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Trajectories of Well-Being in Later Life

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Summary and Keywords

Well-being is a core concept for both individuals, groups and societies. Greater understanding of trajectories of well-being in later life may contribute to the achievement and maintenance of well-being for as many as possible. This article reviews two main approaches to well-being: hedonic and eudaimonic well-being, and shows that it is not chronological age per se, but various factors related to age that underlie trajectories of well-being at older ages. Next to the role of genes, heritability and personality traits, well-being is determined to a substantial extent by external circumstances and resources (e.g., health and social relationships), and to malleable individual behaviors and beliefs (e.g., self-regulatory ability and control beliefs). Although many determinants have been identified, it remains difficult to decide which of them are most important. Moreover, the role of some determinants varies for different indicators of well-being, such as positive affect and life satisfaction. Several prominent goal- and need-based models of well-being in later life are discussed, which explicate mechanisms underlying trajectories of well-being at older ages. These are the model of Selection, Optimization, and Compensation, the Motivational Theory of Lifespan Development, Socio-emotional Selectivity Theory, Ryff's model of Psychological Well-Being, Self-Determination Theory, and Self-Management of Well-being theory. Also, interventions based on these models are reviewed, although not all of them address older adults. It is concluded that the literature on well-being in later life is enormous, and, together with various conceptual models, offers many important insights. Still, the field would benefit from more theoretical integration, and from more attention to the development and testing of theory-based interventions. This remains a challenge for the science of well-being in later life, and could be an important contribution to the well-being of a still growing proportion of the population.

Keywords: well-being, subjective well-being, hedonic, psychological well-being, eudaimonic, determinants, theory, intervention

Introduction

Well-being is an important concept, as it is a desirable outcome for both individuals and groups, as well as for society as a whole. Aging societies in particular require researchers to seek what constitutes well-being, how it comes about, and how it can be improved or maintained, because knowing what trajectories of well-being are may help to maintain good spirits in an increasing number of older adults for as long as possible. Additionally, well-being is not only a desirable outcome in itself: it also has been found to be an important predictor of many kinds of positive outcomes (Lyubomirsky, King, & Diener, 2005), among which are health, physical functioning, and longevity (Diener & Chan, 2011; Steptoe, De Oliveira, Demakakos, & Zaninotto, 2014; Veenhoven, 2008; Xu & Roberts, 2010), and even healthy neuro- and physiological regulation (Pressman & Cohen, 2005; Ryff, 2014). Thus, it is important to investigate well-being over the life course and discover its trajectories in later life.

Well-being, or “the good life,” has been a topic puzzling philosophers since ancient times and scientists for many decades (Myers & Diener, 2018; Diener, Oishi, & Tay, 2018). No one answer, as to what constitutes “the good life,” has been generally accepted so far. Yet it is a widely investigated concept, not only in the social and psychological disciplines, but also, for example, in such fields as behavioral economics. Additionally, the concept covers a variety of related constructs, such as subjective well-being (SWB), psychological well-being (PWB), happiness, life satisfaction, emotional well-being, mental health, and quality of life. As a consequence, these related concepts make it difficult to compare studies, both between and within disciplines. Moreover, the use of different theoretical models, as well as of different samples, measures, methodologies, and practical applications (namely interventions), means the field of well-being is very broad and diverse. Therefore, this review cannot address all approaches fully, so it will focus on two main perspectives on well-being: the hedonic approach and the eudaimonic approach. An extensive treatment of the measurement of well-being concepts is also beyond the scope of this article. Readers are referred to excellent reviews on the measurements of well-being, which also provide guidelines for their use (e.g., OECD, 2013).

The hedonic approach defines well-being as the evaluation by an individual of his or her life in terms of satisfaction judgments (life satisfaction), and in terms of affective reactions, that is, moods and emotions (positive and negative affect), also referred to as SWB (Diener, 1984; Lucas, Diener, & Suh, 1996). Sometimes domain-specific satisfaction, such as job satisfaction, is employed (Diener, Oishi, & Lucas, 2003). The eudaimonic approach defines well-being in terms of the degree to which a person functions fully and is able to realize his or her human potential (e.g., meaning, relatedness, and self-realization), also referred to as PWB (Ryff, 1989, 2014; Ryff & Singer, 1998). For the most part, eudaimonic well-being is defined as consisting of six dimensions: autonomy (whether a person views herself to be living in accord with her own personal convictions), environmental mastery (how well a person is managing her life situations), personal growth (the extent to which someone is making use of her personal talents and potential), positive relations with others (the depth of connection in ties with significant others),

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purpose in life (the extent to which a person feels her life has meaning, purpose, and direction), and self-acceptance (Ryff, 1989, 2014).

