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C. Summary

Introduction

Getting old is no longer just for the lucky few: life expectancy is rising fast and the end of this trend is not yet in sight. However, not all the years that we have gained are free of disease. For this reason, many people wonder to what extent the years that we have gained are enjoyable. For healthcare professionals, scientists and policy makers this question is also becoming more relevant: life satisfaction, a measure of well-being, has become a guiding principle in making and evaluating policy and an evaluative measure of medical treatments. Given these developments, more knowledge about life satisfaction at old age is necessary, so that we can help older people optimise their well-being in our ageing society.

Older people are more satisfied with their lives than is often believed. Across the lifespan, life satisfaction – after a dip around middle age – peaks around age 70 and starts to decline slowly thereafter. Remarkable is that even at age 85 many older people are still very satisfied with life, even when they experience health problems.

More research is needed on the drivers of life satisfaction at old age. In this thesis, I therefore ask the following questions: which factors separate older people with a low from those with a high life satisfaction? And how do older people maintain their high life satisfaction despite physical decline?

Methods

For this thesis, quantitative data from two researches have been analysed:

The Leiden 85-plus Study followed older people from the municipality of Leiden who turned 85 between 1997 and 1999. For six years, participants were interviewed annually and a number of (health) measurements were ascertained. Participation rate was high and participants were representative of the Dutch population in terms of demographic variables and life expectancy.
The Survey of Health, Ageing and Retirement in Europe (SHARE) follows 123,000 individuals from 19 European countries and Israel. This study also contains medical and psychosocial information that was provided by the participants in interviews. Subjects were 50 years and older and community-dwelling.

**Overview Chapters**

The introductory chapter one provides a short summary on our current knowledge on life satisfaction at old age. In this chapter, research on life satisfaction is placed within the theoretical frameworks of quality of life and well-being. Next, we refer to abovementioned gaps in our current knowledge and outline how these will be addressed in this thesis.

The next two chapters address the questions which factors distinguish older people with a low from older people with a high life satisfaction. In chapter two, data from the Leiden 85-plus Study are used to investigate which kind of health problems are related to life satisfaction. We found that physical health is only little related to life satisfaction: less than three percent of the differences in life satisfaction could be related to physical health. When we exclude the differences in life satisfaction that also are related to mental health (operationalised in this research as depressive symptoms and experienced loneliness), then physical health is not associated with life satisfaction at all, with the exception of functional health (disabilities). In contrast, mental health is strongly associated with life satisfaction, independently of physical health. These results seem to suggest that physical health does not matter for life satisfaction as long as the mental health is good.

The scientific literature suggests that psychosocial aspects could be of influence on the relationship between physical health and life satisfaction. This possibility was investigated in chapter three. Analysing SHARE data, we researched whether two psychosocial factors (social resources and again mental health) and age changed the relationship between functional limitations and life satisfaction. The results show that social resources are barely associated with satisfaction, and that both social resources and mental health are not of influence on the relationship between functional disabilities and life satisfaction. Age is associated with life satisfaction: it appears that the relationship between functional limitations and life satisfaction is smaller for older age groups. Possibly,
this is because health complaints are more common at old age, allowing older people to put their health problems in perspective.

Chapter two and three showed that the association between physical health and life satisfaction is small. At the same time, other research has shown that older people do find physical health important. An explanation for this discrepancy is that older people adjust to their declining physical health. In chapter four and five, we look at this possibility when we investigate how older people maintain a high life satisfaction in the face of physical decline. First, chapter four investigates the possibility that older people adjust their health norms and values, in order to maintain a positive image of their own health as they physically decline. We investigated this using self-rated health. Given that older people evaluate their own health using their norms and values held at that moment, older people could use different norms and values when there is a one-year gap between self-evaluations of health. If these norms and values change significantly, this is a threat to the validity of self-reported health as a measure of physical decline. When change in health is self-reported in retrospect over the past year, then only the norms and values from the moment of looking back are used, and this may make retrospectively appreciated change in health a more pure measure of physical decline. Indeed, it appears that retrospective appreciation – using only one norm – is a better measure of physical decline and a better predictor of mortality than comparing two static measures of self-reported health. This suggests that older people adjust their norms and values.

