The moderating role of care in the association between functional limitations and wellbeing among Dutch older adults

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Abstract:
We researched how different aspects of care moderate the relationship between functional limitations and wellbeing for older adults aged 65+, by estimating mixed-models on three waves (2012-2015-2018) of the Longitudinal Aging Study Amsterdam (N=1341). We found no moderation effect for control over care and type of caregiver. Hours of publicly paid care showed a tipping point, with wellbeing being lower when functional limitations were low and higher when functional limitations were high. Care sufficiency displayed a moderating effect: there was more wellbeing when care was sufficient and functional limitations low, but this difference vanished when limitations were high.

Key messages:

1. Control over care and type of caregiver do not appear to moderate the association between functional limitations and wellbeing
2. With the exception of publicly paid care, the buffering effect of care on wellbeing tends to disappear when more functional limitations occur.

Keywords: Mixed-Model analysis, care networks, formal care, informal care, CES-D, Activities of Daily Living

Word count:

5196

Background

As functional limitations increase, older adults tend to receive long-term care with the aim of alleviating the negative impact of limitations on wellbeing. Thus, in terms of the relationship between functional limitations and wellbeing, care might act as a moderator. The two main effects in this relationship have both been well studied. Wellbeing is negatively associated with both functional limitations (Geerlings et al, 2000; Braam et al, 2005; Hilderink et al, 2012; Na and Streim, 2017; Ahmad et al, 2020; Luo et al, 2020) and caregiving (Pot et al, 2005; Abbing et al, 2022). The analysis of whether care acts as a moderator on the effect of functional limitations on wellbeing is particularly important given that governments tend to promote informal care over formal care (Da Roit, 2012). This means that government policies can improve overall wellbeing by supporting certain elements of care if there is indeed a moderating effect of care on the effect of functional limitations on wellbeing.

In general, care consists of four elements, divided into objective elements (who provides care, and how much care is received) and subjective elements (does it feel sufficient, and the amount of experienced control over care). In this study, we investigate whether the effect of functional limitations on wellbeing differs according to the type of caregiver (informal, publicly provided formal care and privately paid formal care), the amount of care received in hours, care sufficiency, and the perceived control over care.

Theoretical background

To understand why these different elements of care may be important for wellbeing, we refer to Self Determination Theory (SDT) (Deci and Ryan, 2000). SDT postulates that relatedness, autonomy, and competence are the three main determinants of psychological wellbeing. These concepts can be connected to the four elements of care (Broese van Groenou, 2020). Relatedness refers to the feeling of being connected to and supported by significant others (Deci and Ryan, 2000). Since informal care is often provided by members of one's social network, and one can expect to feel most connected to members of one's social network, we expect feelings of relatedness to be higher in informal care contexts than in formal care contexts. This expectation is supported by the finding that informal caregivers are more likely to provide care when they feel connected to the care receiver (Dombestein et al, 2020). Informal carers are more likely to provide emotional support, and this support is likely to increase wellbeing (Landau and Litwin, 2001; Levy et al, 2017). This is also confirmed by studies reporting that the use of formal care has a negative impact on wellbeing (Pot et al, 2005; Broese van Groenou, 2020). Another study found that older women who receive formal care experience more loneliness, and lower life satisfaction compared to women who receive informal care or no care (Boumans and Deeg, 2011), which may reflect a lack of relatedness. Therefore, we expect the use of (more) informal care to reduce the negative impact of functional limitations on wellbeing, compared to the use of more publicly and privately paid care.

Autonomy and competence indicate the ability and willingness to self-organise an experience and that the activity is consistent with one’s selfconcept (Deci and Ryan, 2000). Applied to the care context, a sense of autonomy and competence is demonstrated by receiving care that meets ones needs and that one can control. Receiving sufficient care and feeling in control of care can alleviate limitations in daily living due to functional impairment, and increase the sense of being able to manage one's own life and use of care. Higher levels of autonomy and competence are therefore likely to mitigate some of the effects of functional limitations on wellbeing. We hypothesise that the negative effects of functional limitations on wellbeing will be weaker for older adults who experience sufficient care and have control over their care, than for those who perceive their care to be insufficient and have no control over their care. Previous studies report positive associations between wellbeing and care sufficiency (Abbing et al, 2022), and with control over care (Broese van Groenou, 2020).