Although often treated as separate fields, and based on different theoretical perspectives, some argue that the two types of well-being are closely related and show a single overarching construct (e.g., Disabato, Goodman, Kashdan, Short, & Jarden, 2016). Others find a clear difference between the two (e.g., Joshanloo, 2016), or conclude that the two are related but distinct aspects of positive functioning (Keyes, Shmotkin, & Ryff, 2002; Ryan & Deci, 2001).

This review will address what is known about hedonic and eudaimonic well-being over the life course and especially in later life. Moreover, the main determinants of well-being will be discussed. Next, some main models and theories are reviewed, which may help to understand how well-being over the life course is achieved and maintained. Some of these theories come under the term “successful aging,” but consider overall well-being—or its components—as the main criterion of “success.” Finally, interventions based on the models of well-being covered will be reviewed.

Hedonic and Eudaimonic Well-Being Over the Life Course

Research on well-being in a lifespan perspective has, first, focused on the relationship between age and well-being. A puzzling phenomenon is the so-called “well-being in old age paradox,” indicating that many older people are able to maintain well-being despite loss (e.g., Kunzmann, Little, & Smith, 2000). This is in line with the hedonic treadmill theory, which was long considered one of the most important theories explaining why well-being often shows stability over time. Hedonic treadmill theory states that people react to good and bad events, but return to their set point of well-being in a relatively short time. More recently, however, this view has been challenged; it has been argued that individuals differ in their adaptation to events, and they can change for the long term (Diener, Lucas, & Scollon, 2006; Heady, 2013).

Regarding hedonic well-being or SWB, most studies compare, cross-sectionally, different age groups. Other studies investigate more or less substantial parts of the whole life course longitudinally. Different disciplines, including psychology, sociology, and economics, often found a U-shaped pattern of SWB, with the lowest levels in middle age (Blanchflower & Oswald, 2008; Ulloa, Møller, & Sousa-Poza, 2013), but also a small decline after 65 (Mroczek & Spiro, 2005). However, there is still considerable debate and controversy in this area, because of the heterogeneity of results. Some studies show stable patterns (e.g., Fujita & Diener, 2005), while others find an inverted U-shape (Mroczek & Spiro, 2005) increases with age (Yang, 2008), different patterns in different samples (e.g., Baird et al., 2010), and different results for different dimensions of well-being, such as positive and negative affect (Kunzmann, 2008) or life satisfaction (Schilling, 2006). A relatively new extension of research on well-being in aging is the

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distance-to-death perspective, showing a steep decline in well-being prior to death (Gerstorf et al., 2010; Schilling, Wahl, & Wiegering, 2013).

Regarding PWB, in which for the most part the six dimensions of well-being mentioned are distinguished (i.e., autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance), longitudinal analyses showed some differential changes with age, with personal growth and purpose in life declining, but the other four dimensions showing no consistent trajectories of eudaimonic well-being over the life course (Springer, Pudrowska, & Hauser, 2011). Also, cross-sectionally it was found that purpose and growth were lowest in older adults (MacKenzie, Karaoylas, & Starzyk, 2017).

It seems that, although many studies have been executed on the link between age and well-being, a single answer remains elusive. Findings differ, and sometimes even contradict each other. Some argue that findings depend on the choice of controls, such as marital status (e.g., Glenn, 2009), on the samples and estimation techniques (Frijters & Beatton, 2012), and on the means used to measure well-being, such as an overall measure of well-being or positive or negative affective measures (e.g., Kunzmann et al., 2000; Stone, Schwartz, Broderick, & Deaton, 2010). Recent use of more “objective” measures of well-being, such as use of antidepressants (Blanchflower & Oswald, 2016) or observational reports of apes’ well-being (Weiss, King, Inoue-Murayamad, Matsuzawae, & Oswald, 2012), tend to support the U-shape.

What is important to acknowledge in this respect is that age per se is not a cause of stability, decline, or increase in well-being. Chronological age is indeed associated with losses and changes in various aspects of life, but age is not the most adequate indicator of losses or risks (e.g., Schuurmans, Steverink, Lindenberg, Frieswijk, & Slaets, 2004). First of all, aging is characterized by increasing heterogeneity between individuals, including age-related losses. Second, aging does not only mean loss; gains and positive development in adulthood are also reported. For example, Steverink, Westerhof, Bode, and Dittmann-Kohli (2001) found, next to experiences of loss, experiences of continuous growth with aging. Sheldon and Kasser (2001) found higher levels of maturity in older adults, and Shallcross, Floerke, Ford, and Mauss (2013) found higher levels of acceptance with aging, both leading to higher well-being outcomes. Consequently, some age-related changes may lead to increases in well-being, whereas others may lead to decreases (see also Kunzmann et al., 2000).

