



Disentangling the Concept of Well-Being in Very Old Age Using Rodgers' Evolutionary Concept Analysis

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Accepted: 4 January 2022 / Published online: 26 February 2022
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Abstract

Well-being has received increasing attention from researchers and policymakers, and its promotion could be considered pivotal to handle the challenges of aging populations. However, many different well-being concepts have been used inconsistently, and it remains unclear what the concept of well-being refers to among the oldest segments of the population. Hence, there is a need for a more cohesive understanding of the meaning of the concept in this particular context. The aim of this study was to review the scientific literature to examine the conceptualization of well-being in very old age. Rodgers' evolutionary concept analysis was applied as a guiding framework. A search through scientific databases generated a sample of 568 unique articles published between 2009 and 2019, of which 49 were included in the final analysis. Four main attributes of well-being in very old age were identified: multifaceted; intertwined with health and quality of life; ability to adapt; and part of successful aging. Furthermore, the antecedents and consequences of well-being in very old age, as well as related concepts, were summarized and discussed. The results revealed that there was a transition between general aspects of well-being and specific aspects of very old age. Particularly adaptation appears to be a crucial part of well-being in very old age, and methods of supporting the ability to adapt should therefore be tested and implemented.

Keywords Well-being · Oldest old · Aging · Literature review · Conceptualization

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1 Introduction

The world's population is aging, and very old adults represent a rapidly increasing proportion of society. This will increase the number of frail older people suffering from multiple diseases and impairments (Dobriansky et al., 2007; World Health Organization [WHO], 2011). Taken together, this creates challenges for social- and health care systems (Robine et al., 2007). To address these challenges, promoting successful, active, and healthy aging has become a central policy aim worldwide (Foster & Walker, 2015; WHO, 2015). To be able to enhance older adults' ability to age well, emphasis should be placed on not only promoting objective health and living circumstances, but also on the experience of well-being (e.g. Doyle et al., 2012). Overall, well-being has been increasingly acknowledged as an indicator of societal progress that allows a more comprehensive view relative to economic measures, such as GDP (Foregard et al., 2011). However, it is unclear what well-being in very old age actually refers to. To be able to plan and implement appropriate actions to promote well-being, we need a greater understanding of how it is conceptualized, how we measure it, and how the results should be interpreted (Dodge et al., 2012). Although a vast number of studies concerning different aspects of well-being in later life exist, there is to our knowledge no study focusing on the conceptualization of well-being in very old age. Hence, the aim of this study is to disentangle the concept, in other words to explore the conceptualization, of well-being in very old age by applying Rodgers' evolutionary concept analysis (Rodgers, 2000). The evolutionary concept analysis offers the ability to explore the essence of the concept of well-being in very old age as well as to synthesize the results from various studies, which could bring added value to the existing knowledge base. Furthermore, consistent with Rodgers' evolutionary concept analysis (Rodgers, 2000), it can be expected that the conceptualizations of well-being vary depending on the specific context, in this case very old age. Elucidating the concept of well-being could enhance its utility (Rodgers 2000) and provide valuable information to policymakers as well as guide future research.

1.1 Background

On the one hand, well-being has received substantial attention in gerontological research, but studies have mostly focused on the general older population. On the other hand, the importance of focusing explicitly on the challenges related to the fourth age has also been highlighted, due to the imminent risks of frailty, losses, and impairments that occur in very old age (Baltes & Smith, 2003). At the same time, a "well-being-paradox" in old age, which refers to the ability to maintain a high level of well-being despite objective health decline, has received considerable interest among researchers (e.g., Swift et al., 2014).

It is also important to account for the fact that human development, including gains and losses, occurs throughout the entire life span (Freund, 2008). Thus, a long life also implies an increasing heterogeneity between individuals, meaning that there is a large variation in the group of very old people (WHO, 2015). However, increased survival selection also contributes to that very old adults differ from younger old adults (Smith & Ryan, 2016). Additionally, very old age entails an impending awareness of a limited future, i.e. closeness to death (e.g., Gerstorf et al., 2010). Considering the unique characteristics of very old age, it could thus be assumed that the well-being of this group contains some distinct features.

Well-being is a broad and complex concept that has been measured and defined in different ways, and it can be assessed using both objective and subjective measures (e.g., Foregard et al., 2011). Objective well-being often refers to different dimensions of standard of living, such as housing and income (ibid.). However, in the industrialized world, where basic human needs are mostly met, quality of life is often linked to perceived or subjective well-being (Bowling, 2005). This becomes particularly relevant in very old age, when objective health frequently deteriorates (e.g., Steptoe et al., 2015). Regarding the subjective, self-perceived element, well-being is often viewed from two different perspectives: the hedonic and the eudemonic perspective (Deci & Ryan, 2008). Hedonic well-being is based on the assumption that people seek pleasure and avoid discomfort to maximize happiness (ibid.). Subjective well-being (SWB) is generally considered to adhere to the hedonic view (Deci & Ryan, 2008), and it can be defined as cognitive and affective appraisals of one's life consisting of three different components: life satisfaction, positive affect, and negative affect (Diener, 1984). In contrast, the eudemonic view of well-being can be regarded as a process of self-actualization (Deci & Ryan, 2008). Psychological well-being (PWB) could be considered to adhere to the eudemonic view and can be interpreted as positive psychological functioning, which according to Ryff (1989) is characterized by autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance.

There is, however, an inconsistency in the conceptualizations and use of the concepts (George, 2010). For example, objective well-being is seldom explicitly defined; rather, it is described as an encompassing set of indicators (Foregard et al., 2011). Additionally, SWB has in some cases been used interchangeably with PWB, and there are also a broad range of other concepts such as resilience, happiness, sense of coherence, sense of mastery, and morale, which are all commonly employed in well-being research (Bowling, 2005; George, 2010). Moreover, well-being can be considered as perceptions of life quality (George, 2010), and the terms "quality of life" (QOL) and "well-being" have often been used synonymously (Dodge et al., 2012), indicating a close relationship between the two concepts. Although the above-mentioned concepts possess some distinct features, they can still be considered to have significant overlap, such as a mutual goal to measure a "good life" (George, 2010). Accordingly, and in adherence to the inductive approach applied in Rodgers' evolutionary concept analysis (2000), this study will focus on the broad concept of well-being without limiting it to one particular concept, such as SWB or PWB.

To our knowledge, few reviews have focused on the concept of well-being in very old age. A rapid review of mental well-being among the oldest old explored functional, social, personal, and environmental dimensions as important determinants of well-being (Cresswell-Smith et al., 2019). The focus was thus on determinants of well-being in very old age, while the focus of the present study is on the actual conceptualization of well-being. We also found a concept analysis of wellness in older adults (McMahon & Fleury, 2012) which concluded that wellness and well-being were related, and often used synonymously, but still encompassed different attributes. Additionally, they did not focus specifically on very old age. Hence, there is a need for further inquiry within this area, and the present study aims to fill this void. While acknowledging that there are differences between different types of well-being concepts, the purpose here is to uncover what ties these concepts together. In other words, what are the common denominators of these concepts when focusing on very

old age? Additionally, integrating the results from different studies can guide future research by highlighting possible gaps and needs.

