

THE PSYCHOLOGICAL NEEDS OF THE FOURTH AGE

THE ROLE OF EGO-INTEGRITY AND CONTEXTUAL NEED
SUPPORT IN NURSING HOMES

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It has been an intrinsically rewarding journey for me to work on this thesis.

Eveline, May 2020

PREAMBLE CONCERNING COVID-19

The data of the current study were collected between November 2019 and February 2020, right before the COVID-19 crisis started in Belgium. Therefore, there were no implications for the study conducted for this master dissertation.

Due to the COVID-19 crisis, a debriefing of the results has been postponed. We had planned to discuss a research report individually with interested participants and to give the staff a lecture as well. If the measures allow us, the student will certainly carry out these assignments. In the meantime, the student will send the management of the nursing home a digital research report.

This preamble was drawn up by mutual agreement between the student and the supervisor and approved by both.

ABSTRACT

Objectives. As the population ages, nursing home residents' psychological well-being has become a critical subject of public and scientific debate. Drawing from Self-Determination Theory (SDT), a number of studies have begun to investigate psychological need satisfaction in relation to elderly residents' psychosocial adjustment and motivation. To the best of our knowledge, the current study is the first to elucidate the differential role of an autonomy-supportive versus a controlling context simultaneously. In addition, this study examines the role of individual differences among nursing home residents in associations between perceptions of the context, need-based experiences, and well-being. In doing so, this study focused on the role of ego-integrity (versus despair), which represents a key developmental resource in late adulthood.

Methods. A total number of 47 nursing home residents (66% female; Mean age = 87.55 years) participated in the current study. Data on sociodemographic variables, need satisfaction and frustration, autonomy-supportive and controlling practices, life satisfaction, depressive feelings, loneliness, ego-integrity, and despair were collected through questionnaires.

Results. Structural equation modeling showed that perceived autonomy-supportive practices related positively to satisfaction with life and related negatively to depressive feelings. In addition, satisfaction of the needs for competence and autonomy mediated these associations. Moreover, results revealed some evidence for the moderating role of ego-integrity within these associations, showing that ego-integrity may serve as a protective factor against the costs of low autonomy support.

Conclusion. Although the exact direction of effects could not be established, this study underscores the importance of creating an autonomy-supportive climate within nursing homes.

Word count: 250

CORONA PREAMBULE

De data van de huidige studie werden verzameld tussen november 2019 en februari 2020, net voor de COVID-19 crisis begon in België. Derhalve waren er geen implicaties voor de verdere uitwerking van deze masterproef.

Vanwege de COVID-19-crisis is de debriefing van de resultaten echter uitgesteld. We hadden gepland om met geïnteresseerde deelnemers individueel het onderzoeksrapport te bespreken en de medewerkers een lezing te geven. Als de maatregelen het toelaten, zal de student deze opdrachten zeker uitvoeren. In tussentijd zal de student de directie voorzien van een digitaal onderzoeksrapport.

Deze preambule werd in overleg tussen de student en de promotor opgesteld en door beiden goedgekeurd.

NEDERLANDSTALIGE SAMENVATTING

Doelstellingen. Met de toenemende vergrijzing is het psychisch welzijn van ouderen in woonzorgcentra een belangrijk onderwerp in het publieke en wetenschappelijke debat. Uitgaande van de Zelf-Determinatietheorie, onderzochten reeds een aantal studies de relatie tussen de psychologische basisbehoeften, het mentaal welzijn en motivatie van bewoners in woonzorgcentra. Voor zover ons bekend is de huidige studie de eerste die de differentiële rol van een autonomie-ondersteunende tegenover een controlerende zorgomgeving gelijktijdig onderzoekt. Daarnaast exploreert deze studie de rol van individuele verschillen in associaties tussen de perceptie van de context, de psychologische basisbehoeften en welzijnsfactoren. Daarbij richten we ons specifiek op de rol van ego-integriteit (versus wanhoop), wat een belangrijke bron van ontwikkeling omvat binnen de late volwassenheid.

Methode. Deelnemers aan dit onderzoek waren 47 bewoners, allen afkomstig van éénzelfde woonzorgcentrum (66% vrouwen; gemiddelde leeftijd = 87.55 jaar). Via vragenlijsten werden socio-demografische gegevens, de ervaren behoeftesatisfactie en -frustratie, gepercipieerde autonomie-ondersteunende en controlerende zorgpraktijken, levenstevredenheid, depressieve gevoelens, eenzaamheid, ego-integriteit en wanhoop in kaart gebracht.

Resultaten. Resultaten toonden aan dat een gepercipieerde autonomie-ondersteunende zorgstijl een positieve en negatieve voorspeller was van respectievelijk levenstevredenheid en depressieve gevoelens. Deze associaties werden bovendien gemedieerd door autonomie/competentie satisfactie. Bovendien speelde ego-integriteit een modererende rol, wat mogelijks impliceert dat ego-integriteit een beschermende factor kan zijn tegen de negatieve gevolgen van een weinig autonomie-ondersteunend zorgklimaat.

Conclusie. Hoewel de precieze richting van bovenstaande effecten niet kon bepaald worden, onderstrepen deze bevindingen het belang van een autonomie-ondersteunend zorgklimaat in woonzorgcentra voor het welzijn van de bewoners. Beperkingen en richtlijnen voor toekomstig onderzoek worden toegelicht.

Aantal woorden: 250

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In October 2017, 'Pano', a documentary program on the Flemish television broadcaster VRT, demonstrated the obstacles in the treatment of residents in commercial nursing homes. The documentary showed that many nursing home residents did not receive adequate care, even though the nursing homes were quite expensive (De Wolf, 2017). Some private enterprises approach ageing as a lucrative business, which rather turns these long-term care facilities into care factories. Journalist Lina Nasser stated that there rarely is a good moment to have meaningful conversations with the staff, due to increased workload and staff shortage. This programme elicited fierce reactions, yet did not come as a big surprise to people familiar with care for the elderly. Headlines like "nursing homes in dire need of more staffing" or "increased concerns about workload in nursing homes" are very common, recently even more in the COVID-19 era. Quality of life within nursing homes has indeed become a topic of critical debate in public and, to an even greater extent, also in clinical and academic circles (Kane, 2001, 2003; Van Malderen, De Vriendt, Mets, & Gorus, 2016).

In general, advanced old age seems a somewhat 'special' life phase, because it is characterized by very high levels of heterogeneity. Older people who experience the most challenging phase of the life span may show remarkable signs of resilience and adaptation, but also appear to be more at risk for developing psychological problems, including depressive symptoms (Wettstein, Schilling, Reidick, & Wahl, 2015). This heterogeneity is specifically visible among older people residing in nursing homes or those belonging to the fourth age (Coleman & O'Hanlon, 2017; Ranzijn, 2002). During the COVID-19 crisis, some nursing home residents felt anxious or sad, but also showed signs of resilience and adaptive coping strategies (Huyghebaert & Nuyts, 2020). For example, one nursing home resident said: "Sometimes I do feel sad, but I try to see the bright side of the situation. Every cloud has a silver lining."

To understand the heterogeneity among older people, this thesis applies Self-Determination Theory (Ryan & Deci, 2017) to the context of nursing homes because this theory attends to both psychological growth and to risk for psychopathology. More specifically, this theoretical framework can shed a light on how the interpersonal context of a nursing home relates to psychological adjustment among elderly residents. Further, to provide a deeper understanding of nursing home residents' mental health from a person x context perspective, this study will also examine the moderating role of ego-integrity and despair in associations between the perceived context and psychological adjustment.

Chapter 1 will provide a short overview of psychological theory of ageing from a developmental perspective. We will focus on two principal theories that have now become classical developmental accounts of ageing and that inspired further empirical research within gerontology, that is, Erikson's model of development and the socioemotional selectivity theory. In Chapter 2, we discuss how demographical changes have led to a growing demand for long-term residential care and spurred a growing field of studies investigating quality of life within nursing homes. Finally, Chapter 3 will focus on the application of Self-Determination Theory to the interpersonal climate of nursing homes and its relationship with elderly's functioning.

Is there a Developmental Psychology of Late Life?

Recently, research and theory about ageing have begun to devote greater attention to the developmental aspects of growing old (Coleman & O'Hanlon, 2017). This may seem paradoxical, knowing that gerontologists often defined the core feature of ageing as decline, whereas the traditional definition of development was linked to growth (Baltes, 1987). Paul Baltes (1987) therefore conceptualized development as a "joint expression of features of growth (gain) and decline (loss)" (p. 616). Nonetheless, the study of old age has long focused on losses and biological decrements (Ranzijn, 2002).

Psychoanalytic thinkers, such as Erik Erikson (1963) and Alfred Adler (1927), explored new domains of personality development in later life, which encouraged more constructive attitudes towards older people. Furthermore, recent developmental theories, inspired by systematic observations, offered renewed insights and provided corrections to one-sided decline models of ageing. We have to beware that both views can take extreme forms. Besides over-emphasizing decline in old age, developmental theories can also be over-idealistic and portray late adulthood uniquely as a phase of enlightenment (Coleman & O'Hanlon, 2017).

Erikson's model of development. Erik Erikson (1963), a psychoanalytic psychotherapist, developed a theoretical framework for the major stages in psychosocial development. Erikson's pioneering work describes development from the very early periods of life and recognizing the important role of biological, psychological, and social processes. According to Erikson, personality development reflects an 'epigenetic process', in which human development unfolds through a prescribed sequence of eight stages. Erikson positions these stages at relatively fixed points along the lifespan. However, Erikson also acknowledges interindividual differences in the timing of these stages. Research by Sneed, Whitbourne and Culang (2006) confirmed that there is

significant variation around the overall developmental trajectory for three core psychosocial stages.

Erikson describes that each stage is characterized by a specific developmental task or psychosocial crisis, which can be resolved in a positive or negative way. For example, adolescents' psychosocial task is to resolve the issue of ego-identity (positive) versus identity-confusion (negative). More specifically, adolescents need to develop a coherent identity or ego-identity. This task can be challenged by feelings of uncertainty towards one's self, described as identity-confusion (Erikson, 1963, 1968). In late adulthood, the task is to attain ego-integrity, which Erikson described as "the acceptance of one's one and only life cycle as something that had to be and that, by necessity, permitted of no substitutions" (Erikson, 1963, p. 241). In other words, elderly who establish a sense of ego-integrity are satisfied with their life as it has been lived, despite past failures or difficulties. The opposite state was referred to by Erikson as despair, which refers to feelings of regret towards one's past and which may also be expressed in feelings of disgust with other people (Erikson, 1963). According to the epigenetic principle, an elderly person can only reach the highest stage of ego-integrity, when he accomplished the previous developmental tasks. For example, achieving a sense of ego-integrity and the ability to reflect upon life-choices requires a coherent identity. People are otherwise not capable to evaluate their life choices with respect to their identity (Vansteenkiste & Soenens, 2015). Studies that used a cross-sectional design (Hannah, Domino, Figueredo, & Hendrickson, 1996; Webster, 2003) or a longitudinal design (James & Zarrett, 2005; Torges, Stewart, & Duncan, 2008) indeed confirmed that ego-integrity is predicted by the resolution of earlier crises.

Ego-integrity and despair are important themes in contemporary research on elderly. A number of studies have explored the associations between the developmental task ego-integrity/despair and different indicators of well-being. In fact, studies found that ego-integrity is related negatively to depressive symptoms and positively to feelings of well-being, with despair showing the opposite pattern of results (e.g., Dezutter, Wiesmann, Apers, & Luyckx, 2013; James & Zarrett, 2006; Van Hiel & Vansteenkiste, 2009). One study also found that despair was positively associated with neuroticism, whereas extraverted persons, who tend to experience more stable and positive emotions, experienced less despair (Westerhof, Bohlmeijer, & McAdams, 2017). Research also demonstrated that ego-integrity and despair mediated the association between forgiveness and mental health in a sample of community-dwelling elderly and in residential elderly individuals (Derdaele, Toussaint, Thauvoye, & Dezutter, 2017;

Dezutter, Toussaint, & Leijssen, 2016). Thus, elderly who tend to show a forgiving disposition seem to be more capable to develop towards ego-integrity and to avoid the pitfall of despair, which in turn relates to more life satisfaction and less depressed feelings.

Erikson's psychosocial model of development also inspired other areas of investigation on normative development. For example, the formulation of ego-integrity has promoted theorizing and research on the concepts of reminiscence and life review: a mental process of reviewing past events and the experience of one's past life as a whole (Butler, 1963). This domain of research in turn inspired therapeutic practice with older people (e.g., Bohlmeijer, Roemer, Cuijpers, & Smit, 2007; Lamers, Bohlmeijer, Korte, & Westerhof, 2015).

Socioemotional selectivity theory. Laura Carstensen's socioemotional selectivity theory has become one of the most influential developmental theories on ageing (SST; Carstensen, 1992). Research on social networks within gerontology has primarily focused on comparisons of age differences in social network size (Carstensen, Isaacowitz, & Charles, 1999). A meta-analytic review of both cross-sectional and longitudinal studies showed that the social network size increases during adolescence and young adulthood and then decreases steadily throughout adulthood and old age (Wrzus, Hänel, Wagner, & Neyer, 2013).