Thus, it can be concluded that factors related to age, both positive and negative, rather than chronological age itself, may underlie multidirectional changes in well-being at older ages (Steverink et al., 2001; Wettstein, Schilling, Reidick, & Wahl, 2015), making the role of age in well-being hard to assess. Moreover, other factors have been found to be important determinants of well-being over the life course and at older ages. In Section “DETERMINANTS OF WELL-BEING IN LATER LIFE,” we will consider the main determinants as they are found in the literature.

Determinants of Well-Being in Later Life

Determinants of well-being have been found to range from more static heritability, personality, demographic, and environmental factors, to more dynamic social relational, behavioral, and cognitive factors. Moreover, significant life events also are a major cause of changes in well-being (Luhmann, Eid, Hofmann, & Lucas, 2012). Regarding the heritability of well-being, a recent meta-analysis showed an average of 40% of the variability in well-being to be accounted for by heritability (Nes & Røysamb, 2015). Most of this variation is thought to be due to personality traits, which are likely to share underlying biobehavioral systems with SWB, causing personality differences in emotional reactions (Steel, Schmidt, & Shultz, 2008). Indeed, both hedonic and eudaimonic well-being were consistently found to be predicted most by extraversion and neuroticism (Anglim & Grant, 2016; DeNeve & Cooper, 1998; Grant, Langan-Fox, & Anglim, 2009; Steel et al., 2008; Tauber, Wahl, & Schröder, 2016), although personality explained more variance in eudaimonic than in hedonic aspects of well-being (Butkovic, Brkovic, & Bratko, 2012).

Among demographic factors, older women were found to report lower levels of well-being than older men (Pinquart & Sörensen, 2001), but Diener and Tay (2015) did not find gender differences in life satisfaction. Education and income were also found to be important determinants of well-being in later life (Pinquart & Sörensen, 2000), although some found this relationship to be less clear at older ages (Diener, Suh, Lucas, & Smith, 1999). Socioeconomic status as an objective indicator was found to be less predictive of SWB than local status (i.e., the respect and admiration one has in face-to-face groups, e.g., among friends and coworkers) (Anderson, Kraus, Galinsky, & Keltner, 2012). Also, Tay and Diener (2011) and Ng and Diener (2014) found that subjective status (i.e., feeling respected) was related to higher levels of well-being.

Health and health-related factors are also found to be important predictors of well-being (Ngamaba, 2017). At older ages, frailty, a syndrome characterized by age-related cumulative declines in physical, cognitive, and sometimes also social and psychological functioning, was found to be particularly related to lower quality of life (Kojima et al., 2016), lower SWB (Simone & Haas, 2013; St. John, Tyas, & Montgomery, 2013), and lower PWB (Kirby, Coleman, & Daley, 2004). In addition, cognitive decline was found to lead to diminished well-being, especially eudaimonic well-being aspects such as purpose in life (Wilson et al., 2013).

Regarding social network factors, good social relations seem necessary for well-being (Diener & Seligman, 2002). Being married (Mroczek & Spiro, 2005; Pinquart & Sörensen, 2001; Yang, 2008) and interacting with friends, more so than with adult children, seems to be important for well-being (Pinquart & Sörensen, 2000), as is interacting with those with whom one has weak ties, such as acquaintances (Sandstrom & Dunn, 2014). Even more important than these structural aspects of social relationships are functional aspects, such as perceived social support (Montpetit, Nelson, & Tiberio, 2017; Siedlecki, Salthouse, Oishi, & Jeswani, 2014), social interaction quality (Carmichael, Reis, &

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Duberstein, 2015; Fuller-Iglesias, 2015), and basic social needs being fulfilled (Steverink & Lindenberg, 2006; Tay & Diener, 2011). In addition, social activities (Okun, Stock, Haring, & Witter, 1984), social engagement (Huxhold et al., 2013), and leisure engagement (Kuykendall et al., 2015) were found to be important for SWB. Next to these mostly quantitative studies, qualitative studies also have shown that older adults regard their social life and social functioning as very important for their well-being (Douma, Steverink, Hutter, & Meijering, 2017; Von Faber et al., 2001).

Finally, important determinants of well-being are psychological and behavioral factors. The strongest associations with well-being in later life have been found for perceived control (Gerstorf et al., 2014; Quadros-Wander, McGillivray, & Broadbent, 2014; Verme, 2009), mastery, self-efficacy or competence (Pinquart & Sörensen, 2000), and resilience (Ong, Bergeman, Bisconti, & Wallace, 2006), all referring to the belief that one is in command of one's actions and life (Rodin, 1990). Some also find control-related behaviors do not only have a direct effect, but also indirect effects, control beliefs being a mediator of the relationship between determinants like health and social and socioeconomic circumstances and well-being. For example, perceived control was found to buffer terminal decline in well-being (Gerstorf et al., 2014), and Windle and Woods (2004) found environmental mastery to mediate the relationship between adverse circumstances (i.e., housing problems, physical problems, and loneliness) and SWB.