2 Methods

For the purpose of this study, Rodgers' evolutionary concept analysis was applied as a guiding framework (Rodgers 2000). Additionally, the present study also shares common characteristics with the integrative review methodology, in the sense that both theoretical and empirical, as well as both qualitative and quantitative sources, could be included (Whitemore & Knafl, 2005). Rodgers' evolutionary concept analysis is inductive and aims to clarify the current use of a concept by identifying its attributes (Rodgers, 2000). The method is predicated on the assumption that a concept's meaning and use is influenced by time and context; in other words, there is an ongoing dynamic development that shapes the conceptualizations of a given phenomenon over time. Thus, the goal of the analysis is not to establish an absolute definition, but to guide further research and practice.

In line with this method, data concerning the concept's attributes, references, antecedents, and consequences were derived (Rodgers, 2000). In brief, the attributes of a concept, as a cluster of characteristics, can be regarded as the foundation of the concept's definition and thus the main focus in the analysis. References refer to the contexts in which the concept is used. The antecedents entail phenomena leading up to the concept and can also be described as preceding events, conditions, or causes (Merriam-Webster, n.d.), which in the case of well-being can be understood as factors that either promote or hinder well-being. Correspondingly, the consequences refer to factors that are results of either high or low well-being. Additionally, potential surrogate terms and related concepts are discussed. According to Rodgers, surrogate terms are ways of describing the concept of interest using other words; they can be used interchangeably. Related concepts are words that are similar to the chosen concept, but which still possess some distinct features (Rodgers, 2000).

The method entails an initial phase, a core analysis phase, and a further analysis phase (Toftthagen & Fagerström, 2010), which according to Rodgers (2000, p. 85) includes the following overlapping activities:

1. Identifying the name and concept of interest and associated expressions.
2. Identifying and selecting the appropriate setting.
3. Collecting the data to identify:
 - a. The attributes of the concept.
 - b. The contextual basis of the concept.
4. Analyzing the data.
5. If appropriate, identifying an exemplar of the concept.
6. Identifying hypotheses and implications for the further development of the concept.

Considering the scope of the article and the inductive approach used in Rodgers' concept analysis, we chose to use the broad term "well-being" in the literature search. During the initial phase, we regarded QOL as a surrogate term for well-being and thus included both concepts in the search string. Another concept closely connected to well-being is health, which is for example reflected in WHO's definition of health: "Health is a state of complete

physical, mental and social well-being and not merely the absence of disease or infirmity” (1948). The concept of health was consequently considered for inclusion but was ruled out to limit the scope of the search. The setting chosen in this case was that the articles should focus on very old adults. We opted not to limit the search to a specific discipline, since well-being is a central concept in various research fields, including social sciences and health sciences. Drawing comparisons between different disciplines was, however, beyond the scope of this study.

The search for relevant articles was conducted in five databases: Social Science Citation Index (SSCI), PsycINFO, Medline, Cinahl, and Academic Search Premier. These databases were considered appropriate to achieve a broad view incorporating different disciplines regarding well-being. The search strategy, including the choice of words included in the search string, was developed with the help of an academic librarian. Searches in all databases were conducted in March 2019. The initial search criteria were that the article should be peer-reviewed, published during the last 10 years (2009–2019) in English, include the concepts well-being or QOL, and include subject terms related to the age group (“oldest old,” “very old,” “old old,” “fourth age,” octogenarians, nonagenarians, and centenarians). The search string was modified according to the specific design of each database.

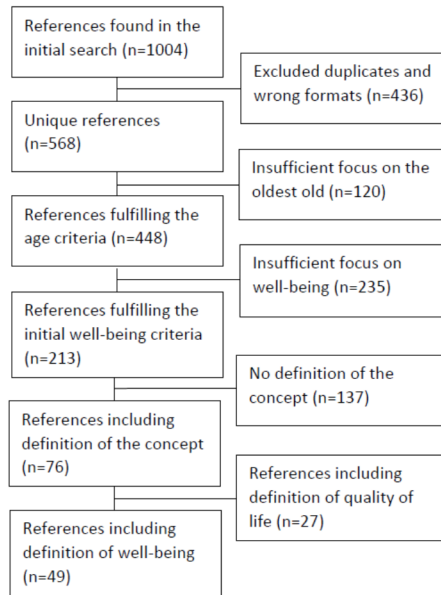
The search generated a total of 1,004 articles (379 in SSCI, 97 in PsycINFO, 200 in Medline, 127 in Cinahl, and 201 in Academic Search Premier) (Fig. 1). After removing duplicates (and references that were the wrong format, such as conference abstracts), 568 articles remained. An initial review of the articles was conducted to determine which articles fulfilled the age criteria. The article should have a sufficient focus on very old people. This meant that the age group (old-old, oldest-old, very old, fourth age, octogenarians, nonagenarians, centenarians) should be mentioned in the title or in the aim. The criteria were also considered fulfilled if the sample had a mean age over 80 years. The screening yielded 448 articles fulfilling the age criteria.

The next step was to exclude articles that did not fulfill the criteria regarding well-being. The criteria were the following: well-being or QOL should be mentioned in the title or in the aim/objectives/hypothesis/research question. Additionally, if the article focused on another concept aside from well-being or QOL, such as life satisfaction, the connection to well-being and/or QOL should be clearly stated in the text. After reviewing 448 articles that fulfilled the age criteria, 235 articles were excluded due to an insufficient focus on well-being/QOL, whereas 213 articles met the criteria for inclusion. To further ensure the relevance of the articles included in the analyses, the articles needed to include a definition of the concept. Correspondingly, 137 articles did not include a definition, leaving 76 articles that fulfilled the criteria.

The first author had the primary responsibility for the literature search as well as the process of including and excluding articles in accordance with the criteria that were established. During the process of designing the literature search and setting the criteria for inclusion, an ongoing dialogue was held with the co-authors. In each step, the articles were thoroughly reviewed by the first author to assess whether the criteria were fulfilled. In cases of uncertainty, the articles were also reviewed by the second author.

Data from the articles were collected to identify attributes and the contextual basis of the concept. After reviewing the 76 articles in detail, it became clear that among the articles included, the concept of QOL deviated from well-being to such an extent that it should be considered a related concept rather than a surrogate term; in other words, they were not

Fig. 1 Flow chart describing the inclusion/exclusion process of the articles found in the literature search



considered synonymous. The relationship between QOL and well-being will be discussed in more detail in the attribute “intertwined with health and quality of life.” Correspondingly, the analysis included only articles stating a focus on well-being ($n=49$).

The final sample of 49 articles was analyzed using thematic analysis (Rodgers, 2000, p. 95) and read repeatedly in a whole-part-whole manner to identify relevant data and generate cohesive themes. Data concerning the concept’s attributes, references, antecedents, and consequences were derived via close reading and by creating data sheets for each article. The data extraction and analysis was mainly performed by the first author, but it was also partly replicated by the second author to increase validity. The results were further discussed and validated by all three authors.