Within social gerontology there is some disagreement about the question whether the size of social networks determines psychological well-being. It was once a common assumption that the losses in social networks during late adulthood would undermine subjective well-being (Pinquart & Sörensen, 2000). Carstensen (1992), however, states that feelings of emotional closeness are not necessarily determined by the amount of social contact. A meta-analysis by Pinquart and Sörensen (2000) indeed revealed that the quality of social contacts has a stronger association with subjective well-being than the frequency of social contact. Research also confirmed that daily emotional well-being was not significantly predicted by the size of social networks (English & Carstensen, 2014). In addition, Kasser and Ryan (1999) demonstrated that the perceived affection and care, rather than the frequency of nursing home residents' contact with relatives and friends, were related to well-being.

SST argues that reduction in social contact throughout adulthood has an underlying adaptive function. SST classifies the different functions of social contact into two main classes: those related to the acquisition of knowledge and those related to regulation of emotions or seeking emotional comfort. On the one hand, having contact

with other people provides an understanding and knowledge about the social and physical world. On the other hand, social contact plays a critical role in regulating emotional states (Carstensen, Fung, & Charles, 2003; Carstensen et al., 1999). Emotion regulation refers to a process by which people can modulate not only the type of emotions they have, but also when and how they experience these emotions (Gross, 1998).

Although the functions of social interactions are diverse, SST argues that the specific place in the life cycle and perception of time influence the effectiveness of specific functions. For people who perceive their future as expansive, broad social networks that provide novel information and knowledge are more valuable. When time is perceived to be limited, people will pursue present-oriented goals, which involves goals related to emotion regulation. Because age is strongly associated with time perspective, older people will show a motivational shift from knowledge-related goals to present-oriented goals (Carstensen, 1992). Lang and Carstensen (2002) found that compared to younger adults, elderly tend to perceive their future time as more limited and therefore prioritize emotionally meaningful goals. For example, an elderly person who is confronted with the death of friends or who watches his grandchildren grow up, may become increasingly aware of the fact that time is passing (Carstensen et al., 2003). Thus, SST assumes that elderly proactively prune their range of social partners to select those relationships that provide emotionally meaningful interactions and emotional satisfaction over relationships that solely fulfil cognitive goals, such as knowledge acquisition. In other words, in the face of limited future opportunities they choose intimate relationships that provide emotionally meaningful interactions and regulate emotions, unlike superficial contacts (Carstensen et al., 1999; Fredrickson & Carstensen, 1990).

Research furthermore confirmed that throughout later life the number of peripheral partners decreases, whereas the number of intimate relationships remains stable over time (English & Carstensen, 2014; Wrzus et al., 2013). In addition, English and Carstensen (2014) also showed that elderly describe their social network members as more emotionally satisfying than younger adults, which underscores the idea that older people spend more time interacting with partners who support their emotional well-being. These findings may explain why there is a positive association between ageing and improvements in emotional well-being (e.g., Carstensen, Mayr, Pasupathi, & Nesselroade, 2000; Carstensen et al., 2011).

Perspectives on development in advanced old age. Theories such as Erikson's model and SST have changed our view on old age by pointing out the

possibility of enduring psychological growth until the end of life. These developmental theories also encouraged more positive concepts within gerontology, such as 'successful ageing': defined as a combination of low risk of disease and disability, active engagement with life, and maintenance of high mental and physical function (Rowe & Kahn, 2015). However, these developmental theories on ageing have also been criticized for having been too optimistic and for not having included older people in greatest need of support (Cole, 1984). Developmental psychologists indeed neglected the study of advanced old age or the fourth age, which refers to a period of time when older people are confronted with issues of disability and frailty (Coleman & O'Hanlon, 2017). Erikson himself became more aware of specific shortcomings as he grew older. He raised questions whether the last stage of ego-integrity adequately described the experience of advanced age and its challenges. After Erikson's death, his wife Joan Erikson (Erikson, 1997) and other psychologists (Brown & Lewis, 2003) made an attempt to formulate a possible further stage beyond ego-integrity.

Overall, the fourth age needs to be considered as a developmental period with both risks and opportunities. It is a time when optimal functioning is challenged by the biological limitations of ageing, but also a stage in life in which quality of life and mental health can be maintained (Gilleard & Higgs, 2011). For example, Wettstein et al. (2015) illustrated the emotional complexity and heterogeneity in very old age, which extends previous research within the developmental theory of socioemotional selectivity. Using growth-curve models, this study found multidirectional dynamics of well-being at very late life. Acceptance towards death and life satisfaction tended to increase over time, whereas a worsening trend was found in positive affect, environmental mastery, purpose in life, and slight but significant increases in depressive feelings. Thus, older people appear to display remarkable capacities for adequate emotional coping, resulting in high levels of well-being. However, late life also seems to place elderly persons at risk for ill-being and maladjustment. These two different faces of ageing are particularly visible among elderly residing in nursing homes.

Caring for the Elderly

The sharp rise in the ageing population is a widespread phenomenon across the world. Different countries have witnessed an increase of people aged 80 and older (Huber, Rodrigues, Hoffmann, Gaşior, & Marin, 2009). In Belgium, the proportion of population aged 65 and over has increased during the last decade from 17.1% in 2008 up to 18.9% in 2019 (Eurostat, 2019). Different factors contribute to the growing

proportion of the elderly population, such as low fertility and, to an even greater extent, increased longevity (Christensen, Doblhammer, Rau, & Vaupel, 2009). Nonetheless, increases in life expectancy do not necessarily reflect a healthier life or improvements in functioning. Despite uncertainty about the impact of prolonged life on health conditions, we cannot deny that there will be a growing demand for long-term residential care (Huber et al., 2009; Lafortune & Balestat, 2007).

In Belgium, the elderly care infrastructure is broadly classified into community services, home care, and institutional or residential care (Arnaert, Van Den Heuvel, & Windey, 2005). Long-term residential care, an important part of the care process for elderly, includes service-flats or assisted living and nursing homes. Service-flats and nursing homes differ in terms of their organization and amount of care. Within service-flats elderly without serious disabilities reside in individual housing areas and are offered a broad range of services, such as nursing care and prepared meals. Nursing homes are designed for people with higher levels of disabilities and greater need of help with daily activities and medical care. In contrast to service-flats, services are provided collectively within nursing homes (Gerken & Merkur, 2010).

The concept of quality of life in institutional settings has become an important topic within research and practice (Van Malderen, De Vriendt, Mets, & Gorus, 2016). Researchers proposed different conceptual frameworks to define quality of life and how it can be enhanced (Gerritsen, Steverink, Ooms, & Ribbe, 2004; Kane, 2003). All of these theoretical frameworks underscore the multidimensional nature of quality of life. For example, Lawton (1991) identified four dimensions that constitute quality of life, namely psychological well-being, perceived quality of life, behavioural competence, and the objective environment. Some researchers even distinguished 11 domains of quality of life, including reciprocal relationships, meaningful activity, enjoyment, and functional competence (Kane, 2001, 2003).

Both lay people and professionals tend to hold negative stereotypes and societal prejudices about life within nursing homes (Kane, 2003), with nursing homes being assumed to be undesirable places to live (Vallerand, O'Connor, & Blais, 1989). Despite the belief that nursing home residents are inherently unhappy and experience a poor quality of life, different studies showed that residents typically experience moderate levels of quality of life (King et al., 2012; Lai, Leung, Kwong, & Lee, 2015). Van Malderen et al. (2016) obtained similar findings for nursing home residents in Flanders, Belgium. Still, elderly residing in nursing homes are confronted with decreases in general functional capacity and increased health problems, which can be specifically demanding

for their mental health and subjective well-being (Dezutter et al., 2016). Research showed that negative life events, such as severe illness, are associated with depression in late life (Kraaij, Arensman, & Spinhoven, 2002). Studies also pointed out that depression is a common disorder among elderly (van't Veer-Tazelaar et al., 2008; Wettstein et al., 2015), especially for those residing in nursing homes (Jongenelis et al., 2004; Smallbrugge et al., 2006). It is therefore important that theoretical frameworks attend to this variability and take into account both factors that foster well-being and quality of life of nursing home residents and factors that increase risk for emotional difficulties. In addition, because of their frailty, elderly people need help to maintain well-being and quality of life. Therefore, theories regarding quality of life also need to form a useful conceptual basis for practice, thereby providing nursing homes and caregivers tools and guidelines to optimise quality of life (Gerritsen, Steverink, Ooms, & Ribbe, 2004). Self-Determination Theory is such a theory, attending to both the bright and the dark side of human functioning and with much applied value for practice.

Self-Determination Theory Applied to the Context of Nursing Homes

Self-Determination Theory (SDT; Deci & Ryan, 2000; Ryan & Deci, 2017), a social psychological theory of human development, serves as the theoretical foundation for this thesis. This empirically supported theory is applicable to different life domains and contexts, including homes for the aged (Kasser & Ryan, 1999; Ryan & Deci, 2017). This theory is particularly relevant to the context of nursing home residents' well-being and adjustment because it attends to both the bright and dark sides of human functioning (Vansteenkiste & Ryan, 2013). As such, this theory has the potential to shed a light on both the opportunities and risks associated with a stay in a nursing home. Moreover, SDT discusses in detail how the social environment affects individuals' adjustment, thereby assuming complex and transactional processes with individual characteristics. Thus, SDT allows for an in-depth examination of how the interpersonal context of a nursing home, in interaction with individual characteristics, is related to the psychosocial adjustment among elderly.

SDT assumes that people naturally experience more well-being as they grow older (Ryan & Deci, 2017). Indeed, the tendency towards optimal psychological growth is assumed to be part of human nature from the earliest stages of psychosocial development until late adulthood. However, this natural potential for growth and flourishing is also conditional upon contextual support. SDT states that certain social-contextual factors can either facilitate or undermine this thriving by supporting,

respectively, thwarting the three basic psychological needs. These three needs are considered essential nutrients for individuals' growth tendency (Ryan & Deci, 2017).

Basic psychological need satisfaction and need frustration. Basic Psychological Needs Theory (Ryan & Deci, 2017; Vansteenkiste, Niemiec, & Soenens, 2010; Vansteenkiste & Ryan, 2013), one of the six mini-theories within SDT, focuses on the relationship between innate psychological needs and human development. Specifically, an important assumption underlying this theory is that people have three basic psychological needs, that is, the needs for autonomy, relatedness, and competence (Deci & Ryan, 2000).

Etymologically **autonomy** refers to self-regulation: the extent to which people experience their behaviour as voluntary and congruent with their interests and values (Deci & Ryan, 2000; Ryan & Deci, 2017). Autonomy need satisfaction involves feelings of volition, psychological freedom, and authenticity. For example, a nursing home resident who chooses to participate in certain physical activities, without feeling coerced, is likely to experience autonomy. The opposite of autonomy is heteronomy, which refers to behaviours or activities experienced as pressured or alienated from the self (Ryan, Deci, & Vansteenkiste, 2016). Hence, autonomy need frustration involves feeling controlled by forces outside the self. Autonomy need frustration, for instance, means that a resident joins into a board game, only as not to rouse the staff's disappointment (Kasser & Ryan, 1999). Autonomy has been examined as a predictor of quality of life in nursing homes (e.g., Kane, 2001, 2003; Palmer, Parker, Berlowitz, Snow, & Hartmann, 2018; Van Malderen, Mets, De Vriendt, & Gorus, 2013). Importantly, autonomy as defined in the SDT-perspective is distinct from the concept of independence. SDT defines autonomy as a sense of self-endorsement and volition rather than as independence and self-reliance. This distinction is important because individuals can be autonomous (i.e., experience volition and authenticity) even in dependent situations. For example, a resident may voluntarily choose to have himself assisted by the nurses or relatives. He then becomes dependent on others, yet he still experiences a sense of autonomy. Conversely, individuals can experience autonomy need frustration (i.e., coercion and pressure) even in independent situations. For example, a resident can be encouraged in a controlling fashion to get out of bed in the morning independently, thereby experiencing pressure to be self-reliant (Ryan, Deci, Grolnick, & La Guardia, 2006; Van Petegem, Vansteenkiste, & Beyers, 2013). Even though the distinction between autonomy and independence is important, researchers sometimes are at variance with the SDT

definition of autonomy (e.g., Custers, Westerhof, Kuin, Gerritsen, & Riksen-Walraven, 2012).

Relatedness refers to the feeling of being loved and cared for by others, but also to the ability to take care of others (Baumeister & Leary, 1995; Deci & Ryan, 2014). The need for relatedness thus refers to a mutual sense of belongingness and interpersonal significance. On the other hand, relatedness frustration means that a resident feels neglected, isolated or excluded from others (Deci & Ryan, 2014). As mentioned earlier, in accordance with SST, elderly benefit more from social contacts that are emotionally satisfying and that provide a sense of belongingness, rather than from having many relationships (Carstensen et al., 1999). Thus, interpersonal interactions that meet the need for relatedness are not necessarily characterized by high levels of frequency or amount (Kasser & Ryan, 1999).