Some of the psychological and behavioral determinants go under the heading of developmental regulation strategies (Heckhausen, Wrosch, & Schulz, 2010), resource management strategies (e.g., Freund, 2008), or self-management abilities (Steverink, 2014). Often these are part of integrated theoretical models that elaborate on how well-being at older ages is achieved and maintained. In Section "MODELS AND THEORIES OF WELL-BEING OVER THE LIFE COURSE," we will go into several of the most important models and theories. By doing so, the focus will be on models aimed at understanding well-being at older ages, and thus trying to unravel psychological and behavioral mechanisms underlying such well-being.

It can be concluded that well-being is determined by genes and heritability, but also to a substantial extent by external circumstances and resources, as well as individual behaviors and choices. Nevertheless, it is difficult to decide what determinants are most important. Moreover, some determinants vary for different indicators of well-being. For example, positive affect (as a component of hedonic well-being) seems to be influenced very much by positive social interactions (Steverink & Lindenberg, 2006; Tay & Diener, 2011; Watson, Clark, McIntyre, & Hamaker, 1992), whereas life satisfaction (as another component of hedonic well-being) is influenced most by factors such as income and health (Diener, Tay, & Oishi, 2013). Finally, a problem with some of the determinants is that they are sometimes also considered as components of well-being; for example, environmental mastery was found to be a determinant and mediator as well as a component of eudaimonic well-being (Windle & Woods, 2004). So, this demonstrates a problem with some multidimensional models of well-being, such as Ryff's model with six dimensions, where it is difficult to disentangle determinants, mediators, and outcomes, as

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well as external resources and behaviors. In Section “MODELS AND THEORIES OF WELL-BEING OVER THE LIFE COURSE,” we will review some important models of well-being at older ages, trying to unravel determinants, mediators, and outcomes, and, as such, potentially theory-driven bases for the design of interventions or policies aimed at supporting trajectories of well-being at an older age.

Models and Theories of Well-Being Over the Life Course

Models and theories of SWB or PWB in later life aim to unravel the mechanisms that can explain what constitutes well-being, and under what conditions individuals are able to achieve and maintain long-term well-being, especially when older. Some models refer in this respect to “successful aging,” but often—although mostly implicitly—refer to well-being as a criterion of “success.” In this section some of the most well-known models and theories of well-being will be discussed.

Most models of well-being in a lifespan perspective can be categorized as either starting from a goals perspective or from a universal needs perspective. The goal-based approaches assume that well-being results from the achievement of personally important goals, which differ among individuals and may change as people age. The universal need-based approaches assume that well-being results from the fulfillment of basic human needs, which share universal importance and remain important for well-being as people age, although their salience, and the available resources for fulfilling them, may change over the lifespan. In Section “INTERVENTIONS FOR IMPROVING WELL-BEING IN LATER LIFE” some important goal-based and need-based models will be discussed and evaluated in terms of their usefulness for the design of interventions.

Goal-Based Models of Well-Being at Older Ages

The Model of Selection, Optimization, and Compensation

One of the main goal-based models of well-being in a lifespan perspective is the Model of Selection, Optimization, and Compensation (SOC), developed by Paul and Margret Baltes (Baltes & Baltes, 1990). The model describes three behavioral processes that operate over the whole lifespan and help maximize gains and minimize losses: selection, optimization, and compensation. These behaviors support aging individuals in pursuing, maintaining, and managing personal goals, while coping with age-related changing balances between gains and losses. Selection is the process of choosing one or more specific goals when physical, social, environmental, or societal constraints occur. Optimization is the process of striving to reach these selected personal goals by achieving, using, and investing in relevant resources. Compensation is the process of compensating or substituting available resources directed at the maintenance of the selected goals. Empirical studies on the SOC model have shown that these three adaptive behaviors indeed support aging individuals in managing their resources in order to

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achieve and maintain personal goals (Freund, 2008). Ultimately these behaviors have been found to result in higher levels of SWB (Jopp & Smith, 2006), particularly when used on a daily basis (Teshale & Lachman, 2016).

Motivational Theory of Life-Span Development

Another main goal-based theory is the Motivational Theory of Lifespan Development (MTLD) (Heckhausen et al., 2010). The core of the theory is about striving for goals throughout the life course and the processes involved in regulating this.

The basic assumption of the theory is that, although much of the regulation of development over the life course is structured (e.g., by biological and societal structuring), individuals are active agents in shaping their own development and aging by pursuing personal goals (Heckhausen & Wrosch, 2016). Nevertheless, over the life course various transitions and challenges occur that influence the opportunities to pursue these personal goals for better and for worse. In order to regulate these transitions and challenges, individuals apply processes of primary control (directed at bringing the environment into line with one's wishes) and secondary control (directed at changing the self to bring it into line with environmental forces). Additionally, as also the SOC model assumes, selectivity and compensation are fundamental to human behavior in a developmental and aging perspective. Combining both control strategies with selection and compensation, the MTLD assumes four types of control strategies: selective primary control, compensatory primary control, selective secondary control, and compensatory secondary control. When people succeed in regulating their personal goals over the life course by these four processes, a long-term optimization of primary control is achieved, which ultimately results in well-being. Various empirical studies show support for the association of the specified control processes with both SWB and PWB over the life course (e.g., Wrosch et al., 2003; Haase et al., 2013), although divergent findings have also been reported (e.g., Wong et al., 2014).