3 Results

Descriptive information concerning the 49 articles included in the thematic analysis is presented in Table 1. Most of the studies focused on one country, but there was also a study comparing Japan and the United States (Nakagawa et al., 2018), a study that included 32 OECD countries (Kim, 2013), and two studies that included respondents from both Sweden and Finland (Niklasson et al., 2015; Niklasson et al., 2017). Although all articles in this study focused on very old adults, in line with the inclusion criteria, the age span varied among the articles included. Nine articles focused on centenarians and near-centenarians (e.g., Cheung & Lau, 2016), and 16 focused on very old adults, meaning those who were referred to as old-old, very old, oldest old, octogenarians, or nonagenarians, or had a mean age over 80 (e.g., Niklasson et al., 2017). The remainder of the articles employed a comparative approach and thus included both very old adults and younger individuals (e.g., Van-

houtte & Nazroo, 2014). Most of the articles included only community-dwelling adults, but several included both community-dwelling individuals and individuals living in some type of institutional setting (e.g., nursing homes) (e.g., Hedberg et al., 2010). Additionally, two articles focused specifically on individuals in institutional settings (Haugan et al., 2013a; Haugan et al., 2013b). There were also several studies that did not include this information (e.g., Kim, 2013). The vast majority of the studies were quantitative, with only four studies implementing a qualitative design (Cherry et al., 2013; Hutnik et al., 2012; Nilsson et al., 2012; Wong et al., 2014). A synthesis of the results regarding the attributes, antecedents, consequences, and related concepts concerning well-being in very old age is presented next, and a more detailed overview of the data derived from each article can be found in the Appendix.

3.1 Attributes

Four main attributes were identified in the analysis: *multifaceted*, *intertwined with health and quality of life*, *ability to adapt*, and *part of successful aging*. Each attribute will be described in detail below.

3.1.1 Multifaceted

This attribute supported previous notions about well-being being a broad concept, and it could be regarded as a more general characteristic not related specifically to very old age. Nevertheless, this was the attribute brought forward in the vast majority of articles included in the analysis, suggesting that this attribute is generally central to the conceptualization of well-being, including in research on very old age. This attribute reflects that well-being was represented in the articles from various perspectives, that a broad range of facets were included, that these facets were dynamic in nature, and that well-being is therefore a highly complex phenomenon.

The results from the 49 articles included in the concept analysis revealed that a broad range of concepts of well-being has been used. A variety of adjectives was used in combination with the word well-being (see Table 1). Subjective and psychological were most frequently occurring, but physical, eudemonic, affective, cognitive, psychosocial, multi-dimensional, mental, social, relational, occupational, and socioemotional were also represented. Several studies explicitly used the term “multidimensional well-being” to highlight its multifaceted nature and listed different dimensions of well-being that were included in their studies. Haugan et al. (2013a), for example, included physical, emotional, social, functional and spiritual well-being. Additionally, well-being in the study by Cherry et al. (2013) encompassed physical, mental, and relational aspects. The overarching views of well-being, hedonia, and eudemonia were also mentioned and described as connected to SWB and PWB, respectively (e.g., Bishop et al., 2011; Fastame et al., 2018; Vanhoutte & Nazroo, 2016; Wettstein et al., 2015). Furthermore, some articles focused on one specific aspect of well-being, such as life satisfaction (e.g., Kobayashi et al., 2015) or affect (e.g., Chui et al., 2015), implying that well-being in very old age was operationalized with numerous different facets.

The multifaceted nature of well-being was also reflected in the measures, both considering the wide range of instruments being used (see Table 1) and in the compositions of some

Table 1 Descriptive information regarding the studies included in the analysis ($n=49$)

Reference	Concept	Measure	Age span	Setting	Country
Ailshire & Crimmins (2011)	Psychosocial well-being	Three-Item Loneliness Scale, Satisfaction with Life Scale, Attitude Toward Own Aging	Younger and older	Community-dwelling	United States
Araújo et al. (2016)	Well-being (successful aging)	Geriatric Depression Scale, Satisfaction with Life Scale	Centenarian/near centenarian	Both community-dwelling and institutionalized	Portugal
Berg et al. (2009)	Life satisfaction	Life Satisfaction Index—Z	Very old adults	Not specified	Sweden
Bishop et al. (2011)	Positive and negative affect, and Life satisfaction	Bradburn Affect Balance Scale Life Satisfaction Index-A	Centenarian/near centenarian	Community-dwelling	United States
Cherry et al. (2013)	Physical, Mental, and Relational Well-Being (successful aging)	Qualitative: three open-ended questions relating to successful aging	Younger and older	Not specified	United States
Cheung & Lau (2017)	Psychological well-being (successful aging)	Geriatric Depression Scale	Centenarian/near centenarian	Both community-dwelling and institutionalized	China (Hong Kong)
Chui et al. (2015)	Affective well-being/depressive symptoms	Center for Epidemiologic Studies Depression Scale	Younger and older	Both community-dwelling and institutionalized	Australia
Fastame et al. (2018)	Psychological/self-perceived well-being	Psychological Well-Being and Ageing Questionnaire	Younger and older	Community-dwelling	Italy
Fastame & Penna (2014)	Psychological/self-perceived well-being	Psychological Well-Being and Aging Questionnaire	Very old adults	Community-dwelling	Italy
Fastame et al. (2014)	Subjective/self-referent well-being	Psychological Well-being and Ageing Questionnaire	Younger and older	Community-dwelling	Italy
Fastame et al. (2013)	Perceived well-being / psychological well-being	Psychological Well-Being and Aging Questionnaire	Younger and older	Community-dwelling	Italy
Gerstorff et al. (2009)	Well-being/depressive symptoms	Center for Epidemiologic Studies Depression Scale	Very old adults	Community-dwelling	United States
Gupta, U. (2016)	Well-being	Satisfaction with Life Scale, Life Orientation Test Revised, The Hope Scale, Meaning in Life Questionnaire	Younger and older	Community-dwelling	India
Hansen & Slagsvold (2012)	Subjective well-being	Satisfaction With Life Scale, Positive and Negative Affect Schedule, Center for Epidemiologic Studies Depression scale	Younger and older	Community-dwelling	Norway

Table 1 (continued)

Reference	Concept	Measure	Age span	Setting	Country
Haugan et al. (2013a)	Multidimensional well-being	Functional Assessment of Cancer Therapy-General Scale, Functional Assessment of Chronic Illness Therapy-Spiritual Well-Being Scale	Very old adults	Nursing home	Norway
Haugan et al. (2013b)	(Multidimensional) well-being	Functional Assessment of Cancer Therapy-General Scale	Very old adults	Nursing home	Norway
Hedberg et al. (2010)	Psychological well-being/Morale	Philadelphia Geriatric Center Morale Scale	Very old adults	Both community-dwelling and institutionalized	Sweden
Hutnik et al. (2012)	Socio-emotional well-being	Qualitative: storytelling about the life of the centenarians	Centenarian/ near centenarian	Both community-dwelling and institutionalized	United Kingdom
Ihle et al. (2017)	Physical and psychological well-being	EuroQoL, Satisfaction with Life Scale	Younger and older	Not specified	Switzerland
Jung & Siedlecki (2018)	Attitude toward own aging + subjective well-being	Attitude Toward Own Aging, Satisfaction with Life Scale, Positive and Negative Affect Scale	Younger and older	Community-dwelling	Germany
Kim (2013)	Social well-being	Human Development Index	Centenarian/ near centenarian	Not specified	International (32 OECD countries)
Kobayashi et al. (2015)	Life satisfaction	Three items from Life Satisfaction Index A	Younger and older	Not specified	Japan
Koistinen et al. (2013)	Wellbeing/wellness	Wellness profile with nine domains	Very old adults	Community-dwelling	Finland
Liu et al. (2016)	Subjective well-being	Life Satisfaction Index A, Bradburn's Affect Balance Scale	Centenarian/ near centenarian	Both community-dwelling and institutionalized	China
Liu et al. (2012)	Psychological well-being	Positive affect: "Do you always look on the bright side of things?"; Loneliness: "Do you often feel lonely and isolated?"; Quality of life: "How do you rate your life at present?"; OARS protocol	Very old adults	Both community-dwelling and institutionalized	China
MacDonald et al. (2009)	Mental well-being (mental health)	OARS protocol	Centenarian/ near centenarian	Both community-dwelling and institutionalized	United States
Martin et al. (2015)	Well-being (successful aging)	Self-rated successful aging, Aging well, Satisfaction with Life Scale	Younger and older	Community-dwelling	United States