If older people adjust their norms and values, then this raises the question what exactly health means for older people. In chapter five we therefore investigate the associations of older people’s self-rated health with the geriatric giants (common disabilities at old age), mortality risk and life satisfaction. We compare these self-reports with similar health evaluations of these participants by healthcare professionals: research doctors and a research nurse. Disagreement between the older people and healthcare professionals was high. Also, all health ratings were associated with the geriatric giants except for hearing, and all three were associated with mortality risk and life satisfaction. Remarkable was that self-rated health had a stronger association with depressive symptoms and life satisfaction, while the ratings by the healthcare professionals better predicted mortality. It appears that self-rated health at old age
emphasises feeling well, while the judgement of the healthcare professional is leaning towards being (physically) well.

In chapter six, an overview is given of all the findings in this thesis. These findings are interpreted in the context of the existing literature, and we discuss how these findings help to improve the lives of older people.

**Conclusion**

At age 85, older people are still highly satisfied with their life. This life satisfaction is strongly related to mental health. Physical health barely is associated with life satisfaction, and this association is mostly dependent on physical health. At the same time studies show that older people do find physical health important. The most logical explanation for this apparent paradox is that older people are good at adjusting to declines in health. Using older people’s self-rated health, we investigated if older people change their norms and values in the face of physical decline. We found that change in self-report health in subsequent years reflected functional decline and predicted mortality less well than retrospective appreciation of change in health. Older people thus appear to adopt milder norms and values as they age. This process could contribute to a higher life satisfaction. Concordant with this, we found that older people’s self-rated health predicts mortality less well than self-rated health of the general population. Also, self-rated health was more strongly related to depressive symptoms and life satisfaction than the health ratings of a physician or nurse.

**Contribution**

Previous studies on the relationship between physical health and life satisfaction suffer from a number of limitations that we addressed in this thesis. First of all, it was unclear what the effect was of different types of health problems. This research showed that physical and mental health have a completely different relationship with life satisfaction, but also that functional limitations were more important than other aspects of physical health. Second, previous studies often used subjective health indicators. This thesis shows how important the use of objective measures is in studying the relationship between physical health and life satisfaction: especially at old age, subjective health measures lean more towards mental health and less towards physical health. Because of this,
subjective health measures overestimate the relationship between physical health and life satisfaction. Third, there is insufficient research on how the relationship between physical health and life satisfaction develops over the lifespan. We show that older people are better at adjusting to physical decline. Finally, populations used in previous studies often were too small or not representative, especially for the older age groups. The populations that we used were large and more representative and thus we were able to draw more reliable conclusions.

**Recommendations**

Older people’s life satisfaction barely declines in spite of increasing health problems, because older people are good at adjusting. Policy workers and healthcare professionals should therefore safeguard that older people are able to keep setting goals that are valuable to them, in spite of their health problems. This requires adequate facilities, for instance in public transport. This also counts for nursing homes, where older people need to find a fitting answer to their physical decline. In order to do that, it is that the older person can explore what is still possible for him or her, which is often made difficult by the tight regime and strict regulations in these facilities. Also, interventions could be deployed on how to adjust to physical health problems, for older people who have difficulty with this. An example of this could be coaching. Finally, the independent relationship between functional health and life satisfaction shows how important it is to overcome physical disabilities for older people, so that they can keep doing what they most want to do.