Socio-Emotional Selectivity Theory

A third important goal-based theory on lifespan development and well-being is Socio-Emotional Selectivity Theory (SST) (Carstensen, Isaacowitz, & Charles, 1999). Although this theory focuses mainly on social goals, it aims to add to the understanding of life-course development and well-being. The theory states that the selection and pursuit of social goals is dependent on one's perception of time and future, which is often age-related. When the future is perceived as open-ended, individuals select knowledge-related goals; when the future is perceived as limited, emotionally rewarding social goals are selected. So, with increasing age and a shortened time horizon, changes occur with regard to goals that are prioritized. This process is assumed to have adaptive benefits in terms of greater emotional well-being. Empirical studies on SST show that a person's future time perspective indeed decreases with age (e.g., Kotter-Grühn & Smith, 2011), but findings on the predicted positive relationship between limited time perspective and emotional well-being are mixed (Carstensen et al., 2011; Grühn, Sharifian, & Chu, 2016).

Need-Based Models of Well-Being at Older Ages

Ryff's Model of PWB

The PWB model of Carol Ryff (Ryff, 1989, 2014; Ryff & Keyes, 1995) was originally developed to counterbalance neglected aspects of successful aging and hedonic well-being approaches, and to be inclusive of more humanistic and existential aspects of positive human functioning, such as self-actualization and finding meaning. Comparing insights from various theories of positive functioning over the lifespan, six dimensions of well-being (discussed in Introduction), were distilled: self-acceptance, positive relationships, autonomy, environmental mastery, purpose in life, and personal growth. These were then placed under the eudaimonic perspective on well-being. An essential aspect of the model is that well-being ultimately is a process—not an end state—of finding and expressing one's unique talents. Well-being at older ages is thus still an ongoing process of actualizing one's potential. Fully functioning individuals will show high levels of functioning on all six dimensions of well-being. A long tradition of research has been conducted on the Ryff model, showing much support for it (Ryff, 2018). Yet there are also studies which did not find the claimed empirical distinctiveness of the six dimensions, showing relatively high factor correlations among especially personal growth, purpose in life, self-acceptance, and environmental mastery (Springer, Hauser, & Freese, 2006).

Self-Determination Theory

Self-Determination Theory (SDT) is a well-known need-based model of well-being (Ryan & Deci, 2000), which has also been applied to human development and aging (e.g., Ryan & LaGuardia, 2000). The core postulate of the theory is that human beings are inherently motivated toward personal growth and well-being, which they try to reach by fulfilling three innate psychological needs, that is, the need for competence, autonomy, and relatedness. When fulfilled, these needs yield well-being, especially eudaimonic well-being (Ryan, Huta, & Deci, 2008). When not fulfilled, these needs undermine well-being and lead to distress. Despite this basic motivation, individuals can be hindered by social and environmental factors, which undermine their development and well-being. So, the key to well-being, according to this theory, is living in such a way—and being facilitated by conditions that foster it—that the three basic psychological needs are being fulfilled. This would not only mean that a person is living a eudaimonic life, but also that they are more likely to experience hedonic well-being (e.g., life satisfaction). Mackenzie et al. (2017) tested hypotheses based on SDT and found that older adults were more likely to have intrinsic aspirations, goal autonomy, mindfulness, and basic psychological need fulfillment (i.e., to be living eudaimonically), as compared to younger and middle-aged adults. Older adults also reported higher levels of life satisfaction, but had the lowest levels of purpose and growth. Neubauer, Schilling, and Wahl (2017) tested the SDT needs of competence and autonomy in very old adults (aged 87–97 at first measurement), and found that competence, but not autonomy, predicted SWB. They suggest that high vulnerability in very old age may change the importance of these needs, thereby challenging the lifespan universality of these needs for well-being.

A Combined Goal- and Need-Based Model of Well-Being in Later Life: Self-Management of Well-Being (SMW) Theory

SMW theory, which is an extension of Social Production Function (SPF) theory (Lindenberg, 1996, 2013; Ormel, Lindenberg, Steverink, & Verbrugge, 1999; Steverink, 2014), states, first of all, that lifelong well-being is the result of the fulfillment of basic human needs, both physical and social. Second, basic need fulfillment results from genetic, biological, social, and societal circumstances and opportunities, but also from human agency. Human beings, by nature being motivated to improve levels of physical and social need fulfillment, try to manage their circumstances and resources toward these ends, although they not necessarily always know what are the right decisions to make to achieve this.

