the term relatedness seems too narrow to the author to search for studies outside the BPNT framework. Relatedness seems closely

linked to BPNT, and other research outside the BPNT framework might not use the same words to address concepts that can be related to *relatedness*. Therefore, it is expected that similar terms must be included to relatedness to find appropriate literature to answer the research questions. For well-being, the working definition introduced in the beginning of this paper will serve as the basis to search for answers to the research question. In sum, the concepts of relatedness and well-being should be addressed with additional terms in the search string. The extension of these terms is deemed necessary by the author to systematically search for results about the association between relatedness satisfaction and well-being outside a BPNT tradition.

Consequently, the purpose of this thesis is to systematically review recent literature about relatedness satisfaction and well-being in an NH context, aiming to 1. provide an understanding of the associations between relatedness satisfaction and well-being based on literature outside the BPNT framework and 2. to identify from these studies factors that are need-supportive for relatedness satisfaction in nursing home residents.

Method

The systematic review was conducted according to the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analysis) guidelines by Moher et al. (2009) to ensure transparent reporting.

Search Strategy

The PICo (*Population or Problem, Interest, Context*) model was used to identify relevant terms and concepts (Pollock & Berge, 2018). The chosen target population were NH residents. This systematic review aimed at identifying the associations between relatedness satisfaction and well-being in this target group, so the interest was relatedness (satisfaction). The context was nursing homes, and research in this context was considered interdisciplinary, so a variety of databases were selected. The review was conducted searching the databases Scopus, ScienceDirect, EBSCOhost, Web of Science, and PubMed to find peer-reviewed results in English language.

As expected, a first pilot search revealed that only including *relatedness* in the search string as a term for the construct led to studies mainly with a BPNT approach. As the aim of this study was to search for associations outside a BPNT framework, other terms were added. Relatedness is defined as a sense of belongingness and connectedness to others (Ryan & Deci, 2000), therefore, *connectedness* was included in the search string. While using *belonging* in

the search string did not seem to add valuable results for the research questions, other terms were considered and tested out in the search string. Finally, *social support* was included to find suitable results since it appeared to be used by many authors relating the term social support to well-being. For the concept of well-being, the term *satisfaction with life* was added to address the concept. This term has also been used by Kasser and Ryan (1999) to address well-being from a BPNT perspective. In addition, the term *quality of life* was added to approach well-being, as this term is used widely and interchangeably with well-being in public discourse, policy, and research (Skevington & Böhnke, 2018).

The search strategy included controlled vocabulary through the use of MeSH words (Medical Subject Headings) and the key concepts. The concepts were searched in combination using the Boolean operators “AND” and “NOT”. The following search string was used:

(nursing home OR residential care OR long term care) NOT (dementia) AND (relatedness OR connect* OR social support) AND (well-being OR quality of life OR satisfaction with life)

The wording in the search string had to be adapted according to the database (e.g. using wildcards, parentheses). Also, the use of the parts of the search string as title/abstract/topic had to be adjusted respectively and the range of limitations to choose from differed per database. Some databases, as, for example, Web of Science, did not offer to use the search category ‘title/abstract/keywords’, and in this case, it was decided to use the category ‘title’ to find results that addressed the research topic (see Table 1).

Table 1*Summary of the Search Strategy and Results*

Set	Database	Search string	Limitations	Results
1	EBSCOhost (APA PsyInfo, APA PsycArticles, Psychology and Behavioral Sciences Collection)	nursing home OR residential care OR long term care NOT dementia [Title] AND relatedness OR connect* OR social support [Abstract] AND well-being OR quality of life OR satisfaction with life [Abstract]	Aged (mean 65+), English, peer-review	47
2	Web of Science	nursing home OR residential care OR long term care NOT dementia [Title] AND relatedness OR connect* OR social support [Title] AND well-being OR quality of life OR satisfaction with life [Topic]	English	29
3	PubMed	nursing home OR residential care OR long term care NOT dementia [Title] AND relatedness OR connect*OR social support [Title/Abstract] AND well-being OR quality of life OR satisfaction with life [Title/Abstract]	English, aged 65+, humans	31
4	ScienceDirect	{well-being} OR {quality of life} OR {satisfaction with life} [Title, abs, key] AND {nursing home} OR {residential care} OR {long term care} NOT dementia [Title] AND relatedness OR connectedness OR {social support} [Title]	Review articles, research articles	32
5	Scopus	{nursing home} OR {residential care} OR {long term care}) [Title] AND relatedness OR connect* OR "social support" [Title, abs, key] AND "well-being" OR "quality of life" OR "satisfaction with life" [Title, abs, key] AND NOT dementia [Title, abs, key]	English, articles, reviews	72

Inclusion and Exclusion Criteria

The following inclusion criteria were used to determine an article's appropriateness: First, the studies had to include an older adult sample (mean age 65 years and older) living in a nursing home. Second, the study should have included an indicator, or at least referring to the concept of well-being, quality of life, or satisfaction with life, and to relatedness, social support, or connectedness. Studies involving participants with dementia or severe cognitive impairments were excluded to ensure comparability to previous studies with a BPNT background, which did not include those groups in their research. Also, samples including only community dwelling older adults were excluded, since this was not the target context.

Finally, studies with a BPNT background were excluded, as the intention was to address the research question outside a BPNT framework.

Procedure and Analysis

From the different databases 211 articles were retrieved in May 2020. Using a snowball technique, other relevant studies were identified from reference lists. Duplicates were removed and records were further screened based on the inclusion and exclusion criteria. The process of study selection is displayed in Figure 1. Finally, 11 studies were chosen for an in-depth screening. Those studies were read in full and systematically analyzed to answer the research questions. All relevant data was extracted from each article. First, general data, such as date of publication, type of study design, and country of origin were recorded. Further, information about the sample was recorded. Finally, instruments that were used by the authors used to measure relatedness and well-being, and the factors supporting relatedness satisfaction were extracted. All the reviewed articles are presented in Table 2 and included in the list of references marked with an asterisk.