The **competence** need refers to feelings of mastery and the ability to successfully perform activities within important life contexts (Ryan & Deci, 2017; White, 1959). For example, a resident can experience a feeling of competence when he is able to exercise certain physical activities. In contrast, feelings of being unsuccessful or having doubts about one's capacities indicate competence frustration (Vansteenkiste & Soenens, 2015). As such, a resident can experience competence frustration or failure when he is confronted with physical decline.

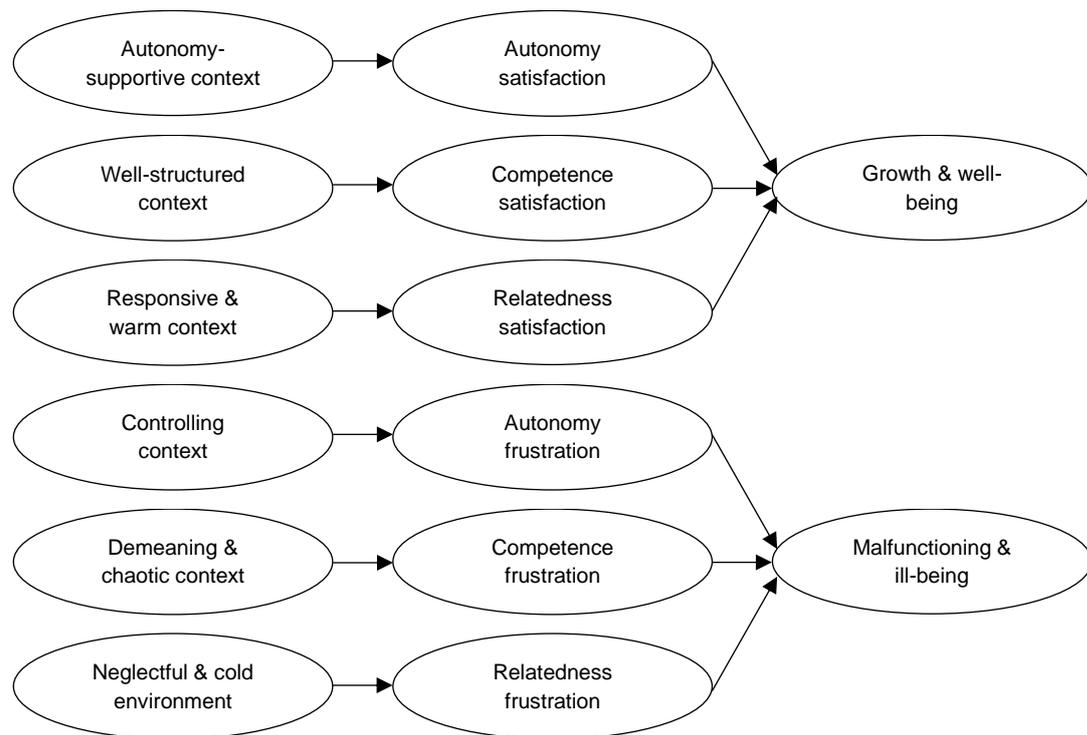
Dark and bright side of human development: The role of need support and need thwarting. Parallel to the experience of need satisfaction and need frustration, Basic Psychological Needs Theory distinguishes between need-supportive and need-thwarting environments (Vansteenkiste & Ryan, 2013). A nursing care facility should not only invest in the physical needs, such as providing a safe environment, proper nutrition and adequate medical interventions, but also in residents' psychological needs (Kasser & Ryan, 1999). Indeed, providing a context supportive of the psychological needs in addition to physical needs is considered to be very important for sustaining elderly residents' wellness. Need-supportive environments promote the experience of need satisfaction, whereas need-thwarting environments lead to the experience of need frustration (Vansteenkiste & Ryan, 2013).

An autonomy-supportive environment, which can be contrasted with a more controlling or demanding one, supports the need for autonomy. For example, autonomy-supportive nursing staff try to respect residents' perspective and offer a meaningful rationale when choices are limited (Vansteenkiste et al., 2010). Conversely, when nursing staff members interact with residents in a pressuring and manipulative fashion,

residents are likely to experience autonomy need frustration. Furthermore, interpersonal relationships with the nursing staff or with other residents, characterized by warmth and responsiveness, function as true support for the satisfaction of the need for relatedness. In contrast, a cold and neglectful environment thwarts the need for relatedness (Vansteenkiste et al., 2010). Finally, a well-structured context supports the need for competence, rather than a chaotic or laissez-faire climate (Vansteenkiste et al., 2010). For example, caregivers support the need for competence when adequately structuring the morning routine and encouraging residents during activities with positive feedback and adequate help (Custers, Kuin, Riksen-Walraven, & Westerhof, 2011). Providing a need-supportive environment, which in turn fulfils the psychological needs for autonomy, relatedness, and competence, is assumed to promote psychological growth and well-being (see Figure 1 for an overview; Deci, Ryan, & Guay, 2013; Ryan & Deci, 2001).

Figure 1

Schematic overview of the different pathways towards optimal and nonoptimal functioning



Importantly, from the SDT perspective, need satisfaction and need frustration are not perfectly opposite constructs. A lack of need satisfaction does not necessarily entail need frustration, and vice versa. Similarly, a lack of need support should not be equated

with the presence of need thwarting, and vice versa (Vansteenkiste & Ryan, 2013). While need support and subsequent need satisfaction are assumed to primarily foster well-being, need-thwarting environments that lead to need frustration would be especially harmful and form a greater risk factor for ill-being (Bartholomew, Ntoumanis, Ryan, Bosch, & Thøgersen-Ntoumani, 2011). Need thwarting involves a more active obstruction of the psychological needs than a lack of need support. For example, a nursing home resident may experience little contact to other residents or the nursing staff (resulting in low need support and need satisfaction). But a resident can also feel actively ignored and excluded, which more directly threatens the need for relatedness (resulting in need thwarting and need frustration). When offered little choice on the menu an elderly person may experience a lack of autonomy need satisfaction. However, explicit and coercive demands to take pills or to eat, actively obstruct the need for autonomy (Vansteenkiste & Ryan, 2013). Research on adults and young adults has shown that frustration of the basic needs is associated with malfunctioning and ill-being (Ryan et al., 2006; Vansteenkiste & Ryan, 2013), including depressive symptoms, burnout, and disordered eating (Bartholomew et al., 2011). These mechanisms, displayed in Figure 1, explain the dark or bright side in individuals' functioning (Vansteenkiste & Ryan, 2013). Considering these general findings, it is important that studies investigate the effects of need support/need satisfaction and need thwarting/need frustration as two different processes, predicting different outcomes. An increasing number of studies in the general population, which included assessments of need frustration and examined need-thwarting environments, showed that need satisfaction and frustration predict different outcomes (Bartholomew et al., 2011; Vansteenkiste & Ryan, 2013; Vansteenkiste & Soenens, 2015). Few studies to date, however, examined the differential roles of need satisfaction and need frustration in older adults' mental health.

Providing a need-supportive environment within nursing homes. Due to the frail physical conditions and cognitive declines among nursing home residents, support of the basic psychological needs of residents depends largely on the environment. However, the institutionalized setting can make it difficult to provide support for these three basic needs (Custers, Westerhof, Kuin, & Riksen-Walraven, 2010; Kloos, Trompetter, Bohlmeijer, & Westerhof, 2019). Van Malderen et al. (2016) for instance examined a set of environmental factors in relation to quality of life within nursing homes in Flanders. Residents reported the lowest positive experiences in the social environment domain. More specifically, they experienced little contact with other residents and sometimes even much distance towards the staff. These results suggest that fulfilment

of the need for relatedness may be under pressure. Moreover, studies also demonstrated a need for improvements in scheduling meaningful activities and leisure (den Ouden et al., 2015; Harper Ice, 2002). Physical and mental decline and a consequent dependency for both physical and psychosocial needs may diminish elderly residents' feelings of competence. Offering meaningful activities throughout the day could be important for fulfilling the need for competence. Furthermore, nursing homes are often considered as autonomy-restrictive environments. Harnett (2010) analysed residents' subtle influence attempts on everyday matters based on face-to-face interactions with staff. Staff members' efforts to maintain routines sometimes constrained residents' ability to make choices, such as on what clothes to wear.

While it is generally challenging to support nursing home residents' psychological needs, there are substantial differences between nursing homes and staff members in the degree to which they create a need-supportive environment, as well as individual differences in the degree to which residents experience need satisfaction. Vallerand et al. (1989) categorized nursing homes as either high or low in autonomy need support. Three psychologists assessed the degree of autonomy need support on five dimensions, concerning the extent of autonomy or control over every-day activities. Elderly people in highly autonomy-supportive nursing homes reported similar levels of life satisfaction compared to those still living elsewhere in the community, and more life satisfaction than residents living in low autonomy-supportive nursing homes. Thus, these results indicate that providing a need-supportive environment in nursing homes is possible and refute the assumption that nursing homes are inherently detrimental to residents' well-being.

Some studies have not only investigated the effect of actual opportunities for autonomy on well-being, but also the subjective experience of autonomy support. Although the use of a cross-sectional design, research showed that actual opportunities for autonomy within nursing homes (e.g., being offered choices about daily activities) predicted subjective experiences of autonomy, which in turn promoted intrinsic motivation for daily activities (O'Connor & Vallerand, 1994). Intrinsically motivated behaviours are those performed for their inherent enjoyment and interesting nature. According to SDT, intrinsic motivation is an important characteristic of psychological growth and therefore enhances well-being (Deci & Ryan, 2000; Deci et al., 2013; Vansteenkiste & Ryan, 2013). Kasser and Ryan (1999) found that autonomous self-regulation of residents was inversely related to mortality status one year later. Residents who were more autonomously or intrinsically motivated to come to the nursing home and who experienced a sense of volition throughout the day were more likely to be alive one

year after receiving the questionnaires. The researchers carefully assumed that those elderly felt more vital and may have been less physical vulnerable.

More recently, one study showed that residents' perceptions of relatedness and autonomy need satisfaction were significantly positively related to personal growth and purpose in life (Ferrand, Martinent, & Durmaz, 2014). Two survey studies provided further cross-sectional support that residents' perceptions of need support were related to more life satisfaction and less depressive feelings (Custers, Westerhof, Kuin, Gerritsen, & Riksen-Walraven, 2013; Custers et al., 2010). Moreover, observational measures of need support, based on video-taped care-giver-resident interactions, indicated that need-supportive practices were related to residents' situational well-being (Custers et al., 2011).

A few longitudinal studies also addressed relations between satisfaction of the three basic psychological needs and intrinsically motivated behaviours or subjective well-being among nursing home residents across time. A prospective study conducted by Philippe and Vallerand (2008) confirmed that providing an autonomy-supportive nursing home climate predicted self-determined or intrinsic motivation through residents' perceptions of autonomy over a one-year period. In a short-term longitudinal study in four Dutch nursing homes, Kloos, Trompetter, Bohlmeijer and Westerhof (2019) found that residents who reported higher basic need satisfaction at baseline experienced more life satisfaction and less depressive feelings 5-8 months later. Moreover, autonomy satisfaction had the strongest relationship with the two well-being outcomes across time.

Some of these studies mentioned above were included in a recently performed meta-analytic review to summarize results of international studies on the relationship between basic psychological need satisfaction, motivation, and well-being among older adults (Tang, Wang, & Guerrien, 2019). As expected, on average across studies, the basic needs for autonomy and competence and autonomous motivation were positively related to psychosocial adjustment (e.g., positive affect and satisfaction with life) and negatively related to malfunctioning (e.g., apathy and depressive feelings). Although the researchers screened studies published in three of the most widely spoken languages (i.e., Chinese, English, and French), only 23 empirical studies were found. Accordingly, they called for more research on the role of basic psychological needs in the mental health of elderly across the world.

As implied in the previous paragraph and as noticed by Kloos et al. (2019), studies on need fulfilment and well-being seem to assign great importance to the need for autonomy in care for older adults. The emphasis on autonomy could be related to an

important proposition within Basic Psychological Need Theory. Autonomy support facilitates satisfaction of each of the three basic psychological needs, because people are more able to seek out and find strategies for satisfying each basic need. In contrast, controlling environments can disrupt not only autonomy satisfaction, but relatedness and competence need fulfilment as well (Ryan & Deci, 2017).