Essential in SMW (and SPF) theory, making these theories a combination of a need- and goal-based approach, is that a hierarchy of needs, goals, and resources is assumed, with needs being universal and hierarchically structured on different layers of the hierarchy, and with goals and resources structured lower in the hierarchy. Goals and resources are means by which basic human needs can be fulfilled, and may differ individually. For example, a friend can be a resource for fulfilling the need for affection, but when one does not have a friend, it may be a goal. So, goals and resources are closely linked, depending on whether they are achieved yet, or still aimed for. Following SPF theory, SMW theory assumes two basic physical needs (comfort and stimulation), and three social needs (affection, behavioral confirmation, and status).

Comfort refers to physical comfort, that is, the fulfillment of core physical needs such as the need for food, drink, rest, and the absence of pain or discomfort. *Stimulation* refers to the need for a pleasant range of physical and mental activation, the right amount of exposure to novelty and interesting events, as well as the absence of boredom. *Affection* refers to the need to experience that people like, love, trust, and accept you; that others empathize with you; and that they like to be either emotionally or physically close to you (e.g., to hug you). *Behavioral confirmation* is the need of feeling that you are doing the “right” thing in the eyes of relevant others and yourself; that you feel others think you are a good person, that you feel you are being useful, contributing to a common goal, and being part of a functional group. The final social need, *status*, is the need of feeling that you are respected by others and are being taken seriously, are autonomous, have influence, can realize yourself, and are known for your achievements, skills, or assets. The three social needs thus have different functions. Affection refers to the love you get for being who you are, regardless of your assets (status) or actions (behavioral confirmation). Behavioral confirmation results primarily from what you do, rather than what kind of person you are (affection), or what you have or can do (status).

Regarding the basic human motivation to improve levels of need fulfillment, SMW theory states that, especially in a life-span perspective with a changing balance between gains and losses in resources and opportunities, people will try to compensate for resources, goals, and even needs, when one goal (or need) becomes difficult to attain (or fulfill). For

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example, when the status need becomes hard to fulfill after retirement, more effort will be put in fulfilling the other two social needs (i.e., behavioral confirmation and affection). So, although the basic needs are universal and remain important across the whole lifespan, the relative ease with which they can be fulfilled changes due to changing opportunities and the loss of both physical and social resources over the life course.

In general, a patterned trajectory of change is assumed over the life course (see Figure 1), showing that resources for status decline faster with age than resources for behavioral confirmation and stimulation, the latter declining faster than resources for affection and comfort (in Western countries).

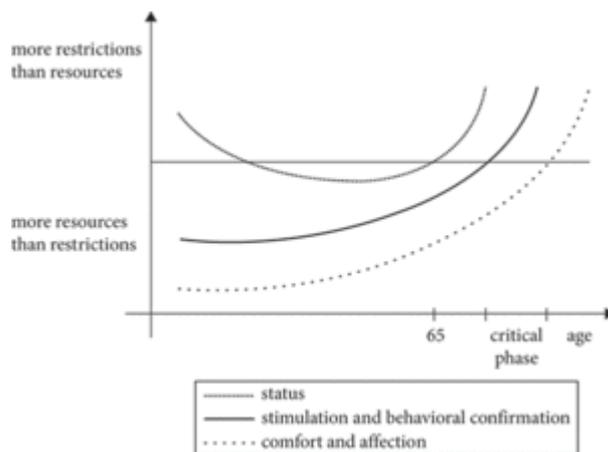


Figure 1. Hypothetical Course of the Relative Difficulty of Goal Realization for (i) Status, (ii) Stimulation and Behavioral Confirmation, and (iii) Comfort and Affection, across the Lifespan (in a Western Society).

Reproduced with permission from Steverink et al. (1998).

These trajectories also imply patterns of compensation, namely, that status loss will be compensated for by increased efforts to fulfill the need for behavioral confirmation, and that loss of resources for behavioral confirmation will be compensated for by increased efforts to fulfill affection needs. Similarly, loss of resources for stimulation will lead to increased efforts to fulfill the need for comfort. All compensation efforts are aimed at, in the end,

maintaining minimum levels of social and physical well-being. If resources decline further, a critical phase emerges, where it becomes very hard to maintain this minimum level of physical and social well-being (i.e., minimum levels of comfort and affection) (Steverink, 2001). So, trajectories of well-being at older ages would imply maintaining resources for all five basic needs, and postponing the critical phase for as long as possible (Steverink, Lindenberg, & Ormel, 1998).

Maintaining resources for all five basic needs and postponing the critical phase would imply not only having access to the right resources (and striving for the right goals), but also having the right abilities to manage one's resources (and choose the right goals) toward this end. So, self-management abilities are needed to manage important resources (for the fulfillment of basic physical and social needs) (see Figure 2).