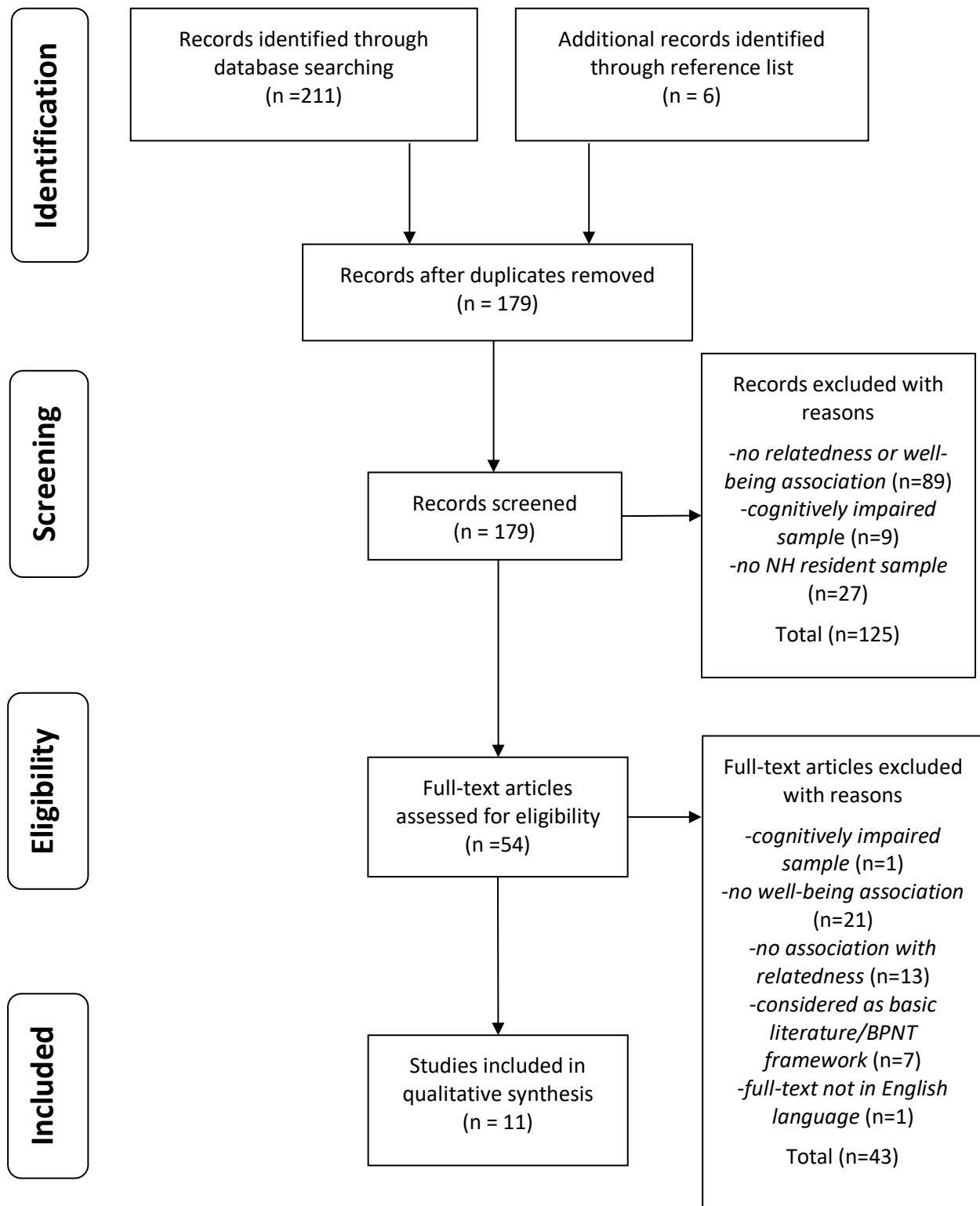


Figure 1. Study selection process from first search. Based on Moher et al., The PRISMA Group (2009).

Results

The 11 records included in the final selection were quantitative studies. Furthermore, the studies included were predominantly cross-sectional in design, with one intervention study among the included records. The studies in the final sample have mainly been published in the past ten years (8 out of 11) and were conducted in Australia, Belgium, China, Germany, Ireland, Norway, Taiwan, the United Kingdom, and the United States of America. One of the included articles investigated the relationship between social support and quality of life ([8]), and two the relationship between social support and health-related quality of life ([3], [11]). Two studies examined NH residents' associations with quality of life with related factors, such as social support ([7], [10]). Another study investigated the quality of life in NH residents and its relationship with social satisfaction ([6]). One article aimed to examine whether NH residents identified social support as coming from family, peer residents, and staff, and how this support contributed to well-being ([1]). One study investigated the extent to which social support promotes well-being in a Chinese NH setting ([2]). Further investigated concepts were social engagement and well-being ([4]), socialization with others, social identification and well-being ([5]), and social network characteristics and subjective well-being ([9]). All objectives and measurements of the included records are presented in Table 2.

Associations between Relatedness and Well-Being

The records included showed a positive association between social support and quality of life ([3], [7], [8], ([10], [11]). Positive associations were also found between social support and well-being ([1], [2], [4], [5]). Only one study explicitly addressed the satisfaction with perceived social support and well-being ([1]). In this American study, the satisfaction with perceived social support from peer residents, staff and family members was significantly positively correlated with positive affect, and negatively with the negative indicator of well-being ([1]).

Additionally, the subjective perceptions of social support from peers, staff, and family members were significantly related with well-being in this study while the size of the support network was not associated with well-being ([1]). Some of the included records described the quantity of social support as less important for well-being than the perceived quality of the social support ([1], [6], [9]). Perceived availability for social support was found to be a significant predictor of subjective well-being, whereas the perceived size of social network was nonsignificant after controlling for average contacts and support in a German study ([9]).

Several studies outline the importance of peer relationships to residents' well-being ([1], [2], [5]). In the American study, residents with a greater subjective sense of social support from their peers reported less depression and more positive affect, and happiness ([1]). Residents who were satisfied with social support received from staff also showed higher well-being, resulting in greater positive affect and happiness ([1]). The perceptions of family support were less consistently related to their well-being and in a multivariate analysis, only the subjective support from peers was significantly related to well-being ([1]). In contrast, an Asian study ([2]) showed that contacts and social support exchanges between NH residents and family members were associated with positive well-being indicators only (positive affect and satisfaction with life), while contacts and support exchanges with peers and staff were also associated with the same positive, but also with negative well-being indicators (such as depression and loneliness). However, also in this study, support from staff and peers was still more strongly associated with well-being than support from family members ([2]). Another Asian study showed that social support from family members was significantly correlated with psychological well-being, while social support from friends was found not to be significantly associated with well-being ([4]). Family contact was also found to be significantly positively related to quality of life ([7]).

A Norwegian study investigated the impact of social support on health-related quality of life (HRQOL) ([3]). Results showed that subdimensions of their social support scale were significantly related to quality of life subdimensions. The social support subscale attachment positively affected the HRQOL subscale mental health, opportunity of nurturance significantly affected the social functioning subscale, and reassurance of worth significantly affected vitality ([3]). A similar positive association between social support and HRQOL was found in a Chinese NH resident sample ([11]). Social satisfaction was found to be a predictor for quality of life in a Belgian NH sample ([6]). Lastly, social identity was found to be positively correlated with quality of life ([5]). In a British study, researchers explored the health-related benefits of participating in so called water-clubs ([5]). The authors conducted an experimental study to find out whether it was the fluid intake or the social interaction of clubs that provided benefits. NH residents were allocated in either water clubs, where they discussed either collectively with other residents, or on one-to-one sessions, the benefits of water-intake, or in the control condition where they discussed current events in either a group or one-to-one sessions. The authors found that group membership in the water club condition enhanced perceived social support and sense of social identity, which were beneficial to residents' health and well-being. However, the relationship between social

support and quality of life was only marginally significant in this study. A mediation analysis indicated that clubs achieved the positive outcomes on well-being by providing social support for NH residents, that helped to build a shared sense of identity.

In sum, perceived social support from peers and staff ([1], [2], [8], [10]), but also from family members ([4], [8], [7], [10], [11]) was reported as contributing to well-being in the included records. Social support from peer residents was found to be more consistently related to residents' well-being than similar support from family and friends in one study ([1]); nevertheless, the interaction between family members and residents was also found to be associated with life satisfaction ([2]) and quality of life in other studies ([7], [10]). All records included support a positive association between perceived social support, and well-being, quality of life or satisfaction with life. The positive association between relatedness and well-being is thus confirmed outside the BPNT scope with similar constructs.