Moreover, previously described studies solely focused on need support within nursing homes and its relationship with perceived need satisfaction and different indicators of well-being. However to date, studies on the differential roles of need support/need satisfaction and need thwarting/need frustration in the prediction of ill-being and well-being in later life, are very scarce. Vanve-Meriaux, Martinent and Ferrand (2018) showed that older adults living at home, with high degrees of satisfaction needs and low degrees of thwarting needs, reported greater levels of well-being (e.g., self-esteem). As mentioned before, the consequences of need frustration or being exposed to a need-thwarting environment do not simply reflect the absence of need support. Clearly, additional research is needed to examine simultaneously the correlates of both psychological need satisfaction and frustration. To our knowledge, the current study is the first to elucidate both pathways simultaneously, thereby focusing specifically on autonomy-supportive versus controlling environments and their relations with, respectively, optimal and suboptimal functioning within nursing home residents. Another way in which this study aims to advance extant research is by considering the role of individual differences in associations between contextual autonomy support, need-based experiences, and mental health. SDT indeed assumes that individuals are not merely passive recipients of the environment. Indeed, individual characteristics interact with the environment in complex ways (Ryan & Deci, 2017).

Individual differences in the effects of need satisfaction and frustration. As discussed in the previous paragraph, a central proposition within Basic Psychological Needs Theory is that need satisfaction and frustration are universally important, with need satisfaction fostering wellness and with need frustration increasing risk for ill-being (Ryan & Deci, 2017). However, the assumption that all persons suffer from need frustration and benefit from need satisfaction does not imply that there is no room for individual differences in these processes (Soenens, Vansteenkiste, & Van Petegem, 2015). Elderly residents might differ in their resilience against (or susceptibility to) the risks associated with a controlling nursing home climate. Still, there are boundaries to such individual differences in the degree of satisfaction and frustration of the basic needs. From an SDT perspective, it is highly unlikely that some people will benefit from

need-thwarting conditions or suffer from need-supportive behaviours. Accordingly, individual differences may moderate the strength of the relationship between need satisfaction (need frustration) and well-being (malfunctioning) but are unlikely to eliminate or reverse these effects (Mabbe, Soenens, Vansteenkiste, & Van Leeuwen, 2016; Ryan & Deci, 2017; Soenens et al., 2015; Vansteenkiste & Soenens, 2015).

Throughout their developmental history, some people are likely to have become more sensitive to the benefits of need satisfaction, whereas other people have become more sensitive to the detrimental effects of need frustration. More specifically, the (de)sensitization hypothesis states that people who chronically experienced need frustration may come to devalue those needs and become increasingly sensitized to the costs associated with need frustration and desensitized to the benefits related with need satisfaction (Moller, Deci, & Elliot, 2010). In contrast, individuals exposed to a history of accumulated need satisfaction, have upgraded those needs and became more sensitive to the benefits of need satisfaction and desensitized to the negative consequences of need frustration. Some studies found support for this hypothesis based on a retrospective design (Moller et al., 2010), as well as on longitudinal data (Mabbe et al., 2019; Vanhalst et al., 2015).

In this study, I focus on ego-integrity and despair as a source of individual differences in associations between perceived autonomy support, need-based experiences, and mental health outcomes. This is because, as discussed in the first part of the literature overview, ego-integrity and despair are developmentally salient orientations in late adulthood with important repercussions for psychosocial adjustment. Also, it can be assumed that individual differences in ego-integrity and despair are rooted in individuals' developmental history of need-based experiences. A recent set of studies indeed showed that ego-integrity is related to a developmental history of need satisfaction and that despair involves a history of need frustration (Van der Kaap-Deeder et al., 2020). Accordingly, it can be expected that elderly scoring high on ego-integrity would be more sensitive to the benefits of perceived contextual need support and need satisfaction. In contrast, elderly experiencing more despair may be more desensitized to the benefits of autonomy need support and need satisfaction and hypersensitive to the costs associated with autonomy need thwarting and need frustration.

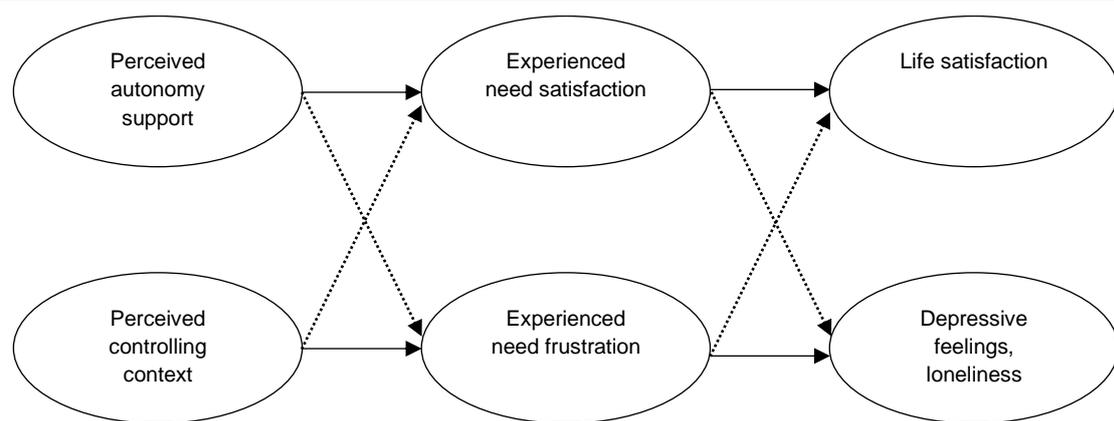
The Present Research

The present study primarily aims to investigate both a dark pathway and a bright pathway involved in nursing home residents' needs-related experiences and mental

health. This is in line with the theoretical assumption within SDT that these pathways represent relatively distinct processes (Vansteenkiste & Ryan, 2013). It was hypothesized that a perceived autonomy-supportive caring environment within nursing homes would relate to elderly's life satisfaction via experienced need satisfaction, whereas the darker pathway from a controlling caring environment towards need frustration would relate to depressive feelings and loneliness in nursing home residents. As can be noticed in Figure 2, we also considered cross-paths and we anticipated that the strength of these cross-paths would be less pronounced compared to the symmetrical relations. More specifically, autonomy support can also relate to lower need frustration and its negative consequences, whereas a need-thwarting environment can forestall life satisfaction via low need satisfaction (Bartholomew et al., 2011; Vansteenkiste & Ryan, 2013). It was therefore hypothesized that perceived autonomy support and need satisfaction would be negatively related to the experience of need frustration and non-optimal functioning (i.e., depressive feelings and loneliness). In addition, it was expected that perceived controlling behaviours would be negatively related to the experience of need satisfaction and optimal functioning (i.e., life satisfaction).

Figure 2

Graphical overview of the hypothesized symmetrical relations (full lines) and cross-paths (dotted lines)



Note. Adapted from "On psychological growth and vulnerability: Basic psychological need satisfaction and need frustration as a unifying principle," by M. Vansteenkiste, and R. M. Ryan, 2013, *Journal of Psychotherapy Integration*, 23, p. 265.

The second part of this study aims to examine the moderating role of individual differences in ego-integrity and despair in the associations displayed in Figure 2. Possibly, associations between a perceived autonomy-supportive context, psychological need satisfaction, and life satisfaction are more pronounced among individuals high on ego-integrity (who typically have a history of need satisfaction and who may be more sensitive to these beneficial effects) and less pronounced among individuals high on despair (who typically have a history of need frustration and may be desensitized to these beneficial effects). Conversely, associations between a perceived controlling context, need frustration, and ill-being (depressive feelings and loneliness) may be more pronounced among individuals high on despair (who typically have a history of need frustration and may be more sensitive to these detrimental effects) and less pronounced among individuals high on ego-integrity (who typically have a history of need satisfaction and who may be more immune against these detrimental effects).

Methods

Procedure

Ethical approval for this study protocol was obtained from the Ethical Committee of Ghent University. I contacted the care-provider and management of one Belgian nursing home and explained the theoretical aim and research procedure. Once permission was obtained from the management, a pilot study was conducted with four participants, which demonstrated that the residents had trouble with understanding the different options on a Likert-scale. To minimize the number of options, we therefore replaced each seven-point Likert scale by a five-point Likert scale: ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). By using two example items (e.g., “I like the activities offered within the nursing home”), the different scale answer options were introduced and practiced. Moreover, the items were read aloud in a closed format, followed by only the relevant scale answer options. These problems have been dealt with previously within other research (Kloos et al., 2019).

The inclusion and exclusion criteria were discussed with the involved management assistant of the nursing home. First, all possible respondents in the current study included nursing home residents living in three different long-term care wards. People residing in the secured ward for specific disease categories (such as Alzheimer’s disease) were excluded. Selection criteria were as follows: (a) participants had to be aged 65 years and over (b) Dutch-speaking (c) without severe cognitive impairment. In order to determine whether elderly residents have severe cognitive problems, we used the Katz Index of Independence in Activities of Daily Living, commonly referred to as the

Katz-scale (Katz, Ford, Moskowitz, Jackson, & Jaffe, 1963). This instrument assesses the functional status of residents in six basic and instrumental activities of daily living (bathing, dressing, toileting, transferring, continence and feeding) and two additional cognitive functions (orientation in time and space). Each item is scored on a four-level ordinal scale, ranging from 1 (independent or oriented) up to 4 (dependent or disoriented). In order to be eligible for subsidy, these scores are recorded in the electronic patient files of every nursing home resident. Within this research project, residents matched the inclusion criteria if they scored 2 or less for the items orientation in time and space (Sermeus et al., 2010).

The actual study was conducted between November 2019 and February 2020. During this time, I visited all possible respondents in their own private rooms and explained the theoretical aim of this study. All interested participants were provided with an informed consent document and confidentiality was guaranteed. After completion of the questionnaire, which took on average 45 minutes per participant, contact information and an informative letter for residents' relatives were provided. Furthermore, the respondents were thanked for their willingness to participate.

Sample

The management assistant gave a list of all residents meeting the criteria for inclusion ($n = 64$). After about two months, the management assistant renewed the list of possible residents, which included newly admitted residents who fitted the selection criteria ($n = 9$). This resulted in a sample of 73 eligible nursing home residents.

Out of the 73 eligible residents, 13 declined to participate and 8 deceased or were transferred during recruitment for this study. In addition, 4 participants were not able to participate due to understanding difficulties (e.g., severe aphasia or hearing loss) and 1 participant was unwilling to continue. Thus, the final sample resulted in a total of 47 elderly (out of 73 = 64.4%) (see Figure 3).

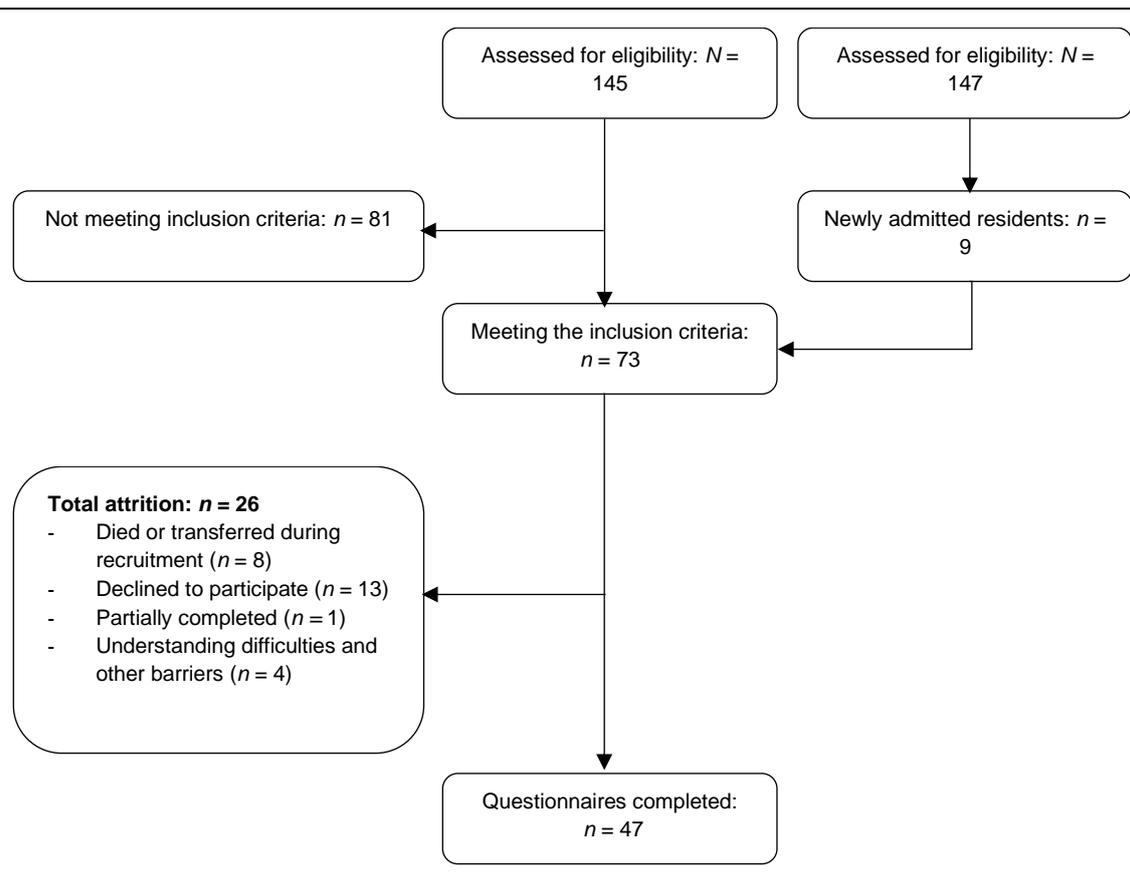
Background Variables

First, participants completed a questionnaire with sociodemographic variables (i.e., gender, age, level of education and marital status). Respondents' mean age was 87.55 years ($SD = 5.48$, range = 73-97 years) and 66% of the residents were female. With regard to educational level, 4.3% of the respondents only completed primary school,

59.6% completed lower secondary school and 36.2% completed higher secondary school. Moreover, 2.1% of the respondents identified as single, 6.4% as divorced, 6.4% as married, and 85.1% as widowed.