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Figure 2. SMW Theory.

SMW theory identifies six core self-management abilities, which are assumed to be essential for acquiring, using, and investing in, the right goals and resources, toward achieving and maintaining (physical and social) well-being for as long as possible. These abilities are: taking initiative, being self-

efficacious, investing resources, having a positive future perspective, taking care of multifunctional resources, and ensuring a variety in resources, all directed at resources for both the two physical needs and the three social needs (see Steverink, 2014, and Steverink, Lindenberg, & Slaets, 2005 for extensive reviews). Indeed, empirical evidence has demonstrated that these abilities make aging individuals better self-managers of their own well-being (Cramm et al., 2012, 2013; Steverink & Lindenberg, 2008), and these self-management abilities can be taught effectively in interventions (Frieswijk, Steverink, Buunk, & Slaets, 2006; Goedendorp & Steverink, 2017; Kremers, Steverink, Albersnagel, & Slaets, 2006; Schuurmans, 2004).

In conclusion, it can be stated that all models presented here offer useful insights, and partly share ideas about how well-being at older ages is achieved and maintained. However, at some essential points the models also differ. This is especially visible in, first, the different ways in which the specific motivational processes have been worked out, that is, whether human agency is about personal goal-based vs. universal need-based strivings. Second, the models also differ in their assumptions about the basic functions of these motivational processes. For example, the SOC model assumes that the behavioral processes are aimed at the management of resources in order to maximize gains and minimize losses. The MTLTD assumes that the behavioral processes are aimed at the maximization of primary control. SST assumes that, due to a shortened time horizon with aging, the basic motivation becomes the regulation of emotion. Interestingly, SOC and MTLTD especially do not explicitly incorporate (aspects of) well-being in their theorizing, but empirical studies on these models often do include well-being as an outcome (e.g., Haase, Heckhausen, & Wrosch, 2013). The model of Ryff, SDT, and SMW theory do explicitly incorporate well-being, although Ryff's model is less elaborate on the concrete behavioral processes that would lead to the six well-being domains that she identifies. Both SDT and SMW theory, however, do specify how well-being is achieved and maintained in a lifespan perspective, and do specify behavioral and adaptive strategies, via the fulfillment of basic human needs. A core difference between the latter two models, however, is that different basic needs are specified, and that resources barely play a role in SDT, while the link between resources and basic needs (and ultimately well-being) is

essential in SMW theory. Therefore, the major advantage of SMW theory is that it combines motivated self-regulatory (self-management) aspects and universal human needs as well as personal goals *and* resources (lower in the hierarchy). As such, it also allows one to specify the conditions under which trajectories of well-being at an older age are possible, and could be induced by concrete interventions. In Section “INTERVENTIONS FOR IMPROVING WELL-BEING IN LATER LIFE” we will discuss what is known about interventions aimed at supporting aging individuals in achieving and maintaining well-being.

Interventions for Improving Well-Being in Later Life

When reviewing trajectories of well-being in later life, interventions aimed at promoting such trajectories cannot be ignored, especially given the ongoing aging of populations worldwide. Although many older adults are able to maintain well-being, various subpopulations exist who suffer from deficits in well-being, visible through, for example, depression, anxiety, or loneliness. Indeed, a wide variety of interventions aimed at enhancing well-being in older adults exists, among which are classic psychotherapeutic interventions (e.g., Piquart & Sørensen, 2014), alleviating the negative outcomes just mentioned, but also interventions promoting positive outcomes, such as well-being. The range of interventions is, however, so wide and various, that we cannot do justice to all, not even to just the interventions that explicitly focus on positive outcomes (i.e., well-being). In terms of the latter, various well-executed reviews exist (e.g., Bolier et al., 2013; Sin & Lyubomirsky, 2009; Sutipan, Intarakamhang, & Macaskill, 2017). Therefore, we will focus here on interventions based on the lifespan models of well-being that have been discussed in Section “MODELS AND THEORIES OF WELL-BEING OVER THE LIFE COURSE.” As theory-driven interventions are preferred above theory-poor ones (Michie & Prestwich, 2010), the theories and models of well-being at older ages seem to be the logical starting point for the development and evaluation of well-being interventions for older adults.