Factors Supporting Relatedness Satisfaction

None of the included records used the term relatedness; instead the terms social support was mostly used. Therefore, only factors contributing to the satisfaction with social support could be identified (see also Table 2). The sources of social support were named in most studies ([1], [2], [4], [7], [8], [10], [11]), while the satisfaction with social support was only explicitly addressed in one study ([1]). Social support was identified as coming from peers, staff, and family members ([1], [2], [4], [7]), as well as from family members and friends ([8], [10]). A Taiwanese study reported social support coming from family was perceived the highest in their sample compared to social support from nurses and peer residents ([7]); however, other study did not reflect this finding. Social support coming from friends was only mentioned in two studies ([8], [10]), but it was not related to satisfaction with social support in these records. An American study reported that the satisfaction with the social support received from peers, staff and family members did not differ among these groups ([1]). Peer and staff networks were reported to be as large, or larger than family networks, but no significant associations were reported between size of support networks and the subjective appraisal of the support ([1]). None of the included records provided clear description about how social support was delivered by and to residents from these groups. Two studies measured contact frequency with members of residents social networks: One Asian study ([7]) measured frequency of family interaction (contact via telephone, visits, returns to home) as an indicator for the social support received from family, while another Asian study measured contact frequency from all members of the residents social network (family, friends, peer residents, and staff) ([2]). In the latter study, the average family visits

were 3.6 times per months, while visits from friends were 0.8 per months ([2]). However, contact frequency was not correlated with social support in these studies.

Another factor identified contributing to perceived social support was residents' ratings of their perceived social competency, that is, how able they felt to initiate and sustain social support contacts ([1]). Perceived social competency was significantly related to perceived social support and associated with the satisfaction with social support ([1]). Residents who felt more competent in their social skills reported higher satisfaction with their perceived social support ([1]).

A British study ([5]) showed that the participation in water-clubs improved perceptions of social support among residents, whereas one-to-one sessions discussing the same topic did not lead to improvements in perceived social support. The authors concluded that participation in groups improved social support as it enhances social identification and belonging among residents. Also, social support was found to be strongly positively related to social identification in a British NH resident sample. The authors concluded that social identification with others in a group enhances perceived social support ([5]).

In sum, relationships with family, peers, and staff, perceived social competency and the social identification with others in the nursing home could be identified as contributing to NH residents' satisfaction with social support.

Table 2*Overview of the Included Records (N=11)*

First author (year), country	Research question	Aim of the study	Sample (mean age, standard derivation)	Instrument	Factors supporting relatedness satisfaction
[1] Carpenter (2002), USA	1, 2	to examine whether nursing home patients identify social support as coming from institutional peers and staff as well as family members	32 male long-term care residents ($M=67.8$, $SD=8.5$)	Social support network (Antonucci, 1986); Social Support Appraisal Scale (Vaux et al., 1986); Satisfaction with social support: own items; Social competency (own items); Affect Balance Scale, (Bradburn, 1969); Geriatric Depression Scale (Sheikh & Yesavage, 1986)	Perceived support from family, peers and staff, perceived social competency
[2] Cheng, (2010), China	1	to investigate the extent to which structural and functional social support promotes psychological well-being among nursing home residents	71 NH residents ($M=80.9$, $SD= 6.14$)	Functional support received/provided, network size, contact frequency (own items); Geriatric Depression Scale (Sheikh & Yesavage, 1986); Chinese Affect Scale (Cheng, 2004), Satisfaction With Life Scale (Diener et al., 1985)	
[3] Drageset (2009), Norway	1	to determine the relationship between social support and health-related quality of life	227 NH residents ($M= 85.4$, SD not specified)	Social Provision Scale (Cutrona and Russel, 1987); SF-36 Health Survey (Ware and Sherbourne, 1992)	
[4] Fu (2018), China	1	to explore the role of self-efficacy and social engagement in psychological well-being of nursing home residents	307 NH residents (M not specified)	Perceived Social Support Scale (PSSS) (Zimet, Dahlem, Zimet, & Farley, 1988); Memorial University of Newfoundland Scale of Happiness (Kozma & Stones, 1987)	

First author (year), country	Research question	Aim of the study	Sample (mean age, standard derivation)	Instrument	Factors supporting relatedness satisfaction
[5] Gleibs (2011), UK	1,2	To examine the origin of the benefits of water clubs for NH residents - fluid intake or social identification	66 NH residents ($M=85.3$ $SD=5.37$)	Social Identity: measured with two items adapted from a social identification scale developed by Doosje, Ellemers, and Spears (1995); Social support three items adapted by Haslam et al. (2005) (e.g. 'I get the emotional support I need from other people'); Quality of Life measured with four items adapted from Jetten et al. (2010) (e.g. 'All things considered, are you happy with your life?')	Social identification with others
[6] Maenhout (2020), Belgium	1	to investigate quality of life in nursing home residents and the relationship with personal, organizational, activity-related factors and social satisfaction	171 NH residents ($M=85.4$, $SD=5.88$)	Geriatric Depression Scale (Yesavage et al., 1982); Social satisfaction: one question from the Belgian Health Interview (asking residents to rate the following statement: "In general, how do you perceive the quality of your social network?" on a four-point Likert Scale)	
[7] Tseng (2001), Taiwan	1,2	to explore subjectively perceived QOL and related factors in NH residents	161 NH residents (aged 74-76, M not further specified)	Social Support Scale (edited by Chang, 1996); Quality of Life Index- Nursing Home Version (Ferrans & Powers, 1985)	Family support
[8] Wang (2018), China	1	to examine how older residents' social support and perceived empowerment are associated with their quality of life (QOL) in long-term care facilities	515 long-term care residents ($M=84$, $SD=5.15$)	Perceived Social Support Scale (Zimet, Dahlem, Zimet, & Farley, 1988); Self-perceived quality of Life (Tseng & Wang, 2001); Quality of Life Index-Nursing Home Version (Ferrans & Powers, 1985)	

First author (year), country	Research question	Aim of the study	Sample (mean age, standard derivation)	Instrument	Factors supporting relatedness satisfaction
[9] Wiesmann (2017), Germany	1	to explore the mechanisms of positive aging in nursing-home residents and assess selected resistance resources (subjective age, social network characteristics), the sense of coherence, and positive aging (psychological health and subjective well-being)	190 NH residents ($M=84.3$, $SD=7.6$)	Modified Version of Social Support Questionnaire (by Sarason et al., 1983) to measure perceived network size; Modified version of the Social Support Questionnaire (by Fydrich, Sommer, Tydecks, & Brähler, 2009) to measure perceived social support; Modified version of the German SF-12 Health Survey (by Bullinger & Kirchberger, 1998); Modified German version of Philadelphia Geriatric Center Morale Scale (by Lawton, 1975)	
[10] Wilkinson, (2012), Australia	1	to establish associations with quality of life (QOL) of older people in long-term residential care facilities in two New Zealand cities	599 long-term care residents ($M= 85$, SD not specified)	Social Support: own item (e.g. ‘Can you count on anyone to provide you with emotional support talking over problems or helping you make a difficult decision?’); Own items to assess contact frequency (Family and friends); Life Satisfaction Index (Neugarten, Havighurst, & Tobin, 1961)	
[11] Wu (2018), China	1	to confirm the relationship between social support and health-related quality of life (HRQOL) among elders in nursing homes	205 NH residents ($M=77.3$, $SD= 7.86$)	Multidimensional Scale of Perceived Social Support Scale (Zimet, et al., 1990); SF-36 Short Form (Ware & Sherbourne, 1992)	