Table 1 (continued)

Reference	Concept	Measure	Age span	Setting	Country
Montaz et al. (2011)	Psychological well-being	WHO-5 Well-being Index	Younger and older	Community-dwelling	Malaysia
Morack et al. (2013)	Well-being (successful aging)	Center for Epidemiologic Studies Depression Scale	Very old adults	Both community-dwelling and institutionalized	Sweden
Nakagawa et al. (2018)	Subjective well-being	Philadelphia Geriatric Center Morale Scale	Centenarian/ near centenarian	Both community-dwelling and institutionalized	Japan and the United States
Neubauer et al. (2017)	Subjective well-being	Satisfaction with Life Scale, Positive and Negative Affect Schedule	Very old adults	Both community-dwelling and institutionalized	Germany
Ng et al. (2017)	Life satisfaction	Respondents' own rating of how satisfied they are with life on a five-point scale	Very old adults	Not specified	China
Niklasson et al. (2015)	Morale	Philadelphia Geriatric Center Morale Scale	Very old adults	Both community-dwelling and institutionalized	Sweden and Finland
Niklasson et al. (2017)	Morale	Philadelphia Geriatric Center Morale Scale	Very old adults	Both community-dwelling and institutionalized	Sweden and Finland
Nilsson et al. (2012)	Occupational well-being	Four key questions related to occupational well-being	Very old adults	Community-dwelling	Sweden
Oswald et al. (2011)	Life satisfaction	Single-item self-evaluation rating scale of life satisfaction	Younger and older	Community-dwelling	Germany
Paigi (2013)	Well-being	12-item measure of positive and negative affect, Satisfaction With Life Scale, three of Ryff and Keyes's items of PWB	Younger and older	Not specified	United States
Paigi & Shmotkin (2010)	Life satisfaction	Cantril's self-anchoring scale.	Very old adults	Both community-dwelling and institutionalized	Israel
Schilling et al. (2013)	Life satisfaction	Single-item self-evaluation measure of life satisfaction	Very old adults	Community-dwelling	Germany
Shmotkin et al. (2013)	Subjective wellness	Center for Epidemiological Studies-Depression scale, rate life today on a scale from 1 to 4, rate current health on a scale from 1 to 4	Very old adults	Both community-dwelling and institutionalized	Israel
Toffalini et al. (2016)	Psychological well-being	BEN-SSC—Questionario Ben-essere Psicologico	Younger and older	Community-dwelling	Italy
Tomás et al. (2012)	Perceived health	Perceived health scale	Younger and older	Both community-dwelling and institutionalized	Angola

Table 1 (continued)

Reference	Concept	Measure	Age span	Setting	Country
Tomás et al. (2014)	Life satisfaction	Satisfaction With Life Scale	Younger and older	Both community-dwelling and institutionalized	Angola
Vanhoutte & Nazroo (2016)	Cognitive, Affective and Eudemonic Well-being	General Health Questionnaire, Center of Epidemiological Studies Depression Scale, Satisfaction with Life Scale, The CASP scale	Younger and older	Community-dwelling	England
Wahl et al. (2014)	Affective well-being	Positive and Negative Affect Schedule	Very old adults	Community-dwelling	Germany
Weststein et al. (2015)	Well-being	Satisfaction With Life Scale, Positive and Negative Affect Schedule, Ryff's scales of psychological well-being, Geriatric Depression Scale, Multidimensional Orientation Toward Dying and Death Inventory	Very old adults	Both community-dwelling and institutionalized	Germany
Wong et al. (2014)	Psychological well-being	Psychological well-being regarding six areas: relations with others, life events, life attitude, hope, happiness, suggestions to others on achieving longevity	Centenarian/ near centenarian	Community-dwelling	China
Yang et al. (2016)	Life satisfaction	13 items on participants' subjective ratings of life satisfaction	Younger and older	Community-dwelling	China
Zaslavsky et al. (2014)	Eudaimonic well-being	Modified seven-item measure from the Psychological well-being scale of Ryff and Keyes	Very old adults	Not specified	United States

Note. The column 'Setting' refers to whether the sample consisted of community-dwelling individuals, individuals living in an institutional setting, or both

of the instruments. For example, the Philadelphia Geriatric Center Morale Scale (PGCMS) used for measuring morale (Niklasson et al., 2015; Niklasson et al., 2017) and SWB (Nakagawa et al., 2018) included three subscales (attitudes toward own aging, lonely dissatisfaction, and agitation), and Ryff's model of PWB included six different factors (autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance) (e.g., Palgi, 2013; Wettstein et al., 2015).

Importantly, as some of the studies revealed, the various aspects of well-being also affected each other, meaning that they had a dynamic relationship. For example, although hedonic and eudemonic well-being can be viewed as distinct, hedonic well-being could also be interpreted as a consequence of the fulfillment of needs that characterizes eudemonic well-being (Vanhouette & Nazroo, 2016). Furthermore, in the study by Haugan et al. (2013b), the results showed that different dimensions of well-being affected each other; in this case, functional well-being positively affected emotional well-being, and emotional well-being positively affected physical well-being. Wettstein et al. (2015) described well-being as both heterogeneous and multidirectional in the sense that different facets of well-being were affected differently over time (see also Hansen & Slagsvold, 2012). In the study by Bishop et al. (2011), positive and negative affect were associated with life satisfaction, implying that life satisfaction is derived from cognitive-affective processes operating in tandem.

Lastly, the review also supported the notion that different concepts are used inconsistently. Although, for example, SWB and PWB could be regarded as separate concepts, albeit related (see Fastame et al., 2018 for discussion), the boundaries between different concepts were sometimes blurred. This was evident, for example, in the fact that there were studies in which SWB and PWB were seen as synonymous (e.g., Momtaz et al., 2011), and some concepts, such as morale (Hedberg et al., 2010; Niklasson et al., 2015; Niklasson et al., 2017), were considered to be related to both PWB and SWB. In contrast, some authors also noted the distinctiveness of different well-being components (e.g., Ng et al., 2017).