Given the strong relationship between mental health and life satisfaction, maintaining a good mental health is likely to be the most important for maintaining a good life satisfaction in the face of physical decline. Our findings show that also light, subclinical depressive symptoms and feelings of loneliness are strongly associated with life satisfaction. Studies show that depressive symptoms in older people can be treated well, for instance with life review therapy, mindfulness, positive psychological interventions such as gratitude journals and physical exercise. Feelings of loneliness could be treated with for instance low threshold social activities in the neighbourhood, coaching, animal-human contact and computer courses. Given that evidence for the efficacy of treatments for severe depression at old age is still incomplete, and the evidence that does exist suggests that treatment at old age is somewhat less effective
than at younger age, preventive interventions and treatments of subclinical symptoms could lead to the greatest gain in life satisfaction.

‘Quality of life’ is used, amongst others, by researchers, economists and policy makers as a construct that refers to the good life. The goal of this usually is to optimise quality of life. There are many different interpretations of what quality of life entails, but almost all measures of quality of life are strongly associated with physical health. My research shows that for older people life satisfaction only has a modest relationship with physical health. It has been noted before what outsiders see as a qualitatively bad life is not in agreement with how people view their own life. This is particularly true for older people, who know well how to adapt their declining health. Possibly, the cause of this difference is that measures of quality of life are usually based on pre-determined criteria of what a good life is. These criteria are not necessarily shared by the population under investigation. Also, even when for the sake of argument the right criteria have been captured, it is still questionable whether these influence life satisfaction. After all, the population can still adjust in the face of adversity, for instance in the case of declining health.

The fact that the construct of quality of life is not in agreement with how people experience their life, does not mean that it is a useless construct. For instance, we found a small association between diseases and life satisfaction at old age, but nobody would conclude from this that older people do not care if they become ill or not. On the contrary, research has shown that older people attach great importance to their health. Professionals working with quality of life therefore should determine whether they are interested as wellbeing determined by personal values, after adjustment has occurred, or quality of life based on normative criteria. This depends on the question that they want to answer: in the case of a psychological interest in how people experience their life, experienced wellbeing is necessary. If one wants to know the efficacy of a policy or treatment, measures of quality of life will be more sensitive to change. In that case the conclusion will necessarily be limited, because people’s experience of life has been left out of consideration. Therefore, in this case too adding life satisfaction as an outcome measure is useful. In this way, it can be researched if the differences in how you have operationalised quality of life can also be seen in life satisfaction. Given the conceptual and statistical differences between quality of life and life satisfaction, attempts to combine both into one construct are
meaningless, because they provide a number of which no one knows what it is.

The distinction between quality of life and life satisfaction can have important implications, for instance in the debate of how healthcare resources should be allocated. One proposed method to calculate how much a treatment may cost is the method of quality-adjusted life years (QALYs). According to this method, in order for a treatment to be reimbursed, it may cost no more than a fixed amount per gained life year, and these life years are adjusted for the quality of these years. Here the difference between quality of life and wellbeing becomes problematic: if older people with health problems still experience a high amount of wellbeing, then are these lives not also worth paying for?

Not physical health, but life satisfaction in the past is the best predictor of future life satisfaction. After all, life satisfaction is stable across the lifespan, with only some disturbances after major life events that restore completely or almost completely within a few years. From the perspective of individual life satisfaction, future quality of life should be estimated based on how life satisfaction was before the ‘bump’. Applied to the debate on the allocation of the healthcare budget, this would mean that some peoples’ treatment may cost more than others’. This cannot be reconciled with the principle that healthcare should be equally accessible to all.

A more humane approach might be to simply invest in well thought-out decision making of informed patients. Given that people are relatively stable in their life satisfaction, patients can best estimate their own future life satisfaction. In a report from the KNMG from 2015, it was argued that doctors treat longer and more than they and – more importantly – their patients really want. The reason for this is that during consultations, doctor and patient both are hesitant to discuss the option of stopping treatment and starting palliative care. By training the doctor to reflect with the patient on what is in the patient’s best interest, budgetary restriction can be exercised in a way that also best suits the wellbeing of the patient.