In the current study, we investigate the moderating effect that four elements of caregiving (type of caregiver, quantity, sufficiency, experienced control) have on the relationship between functional limitations and wellbeing. The role of informal care as a moderator in the relation between functional limitations and wellbeing has been previously studied by (Abramowska-Kmon et al, 2023), but our study is the first that takes this many aspects of care into account, makes a distinction between spousal care and other forms of informal care, and includes a longitudinal design. We use a longitudinal design that includes the last three waves (2012/13, 2015/16, 2018/19) of the Longitudinal Ageing Study Amsterdam to estimate both between-effects (differences in wellbeing due to the differences between groups) and within-effects (effect of a change in one of the elements of caregiving over time).

Methods

Design and Study sample

Data were used from the Longitudinal Aging Study Amsterdam (LASA), an ongoing population-based longitudinal study of older adults (aged 55 years and older) in the Netherlands (Hoogendijk et al, 2016, 2020). In 1992/93, the baseline sample, comprising 3107 respondents aged 55 to 84 years, was drawn from urban and rural regions in the Netherlands. In 2002 and 2012, two additional cohorts of 1002 and 1023 respondents were drawn from the same sampling frame but from different birth cohorts. For the first and second cohorts, the baseline cooperation rate was 62%, and for the third cohort it was 63%. Additional waves of measurement were conducted every three years.
Because wellbeing data were not available for the majority of older adults living in nursing homes, we selected all participants who lived in the community and were 65 years or older at the time of the 2012/13 wave (N=1341) and had valid data on functional limitations and wellbeing at the time of the 2012/13 wave. For 1243 participants, data were collected in the 2012/13 wave through a face-to-face interview, and for 98 participants through an abbreviated telephone interview. Sample sizes in the analyses varied because some independent variables were not captured in the telephone interview. Because participants were able to start receiving care during the follow-up, we included participants who were not receiving care at the time of the first wave of measurement. Where data were available in either the face-to-face or telephone interview, data were also collected for the two subsequent waves (2015/16, 2018/19). In the second wave, 948 face-to-face and 63 telephone interviews were collected, and in the third wave, 694 face-to-face and 82 telephone interviews were collected. As hours of care and feeling in control of care were only measured in the face-to-face interviews, the analysis with these variables had a lower N-value.

Dependent variable: psychological wellbeing

Psychological wellbeing was measured using the Centre for Epidemiologic Studies Depression Scale (CES-D) (Radloff, 1977), which has 20 items to measure whether participants had depressive symptoms in the past week. The CES-D includes items covering both negative and positive aspects of mood and can therefore be considered an indicator of emotional wellbeing. Responses ranged from 0 'rarely or never' to 3 'most of the time or always'. After all items had been coded in the same direction, all 20 items were summed and recoded, with higher scores indicating less depressive symptoms. The scale ranged from 0-48, with 48 indicating more wellbeing and 0 indicating severe depression.

Independent variables (time varying)

Functional limitations

Functional limitations were measured on a scale of 0-24 by summing whether respondents were unable (1) or able (5) to perform the following six activities of daily living without assistance: 1) dress or undress themselves, 2) get up from a chair or sit down, 3) cut their own toenails, 4) use their own or public transport, 5) climb stairs, and 6) walk outside for 5 minutes without resting. Higher scores indicated a lower level of functioning (Pluijm et al, 2005).

Type of caregiver

Participants were asked if they received help (no, yes) from: 1) co-residential caregiver (spouse, co-residential child and/or others), 2) other informal caregivers (non-co-residential children, other relatives, neighbours/friends/acquaintances), 3) a publicly paid caregiver (community nurse, help at home), 4) a privately paid caregiver (private help or staff at home) with at least one of the following tasks: personal care, housekeeping, nursing, transportation, and administrative tasks. This was measured, for example, by asking the respondent: Do you receive help with personal care, e.g. help with washing, bathing, dressing, going to the toilet, getting up and sitting down? And if so, by whom and for how many hours per caregiver.