3.1.2 Intertwined with Health and Quality of Life

Even though the analysis focused on the concept of well-being, it was repeatedly noted that well-being, health, and QOL overlap in the literature. Although we previously stated that QOL should not be regarded as a surrogate term for well-being, this attribute illustrates that the connections between the concepts are close and complex, and nearly impossible to fully separate. The review of the articles also highlighted that a similar bond exists between well-being and health, and moreover that all three concepts were interconnected, prompting the conclusion that well-being is intertwined with health and QOL.

Overall, it was noted that many authors, implicitly or explicitly, described well-being and QOL as closely related in their texts, for example by including phrases where well-being was interpreted as having implications for QOL (e.g., Ailshire & Crmmms, 2011; Bishop et al., 2011; Fastame et al., 2014; MacDonald et al., 2009), or other wordings indicating a connection between the two (e.g., Fastame et al., 2013; Liu et al., 2016; Morack et al., 2013; Niklasson et al., 2015; Palgi, 2013; Toffalini et al., 2016; Tomás et al., 2014). Previous research on QOL was also frequently addressed in some articles, even if the authors themselves examined well-being (e.g., Berg et al., 2009; Momtaz et al., 2011; Wong et al., 2014). Additionally, some studies utilized measures of QOL as measures of well-being (Haugan et al., 2013a; Haugan et al., 2013b; Ihle et al., 2017; Liu et al., 2012).

The intertwining between health and well-being was noted in a similar manner, particularly regarding mental health. For example, SWB was described as an important indicator of mental health (Liu et al., 2016), and some authors used mental health and mental or psychological well-being interchangeably (Fastame et al., 2018; MacDonald et al., 2009). Other aspects of health were also seen as closely connected to well-being. For instance, psychological well-being was regarded an integrative factor of one's physical health (Zaslavsky et al., 2014), and perceived health was used as an indicator of well-being (Tomás et al., 2012; Shmotkin et al., 2013). However, others did not equate perceived health and well-being; they instead used perceived health as an explanatory variable for well-being (e.g., Neubauer et al., 2017; Ng et al., 2017), reflecting an inconsequence in how health-related concepts are considered and used in relation to well-being.

There were also researchers who highlighted differences between the concepts, even though they are closely related (e.g., Koistinen et al., 2013). According to Koistinen et al. (2013), well-being could be interpreted as an extension to QOL. In our initial review of QOL as a potential surrogate term for well-being in the context of very old age, we also concluded that there were some distinguishing features between the two concepts, both theoretically and empirically, at least given the specific criteria employed in the current study. QOL, particularly health-related QOL, was for example often used in medical studies when examining the outcome of a certain treatment or disease (e.g., Johnman et al., 2013). Regarding health, Ihle et al. (2017) distinguished between physical well-being and physical health; physical well-being was considered to refer to evaluations of whether physical limitations limit one's life, and not the occurrence of physical limitations per se. Gupta (2016) also distinguished between mental health and well-being by referring to stress, anxiety, and depression as indicators of mental health, while measures of life satisfaction, optimism, and meaning in life were regarded as PWB.

In summary, there is no concise view of how the concepts of well-being, QOL, and health are interrelated. There were several articles wherein the intertwining with health and QOL emerged, whereas others did not blend these concepts. However, in one qualitative study (Cherry et al., 2013), it was noted that older people themselves seemingly integrated different aspects of well-being and health together in their responses. Similarly, the responses in the study by Nilsson et al. (2012) revealed that most respondents included both thoughts concerning physical health and general feelings of well-being without drawing any distinction between the two. These observations indicate that from a lay perspective, it is not always relevant to view these concepts as distinct.

3.1.3 Ability to Adapt

Adaptation was mentioned in numerous studies in connection to the definition of well-being (Nakagawa et al., 2018; Tomás et al., 2014; Tomás et al., 2012). SWB was, for example, described as the result of adaptation, regulation of emotions, and successful use of coping strategies (Hansen & Slagsvold, 2012). In a similar manner, PWB could be regarded as representing a perception of engagement with existential challenges and life event changes, suggesting that PWB becomes a core value in old age (Momtaz et al., 2011; Palgi, 2013). Furthermore, another word used in the literature that could be considered closely connected to adaptation is "coping" (e.g., Chui et al., 2015; Martin et al., 2015). According to Koistinen et al. (2013, p. 83), "... wellbeing in advanced years generally means successful coping with

one or multiple impairments or disabilities accompanied by losses of close persons and social attendance.” This was also reflected in the articles by Fastame et al. (Fastame et al., 2013; Fastame & Penna, 2014; Fastame et al., 2018; Fastame et al., 2014), in which the instrument measuring PWB included a subscale regarding coping strategies. In the study by Hutnik et al. (2012), which focused on centenarians, adaptation was referred to as an “ability to bounce back.” They also highlighted an ability to live in the present moment, not thinking excessively about the past or the future, indicating adaptation to their current life situation. In contrast, Palgi and Shmotkin (2010) found a shift in focus to the past rather than the present or future as a coping strategy.

In old age, adaptation can also mean accepting things one cannot change, in line with the definition of morale by Lawton (Hedberg et al., 2010; Niklasson et al., 2015). Haugan et al. (2013b), who focused on self-transcendence and well-being, concluded that self-acceptance and adjustment appeared necessary for well-being among nursing home residents (see also Haugan et al., 2013a). Similarly, in interviews with near-centenarians and centenarians (Wong et al., 2014), the participants highlighted the importance of “letting go” and the use of adaptive coping strategies. Stoicism was also highlighted by centenarians, manifested as a “just get on with it” attitude (Hutnik et al., 2012).

Very old individuals’ adaptational abilities are immensely challenged by various age-related losses and increased vulnerability (Chui et al., 2015; Haugan et al., 2013b; Ihle et al., 2017; Schilling et al., 2013; Shmotkin et al., 2013; Wettstein et al., 2015). At the same time, the need for adaptation becomes even more crucial for the same reasons (Ihle et al., 2017; Shmotkin et al., 2013). Thus, some authors raised concerns regarding whether very old age curbs this ability (Hansen & Slagsvold, 2012; Nakagawa et al., 2018; Palgi, 2013). Nakagawa et al. (2018), for example, concluded that a certain level of cognitive, physical, and sensory function is crucial for the ability to adapt.

In contrast, there were also several authors who highlighted that age-related losses can be successfully managed by the older adults. Ihle et al. (2017) concluded that health limitations per se might not be crucial to well-being; rather, how the older individuals evaluate the consequences of them might be more important. Further, Yang et al. (2016) argued that very old adults might be better at adapting to health restrictions than younger old adults, which partly could be explained by the fact that increasing frailty is perceived as more on time than before (see also Schilling et al., 2013). Liu et al. (2012) suggested that institutionalized individuals might use downward comparison, i.e. comparing themselves with those who are worse off, and thereby be able to promote their own well-being. In line with this, Shmotkin et al. (2013) suggested that a well-functioning self-regulatory system among very old adults might explain the increasing discrepancy between objective health and perceived well-being.