Discussion

This review investigated the associations between relatedness satisfaction and well-being in nursing home resident outside a BPNT framework and identified factors supporting NH residents' relatedness satisfaction. The results provide support for a positive association between a wider concept of relatedness, including social support, and well-being in nursing homes outside a BPNT framework. The included records showed evidence for a positive association mainly between social support and well-being or quality of life. Factors that support relatedness satisfaction in NH residents could not be identified in the literal sense, as none of the included records used the term 'relatedness'. Instead, factors that support NH residents' satisfaction with perceived social support were identified. Those factors were perceived social support from peer residents, staff, and family, as well as social identification with others and perceived social competency. In the following, results of this review will be discussed and compared to other literature.

This review supports the importance of relatedness satisfaction for the well-being of older adults in a NH context and can be regarded as a first link between literature with and without a BPNT approach for this association. Although the term relatedness was used in the search string to find relevant records, no study outside a BPNT framework had used this term. The included studies did thus not measure relatedness satisfaction, but perceived social support. Social support on the one hand, and well-being, quality of life, and satisfaction with life, on the other hand, were positively associated in the included records. However, only one study included in this review explicitly measured the satisfaction with social support, while the others investigated the relation between social support and well-being constructs. Therefore, a positive association between social support and well-being is confirmed, but need satisfaction and well-being was not depicted in this review as within studies with a BPNT framework.

Comparing the included records with BPNT literature, a connection between the term social support, found in the included records, and the definition of relatedness provided by BPNT emerged. Relatedness is defined as "feeling connected to and cared about by others" in BPNT (Ryan, Huta, & Deci, 2008, p.153). Social support has been described as emotional support and a sense of belonging (Hwang, et al., 2012). Perceived social support might not be equal to feeling connected to another individual or group, but it reflects a sense of belonging, feeling cared for, and feeling supported by others, and in this sense, would fit into the conceptualization of relatedness proposed by Deci and Ryan. Therefore, a suggestion from

this review is to consider broadening the BPNT definition of relatedness by including the term perceived social support in future studies.

The second aim of this study was to identify factors supportive for relatedness satisfaction. However, the review revealed that relatedness was not used as a term in studies without a BPNT framework, so that the results only refer to factors that contribute to NH residents' satisfaction with perceived social support. The difference between need satisfaction and the factors that contribute to need satisfaction largely remains unexplained in BPNT. Distinguishing between the two has also been a challenge to this review, as the included records did mostly not explain which factors they considered as need supportive for the satisfaction with social support, but mostly stated what contributed to higher perceptions of social support in residents. Therefore, only a few factors could be identified as contributing to NH residents' experience of social support, namely the relationships with family, peers, and staff, perceived social competency and the social identification with others in the nursing home.

The first factor that this review identified was relationship to peer residents, which was found to be contributing to satisfaction with perceived social support (e.g. in Carpenter, 2002). Additional literature has also outlined the importance of peer relations for NH residents, proposing that residents have an intention to build relationships with others within the institution (Roberts & Bowers, 2015), but that forming friendships with peers is an obstacle for many residents (Buckley & McCarthy, 2009). Reasons for this difficulty, mentioned in additional literature, were not sharing common interests and not knowing what to talk about (Buckley & McCarthy, 2009). However, additional research has also reported residents' impression that finding a common bond with other residents could facilitate developing relationships with them (e.g. Buckley & McCarthy, 2009). Bergland and Kirkevold (2008) proposed that staff can serve as a "facilitator" for the contact between residents by promoting social interaction. Concluding from the importance of peer relationships for NH residents perceived social support found in the present review and earlier findings outlined above, peer relationships among NH residents need to be sustained, and, if necessary, encouraged by staff.

Besides the relationship to peers, the present review also outlined the importance of NH residents' relationship with staff for the satisfaction with perceived social support. Relatedness with staff has been found to be important for residents' relatedness satisfaction in earlier studies (e.g. Custers et al., 2012). Literature reviewed in this paper has pointed out that residents appreciate support exchange with staff (Cheng et al., 2012). Similar findings were

reported in additional studies (Nakrem, Vinsnes, & Seim, 2011; Kang et al., 2020). Researchers have reported that residents like staff to share some personal information about their lives and thus having the opportunity to provide support to their caregivers in form of advice (Nakrem, Vinsnes, & Seim, 2011). This reciprocity might evoke a feeling of being needed and valued, which is considered to be crucial for strengthening self-esteem (Weiss, 1974), and for preventing depression (Tikkainen & Heikkinen, 2005). Unfortunately, findings from other studies also indicate that residents often perceive staff as too busy and short on time to develop more profound reciprocal relationships (Nakrem, Vinsnes, & Seim, 2011). One solution might be highly educated staff, because higher education of staff has been reported to be related with higher need fulfillment in residents (Custers et al., 2011). In conclusion, investing in staff's education and ensuring enough human resources to meet residents physical and psychological needs could help improve the quality of care in institutions and contribute to relatedness satisfaction.

Apart from peer and staff relationships, the present review pointed out the importance of family contact for residents' satisfaction with social support (e.g. Wang et al., 2018). Family plays an important role for the satisfaction of relatedness in NH residents, and contributes by providing emotional support (Wilkinson et al., 2012). However, concerning the importance of perceived social support from family vs. support from peers or staff for NH residents' *well-being*, inconsistent results emerged. On the one hand, results indicated that social support from peer residents was more important to residents' well-being than similar support from family and friends (Carpenter, 2002; Cheng, Lee, & Chow, 2010); on the other hand results indicated that family's social support had the strongest association with quality of life in Asian samples (Tseng & Wang, 2001). Although BPNT proposes the universal importance of need satisfaction for well-being, some researchers have argued that the contribution of need satisfaction on well-being differs across cultures (e.g. Hahn & Oishi, 2006). Therefore, cross-cultural research could help to gain insight into the differences regarding the role of family support in relatedness satisfaction in NH residents in collectivist and individualist cultures. Irrespective of the cultural background, involving family in leisure activities could help to promote social interaction and feeling of connectedness between residents and their relatives. Finally, social support from friends was not related to satisfaction with social support in the included studies, however, social support from friends was generally described as low (e.g. Cheng et al., 2010). Additional literature has also described residents contact with friends as declining after NH admission (Port et al., 2001).