Figure 3

Flowchart of initial sample, attrition and study population



Participants' health status was considered an important control variable because residents with poorer health may have more frequent interactions with the staff, which in turn may influence residents' perceptions of the caring relationship. For example, Custers et al. (2012) found that residents with poorer physical health experience more relatedness fulfilment with their caregivers compared to residents with better health. To determine the degree of nursing care dependency, the scores on the Katz-scale were used (Katz et al., 1963). As mentioned previously, this scale consists of six instrumental activities of daily living, which are scored on a four-level ordinal scale. Based on these scores, every resident can be divided into one of the following categories of dependency. Nursing home residents from category O are independent or at a low dependency level.

Residents from category A are dependent for bathing, dressing and transfer or toileting. Residents from category B are dependent for bathing, dressing, transfer, toileting and continence or eating. Residents from category C have the highest score for at least five functions, except for continence or eating, which may have a score 3 (Sermeus et al., 2010). The management assistant searched for these data in the electronic patient files, after explicit permission was received from the participating residents. Within the current study, 27.7% belonged to category O, 44.7% to category A, 21.3% to category B, and 6.4% to category C. In sum, the majority of the current sample was dependent on at least three functional activities (i.e., categories A, B and C), with 6.4% belonging to category C and thus being dependent on all activities of daily living.

Measures

All questionnaires were administered in Dutch, the participants' native language. Unless indicated otherwise, scale scores of each study variable were computed by averaging the scores on the scale items.

Autonomy-supportive and controlling behaviours. We used six items taken from the Health-Care Climate Questionnaire (HCCQ; Williams, Grow, Freedman, Ryan, & Deci, 1996) to measure perceived autonomy support. The original scale has been used in previous nursing home research (Kasser & Ryan, 1999) and the Dutch translation has been validated (Jochems, Duivenvoorden, van Dam, van der Feltz-Cornelis, & Mulder, 2016; Jochems, Mulder, Duivenvoorden, van der Feltz-Cornelis, & van Dam, 2014; Jochems, van der Feltz-Cornelis, van Dam, Duivenvoorden, & Mulder, 2015). We modified these items for their use in a nursing home (e.g., "I feel that the nursing staff provides me choices"). Elderly residents' perceptions of the staff members' controlling behaviours were assessed by developing six items, based on the Psychological Control Scale-Youth Self-Report: a frequently-used and well-validated questionnaire measuring controlling communication (PCS-YSR; Barber, 1996). A sample item reads "The nursing staff is less friendly with me, if I do not see things their way." The internal structure of the items measuring autonomy support and control was examined using Principal Components Analysis (PCA) in the preliminary analyses (see below).

Basic psychological need satisfaction and frustration. The Basic Psychological Need Satisfaction and Need Frustration Scale (BPNSNF; Chen et al., 2015) was used to capture both the satisfaction and frustration of the psychological needs for autonomy, competence and relatedness. The original scale has 24 items and was validated in four culturally diverse samples, including Peru, China, the US and

Belgium. For reasons of brevity, a validated 12-item version was used, with satisfaction and frustration of each of the three needs being measured with two items (Mabbe, Soenens, Vansteenkiste, van der Kaap-Deeder, & Mouratidis, 2018). To assess residents' need fulfilment and frustration experienced within the nursing home, all items were preceded by the stem "In the nursing home" followed by for example "..., I feel a sense of choice and freedom in the things I undertake" (i.e., autonomy satisfaction) or "..., I feel forced to do many things I wouldn't choose to do" (i.e., autonomy frustration). Previous research with this 12-item scale showed evidence for a 2-factor solution distinguishing between need satisfaction and need frustration (Mabbe et al., 2018). Because this scale was used for the first time in the context of nursing homes, its internal structure was also examined using Principal Components Analysis (PCA) in the preliminary analyses (see below).

Life satisfaction. Satisfaction with life was measured through the Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985). This scale consists of five items (e.g., "I am satisfied with my life") and has previously been used in nursing homes to measure residents' subjective well-being (e.g., Custers et al., 2010; Kloos et al., 2019). For the present study, the Dutch translation was used (e.g., Chen et al., 2015). However, it was necessary to delete one item that suppressed reliability (i.e., "If I could live my life over, I would change almost nothing"), leaving a four-item scale with a Cronbach's alpha of .76.

Depressive feelings. The eight-item version of the Geriatric Depression Scale (GDS; Jongenelis et al., 2007) was used to measure depressive feelings. Items are formulated in a closed question format (yes = 1 and no = 0). An example item reads "Do you feel that your life is empty?" Items measuring positive feelings were reverse coded and a sum score was computed. Jongenelis et al. (2007) developed this user-friendly instrument to screen for depression among nursing home residents. As shown in previous research, this scale has good psychometric properties, with high sensitivity rates for both major and minor depressive disorder (Jongenelis et al., 2007). Within the current study, this measurement had a Cronbach's alpha of .75.

Loneliness. We used four items of the State-Trait Loneliness Scale (STLS; Gerson & Perlman, 1979) to assess loneliness (e.g., "During the past days, I missed the company of others"). Within this study, the Dutch version of the scale was used (Soenens, Vansteenkiste, Duriez, & Goossens, 2006; Soenens, Vansteenkiste, Goossens, Duriez, & Niemiec, 2008). In addition, one item with poor reliability was

deleted (i.e., “During the past days, I have not felt closely connected to anyone”), resulting in a three-item scale with a Cronbach reliability of .74.

Ego-integrity and despair. Van Hiel and Vansteenkiste (2009) developed a measure to assess residents’ level of ego-integrity and despair. This measure has two subscales: despair (ten items; e.g., “I look back upon my life with a feeling of discontent and regret”) and ego-integrity (eight items; e.g., “I can accept my faults and missed opportunities”). Research demonstrated the predictive validity of both dimensions for a broad array of well-being outcomes (e.g., Dezutter et al., 2013; Soenens & Duriez, 2012). Previous studies also confirmed the clear and interpretable factor structure distinguishing ego-integrity and despair (Van Hiel & Vansteenkiste, 2009). Cronbach’s alphas were .74 and .79 for ego-integrity and despair, respectively.

Results

Preliminary Analyses

Note that the variable relational status was not included in further analyses, due to having a small amount of variance across the categories. In addition, the response categories ‘primary school’ and ‘lower secondary school’ of the variable level of education were collapsed and a variable with two categories was used (‘primary school’ and ‘lower secondary school’, $n = 30$, 63.8%; ‘higher secondary school’, $n = 17$, 36.2%). Further, the Katz-categories were treated as a continuous variable ($O = 1$, $A = 2$, $B = 3$, $C = 4$), with higher scores indicating more nursing care dependency ($M = 2.06$, $SD = 0.87$). There were no missing data in the current study.

Psychometric analyses. As mentioned above, the internal structure underlying the 12 items measuring perceived autonomy-supportive and controlling behaviours was examined by performing Principal Component Analysis (PCA), followed by a standard orthogonal rotation. First, inspection of the scree plot yielded evidence for a two-dimensional solution (Cattell, 1966), accounting for 48.3% of the variance. After performing a varimax rotation, all items clearly loaded onto the expected component, and close to zero on the other component (see Table 1). Thus, a two-factor solution was used, whereby factors 1 and 2, respectively, represent the degree of perceived controlling and autonomy-supportive behaviours. In the current study, alpha reliability coefficients were, respectively, .79 and .71.

The same factor-analytical procedure was repeated in order to investigate the internal structure of the shortened-version of the BPNSNF scale. When performing a PCA on the 12 items, the scree plot indicated a two component solution (Cattell, 1966), accounting for 42.5% of the variance. After performing a varimax rotation, the factor

loadings were not in line with the theoretically expected distinction between need satisfaction and need frustration. Specifically, the first dimension captured satisfaction of the needs for competence and autonomy (with the items reflecting frustration of these needs loading negatively on the component), whereas the items concerning satisfaction of the need for relatedness loaded positively on the second dimension (and with one item measuring relatedness need frustration loading negatively on the component). So, rather than reflecting a distinction between need satisfaction and need frustration, the two components reflected a distinction between relatedness and competence/autonomy.

Table 1
Factor loadings of the rotated PCA solutions

Items	Factor loadings	
	Component 1	Component 2
1. I feel that the nursing staff provides me choices (AS)	-.06	.41
2. I feel understood by the nursing staff (AS)	-.35	.74
3. The nursing staff is disappointed, if I fail to do things their way (CON)	.75	.22
4. The nursing staff changes the subject whenever I have something to say (CON)	.73	-.18
5. The nursing staff conveys confidence in my abilities (AS)	-.09	.65
6. The nursing staff encourages me to give my opinion (AS)	.10	.48
7. The nursing staff takes over these tasks, which I would have preferred doing myself (CON)	.60	.22
8. The nursing staff is less friendly with me, if I do not see things their way (CON)	.76	-.19
9. The nursing staff listens to my opinion (AS)	-.16	.72
10. The nursing staff tries to understand how I see things before suggesting a new way to do things (AS)	.02	.73
11. The nursing staff often interrupts me (CON)	.62	-.30
12. The nursing staff is less friendly, when I disrupt the routine (CON)	.68	-.28

Note. (AS) = perceived autonomy support; (CON) = perceived controlling behaviours.

We therefore created two variables: the first variable combines items reflecting satisfaction of the need for autonomy and the need for competence and reverse scored-items for frustration of these needs and the second one combines all items for satisfaction of the need for relatedness and for frustration of this need (reverse-scored). The Cronbach's alphas were .74 for autonomy/competence, but only .58 for relatedness, which was rather low. Deleting one item (i.e., "I feel excluded from the group I want to belong to"), which had no clear loading pattern, increased reliability up to .65. The factor loadings are presented in Table 2.

Table 2
Factor loadings of the rotated PCA solutions

Items	Factor loadings	
	Component 1	Component 2
1. I feel a sense of choice and freedom in the things I undertake (AS)	.77	.03
2. Most of the things I do feel like 'I have to' (AF)	-.56	.08
3. I feel excluded from the group I want to belong to (RF)	-.11	-.18
4. I feel confident that I can do things well (CS)	.74	.32
5. I feel that my decisions reflect what I really want (AS)	.71	.12
6. I feel forced to do many things I wouldn't choose to do (AF)	-.45	-.14
7. I feel connected with people who care for me, and for whom I care (RS)	.10	.90
8. I feel that people who are important to me are cold and distant towards me (RF)	.18	-.47
9. I feel capable at what I do (CS)	.51	.27
10. I feel disappointed with many of my performance (CF)	-.51	.27
11. I feel insecure about my abilities (CF)	-.50	-.12
12. I experience a warm feeling with the people I spend time with (RS)	.29	.81

Note. (AS) = autonomy satisfaction; (AF) = autonomy frustration; (CS) = competence satisfaction; (CF) = competence frustration; (RS) = relatedness satisfaction; (RF) = relatedness frustration.

Descriptive statistics and bivariate analyses. As displayed in Table 3, the descriptive statistics of and associations between the study variables were examined.

Respondents, on average, experienced high levels of satisfaction of the three needs and perceived the environment as highly autonomy supportive. In terms of subjective well-being, elderly reported high levels of satisfaction with life, low levels of depressive feelings and moderate levels of loneliness. Furthermore, participants reported high levels of ego-integrity and moderate levels of despair. Note that the standard deviations of the variables loneliness ($SD = 1.22$) and depressive feelings ($SD = 1.93$) were relatively high, indicating substantial variability across residents. Based on the cut-off point 3 as described in the research of Jongenelis et al. (2007), 25.5% ($n = 12$) of the residents had an indication for having a depressive disorder.

Pearson correlation analysis showed that perceived autonomy support was positively related to fulfilment of the needs for competence and autonomy and satisfaction with life, and negatively related to depressive feelings. Satisfaction of the needs for competence and autonomy was positively related to life satisfaction and negatively related to depressive feelings. Next, the measurements of residents' subjective well-being were highly interrelated (i.e., life satisfaction, depressive feelings and loneliness). In addition, ego-integrity was positively associated with perceived autonomy support, autonomy/competence satisfaction, life satisfaction and negatively associated with depressive feelings and loneliness. Despair showed the opposite pattern of results concerning the outcome variables. Noteworthy, perceived controlling behaviours and relatedness satisfaction were not related to the other study variables.