Several authors also referred to different theories as potential explanations of how very old adults promote and maintain well-being in relation to adaptation. For example, the Selective Optimization with Compensation model (SOC) developed by Baltes and Baltes, in which psychological and behavioral strategies are emphasized, was frequently addressed (Cheung & Lau, 2017; Ihle et al., 2017; Neubauer et al., 2017; Schilling et al., 2013). Another theory mentioned was the developmental adaptation model by Martin and Martin (Araújo et al., 2016; Liu et al., 2016; MacDonald et al., 2009), which was described as a model in which distal and proximal experiences, personal and social resources, as well as structural characteristics affect the ability to adapt and therefore the well-being of very old

people. The socioemotional selectivity theory (SST) posited by Carstensen, focusing on regulating negative emotions and enhancing positive emotions, was an additional theory connected to adaptation (Bishop et al., 2011; Hutnik et al., 2012; Ihle et al., 2017; Liu et al., 2016; Martin et al., 2015; Toffalini et al., 2016). The developmental context of very old age can also reflect adaptation, such as the eighth stage in Erik Erikson's psychosocial development theory (Bishop et al., 2011; Hutnik et al., 2012), and the ninth stage, which entails a shift in meta perspective, similar to the ideas of Gerotranscendence (Bishop et al., 2011; see also Cherry et al., 2013) and the motivational theory of life-span development (Neubauer et al., 2017).

In summary, adaptation could be regarded as an ongoing process crucial to well-being in very old age. In several cases, adaptation and successful aging were mentioned simultaneously in relation to well-being (Cheung & Lau, 2017; Gerstorf et al., 2009; Ihle et al., 2017; Nakagawa et al., 2018; Tomás et al., 2014; Tomás et al., 2012). Since successful aging was not only related to adaptation, it was viewed as constituting a separate attribute of well-being in very old age; it will thus be presented next.

3.1.4 Part of Successful Aging

Among the articles included, different means of expressing well-being as linked to aging well surfaced. The most commonly invoked concept was successful aging. As stated in the preceding attribute, successful aging was frequently connected to adaptation. For example, the previously mentioned SOC model is also a part of the successful aging discourse (e.g., Cheung & Lau, 2017; Ihle et al., 2017). However, other aspects of successful aging were also raised in the literature, which is why it was deemed appropriate that this would constitute a separate attribute. Some only briefly mentioned successful aging and the connection to well-being (Liu et al., 2016; Liu et al., 2012; Momtaz et al., 2011; Nakagawa et al., 2018; Neubauer et al., 2017; Niklasson et al., 2017; Tomás et al., 2014), while others had a specific focus on successful aging and included well-being as an element of that entity (Araújo et al., 2016; Cherry et al., 2013; Cheung & Lau, 2017; Kim, 2013; Morack et al., 2013). Araújo et al. (2016), for example, included physiological, cognitive, well-being, and social aspects in their multidimensional model of successful aging. Well-being was generally seen as a vital component of successful aging (Gerstorf et al., 2009; Fastame et al., 2018; Liu et al., 2016; Liu et al., 2012; Momtaz et al., 2011). In contrast, self-perceived successful aging was also described as a powerful indicator of well-being (Martin et al., 2015), denoting a reciprocal relationship between well-being and successful aging.

Centenarians were particularly highlighted as interesting to examine when it came to successful aging, since they have been able to overcome many challenges related to aging (Araújo et al., 2016; see also Cheung & Lau, 2017). For the oldest old, and especially for centenarians, a definition of successful aging as living a life without disability was not considered feasible (Araújo et al., 2016; Cherry et al., 2013; Cheung & Lau, 2017). Fastame et al. (2018) therefore emphasized that subjective measures, namely well-being, should be included in successful aging, which would allow more individuals to qualify as successful agers despite declines in health (see also Araújo et al., 2016).

There were also studies that focused on the older adults' perceptions of successful aging, rather than a pre-established definition of what constitutes successful aging. Martin et al. (2015) chose to include measures of self-perceived successful aging to investigate to what

extent older adults viewed themselves as successfully aging. In qualitative interviews focusing on successful aging and longevity, the following themes emerged as essential: maintaining physical, mental, and relational well-being; living a healthy life; and living a faithful life (Cherry et al., 2013). Well-being was thus also highlighted by older adults themselves, supporting the notion that well-being is a central component of successful aging.

3.2 Antecedents

Regarding the attributes, we were able to identify some common denominators in the literature. When it comes to the antecedents, however, it was far more difficult to find a consensus. Older age could, for example, be identified as an antecedent of lower well-being in one study (Momtaz et al., 2011), but not in another (Toffalini et al., 2016). It appears that the antecedents of well-being can vary, depending on various factors such as age, gender, culture, context but also on the methodological variations and measures being used. First, a short summary of the different types of antecedents to well-being in very old age found in the literature is included. Second, a discussion regarding important aspects to account for regarding the antecedents that were highlighted in the literature, and identified in the analysis, will follow.

The antecedents found in the articles were derived from the results sections (where plausible). In the quantitative studies, this meant that to be classified as an antecedent, the variable was used as an explanatory or independent variable and was found to have a statistically significant association with well-being. Antecedents were also identified in the results of the qualitative studies in which the respondents discussed various factors in relation to well-being. The antecedents could be divided into four main domains: sociodemographic, social, health-related, and inner resources. An overview of the antecedents is presented in Table 2, and a more detailed report concerning the antecedents found in each article is included in the appendix. Some articles identified antecedents from more than one domain (e.g., Ihle et al., 2017), while some had a specific focus on a single antecedent (e.g., Ailshire & Crimmins, 2011), and several did not include any antecedents of well-being (e.g., Morack et al. 2013).

When interpreting these results, it is important to account for the specific context and design of the studies. For example, it was noted that different aspects of well-being were affected by different antecedents (Ihle et al., 2017; Fastame & Penna, 2014; Hansen &

Table 2 Overview of the antecedents of well-being in very old age

Domain	Categories
Sociodemographic	Age; cohort; gender; culture; economic situation; housing
Social	Quantity and quality of social contacts; family; participation
Health-related	Sensory impairments; cognition; functional ability; frailty; diseases; mental health; health care
Inner resources	Personality traits; competence; self-transcendence; attitudes; hope

Slagsvold, 2012; Haugan et al., 2013a; Haugan et al., 2013b; Liu et al., 2016; Nakagawa et al., 2018; Ng et al., 2017; Wahl et al., 2014) and that many different instruments were used to measure well-being (see Table 1). The choice of measurement of well-being, as well as the validity of the different well-being instruments when used in samples of very old adults relative to younger age groups (see, for example, the discussion of Bishop et al., 2011), can therefore affect the results.

Furthermore, considering the scope of this study, age is perhaps the most important aspect to consider regarding this discussion concerning the antecedents of well-being. Several authors concluded that the antecedents varied in different ages; for example, associations found in younger old were not found in older old. In the study by Tomás et al. (2014), performance related QOL was related to life satisfaction in younger old adults but not among the oldest old. Conversely, there were also factors, such as social support, that affected life satisfaction among both younger and older adults in a similar way (*ibid.*). Further, in the study by Oswald et al. (2011) a larger apartment was associated with higher life satisfaction in younger old but with lower life satisfaction in older old. In the study by Vanhoutte and Nazroo (2016), very old individuals seemed to cope with more somatic symptoms as younger individuals with the same level of affective well-being. Palgi (2013) demonstrated that ongoing cumulative chronic stressors had a stronger effect on PWB in middle and young-old age compared to very old age. Accordingly, the antecedents of well-being appear to have some age-differential patterns.