Furthermore, this review found that participation in group activities is another factor that is thought to facilitate perceived social support amongst residents (e.g. Gleibs et al., 2011). Participating in groups can provide residents with a sense of shared identity, which partially explained the positive effect of social support on well-being in one of the included studies (Gleibs et al., 2011). This is in line with other literature arguing that it is not the number of social activities a resident performs, but the subjective perception of feeling connected to others during an activity that contributes to well-being (Palacios-Cena et al., 2016). Other researches have also outlined positive effects of social support, evoked through participation in leisure activities, on NH residents' well-being within a BPNT framework. For example, participation is considered to lower ill-being (e.g. Duncan, Killian, & Lucier-Greer, 2017) and facilitate adaption to the living environment (Altintas, Benedetto, & Gallouj, 2017). However, the mechanisms of how meaningful activities with others promote social support, and consequently well-being, should be explored further. Concluding from this review, group activities seem to enhance social support amongst residents by strengthening social identification with others. Therefore, promoting meaningful activities in which residents have the chance to interact with and connect to each other could serve as a vehicle for relatedness satisfaction.

Another factor associated with social support satisfaction found in this review is perceived social competency – defined as residents' perceived ability to initiate and sustain social support contacts (Carpenter, 2002). Residents who felt more competent in their social skills reported higher perceived social support, higher satisfaction with perceived social support, and higher well-being (Carpenter, 2002). The latter part of this finding is in line with BPNT, as competence is considered another basic psychological need contributing to well-being (Ryan & Deci, 2001). Finally, this review indicated that it is not the quantity of social support perceived, but the quality of that support that mattered more to residents' experience of social support. Although the perceived size of the social network was described as rather low, the perceived availability of social support was described as high by residents in some of the included records (e.g. Wiesmann et al., 2017). This finding can be linked with Carstensen's socioemotional selectivity theory, which claims that when limited time is left in life, emotional goals are prioritized and fewer, but more closer relationships are perceived as satisfying for older adults (Carstensen, 1992; Carstensen et al., 1999).

In light of the positive associations between social support and NH residents' well-being found in this study, how can NH institutions promote relatedness satisfaction for their residents? First, offering frequent opportunities for residents to participate in group activities

could be helpful, as activity engagement can promote thriving in NH residents (e.g. Björk et al., 2017), might facilitate social identification with others, and contribute to a feeling of social support for NH residents (Gleibs et al., 2011). Second, NH staff should be aware of the concept of relatedness or social support as a basic psychological need which a resident might need just as much to flourish as he needs physical care (Custers et al., 2013). On an institutional level, enough time and personnel resources should be ensured so that staff has the opportunity to provide high-quality care with attention to residents physical *and* psychological needs. Third, family members should get involved in resident's life's as much as possible, as they can present a connection to the outside world and a source supporting relatedness satisfaction (Ferrand et al., 2019). Finally, involving volunteers in the residency could offer residents an additional source of social support (Buckely & McCarthy, 2009).

Strengths and Limitations

This systematic review followed the PRISMA guidelines to ensure a transparent search process (Moher et al., 2009). The broad search in five different databases strengthens the informative value of the findings of this review. Within EBSCOhost, PsyArticles, PsychInfo, and Psychology and Behavioral Science Collection were searched to provide a psychological approach, while Web of Science, Scopus and ScienceDirect were approached to extend the search to other fields, and thus broaden perspectives on the topic. Finally, PubMed was chosen to ensure a medical approach to the topic, which was also considered an important perspective. As research in the NH context is multidisciplinary, the broad choice of databases can be considered as a strength. However, not all of these databases allowed for the use of the search string in the categories abstract/title/topic, so that in some databases (e.g. Web of Science) the search string had to be adapted and title was chosen as the best fitting category. Although this was done carefully and with the intention to ensure as much comparability between the searches in the five different databases, this limitation might have impacted the selection of studies found and presents a general obstacle for literature reviews using these five databases in combination. In addition, the exclusion of samples with cognitive impairments to ensure comparability with previous studies might curtail the generalizability of the results. Since dementia is common among NH residents (Nygaard, 2003), the results of this review are not representable for the whole NH population. As relatedness is thought to be a universal basic psychological need “regardless of state of development” (Ryan, 2009, p.1), it could be expected that such replications would show similar results of a positive association between relatedness and the well-being in cognitively impaired residents. Conclusively, the records included in this review should be replicated with

dementia samples. Lastly, most of the studies were cross-sectional in design. More longitudinal research is needed to draw causal conclusions about the nature of the relationship between relatedness and well-being in older adults living in nursing homes.

Conclusion

This systematic review identified 11 records showing positive associations between social support and well-being, quality of life and satisfaction with life, which provide support for the positive association between relatedness and well-being outside a BPNT framework. Factors identified as supportive to residents perceived social support were relationships with peer residents, staff and family, social competency, and social identification with others. As the BPNT definition of relatedness seems limited in capturing the whole picture of relatedness in NH residents, future studies should consider complementing this definition by including the term *perceived social support*.

References

- Antonucci, T. C. (1986). Social support networks: A hierarchical mapping technique. *Generations*, 10, 10-12.
- Altintas, E., De Benedetto, G., & Gallouj, K. (2017). Adaptation to nursing home: The role of leisure activities in light of motivation and relatedness. *Archives of gerontology and geriatrics*, 70, 8-13. <https://doi.org/10.1016/j.archger.2016.12.004>
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, 117, 497–529. <https://doi.org/10.1037/0033-2909.117.3.497>
- Bergland, Å., & Kirkevold, M. (2008). The significance of peer relationships to thriving in nursing homes. *Journal of clinical nursing*, 17(10), 1295-1302. <https://doi.org/10.1111/j.1365-2702.2007.02069.x>
- Björk, S., Lindkvist, M., Wimo, A., Juthberg, C., Bergland, Å., & Edvardsson, D. (2017). Residents' engagement in everyday activities and its association with thriving in nursing homes. *Journal of Advanced Nursing*, 73(8), 1884-1895. <https://doi.org/10.1111/jan.13275>
- Bonvalet, C. (2007). Vieillissement de la population et logement: les stratégies résidentielles et patrimoniales [Aging of the population and housing: Residential and heritage strategies]. In C. Bonvalet, F. Drosso, F. Benguigui, & M. Huynh (Eds.), *Vieillissement de la population et logement. Les stratégies résidentielles et patrimoniales*. Paris: La Documentation Française.
- Bradburn, N. M. (1969). *The structure of psychological well-being*. Chicago: Aldine
- Buckley, C., & McCarthy, G. (2009). An exploration of social connectedness as perceived by older adults in a long-term care setting in Ireland. *Geriatric Nursing*, 30(6), 390-396. <https://doi.org/10.1016/j.gerinurse.2009.09.001>
- Bullinger, M., & Kirchberger, I. (1998). *SF-36: Fragebogen zum Gesundheitszustand; Handanweisung*. Hogrefe, Verlag für Psychologie
- *Carpenter, B. D. (2002). Family, Peer, and Staff Social Support in Nursing Home Patients: Contributions to Psychological Well-Being. *Journal of Applied Gerontology*, 21(3), 275–293. <https://doi.org/10.1177/073346480202100301>