Researchers working on the models of well-being in aging discussed in Section “MODELS AND THEORIES OF WELL-BEING OVER THE LIFE COURSE” have indeed started to design and evaluate theory-based interventions, although not always primarily aimed at older adults. For example, the SOC model has been used for improving well-being at work in a group of nurses, with an average age of 43.7 years (Müller, Heiden, Herbig, Poppe, & Angerer, 2016). The randomized controlled intervention showed that training in SOC strategies enhanced mental well-being, especially when job control was low, and especially in employees with a strong commitment to the intervention. Also the MTLTD was used as basis for the development of a control-striving treatment, albeit for young adults (aged 17–18) making the transition from high school to university (Hamm, Perry, Chipperfield, Heckhausen, & Parker, 2016). The pre-post randomized field study showed that the motivation-enhancing selective secondary control-striving treatment increased

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performance in students who faced obstacles to goal attainment. As MTLT hypothesized, the link between the selective secondary control striving treatment and later performance was mediated by selective secondary and selective primary control. The treatment also indirectly increased positive emotions and decreased negative emotions.

The other models discussed in Section “MODELS AND THEORIES OF WELL-BEING OVER THE LIFE COURSE” all have been applied to the development of interventions for older target groups, although not always with an explicit focus on well-being as the outcome. SST, for example, was used as the basis for a pre-post five-week intervention in a group of older adults (mean age 75.8) aimed at promoting walking (Notthoff & Carstensen, 2014). As SST hypothesizes, age-related constraints on future time lead to a prioritization of goals related to emotional well-being. Therefore, for older adults, messages about the benefits of walking would be more effective in promoting walking than messages about the risks of not walking. Indeed, it was found that the positively framed messages were more effective than the negatively framed ones. Ryff’s model of PWB, although mostly used in well-being treatments for patients with affective disorders (Ruijter & Fava, 2012), has been applied to the development of an intervention to promote PWB among older adults (mean age 71.7) (Friedman et al., 2017). This pre-post pilot study showed that eudaimonic well-being outcomes increased, except for autonomy and positive relations with others (Friedman et al., 2017). Also, SDT has been used as a basis for the design of interventions, for various target groups, and with various aims. For example, several studies show the effectiveness of SDT-based interventions for improvement of health behaviors, such as physical activity (e.g., Teixeira, Carraca, Markland, Silva, & Ryan, 2012). An example of an SDT-based physical activity intervention for older adults, with well-being as outcome, is the study of Van Hoecke, Delecluse, Bogaerts, and Boen (2014). They tested an SDT-based physical activity counseling strategy, along with two other non-SDT-based counseling strategies, in sedentary older adults (mean age was 69.5). Although well-being increased after one year (and decreased again after two years), there were no differences between the three counseling strategies, leaving it open to discussion how SDT need fulfillment works in improving physical activity and subsequent well-being.

The final theory to be discussed here is the SMW theory, with particular focus on how this theory has been used as a basis for the design of interventions. SMW theory has, so far, explicitly been applied to the design of well-being interventions for older age groups (50 years and older). SMW interventions (which also run under the name GRIP&GLEAM in the Netherlands) are specifically aimed at older adults facing changes and losses in important resources for well-being, and are explicitly aimed at the improvement of self-management ability and well-being. Various studies have been executed, in different subgroups of older adults, to test the effectiveness of these interventions. For example, Schuurmans (2004) evaluated an SMW-based home visits intervention for frail older adults living in the community. Kremers et al. (2006) evaluated an SMW-based six-week group course for lonely older women and Frieswijk et al. (2006) evaluated an SMW-based self-help intervention in community-dwelling older adults showing the first signs of frailty. All three were randomized controlled studies and showed increased levels of self-

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management ability and of well-being. These positive effects were also found in a later field study, which was executed after having implemented the SMW group intervention in social and healthcare organizations (Goedendorp, Kuiper, Reijneveld, Sanderman, & Steverink, 2017). As SMW theory hypothesizes, well-being will increase when better self-management abilities for it have been learned and applied. This hypothesized mechanism was indeed found (Goedendorp & Steverink, 2017), providing evidence that SMW theory is useful for the design of well-being interventions for older adults.

In conclusion, it seems that the translation of most of these models into concrete interventions aimed at the improvement of well-being in older adults is still in its infancy. Although all models have been used for the design of interventions, only a few have explicitly focused on older adults and on the improvement of well-being. This offers an avenue for future studies, and a challenge for researchers in the theory-driven field of well-being in aging to work on the development and testing of interventions based on their theories. Moreover, studying and evaluating the diverse theoretical mechanisms via intervention studies will offer ever more insights into what works and what not. This may help to inspire more research in comparing and integrating theories and mechanisms, by refining and further developing the mechanisms toward ever more effective interventions.

Conclusion

The literature on well-being at older ages is enormous, offering many important insights. Also, most conceptual models offer sophisticated views on trajectories of well-being in later life. Nevertheless, the field would benefit from more efforts toward the theoretical integration of insights, more consensus about the essential dimensions of well-being, and innovative methodologies, which could help us to gain more robust knowledge about trajectories of well-being in later life. Additionally, apart from a few good examples, theory-informed interventions on trajectories of well-being are still scarce. This offers important challenges for the science of well-being at older ages, which could provide an important contribution to the well-being of a still growing proportion of the population.

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