In support of their results showing that different antecedents affected well-being in different age groups, many of the researchers highlighted the importance of separating young old from older old (e.g., Tomás et al., 2014). Importantly, differences can arise due to both age effects and cohort effects, which are often difficult to distinguish (Kobayashi et al., 2015). This consideration becomes especially relevant in cross-sectional studies. Additionally, the well-being of the older adults was interpreted as connected to both their past and their future, highlighting a lifespan view of well-being (Hutnik et al., 2012; Nilsson et al., 2012). Another potential contributing factor to the inconsistency of the results of the articles included could thus be the high heterogeneity that exists within very old populations (Fas-tame & Penna, 2014).

Culture, aside from being an antecedent in itself, was also discussed concerning its possible effect on the antecedents that influence well-being. This issue was often raised in studies from China or Japan, where the culture differs from that in Western nations. For example, expectations and values related to the family were expected to affect what was considered important in life as well as well-being (Cheung & Lau, 2017; Liu et al., 2012; Ng et al., 2017). The importance of social reputation was also mentioned as one factor that might have affected the information given by the respondents (Wong et al., 2014).

There were also other aspects to account for regarding the antecedents of well-being, such as differing patterns between men and women (e.g., Berg et al., 2009; Kobayashi et al., 2015). The results yielded by Berg et al. (2009), for example, revealed that there were some differences between men and women in which diagnoses were related to lower life satisfaction. Yang et al. (2016) also demonstrated that the interaction between frailty and life satisfaction was significant only in more socially vulnerable groups. Ailshire and Crimmins (2011) discussed the fact that their results may not apply to older adults in nursing homes, since they only included community-dwelling individuals.

3.3 Consequences

In contrast to the extensive list of antecedents affecting well-being, only a few of the articles focused on the consequences of well-being. Some consequences were identified based on quantitative data, and others were based on interviews in the qualitative studies. In the quantitative studies, the results of Niklasson et al. (2017) suggested that higher morale was associated with a lower risk of depressive disorders over time. In the study by Kim (2013), social well-being was seen as a contributor to longevity. Similarly, there were also indications that low well-being has negative consequences, as illustrated by Zaslavsky et al. (2014), who found that low well-being, in this case measured with the dimensions personal growth and purpose in life, was associated with a higher risk of death (see also Chui et al., 2015) and mobility disability. Gerstorf et al. (2009) also found that well-being, as measured by depressive symptoms, exerted an effect on memory decline. Further, more negative attitudes toward one's own aging was related to lower levels of purpose in life (Hedberg et al., 2010). Consequences of well-being that were discussed in the qualitative studies were, for example, a long and happy life (Cherry et al., 2013) and living well (Wong et al., 2014). As with the antecedents, it would be difficult to draw any firm conclusions regarding the consequences of well-being in very old age. However, taken together, the articles indicate that having either high or low well-being can affect various aspects of health.

3.4 Related Concepts

As stated previously, related concepts refer to words that bear some similarities to well-being but that are still distinct, while surrogate terms are considered synonymous with well-being (Rodgers, 2000). Several related concepts were identified during the process of reviewing the initial set of articles. One, as previously discussed, was QOL. The term "wellness" was also used in two of the articles included in our analysis (Koistinen et al., 2013; Shmotkin et al., 2013) as synonymous with well-being. However, with support of the concept analysis of McMahon and Fleury (2012), wellness and well-being could rather be interpreted as related concepts as opposed to surrogate terms. "Happiness" was also a recurring word used rather synonymously, foremost to SWB and positive affect (e.g., Bishop et al., 2011), suggesting that happiness could be regarded as a surrogate term for SWB but not necessarily the broader concept of well-being. Additionally, happiness or "being happy" were also words used by older adults themselves when discussing well-being (e.g., Hutnik et al., 2012). There were also concepts that referred to some kind of positive trait in old age, such as resilience, self-transcendence, sense of coherence, and health locus of control. Although related to well-being, these concepts could rather be seen as resources for well-being as opposed to components of well-being. This could for example be reflected in the fact that self-transcendence was used as an explanatory variable for well-being in the studies by Haugan et al. (2013a; 2013b) and resilience and optimism in the study of Martin et al. (2015).

Another concept that sometimes was employed as a well-being concept is depression and/or depressive symptoms. This could also be observed in several of the articles included in the review in the sense that measures of depression/depressive symptoms were included as measures of well-being (e.g., Araújo et al., 2016; Hansen & Slagsvold, 2012; Ng et al., 2017). Depressive symptoms were typically regarded as a form of negative affect (e.g., Chui

et al., 2015; Kobayashi et al., 2015; Vanhoutte & Nazroo, 2016) or as a “reversed indicator of well-being” (Gerstorf et al., 2009). However, there were also authors who distinguished between depression and well-being (Fastame et al., 2014; Gupta, 2016; Niklasson et al., 2017), which is a view that also finds support in the literature not included in the review (e.g., Ryff et al., 2006; Westerhof & Keyes, 2010). In the study by Fastame et al. (2014), depression was used as an explanatory variable of well-being. In Niklasson et al.’s study (2017), higher morale was associated with a lower risk of depressive disorders. In contrast to the above-mentioned positive traits (e.g., resilience), depression and depressive symptoms could thus be viewed as threatening well-being. Nevertheless, bearing in mind the multifaceted nature of well-being, there would most likely also be valid arguments as to why these concepts could also be regarded as surrogate terms or as integrated components of well-being.

4 Discussion

The aim of this study was to examine the conceptualization of well-being in very old age by applying Rodgers’ evolutionary concept analysis (Rodgers, 2000). The results revealed that the conceptualization of well-being in very old age is characterized by being multifaceted, intertwined with health and QOL, an ability to adapt as well as being an element of successful aging. Most of the articles included definitions of well-being that were not related to a specific age group or context, indicating that well-being is assumed to have some general characteristics that are not connected to age, gender, culture, etc. Simultaneously, there are also some attributes that were highlighted in very old age, particularly related to adaptation and successful aging.

Furthermore, numerous antecedents of well-being in very old age were identified, although it was difficult to draw any firm conclusions due to the variability among the studies included. Nevertheless, the results suggested that antecedents from various domains, i.e. sociodemographic, social, and health-related antecedents as well as inner resources, seem to be important to well-being in very old age; additionally, these to some extent differ from antecedents identified among younger individuals (e.g. Oswald et al., 2011). The few included studies focusing on the consequences of well-being indicated that high well-being could have some positive implications, including a lower risk of developing depressive disorders (Niklasson et al., 2017), while low well-being was associated with adverse health outcomes, such as higher mortality (Zaslavsky et al., 2014). Moreover, the review corroborates that there are several concepts related to well-being in very old age that also in various ways relate to aging well, as either resources or threats. In the following discussion, emphasis is placed on the implications that the results from this study could have for further research and practice.