- Carstensen, L. L. (1992). Social and emotional patterns in adulthood: support for socioemotional selectivity theory. *Psychology and aging, 7*(3), 331.
- Carstensen, L. L., Isaacowitz, D. M., & Charles, S. T. (1999). Taking time seriously: A theory of socioemotional selectivity. *American psychologist, 54*(3), 165. <https://doi.org/10.1037/0003-066X.54.3.165>
- Chang, S. H. (1996). Loneliness of elderly people related to perceived health status and social support. *Masteral Dissertation, Kaohsiung Medical College*.
- Chao, S., Liu, H., Wu, C., Jin, S., Chu, T., Huang, T., & Clark, M. J. (2006). The effects of group reminiscence therapy on depression, self esteem, and life satisfaction of elderly nursing home residents. *Journal of Nursing Research, 14*(1), 36. <http://doi.org/10.1097/01.jnr.0000387560.03823.c7>
- Chen, B., Vansteenkiste, M., Beyers, W., Boone, L., Deci, E. L., Van der Kaap-Deeder, J., ... Ryan, R. M. (2015). Basic psychological need satisfaction, need frustration, and need strength across four cultures. *Motivation and Emotion, 39*(2), 216–236. <https://doi.org/10.1007/s11031-014-9450-1>
- *Cheng, S. T., Lee, C. K. L., & Chow, P. K. Y. (2010). Social support and psychological well-being of nursing home residents in Hong Kong. *International Psychogeriatrics, 22*(7), 1185-1190. <https://doi.org/10.1017/S1041610210000220>
- Cheng, S-T. (2004). Age and subjective well-being revisited: a discrepancy perspective. *Psychology and Aging, 19*, 409–415. <https://doi.org/10.1037/0882-7974.19.3.409>
- * Cooney, A., Dowling, M., Gannon, M. E., Dempsey, L., & Murphy, K. (2014). Exploration of the meaning of connectedness for older people in long-term care in context of their quality of life: a review and commentary. *International journal of older people nursing, 9*(3), 192-199. <https://doi.org/10.1111/opn.12017>
- Cornwell, B., Laumann, E. O., & Schumm, L. P. (2008). The Social Connectedness of Older Adults: A National Profile*. *American sociological review, 73*(2), 185–203. <https://doi.org/10.1177/000312240807300201>
- Cutrona, C. E., & Russell, D. W. (1987). The provisions of social relationships and adaptation to stress. *Advances in personal relationships, 1*(1), 37-67.
- Custers, A. F., Westerhof, G. J., Kuin, Y., & Riksen-Walraven, M. (2010). Need fulfillment in caring relationships: Its relation with well-being of residents in somatic nursing

- homes. *Aging & mental health*, 14(6), 731-739.
<https://doi.org/10.1080/13607861003713133>
- Custers, A. F. J., Kuin, Y., Riksen-Walraven, M., & Westerhof, G. J. (2011). Need support and well-being during morning care activities: An observational study on resident–staff interaction in nursing homes? *Ageing & Society*, 31(8), 1425–1442.
<http://dx.doi.org/10.1017/S0144686X10001522>.
- Custers, A. F., Westerhof, G. J., Kuin, Y., Gerritsen, D. L., & Riksen-Walraven, J. M. (2012). Relatedness, autonomy, and competence in the caring relationship: The perspective of nursing home residents. *Journal of Aging Studies*, 26(3), 319-326.
<https://doi.org/10.1016/j.jaging.2012.02.005>
- Custers, A.F.J., Westerhof, G.J., Kuin, Y. *et al.* Need fulfillment in the nursing home: resident and observer perspectives in relation to resident well-being. *Eur J Ageing* 10, 201–209 (2013). <https://doi.org/10.1007/s10433-013-0263-y>
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum.
- Deci, E. L., & Ryan, R. M. (1991). A motivational approach to self: Integration in personality. In *Nebraska symposium on motivation*, 38 (1), 237-288.
- Deci, E. L., & Ryan, R. M. (2008). Hedonia, eudaimonia, and well-being: An introduction. *Journal of happiness studies*, 9(1), 1-11. <https://doi.org/10.1007/s10902-006-9018-1>
- Deci, E. L., & Ryan, R. M. (2008). Self-determination theory: A macrotheory of human motivation, development, and health. *Canadian psychology/Psychologie canadienne*, 49 (3), 182. <https://doi.org/10.1037/a0012801>
- Deci, E. L., & Ryan, R. M. (2014). Autonomy and need satisfaction in close relationships: Relationships motivation theory. In *Human motivation and interpersonal relationships* (pp. 53-73). Springer, Dordrecht. https://doi.org/10.1007/978-94-017-8542-6_3
- Diener, E. (1984). Subjective well-being. *Psychological Bulletin*, 95, 542–575.
<http://dx.doi.org/10.1037/0033-2909.95.3.542>

- Diener, E., Emmons, R. A., Larsen, R. J. and Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment*, 49, 71–75.
https://doi.org/10.1207/s15327752jpa4901_13
- Dodge, R., Daly, A. P., Huyton, J., & Sanders, L. D. (2012). The challenge of defining wellbeing. *International journal of wellbeing*, 2(3), 222-235.
- Doosje, B., Ellemers, N., & Spears, R. (1995). Perceived intragroup variability as a function of group status and identification. *Journal of experimental social psychology*, 31(5), 410-436. <https://doi.org/10.1006/jesp.1995.1018>
- *Drageset, J., Eide, G. E., Nygaard, H. A., Bondevik, M., Nortvedt, M. W., & Natvig, G. K. (2009). The impact of social support and sense of coherence on health-related quality of life among nursing home residents—A questionnaire survey in Bergen, Norway. *International journal of nursing studies*, 46(1), 66-76.
<https://doi.org/10.1016/j.ijnurstu.2008.07.005>
- Drageset, J., Espehaug, B., & Kirkevold, M. (2012). The impact of depression and sense of coherence on emotional and social loneliness among nursing home residents without cognitive impairment—a questionnaire survey. *Journal of Clinical Nursing*, 21(7-8), 965-974. <https://doi.org/10.1111/j.1365-2702.2011.03932.x>
- Duncan, J. M., Killian, T. S., & Lucier-Greer, M. (2017). Leisure, relatedness, and ill-being among older adults in long-term care. *Activities, Adaptation & Aging*, 41(4), 273-290.
<https://doi.org/10.1080/01924788.2017.1326764>
- Ferguson, S. J., & Goodwin, A. D. (2010). Optimism and well-being in older adults: The mediating role of social support and perceived control. *The International Journal of Aging and Human Development*, 71(1), 43-68. <https://doi.org/10.2190/AG.71.1.c>
- Ferrand, C., Martinent, G., & Durmaz, N. (2014). Psychological need satisfaction and well-being in adults aged 80 years and older living in residential homes: Using a self-determination theory perspective. *Journal of Aging Studies*, 30, 104-111.
<https://doi.org/10.1016/j.jaging.2014.04.004>
- Ferrand, C., Martinent, G., Deliot, M., & Pont, V. (2019). Need satisfaction and frustration in older People living in French nursing homes. *GeroPsych*, 32,69
77. <https://doi.org/10.1024/1662-9647/a000205>