Quantity of care

Quantity of care was measured by asking how many hours per week respondents received either informal, privately paid or publicly paid care, with help with administrative tasks, guidance, nursing, personal care and home care. These hours were summed up. We winsorized (Tukey, 1962) the highest values to the 97.5th percentile of respondents receiving this type of care, which yielded 27 hours for publicly paid care, 10 hours for privately paid care, and 50 hours for informal care.

Care sufficiency

Care sufficiency was assessed by asking whether the amount of care received was sufficient, with 1 being 'sufficient', and 0 being 'not sufficient', which was indicated when respondents rated their care as either insufficient or 'in between sufficient and insufficient'.

Control over care

Control over care was a scale that ranged from 3 to 9 and consisted of the following three questions: 'To what extent can you decide what kind of help is given, who gives the help and when the help is given?'. A higher score indicates a higher level of control. Information on control was only available for respondents who completed the face-to-face questionnaire. Therefore the analysis that included control over care as an independent variable and moderator had a lower N than the other analyses (N=840).

Control variables

Control variables were age at baseline (in years), sex (1=female), and education level, which was categorised into three groups: low (primary school), medium (secondary school or lower vocational education), and high (higher vocational education or higher). Chronic diseases was a scale ranging from 0 to 7, and was calculated as the sum of the seven major chronic diseases: Lung disease, heart disease, arterial disease, diabetes, cardiovascular accidents, rheumatic diseases and cancer.

Methods of Analysis

Using the *xtreg* function in STATA 16, we estimated five mixed models with functional limitations as the main independent variable and wellbeing as the dependent variable. In the first model, we examined the effect of functional limitations on the wellbeing-score. As the Hausman test was significant, we used time-varying fixed effects for functional limitations (Hausman, 1978). In the other four models, we examined the effect of functional limitations on wellbeing in combination with one of the following elements of caregiving: 1) type of caregiver, 2) amount of care, 3) perceived care sufficiency, 4) perceived control over care. An interaction term between functional limitations and the element of caregiving central to that model was also included in each model. The between-person effects represented the effects of functional limitations and the four elements of care on wellbeing, and the within-person effects represented the effects of changes in any of these four elements on wellbeing. In all models, age, sex, education, and number of chronic diseases were controlled for. These control variables were included in the analyses to decipher the relationship between functional limitations and wellbeing.

Results

[Table 1 about here]

The descriptive statistics are presented in Table 1. In the 2012/13 wave, 57% of our sample was female, and the average age was 75 years. Respondents scored an average of 2 for chronic conditions, 52 on the wellbeing scale, and 5 on the functional limitations scale. In Table 2, the between and fixed effects of functional limitations on wellbeing-score were estimated and adjusted for time. The crude effect of functional limitations was -0.41 [-0.47; -0.35], i.e. a one-unit increase in functional limitations resulted in a 0.41-point decrease of the score on the 60-point wellbeing scale. After adjustment for education, age, sex, and number of chronic diseases, the effect of functional limitations decreased to -0.47 [-0.55; -0.39]. The fixed effect was -0.09 [-0.15; -0.03], which means that a one-unit change over time led to a decrease in wellbeing-score of on average -0.09 points.

[Table 2 about here]

[Table 3 about here]

Caregiver types

Table 3 shows the effects on wellbeing-score of the caregiver types, functional limitations, and the interaction between functional limitations and the caregiver types. In models 1 and 3, the models without the interaction terms, the effect of functional limitations was statistically significant and negative. Model 1 showed significant negative between effects for the following three types of caregivers when compared to other caregiver types: informal caregivers B=-1.16 [-2.26; -0.07], publicly paid caregivers B=-2.28, [-3.38; -1.18], and privately paid caregivers B=-1.64 [-2.70; -0.58]. Thus, informal, publicly paid or privately paid care was found to be associated with lower levels of wellbeing-scores than no care or care provided by a co-residential caregiver. Model 3, the fixed effects model, showed that starting to receive care by an informal caregiver (B=-1.04 [-1.35; -0.74]) resulted in a decrease in the wellbeing-score. Since the clinically relevant change is about 7 points (Radloff, 1977), these differences seem small.

We estimated interaction effects in models 2 and 4, but the presence of an interaction was not supported by the data for both the between and the fixed effects. This seems to indicate that there are no significant differences in the relationship between functional limitations and wellbeing depending on who an older adult receives care from.