The relation between the background variables and the study variables. A multivariate analysis of covariance was conducted to investigate the relationship between the background variables and the study variables. Specifically, we carried out a MANCOVA with the categorical background variables as fixed factors (i.e., gender and educational level), with the continuous background variables as covariates (i.e., age and nursing care dependency), and with all key variables of interest as dependent variables. All multivariate tests reported in this study are based on Wilks' Lambda. There were no significant effects for gender: Wilks's $\lambda = .76$, $F(9,34) = 1.18$, $p = .34$; level of education: Wilks's $\lambda = .74$, $F(9,34) = 1.30$, $p = .27$; age: Wilks's $\lambda = .71$, $F(9,34) = 1.52$, $p = .18$; and nursing care dependency: Wilks's $\lambda = .65$, $F(9,34) = 2.04$, $p = .06$. Although the multivariate effects of the background variables on the study variables were non-significant, the variables age and especially nursing care dependency showed a tendency towards significance. Therefore, we decided to control for the effects of age and nursing care dependency in the primary analyses to test our hypotheses as conservatively as possible.

Table 3

Means, standard deviations, and correlations between the study variables

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8
1. Autonomy-supportive context	3.89	0.74								
2. Controlling context	1.65	0.74	-.24							
3. Needs for competence and autonomy	3.91	0.73	.63**	-.27						
4. Need for relatedness	3.95	0.93	.22	-.14	.22					
5. Life satisfaction	3.68	1.07	.42**	-.08	.45**	.16				
6. Depressive feelings	1.79	1.93	-.37**	.10	-.38**	-.16	-.65**			
7. Loneliness	2.34	1.22	-.19	.23	-.21	-.25	-.46**	.47**		
8. Ego-integrity	4.02	0.67	.56**	-.06	.42**	.04	.44**	-.35*	-.31*	
9. Despair	2.57	0.84	-.03	.19	-.06	-.04	-.43**	.55**	.45**	-.09

Note. All constructs were assessed on a five-point Likert scale, with the exception of depressive feelings, for which items were summed to obtain a global depression score between 0 and 8. * $p < .05$; ** $p < .01$.

Primary Analyses

Research question 1. The primary aim of the current study was to examine the differential role of an autonomy-supportive versus a controlling caring context for both optimal and nonoptimal functioning among nursing home residents. We also included age and nursing care dependency as control variables. We therefore estimated structural path models using the package Lavaan 0.6-5 in R 3.6.3 (Rosseel, 2012). Model fit was evaluated in terms of Chi-square, which ideally is non-significant, and several other fit indices: the Root Mean Square Error of Approximation (RMSEA), the Standardized Root Mean Square Residual (SRMR), and the Comparative Fit index (CFI). An acceptable fit was indicated by RMSEA values of .06 or below, SRMR values of .08 or below, and CFI values of .95 or above (Hu & Bentler, 1999).

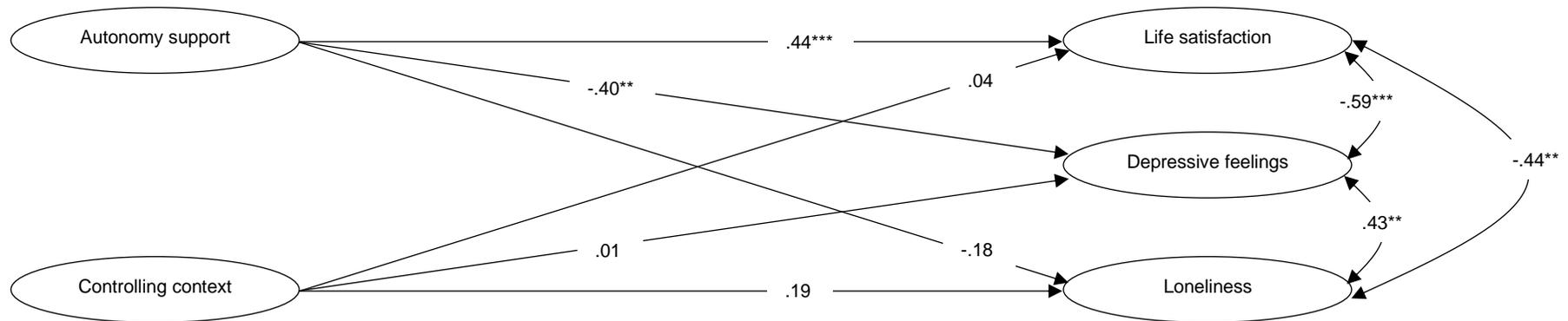
To address our first research question, we tested several models with direct and indirect paths. In a first model, the direct effects of perceived autonomy support and controlling behaviours on subjective well-being (i.e., life satisfaction, depressive feelings and loneliness) were estimated. In a second and third model, the needs for competence/autonomy and the need for relatedness respectively were separately added as mediators in the first model. We tested models with these two sets of needs separately in order to avoid testing overly complex models. With a small sample size, such models may result in unstable parameter estimations.

In the first model, perceived autonomy support and controlling behaviours were entered as predictors of the outcome variables (i.e., life satisfaction, depressive feelings and loneliness). In this model (see Figure 4), we also allowed correlations between the outcome variables. Estimation of this fully saturated model, which by definition shows a perfect fit ($\chi^2(0) = 0.00$; CFI = 1.00; SRMR = .00; RMSEA = .00), showed that the direct paths from a perceived controlling care climate to subjective well-being were non-significant. There were significant paths, however, from perceived autonomy support to life satisfaction and depressive feelings. More specifically, results showed that autonomy support related positively to life satisfaction and negatively to depressive feelings. In addition, the path from autonomy support to loneliness was non-significant. The indicators of residents' subjective well-being were highly intercorrelated.

In Model 2, we estimated a model in which perceived autonomy support and control were related to the outcomes only indirectly, through autonomy/competence need satisfaction. Moreover, correlations between the outcome variables were allowed.

Figure 4

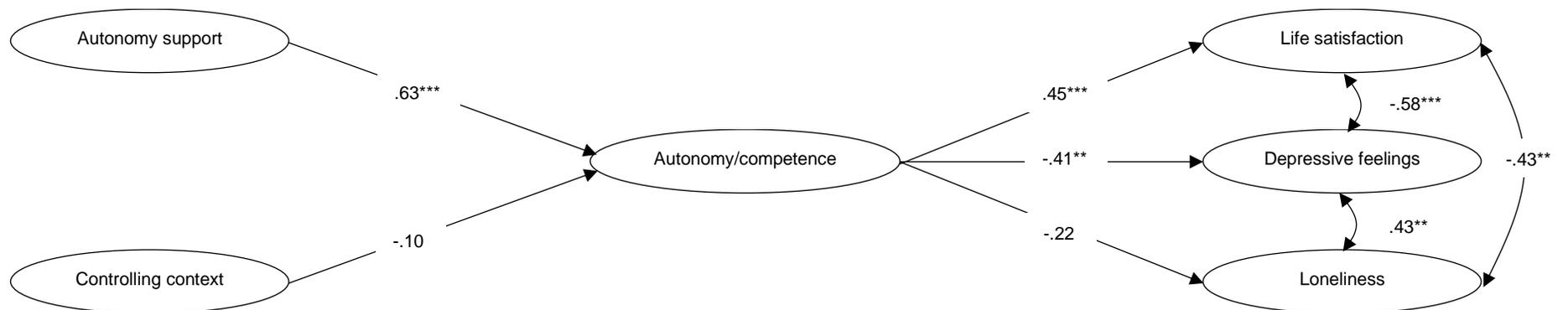
Graphic representation of the first model



Note. * $p < .05$; ** $p < .01$; *** $p < .001$.

Figure 5

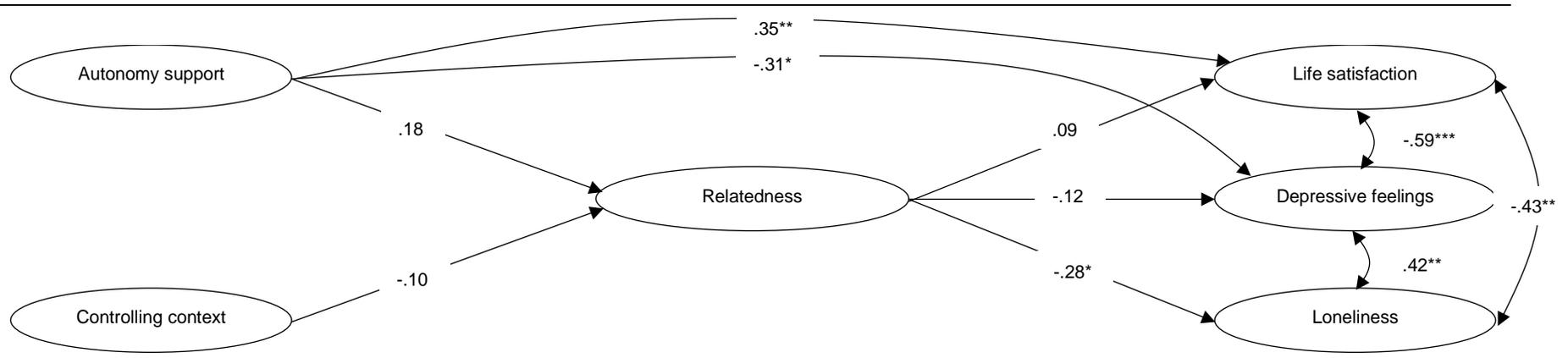
Graphic representation of the second model with inclusion of the mediator autonomy/competence satisfaction



Note. * $p < .05$; ** $p < .01$; *** $p < .001$.

Figure 6

Graphic representation of the third model with inclusion of the mediator relatedness satisfaction



Note. * $p < .05$; ** $p < .01$; *** $p < .001$.

This model did not include direct paths between perceived autonomy support/controlling behaviours and the outcome variables. This model showed an adequate fit: $\chi^2(6) = 5.19$, $p = .52$; CFI = 1.00; SRMR = .05; RMSEA = .00. As displayed in Figure 5, autonomy support was related positively to autonomy/competence satisfaction. Satisfaction of these needs, in turn, related positively to life satisfaction and negatively to depressive feelings. In this model, both the indirect paths from autonomy support to life satisfaction ($\beta = .28$, $p < .01$) and to depressive feelings ($\beta = -.26$, $p < .01$) through fulfilment of the needs for autonomy/competence were significant. Adding direct paths from the perceived contextual variables to the outcomes did not improve model fit and these paths were also not significant.

In Model 3, satisfaction of the need for relatedness was modelled as an intervening variable (instead of autonomy/competence satisfaction). Again, correlations between the outcome variables were allowed and direct paths between perceived autonomy support/controlling behaviours and the outcome variables were initially not included. This model showed an inadequate fit: $\chi^2(6) = 12.03$, $p = .06$; CFI = .85; SRMR = .10; RMSEA = .15. There was only a significant path from satisfaction of the need for relatedness towards loneliness ($\beta = -.28$, $p < .05$). Because the fit of this model was inadequate, we inspected the modification indices. Modification indices suggested the addition of direct paths from autonomy support to life satisfaction and depressive feelings. Adding these direct paths resulted in a substantially better fit: $\chi^2(4) = 3.84$, $p = .43$; CFI = 1.00; SRMR = .05; RMSEA = .00; and the added paths were also significant. These results indicate that the effects of autonomy support on life satisfaction and depressive feeling are not mediated by relatedness satisfaction. In addition, satisfaction of the need for relatedness related negatively to loneliness (see Figure 6).

Research question 2. The second aim of the current study was to examine the moderating role of ego-integrity and despair. More specifically, we examined ego-integrity and despair as possible moderators of the associations between a perceived autonomy-supportive/controlling care climate, fulfilment of the basic needs and subjective well-being.

Based on the procedures outlined by Aiken & West (1991), the independent variables and moderators were centered and the interaction terms were computed as the product of these centered variables. Thus, we performed multiple regressions in SPSS statistics with age and nursing care dependency as control variables. Specifically, we tested the main effects of ego-integrity, despair, autonomy support and control, and considered potential interactions between these variables.