- Ferrans, C. E., & Powers, M. J. (1985). Quality of life index: development and psychometric properties. *Advances in nursing science*. <https://doi.org/10.1097/00012272-198510000-00005>
- *Fu, F., Liang, Y., An, Y., & Zhao, F. (2018). Self-efficacy and psychological well-being of nursing home residents in China: the mediating role of social engagement. *Asia Pacific Journal of Social Work and Development*, 28(2), 128-140. <https://doi.org/10.1080/02185385.2018.1464942>
- Fydrich, T., Sommer, G., Tydecks, S., & Brähler, E. (2009). Fragebogen zur sozialen unterstützung (F-SozU): Normierung der Kurzform (K-14). *Zeitschrift für Medizinische Psychologie*, 18(1), 43-48.
- *Gleibs, I. H., Haslam, C., Haslam, S. A., & Jones, J. M. (2011). Water clubs in residential care: Is it the water or the club that enhances health and well-being?. *Psychology & health*, 26(10), 1361-1377. <https://doi.org/10.1080/08870446.2010.529140>
- Hahn, J., & Oishi, S. (2006). Psychological needs and emotional well-being in older and younger Koreans and Americans. *Personality and Individual Differences*, 40(4), 689–698. <https://doi.org/10.1016/j.paid.2005.09.001>
- Haslam, S. A., O'Brien, A., Jetten, J., Vormedal, K., & Penna, S. (2005). Taking the strain: Social identity, social support, and the experience of stress. *British journal of social psychology*, 44(3), 355-370. <https://doi.org/10.1348/014466605X37468>
- Hellström, U. W., & Sarvimäki, A. (2007). Experiences of self-determination by older persons living in sheltered housing. *Nursing ethics*, 14(3), 413-424. <https://doi.org/10.1177/0969733007075888>
- Hwang, H. L., Tu, C. T., Chen, S., & Wang, H. H. (2012). Caring behaviors perceived by elderly residents of long-term care facilities: Scale development and psychometric assessment. *International journal of nursing studies*, 49(2), 183-190. <https://doi.org/10.1016/j.ijnurstu.2011.08.013>
- Jetten, J., Haslam, C., Pugliese, C., Tonks, J., & Haslam, S. A. (2010). Declining autobiographical memory and the loss of identity: Effects on well-being. *Journal of clinical and experimental neuropsychology*, 32(4), 408-416. <https://doi.org/10.1080/13803390903140603>
- Kahneman, D., Diener, E., & Schwarz, N. (Eds.). (1999). *Well-being: Foundations of hedonic psychology*. Russell Sage Foundation.

- Kang, B., Scales, K., McConnell, E. S., Song, Y., Lepore, M., & Corazzini, K. (2020). Nursing home residents' perspectives on their social relationships. *Journal of Clinical Nursing, 29*(7-8), 1162-1174. <https://doi.org/10.1111/jocn.15174>
- Klerck, M.M.Y. (2005). *Ouderen in instellingen: Landelijk overzicht van de leefsituatie van oudere tehuisbewoners* [Elderly in institutions: National overview of older residents' living situation]. Den Haag: Social en Cultureel Planbureau.
- Kloos, N., Trompetter, H. R., Bohlmeijer, E. T., & Westerhof, G. J. (2019). Longitudinal associations of autonomy, relatedness, and competence with the well-being of nursing home residents. *The Gerontologist, 59*(4), 635-643. <https://doi.org/10.1093/geront/gny005>
- Kozma, A., & Stones, M. J. (1987). Social desirability in measures of subjective well-being: A systematic evaluation. *Journal of Gerontology, 42*, 56–59. <https://doi.org/10.1093/geronj/42.1.56>
- Lawton, M. P. (1975). The Philadelphia geriatric center morale scale: A revision. *Journal of gerontology, 30*(1), 85-89. <https://doi.org/10.1093/geronj/30.1.85>
- Luong, G., Charles, S. T., & Fingerhman, K. L. (2011). Better with age: Social relationships across adulthood. *Journal of Social and Personal Relationships, 28*(1), 9–23. <https://doi.org/10.1177/0265407510391362>
- *Maenhout, A., Cornelis, E., Van de Velde, D., Desmet, V., Gorus, E., Van Malderen, L., ... & De Vriendt, P. (2020). The relationship between quality of life in a nursing home and personal, organizational, activity-related factors and social satisfaction: a cross-sectional study with multiple linear regression analyses. *Aging & Mental Health, 24*(4), 649-658. <https://doi.org/10.1080/13607863.2019.1571014>
- Meijer, A., Van Campen, C., & Kerkstra, A. (2000). A comparative study of the financing, provision and quality of care in nursing homes. The approach of four European countries: Belgium, Denmark, Germany and the Netherlands. *Journal of Advanced Nursing, 32*(3), 554-561. <https://doi.org/10.1046/j.1365-2648.2000.01515.x>
- Milyavskaya, M., Gingras, I., Mageau, G. A., Koestner, R., Gagnon, H., Fang, J., & Boiché, J. (2009). Balance across contexts: Importance of balanced need satisfaction across various life domains. *Personality and Social Psychology Bulletin, 35* (8), 1031–1045. <https://doi.org/10.1177/0146167209337036>

- Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. *PLoS Med* 6(7): e1000097. <https://doi.org/10.1371/journal.pmed.1000097>
- Nakrem, S., Vinsnes, A. G., & Seim, A. (2011). Residents' experiences of interpersonal factors in nursing home care: a qualitative study. *International journal of nursing studies*, 48(11), 1357-1366. <https://doi.org/10.1016/j.ijnurstu.2011.05.012>.
- Niemiec, C. P., Soenens, B., & Vansteenkiste, M. (2014). Is relatedness enough? On the importance of need support in different types of social experiences. In *Human motivation and interpersonal relationships* (pp. 77-96). Springer, Dordrecht. https://doi.org/10.1007/978-94-017-8542-6_4
- Neugarten, B. L., Havighurst, R. J., & Tobin, S. S. (1961). The measurement of life satisfaction. *Journal of gerontology*. <https://doi.org/10.1093/geronj/16.2.134>
- Nygaard, H. A., & Ruths, S. (2003). Missing the diagnosis: senile dementia in patients admitted to nursing homes. *Scandinavian journal of primary health care*, 21(3), 148-152. <https://doi.org/10.1080/02813430310001798>
- Palacios-Cena, D., Gomez-Calero, C., Cachon-Perez, J. M., Velarde- Garcia, J. F., Martinez-Piedrola, R., & Perez-De-Heredia, M. (2016). Is the experience of meaningful activities understood in nursing homes? A qualitative study. *Geriatric Nursing* (New York, N.Y.), 37, 110–115. <https://doi.org/10.1016/j.gerinurse.2015.10.015>
- Pollock, A., & Berge, E. (2018). How to do a systematic review. *International Journal of Stroke*, 13(2), 138–156. <https://doi.org/10.1177/1747493017743796>
- Port, C. L., Gruber-Baldini, A. L., Burton, L., Baumgarten, M., Hebel, J. R., Zimmerman, S. I., & Magaziner, J. (2001). Resident contact with family and friends following nursing home admission. *The Gerontologist*, 41(5), 589-596. <https://doi.org/10.1093/geront/41.5.589>
- Richer, S., & Vallerand, R. J. (1998). Construction and validation of the perceived relatedness scale. *European Review of Applied Psychology*, 48, 129–137.
- Roberts, T., & Bowers, B. (2015). How nursing home residents develop relationships with peers and staff: A grounded theory study. *International journal of nursing studies*, 52(1), 57-67. <https://doi.org/10.1016/j.ijnurstu.2014.07.008>