The multifaceted attribute of well-being implies that combining various perspectives and including several facets, such as both affective and cognitive components of SWB, would be beneficial to facilitate a more comprehensive understanding of well-being (Fastame et al., 2018; Liu et al., 2016; Palgi, 2013). Furthermore, considering the multifaceted nature of well-being and its intertwining with health and QOL, as well as the fact that only 76 out of 213 articles with the aim to examine well-being or QOL included a definition, concise descriptions of the concepts in focus would be preferable.

The ability to adapt appears to be a crucial element of well-being in very old age, considering the many challenges and changes that are typically encountered during this life stage. Future research could thus focus on examining how the ability to adapt to changing life circumstances could be supported. This could yield valuable information related to social and health care development. Similarly, the results regarding well-being being viewed as an important part of successful aging from both researchers and very old adults themselves highlight the relevance of well-being in policymaking. Accordingly, and in consideration of the high heterogeneity in the very old population (WHO, 2015), tailored and person-centered interventions to support the ability to adapt should be tested and implemented. Simultaneously, more emphasis should be placed on how the ability to adapt can be supported from a societal perspective, by for instance fostering age-friendly environments (cf. WHO, 2021).

As previously mentioned, the antecedents of well-being in very old age can vary between contexts, ages, and genders as well as depending on which facet of well-being is in focus and which measures are being used. To shed further light on this topic, systematic reviews and meta-analyses of different antecedents are recommended. Importantly, the variability in the results of the studies included in the analysis can also reflect the high heterogeneity within the very old population. Additionally, considering that the risk of selection bias also increases in very old age (Smith & Ryan 2016), meaning that those who are most frail and unwell are more likely to be unable or decline to participate, the generalizability of individual studies could be limited.

Furthermore, only a few studies in the analyzed sample included more than one country, which highlights the fact that additional cross-national and cross-cultural studies would be beneficial, considering that cross-national differences in well-being and its associated factors have been noted (e.g., Bonini, 2008). Additionally, ethnocultural diversity within nations would also be an important topic to address (e.g., Zubair & Norris, 2015). Overall, developing and implementing strategies to increase the involvement of “hard to reach groups” in gerontological research is highly relevant (Liljas et al., 2017).

The results from this review also indicate that the majority of studies on well-being in very old age were quantitative. Hence, to increase the understanding of well-being in very old age, more qualitative studies would be valuable. As seen in the qualitative studies included in the review, studies from a lay perspective can provide more nuanced information concerning well-being in this specific age group, which serves as an important complement to the quantitative knowledge base.

Minimal studies focused on the consequences of well-being. Nevertheless, the consequences brought forward support the notion that well-being in very old age is crucial to promote. Hence, the consequences of well-being in very old age could be important to policymaking and in decisions regarding the allocation of resources, meaning that further studies focusing on consequences are warranted.

4.1 Methodological Considerations

Rodgers’ evolutionary concept analysis served as a valuable framework for this type of review, in which emphasis is placed on exploring the concept in addition to synthesizing results. The method is generally used in nursing, but it can also be considered suitable in other disciplines, as it can be applied to different contexts and concepts (Toftthagen & Fag-

erström, 2010). There are nevertheless a few points that should be discussed regarding the present study. The set of inclusion criteria applied in this study had implications regarding which studies constituted the sample that was analyzed; this could have affected the results. We selected a strict inclusion criterion; specifically, a definition of well-being had to be included, which meant that the majority of the articles on well-being in very old age had to be excluded. We, however, deemed that this was called for to ensure a sufficient focus on the conceptualization of well-being in very old age, which was the main focus of our analysis, and we believe that saturation regarding the attributes was achieved. Furthermore, as stated previously, the goal of Rodgers' evolutionary concept analysis is not to find an absolute definition but to guide further research and practice (Rodgers, 2000). Rodgers also highlights that the use and meaning of a concept can evolve over time. We therefore do not rule out potential attributes of well-being in very old age other than the attributes that we identified in our analysis.

It should also be noted that there were, for example, some researchers who had authored several of the articles and some disciplines, such as psychology, that were more represented than others. This could have had implications for the focus of the studies. The articles could be considered representative in the sense that there was a sufficient variety of disciplines and settings incorporated. Nevertheless, the sample of articles included in this study reflects that many countries are still underrepresented in gerontological research (WHO, 2021), which would be important to address in the future. It should also be noted that factors such as genetics, which has been extensively discussed in relation to well-being (e.g., Nes & Røysamb, 2015), was not examined in the included articles. Similarly, none of the included articles focused on objective well-being.

Some of the articles included several of the attributes, while some included only one of them (see Appendix). Similarly, the same attribute, such as the multifaceted nature of well-being, could be represented quite extensively in one article (e.g., Wettstein et al., 2015) and more briefly in another (e.g., Niklasson et al., 2015). Nevertheless, all articles contributed in some manner to the categorization of attributes in the thematic analysis. Further, it was noted that the distinctions between antecedents, consequences, and attributes of well-being were not always clear-cut. For example, this was noted regarding successful aging, which could be regarded as both an attribute and a consequence (e.g., Fastame et al., 2018). The blurred lines between antecedents, consequences, and attributes also reflect the dynamic aspects of well-being. Importantly, many studies were cross-sectional, and considering that the identification of antecedents and consequences was largely based on how the authors of the included articles had designed their studies, it is thus important to note that causality cannot be determined in most cases. Lastly, although we limited this review to very old age, it should also be considered that the age span varied from octogenarians to centenarians, implying some variability among the studies included.

5 Conclusions

The current study has contributed to elucidating the concept of well-being in very old age, as well as pinpointing areas for further development. The review of the included studies illustrates that there has been immense interest in examining well-being in very old age from a quantitative perspective, which points to several potential paths forward methodologi-

cally, such as conducting systematic reviews with meta-analyses and qualitative studies about well-being in very old age. Furthermore, the concept analysis indicates that there is a transition between the general aspects of well-being and the specific aspects of very old age that should be acknowledged in research focusing on this group. Moreover, highlighting well-being as an important part of successful aging is central to policymaking and practices targeting very old adults. In particular, developing strategies to support the ability to adapt on both an individual and a societal level would be an important step forward in the promotion of well-being in very old age.

Supplementary Information The online version contains supplementary material available at <https://doi.org/10.1007/s10902-022-00496-4>.

Authors' Contributions All authors contributed to the objective and design of the article. Marina Näsman had the main responsibility for the literature search as well as the process of including and excluding articles in accordance with the criteria that were set. In cases of uncertainties, the articles were also reviewed by Fredrica Nyqvist. The results were discussed and validated by all authors. Marina Näsman drafted the article while Fredrica Nyqvist and Mikael Nygård critically reviewed and contributed to the revisions of the manuscript. All authors approved the version to be published.

Funding The work by Marina Näsman was supported by the Society of Swedish Literature in Finland, Högskolestiftelsen i Österbotten, Marianne Armfelt's foundation, and the Swedish Cultural Foundation in Finland.

Open access funding provided by Abo Akademi University (ABO).

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

Ethics Statement The literature review is based on published, peer-reviewed scientific articles, meaning that no data from human subjects were collected for the present study.

Informed Consent Not applicable.

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*References marked with an asterisk are part of the sample included in the analysis.