Table 4

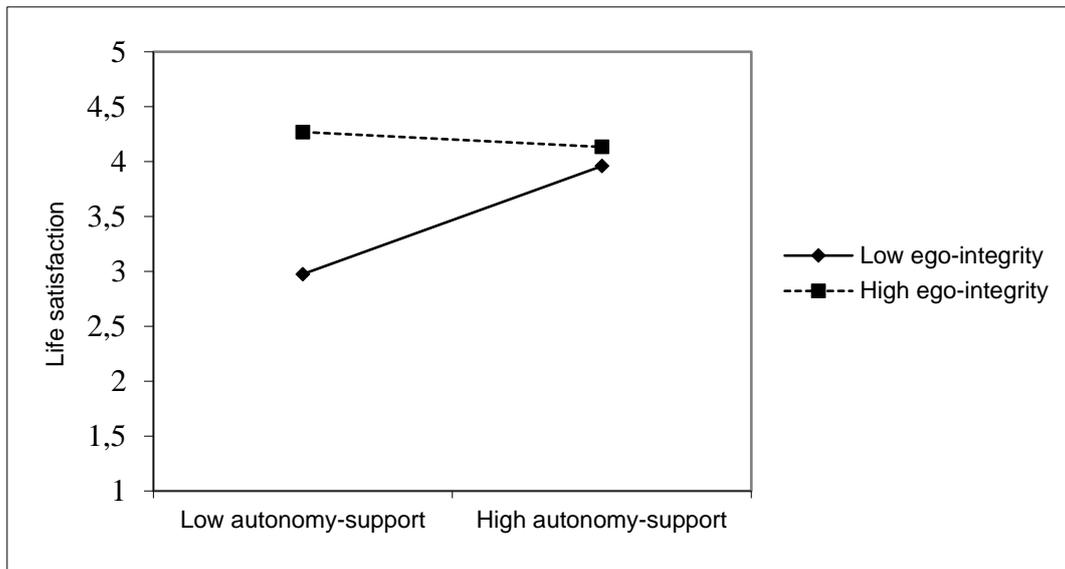
Regression analyses and the standardized coefficients

	Need satisfaction		Subjective well-being		
	Autonomy/competence	Relatedness	Life satisfaction	Depressive feelings	Loneliness
Age	.03	-.14	-.21	.07	.03
Nursing care dependency	-.28*	.05	-.24	.07	.23
Ego-Integrity	.19	-.14	.34*	-.11	-.32
Despair	.13	.08	-.50**	.53***	.44*
Autonomy support	.46**	.31	.20	-.25	.02
Controlling context	-.13	-.15	.27	-.24	.05
Ego-integrity X autonomy support	-.19	.03	-.37*	.48**	.07
Ego-integrity X controlling context	.01	.05	-.11	.12	-.10
Despair X autonomy support	.05	-.25	-.08	.04	.16
Despair X controlling context	.24	.20	-.03	-.07	.07

Note. * $p < .05$; ** $p < .01$; *** $p < .001$.

Figure 7

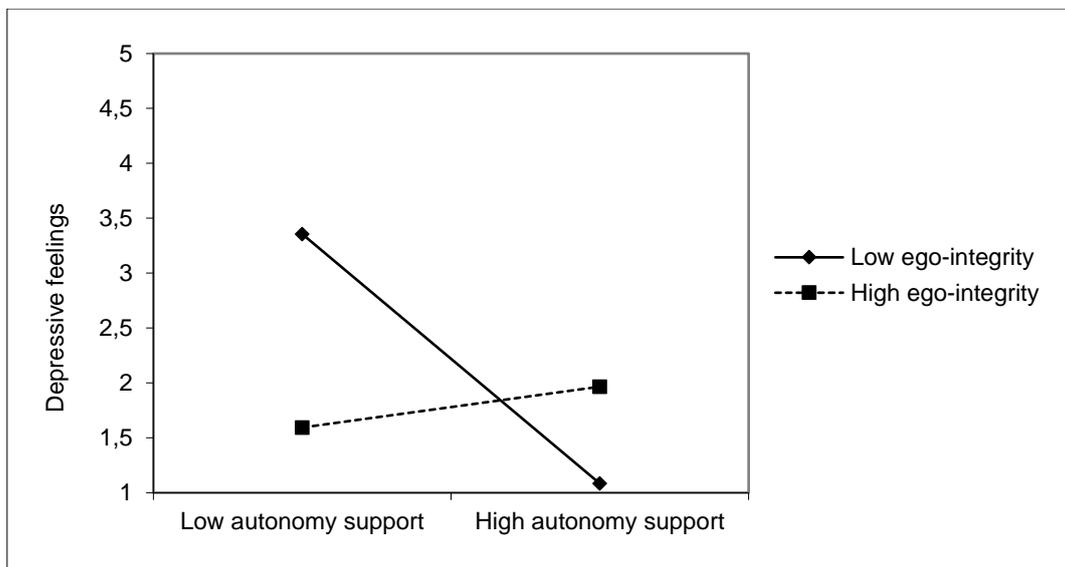
Interaction between perceived autonomy support and ego-integrity for life satisfaction



Note. Low autonomy support/low ego-integrity = one standard deviation below the mean; high autonomy support/high ego-integrity = one standard deviation above the mean.

Figure 8

Interaction between perceived autonomy support and ego-integrity for depressive feelings



Note. Low autonomy support/low ego-integrity = one standard deviation below the mean; high autonomy support/high ego-integrity = one standard deviation above the mean.

As shown in Table 4, the variables ego-integrity and despair showed several main effects. More specifically, ego-integrity was significantly positively related to life satisfaction, whereas despair was positively related to both depressive feelings and loneliness and was negatively related to life satisfaction. Two significant interactions were found, with ego-integrity being a significant moderator of the effects of autonomy support on life satisfaction and depressive feelings (see Table 4).

Next, we inspected associations between autonomy support and the two indicators of well-being at low (one standard deviation below the mean) and high (one standard deviation above the mean) levels of the moderator ego-integrity (see Figure 7 and 8). The associations were most pronounced among participants low on ego-integrity, suggesting that autonomy support may matter most to participants low on ego-integrity. In contrast, participants with high levels of ego-integrity seem to be less susceptible to the effects of a low autonomy-supportive environment on life satisfaction and depressive feeling.

Discussion

Theories and research on developmental processes and quality of life in nursing homes have come a long way (see Coleman & O'Hanlon, 2017 for an overview). Classic and recent developmental accounts (e.g., Laura Carstensen's socioemotional selectivity theory) explored normative trends and areas of growth within late life (Baltes, 1987; Ranzijn, 2002). These theoretical insights have not only encouraged more constructive attitudes, but also inspired empirical research to investigate the heterogeneity in adjustment and multi-factorial influences on adjustment in very old age (e.g., Wettstein et al., 2015).

We applied Self-Determination Theory (Ryan & Deci, 2017) to the context of nursing homes. This theory allows for an investigation of the complexity and heterogeneity in factors contributing to the reality of elderly in nursing homes. More specifically, this theoretical framework can advance our understanding of the interpersonal climate and its relationship with nursing home residents' well-being. Some researchers previously investigated elderly residents' mental health, by focusing on the role of autonomy support or need satisfaction (see Tang et al., 2019 for an overview).

However, none of these studies examined the differential roles of a need-supportive and need-thwarting care climate. Moreover, previous research did not attend to individual differences in the associations between perceptions of the context, need-based experiences, and subjective well-being. This is unfortunate, because these concepts contribute to a greater insight into the complexity of the interaction between a

caring environment and elderly residents' mental functioning (Vansteenkiste & Ryan, 2013). So, by relying on SDT, this study aimed to enrich the literature on nursing home residents' adjustment. At the same time, this study aimed to contribute to SDT-based literature, most of which deals with children, adolescents, and young adults. With an average age of 88 years, this is the oldest sample ever studied from an SDT-based perspective. As such, this study also allows to test whether SDT-based predictions apply at a very old age, thereby testing the relevance of this theory from a lifespan perspective.

Nursing Home Residents' Overall Adjustment

Descriptive statistics revealed that residents, on average, reported high levels of life satisfaction and low to moderate levels of depressive feelings and loneliness. In addition, residents perceived the caring environment as highly autonomy-supportive and reported very low levels of controlling behaviours. These findings are comparable to those of other studies on need fulfilment among nursing home residents (Custers et al., 2012, 2010; Kloos et al., 2019). Thus, despite age-related losses in functional and social resources and challenges in providing a need-supportive environment within an institutionalized setting, nursing home residents seem to maintain a sense of well-being and need fulfilment and perceive the caring environment as autonomy-supportive. These somewhat counterintuitive findings can be explained through two interrelated processes of assimilative and accommodative coping, described in the work of Jochen Brandtstädter and colleagues (1994, 2009). Assimilative coping refers to an intentional effort to change the environment or behavioural patterns in ways congruent with personally desired goals. Assimilation occurs when elderly people, for example, exercise to maintain health or to prevent further physical decline. However, when age-related losses become too demanding and goals unattainable, elderly may shift from assimilative to accommodative modes of coping. With accommodation, elderly adjust their personal goals and aspiration levels to biological or environmental constraints (Brandtstädter, 2009; Brandtstädter & Greve, 1994). The experience of fading life-time reserves and the confrontation with irreversible life changes seem to activate accommodative coping processes (Brandtstädter, Rothermund, Kranz, & Kühn, 2010). Thus, the use of accommodative strategies may be particularly important among elderly when moving to a nursing home. Examples of accommodative coping processes include rescaling ambitions or finding positive meaning in aversive events (Brandtstädter, 2009; Brandtstädter & Greve, 1994).

Although participants reported relatively high average levels of adjustment, there was also striking heterogeneity between participants. This variability in adjustment raises

the question why some nursing home residents fare better than others. According to SDT, need-based experiences and contextual support for these needs play an important role.

The Role of Contextual Climate and Need-Based Experiences in Residents' Adjustment

A central aim was to test the theory-based model specifying paths from an autonomy-supportive/controlling context via experiences of need satisfaction and need frustration towards subjective well-being (Vansteenkiste & Ryan, 2013). An unexpected finding, however, was that the structure underlying the shortened version of the BPNSNF Scale reflected a distinction between autonomy/competence and relatedness satisfaction, rather than the theoretically expected distinction between need satisfaction and need frustration. Thus, within the current study the need for relatedness seemed to play a distinct role within elderly residents intra-individual functioning. More specifically, this finding indicates that residents' subjective ratings concerning relatedness satisfaction were not necessarily related to the experienced levels of competence/autonomy satisfaction. I will discuss two possible explanations for this finding.

First, we used the shortened 12-item version of the original scale. The original item scale consists of 24 items, with 12 items measuring need satisfaction and 12 items measuring need frustration (Chen et al., 2015). Using the original version might have led to the expected two-dimensional distinction between need frustration and need satisfaction.

A second, more theoretical, explanation for the unique role of the relatedness need could be linked to the socioemotional selectivity theory from Laura Carstensen (1992). As outlined in the introduction, this theory assumes that relatedness plays a rather specific and unique role in the development of elderly. An essential premise of this theoretical framework is that older adults narrow their social network down to a core network of emotionally close relationships (Carstensen, 1992). When time is perceived limited, elderly will prioritize emotional goals (e.g., finding meaning in close relationships) over future-oriented goals (e.g., the pursuit of information) (Carstensen et al., 1999). Furthermore, SST states that greater investment in meaningful relationships at late life improves emotional well-being (Carstensen et al., 2000). Finding meaningful relationships refers to the basic need to feel deeply connected with significant others (Ryan & Deci, 2017), suggesting that relatedness may be a particular important and

unique need in very old age (Neubauer, Schilling, & Wahl, 2017). Custers et al. (2012), for example, found that elderly residents attached the most importance to the need for relatedness. Based on these findings, we decided to examine the mediating roles of the needs for autonomy/competence and the need for relatedness in separate models. Thus, the intervening role of need frustration, as represented in Figure 2, was not examined.

The results from structural equation modeling indicated that perceived autonomy support related positively to life satisfaction and negatively to depressive feelings, associations that were accounted for by satisfaction of the needs for autonomy and competence. That is, autonomy support related via satisfaction of the needs for competence and autonomy to life satisfaction. The latter finding confirms the hypothesis that a perceived autonomy-supportive caring environment relates to elderly residents' subjective well-being via experiences of need satisfaction. We also found evidence that perceived autonomy support is negatively related to depressive feelings through autonomy and competence satisfaction, an association that was more pronounced than we had anticipated because it was assumed that a controlling context would be related more strongly to depressive feelings than low autonomy support.

Surprisingly, perceived controlling practices showed no significant association with maladaptive functioning (i.e., depressive feelings and loneliness). Thus, elderly residents seem to reap the benefits from an autonomy-supportive climate and do not necessarily suffer from a controlling environment. First, this finding can be linked to the concept of affect optimization, which is defined as the ability to maximize benefits from positive experiences (such as autonomy-supportive practices) and dampen the negative impact caused by aversive events (such as controlling practices) (Labouvie-Vief & Medler, 2002). Secondly, the non-significant association between control and maladaptive functioning can also be explained through the process of accommodative coping, which has already been described in one of the previous paragraphs. In particular, elderly residents may reappraise requests from the nursing staff so they realize that these requests are well-intentioned or they understand the personal relevance of these requests (Soenens et al., 2015). For example, when a staff member asks a resident in a pressuring way to eat more during lunchtime, the resident may come to understand that this request is positively intended as it is indeed important to maintain good health. Recently, research showed that adolescents experiencing psychological controlling practices will suffer less from these practices, when they use accommodative coping strategies (Camras, Sun, Fraumeni, & Li, 2017; Cheah, Yu, Liu, & Coplan, 2019). Therefore, it would be interesting to replicate this research with older adults.