- Ryan, R. M. (1995). Psychological needs and the facilitation of integrative processes. *Journal of Personality*, 63, 397-427. <https://doi.org/10.1111/j.1467-6494.1995.tb00501.x>
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American psychologist*, 55(1), 68.
- Ryan, R.M., & Deci, E.L. (2001). On happiness and human potentials: A review of research in hedonic and eudemonic well-being. *Annual Review of Psychology*, 52 (2), 141- 166. <https://doi.org/10.1146/annurev.psych.52.1.141>.
- Ryan, R.M., & Deci, E.L. (2002). Overview of self- determination theory: An organismic dialectical perspective. In E.L. Deci & R.M. Ryan (Eds.), *Handbook of self-determination research* (pp. 3–33). Rochester: The University of Rochester Press.
- Ryan, R. M., & La Guardia, J. G. (2000). What is being optimized?: Self-determination theory and basic psychological needs across. In S. H. Qualls & N. Abeles (Eds.), *Psychology and the aging revolution: How we adapt to longer life* (pp. 145–172). APA Books. <https://doi.org/10.1037/10363-008>
- Ryan, R. M., Huta, V., & Deci, E. L. (2008). Living well: A self-determination theory perspective on eudaimonia. *Journal of happiness studies*, 9(1), 139-170. <https://doi.org/10.1007/s10902-006-9023-4>
- Ryan, R. (2009). Self determination theory and well being. *Social Psychology*, 84(822), 848.
- Ryan, R. M., & Deci, E. L. (2017). *Self-determination theory: Basic psychological needs in motivation, development, and wellness*. Guilford Publications.
- Ryff, C. D. (1989). In the eye of the beholder: Views of psychological well-being among middle-aged and older adults. *Psychology and aging*, 4(2), 195-210. <https://doi.org/10.1037/0882-7974.4.2.195>
- Sarason, I. G., Levine, H. M., Basham, R. B., & Sarason, B. R. (1983). Assessing social support: practical and theoretical implications. *Journal of Personality and Social Psychology*, 44, 127-139.
- Sheikh, J. I., & Yesavage, J. A. (1986). Geriatric Depression Scale (GDS): recent evidence and development of a shorter version. *Clinical Gerontologist: The Journal of Aging and Mental Health*. https://doi.org/10.1300/J018v05n01_09

- Shin, D., & Johnson, D. (1978). Avowed happiness as an overall assessment of the quality of life. *Social Indicators Research*, 5(1), 475–492.
<http://dx.doi.org/10.1007/BF00352944>
- Skevington, S. M., & Böhnke, J. R. (2018). How is subjective well-being related to quality of life? Do we need two concepts and both measures?. *Social Science & Medicine*, 206, 22-30. <https://doi.org/10.1016/j.socscimed.2018.04.005>
- Sun, Y., Zhang, D., Yang, Y., Wu, M., Xie, H., Zhang, J., & Su, Y. (2017). Social support moderates the effects of self-esteem and depression on quality of life among Chinese rural elderly in nursing homes. *Archives of Psychiatric Nursing*, 31(2), 197-204.
<http://dx.doi.org/10.1016/j.apnu.2016.09.015>
- Tang, M., Wang, D., & Guerrien, A. (2020). A systematic review and meta-analysis on basic psychological need satisfaction, motivation, and well-being in later life: Contributions of self-determination theory. *PsyCh Journal*, 9(1), 5-33.
<https://doi.org/10.1002/pchj.293>
- Tiikkainen, P., & Heikkinen, R. L. (2005). Associations between loneliness, depressive symptoms and perceived togetherness in older people. *Aging & Mental Health*, 9(6), 526-534. <https://doi.org/10.1080/13607860500193138>
- *Tseng, S. Z., & Wang, R. H. (2001). Quality of life and related factors among elderly nursing home residents in Southern Taiwan. *Public Health Nursing*, 18(5), 304-311.
<https://doi.org/10.1046/j.1525-1446.2001.00304.x>
- Trybusińska, D., & Saracen, A. (2019). Loneliness in the context of quality of life of nursing home residents. *Open Medicine*, 14(1), 354-361. <https://doi.org/10.1515/med-2019-0035>
- Vanhove-Meriaux, C., Martinent, G., & Ferrand, C. (2018). Profiles of needs satisfaction and thwarting in older people living at home: Relationships with well-being and ill-being indicators. *Geriatrics & gerontology international*, 18(3), 470-478.
<https://doi.org/10.1111/ggi.13205>
- Vansteenkiste, M., Ryan, R.M. & Soenens, B. (2020). Basic psychological need theory: Advancements, critical themes, and future directions. *Motiv Emot* 44, 1–31 (2020).
<https://doi.org/10.1007/s11031-019-09818-1>
- Vaux, A., Phillips, J., Holly, L., Thomson, B., Williams, D., & Stewart, D. (1986). The Social

- Support Appraisal (SS-A) Scale: Studies of reliability and validity. *American Journal of Community Psychology*, 14, 195-219. <https://doi.org/10.1007/BF00911821>
- *Wang, J., Wang, J., Cao, Y., Jia, S., & Wu, B. (2018). Perceived empowerment, social support, and quality of life among Chinese older residents in long-term care facilities. *Journal of aging and health*, 30(10), 1595-1619. <https://doi.org/10.1177/0898264318795724>
- Ware Jr., J.E., Sherbourne, C.D. (1992). The MOS 36-item short-form health survey (SF-36). I. Conceptual framework and item selection. *Medical Care* 30 (6), 473–483.
- Waterman, A. S. (1993). Two conceptions of happiness: Contrasts of personal expressiveness (eudaimonia) and hedonic enjoyment. *Journal of Personality and Social Psychology*, 64(4), 678–691. <https://doi.org/10.1037/0022-3514.64.4.678>
- Weiss, R.S. (1974). The provisions of social relationships. In *Doing Unto Others* (Rubin Z ed.). Prentice-Hall, Englewood Cliffs, NJ, 17–26.
- *Wiesmann, U., Becker, M. L., & Hannich, H. J. (2017). Positive aging in nursing home residents. *GeroPsych*, 30, 71-78. <https://doi.org/10.1024/1662-9647/a000166>
- *Wilkinson, T. J., Kiata, L. J., Peri, K., Robinson, E. M., & Kerse, N. M. (2012). Quality of life for older people in residential care is related to connectedness, willingness to enter care, and co-residents. *Australasian journal on ageing*, 31(1), 52-55. <https://doi.org/10.1111/j.1741-6612.2010.00503.x>
- Whoqol Group. (1998). Development of the World Health Organization WHOQOL-BREF quality of life assessment. *Psychological medicine*, 28(3), 551-558. <https://doi.org/10.1017/S0033291798006667>
- *Wu, M., Yang, Y., Zhang, D., Zhao, X., Sun, Y., Xie, H., ... & Li, Y. (2018). Association between social support and health-related quality of life among Chinese rural elders in nursing homes: the mediating role of resilience. *Quality of Life Research*, 27(3), 783-792. <https://doi.org/10.1007/s11136-017-1730-2>
- Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The multidimensional scale of perceived social support. *Journal of personality assessment*, 52(1), 30-41. http://doi.org/10.1207/s15327752jpa5201_2