In addition, the path from perceived controlling practices to need satisfaction was non-significant. In line with previous research (Bartholomew et al., 2011; Haerens, Aelterman, Vansteenkiste, Soenens, & Van Petegem, 2015), this finding seems to point out that controlling practices do not simply reflect low levels of autonomy support and subsequent experiences of low need satisfaction. Nonetheless, because need frustration was eventually not included in the analyses, we were not able to test the hypothesized pathway from a controlling caring environment towards negative indicators of well-being via experiences of need frustration.

Moreover, relatedness satisfaction showed no significant association with the outcome variables, possibly due to the relatively low reliability of the relatedness satisfaction scale. A recent meta-analysis performed by Tang et al. (2019), however, also found an insignificant association between the fulfilment of relatedness and positive indicators of well-being in later life. As described by Tang et al. (2019), one possible explanation for this finding was the use of different scales measuring relatedness satisfaction. It could be that relatedness plays a specific role in interpersonal outcomes, such as loneliness. The current study indeed found a significant negative association between relatedness satisfaction and loneliness, although this association was rather weak. Recent qualitative research showed that elderly residents describe feelings of loneliness as a multidimensional concept, not only related to the need for relatedness (Barbosa Neves, Sanders, & Kokanović, 2019; Paque, Bastiaens, Van Bogaert, & Dilles, 2018).

Furthermore, the need for relatedness showed no significant association with perceptions of the caring context (i.e., perceived autonomy support and control). In the current study, the provided warmth and responsiveness from the nursing staff, which functions as a true support for the satisfaction of the relatedness need, were not measured (Vansteenkiste et al., 2010). Another explanation could be that elderly residents derive more relatedness satisfaction from meaningful interactions with other residents, relatives or even past memories than from interpersonal relationships with the nursing home staff. For example, Bergland and Kirkevold (2005) found that some residents did not assign great importance to having emotional supportive relationships with caregivers. In sum, future research would do well to further investigate both the sources of relatedness satisfaction and its association with psychosocial adjustment.

The Moderating Role of Ego-Integrity and Despair

The second aim of the current study was to examine the potential moderating roles of ego-integrity and despair in associations between the contextual climate and residents' adjustment.

Based on multiple regressions analyses, ego-integrity was positively associated with life satisfaction, whereas despair was positively related to both depressive feelings and loneliness and was negatively related to life satisfaction. These findings are consistent with theoretical expectations based on Erikson's model of development (1963) and with past work showing the beneficial role of ego-integrity in psychological adjustment at late life.

Results showed two significant interaction effects for elderly residents' level of ego-integrity. It appears that elderly residents scoring high on ego-integrity seem to be more immune against the detrimental effects of a low autonomy-supportive environment on life satisfaction and depressive feelings. Residents with low levels of ego-integrity seem to be more susceptible to the aversive effects of low autonomy support. Viewed from a diathesis-stress perspective, we could state that susceptible residents with low levels of ego-integrity may be more vulnerable to the detrimental effects of low autonomy support. Nonetheless, results only partially confirmed the (de)sensitization hypothesis. More specifically, our results do not confirm that elderly residents with high levels of ego-integrity are more sensitive to the beneficial effects of an autonomy-supportive caring climate.

It is important to note that ego-integrity only changed the strength of the effects of perceived autonomy support on indicators of well-being, not the direction. This means, that it is highly unlikely that elderly residents will suffer (benefit) from an autonomy-supportive climate (controlling practices). Thus, these findings not only support the universally nurturing role of autonomy-supportive behaviours, but also acknowledge room for individual differences (Soenens et al., 2015).

Strengths, Limitations and Future Research

The current study partly replicates findings from previous studies (e.g., Bartholomew et al., 2011) and at the same time extends prior research among nursing home residents by examining the mechanisms and potential moderators underlying the association between autonomy support and well-being.

An important strength of the present study was its use of an empirically based theoretical framework that provides practical tools for enhancing elderly residents' well-

being. As mentioned above, findings of the current study point out that providing an autonomy-supportive environment seems to play a substantial role in elderly residents' functioning. Providing an autonomy-supportive environment within nursing homes can be translated into some practical guidelines. The nursing home staff could create an autonomy-supportive care climate by, for example, using informational and non-controlling language, listening with an empathic attitude, being open to complaints, imposed demands and structures, and offering interesting and relevant activities (e.g., Soenens, Sierens, Vansteenkiste, Dochy, & Goossens, 2012). Practical guidelines that constitute autonomy-supportive practices and their relevance could be implemented in the education program of the nursing home staff. In addition, interventions aimed at increasing autonomy-supportive practices could be applied to the context of nursing homes, as research already demonstrated the positive outcomes of such interventions in the context of sport, education and parenting.

A number of limitations of the present research need to be acknowledged. First, we note that the sample of the current study was relatively small. This is because the population is hard to reach and because it is very time-intensive to administer questionnaires. The items had to be read aloud, with the researcher filling out items one by one. Because of the limited sample size, there was a risk of low statistical power to detect effects.

Next, the current sample was quite homogeneous in terms of socio-demographic variables. Nonetheless, when we compare the characteristics of the current sample with those of a large survey study conducted across Belgian nursing homes ($n = 383$), we found some similarities in terms of age, gender, marital status and level of care dependency (Van Malderen et al., 2016). Importantly, the background variables were not associated with each of the study variables within the present study.

Moreover, participants of the current sample were all recruited from one (public) Belgian nursing home. Residents reported high levels of subjective well-being and were rather satisfied concerning need fulfilment and perceived autonomy support. However, these findings may vary across Belgian nursing homes due to differences in organization type (i.e., public, private non-profit, private for-profit) or policy. Van Malderen et al. (2016) examined quality of life in 57 nursing homes in Flanders, which were stratified according to organization type and province. Results showed that residents reported a relative positive experience regarding the provided psychological support among these nursing homes. Nonetheless, as Owens and Batchelor (1996) already demonstrated, elderly

have been found to be reluctant to articulate their dissatisfaction or criticize the caring environment.

Furthermore, residents with moderate to severe cognitive impairment were not included in the current study. As mentioned in the introduction, central to the SDT approach is the proposition that the needs for autonomy, relatedness and competence apply to all individuals (Ryan & Deci, 2017). Thus, providing a need-supportive care climate in nursing homes is also important when it comes to enhancing the psychological well-being of residents with cognitive deficits or dementia. To the best of our knowledge, no research has yet applied this theoretical framework of SDT to nursing home residents with dementia. Nonetheless, research concerning quality of life of people with dementia, seems to point out indirectly the importance of supporting the three basic psychological needs. For example, based on a meta-analysis, Martyr et al. (2018) showed that greater social engagement, having meaningful relationships (referring to the need for relatedness) and functional ability (referring to the need for competence) were related to better quality of life in people with dementia. From a person-centred approach, research also acknowledges the importance of providing an autonomy-supportive climate. For example, Goossens, Sevenants, Declercq and Van Audenhove (2020) evaluated an intervention in different Belgian nursing homes (called 'We DECide optimized') to promote shared decision-making in dementia care. However, in order to conduct research among elderly residents with severe cognitive impairments from an SDT-approach, it is necessary to look beyond research methods, such as in-person surveys or written self-reports.

The current study is also limited by its use of a cross-sectional design and, therefore, no causal relationships could be established. According to the first research question, the direction of the associations between perceptions of the context, need-based experiences, and well-being remains unclear. For example, residents who experience mental health issues may provoke controlling behaviours from the nursing home staff and/or may perceive the staff in a more negative light. Studies indeed found longitudinal evidence for a reciprocal relationship between controlling parenting practices and maladjustment among adolescents (e.g., Soenens, Luyckx, Vansteenkiste, Duriez, & Goossens, 2008). According to the second research question, residents' level of ego-integrity may moderate the association between perceived autonomy support and subjective well-being in both directions. For example, the nursing home staff may respond more strongly with autonomy-supportive practices to elderly who are satisfied

with their life, when they simultaneously perceive their life to be meaningful despite past failures and difficulties.

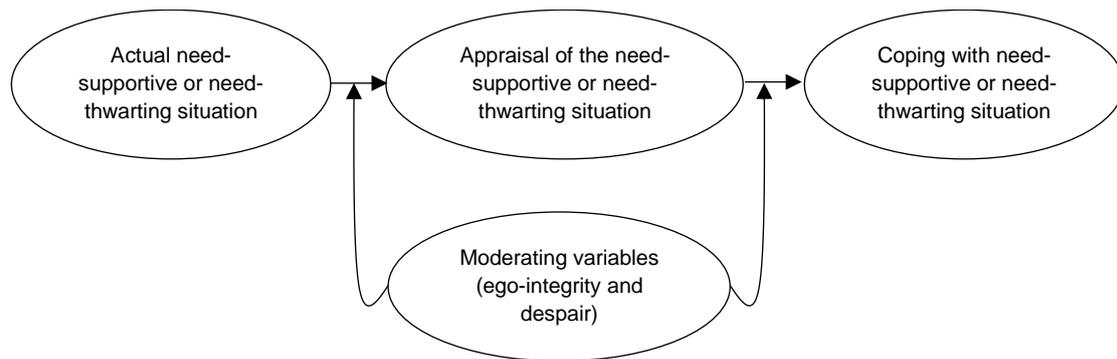
In the current study we primarily focused on facets of hedonic well-being (i.e., life satisfaction) and indicators of mental distress (i.e., loneliness and depressive feelings). In the literature, a distinction is made between eudaimonic and hedonic components of well-being. More specifically, hedonic well-being focuses on the absence of negative affect, the presence of positive affect, and life satisfaction (Ryan & Deci, 2001). Eudaimonic well-being on the other hand entails a more stable and deeply satisfying type of happiness. Briefly said, eudaimonic well-being consists of more than superficial and momentary feelings of happiness (Ryan, Huta, & Deci, 2008). Future research would do well to include facets of eudaimonic well-being, such as purpose of life, self-acceptance, and environmental mastery. As Wettstein et al. (2015) noted, it is important to include different facets of well-being to understand the heterogeneity of well-being at late life. Future research could also focus on other indicators of mental distress common at late life, such as fear towards death or dying (e.g., Neimeyer, 1994). In this way, we might be able to better identify the role of a controlling care climate, which showed no association with loneliness and depressive feelings in the current study. In addition, we would develop a better understanding which facets of well-being are determined by either a need-supportive or a need-thwarting care climate.

Finally, future research would do well to address the moderating role of ego-integrity and despair in greater detail. More specifically, individual characteristics are also assumed (and perhaps even more likely) to play a role in the appraisal of actual contexts. For example, with high levels of ego-integrity, individuals may be more likely to have a benign interpretation of the environment, such that potentially need-supportive environments are experienced more positively (in terms of subjective need satisfaction) and need-thwarting conditions are experienced as less negatively (in terms of subjective need frustration). In addition, elderly residents may also differ in their coping responses when confronted with either a need-supportive or need-thwarting environment (Soenens et al., 2015). For instance, when confronted with similar levels of autonomy need frustration, elderly people scoring high on ego-integrity may respond more constructively (e.g., using negotiation) than people scoring high on despair, who may more often submit passively to frustrating conditions or react against staff members with anger and hostility. As illustrated in Figure 9, future research could examine the role of ego-integrity and despair in residents' interpretation of and coping strategies with a potentially autonomy-

supportive or controlling interaction by, for example, presenting video vignettes of caring practices to residents (Aguinis & Bradley, 2014).

Figure 9

Graphic overview of the moderating role of ego-integrity and despair in nursing home residents' appraisal and coping strategies



Note. Adapted from “Let us not throw out the baby with the bathwater: Applying the principle of universalism without uniformity to autonomy-supportive and controlling parenting,” by B. Soenens, M. Vansteenkiste, and S. Van Petegem, 2015, *Development Perspectives*, 9, p. 46.

Conclusion

To the best of our knowledge, the current study is the first to examine both the dark and bright pathway in nursing home residents' needs-related experiences and mental health. A second aim was to shed light on residents' active contribution in caring interactions by examining the moderating role of ego-integrity and despair. Overall, we found that perceived autonomy-supportive caring practices related to elderly residents' well-being via experiences of autonomy/competence satisfaction. Moreover, results showed some evidence for a moderating role of ego-integrity in effects of perceived autonomy support on life satisfaction and depressive feelings, with high levels of ego-integrity playing a protective role in the face of low contextual autonomy support. Despite some limitations, an important strength of the current study is the use of a theoretical framework (i.e., Self-Determination Theory) with much applied value. To the extent that future longitudinal and experimental research confirms the current findings, the nursing home staff can be encouraged to engage in an autonomy-supportive style when taking care of the elderly. To conclude, we call for future research that addresses the darker pathway from a controlling caring environment towards elderly residents' functioning through experiences of need frustration. In addition, we encourage future research on

individual differences in residents' interpretation of and coping strategies with a potentially autonomy-supportive or controlling interaction.

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