[Table 4 about here]

Quantity of care

Table 4 presents the effects of functional limitations on wellbeing-score and the number of hours of different types of received care. In model 1, without the interaction terms, quantity of care did not appear to have a statistically significant between effect on wellbeing-score. However, in model 3, receiving more hours of informal care had a statistically significant negative fixed effect on wellbeing-score (B=-0.07 [-0.12; -0.02]). Because we winsorised the maximum number of hours of informal care to 50 hours, the maximum effect of a person receiving full-time informal care compared to a person receiving no hours of informal care was 3.5 points on the 60-point wellbeing scale. For a person moving from zero hours to full-time informal care, the average change in wellbeing-score would have been minus 3.5 points.

In model 2, the interaction effect of hours of public care (B=0.04 [0.02; 0.06]) was statistically significant, as was the main effect in the interaction model (B=-0.59 [-0.90; -0.28]), suggesting that for people with few functional limitations, more care led to a lower wellbeing-score, while for people with more functional limitations, more hours of publicly paid care led to a higher wellbeing-score (see Figure 1). Model 4 showed no statistically significant fixed effects for either the main or the interaction terms.

[Figure 1 about here]

[Table 5 about here]

Care sufficiency

In Table 5, Models 1 and 3, the associations between the wellbeing-score and functional limitations were negative and significant, and both the between and fixed effects of care sufficiency were positive and statistically significant. The wellbeing-score of people who perceived their care as sufficient was on average 4.78 points [3.52; 6.05] higher than that of people who perceived their care as insufficient. Model 3 shows that respondents who initially perceived their care as insufficient but later perceived it as sufficient, had an average well-being score that was 1.01 [0.22; 1.80] points higher. The interaction effect in model 2 (B=-0.23 [-0.43; -0.04]) suggests that the difference in the effect of functional limitations on wellbeing-score based on care sufficiency was high for low functional limitations and absent for high levels of functional limitations (see Figure 2). At the highest level of functional limitations, there appeared to be no difference in wellbeing-score based on perceived care sufficiency. Model 4 shows no indication of moderation for the fixed effects.

[Figure 2 about here]

[Table 6 about here]

Control over care

Table 6, model 1 shows that respondents who felt they had control over the care they received, had a wellbeing-score [0.08; 0.61] that was 0.35 points higher than those who felt they had no control, with a maximum potential effect of 2.1. Model 3 shows that perceptions of having more control over time did not appear to influence the wellbeing-score, with a fixed effect of control of B=-0.01 [-0.25; 0.23]. Both for the between effects (model 2) and the fixed effects (model 4), the interaction terms did not provide clear evidence of a differential effect of functional limitations on wellbeing-score depending on the respondent's level of perceived control over care.

Discussion

In this study, we investigated whether certain elements of care have a moderating effect on the relationship between functional limitations and wellbeing. The finding that functional limitations have a negative effect on wellbeing (Geerlings et al, 2000; Braam et al, 2005; Hilderink et al, 2012; Na and Streim, 2017; Luo et al, 2020) was confirmed by our study, in which we operationalised wellbeing using depressive symptom scores. Consistent with previous studies using data from LASA (Pot et al, 2005; Abbing et al, 2022), and in line with other studies (Brown, 2007; Kwak et al, 2014; Abramowska-Kmon et al, 2023), we found evidence that care use is generally negatively associated with wellbeing. To these studies we add the findings that quantity of care and sufficiency of care moderate the impact of functional limitations on wellbeing. We found no evidence of moderation by the type of caregiver and control over care.

The objective elements of care in our study, i.e. the type of caregiver and the number of hours of care received, associated significantly with both wellbeing and functional limitations. However, the differences in wellbeing based on caregiver type were rather small. Our study showed that starting to receive informal care resulted in a decline in wellbeing. This suggests that some aspects of informal care, are less conducive to wellbeing. These aspects are not inherent to coresidential care, as there appeared to be no difference in wellbeing between respondents receiving no care, and respondents receiving coresidential care. The concepts of relatedness and autonomy can explain these findings in several ways, and express themselves in the following two notions. One, there is a big difference between care and support. Two, norms and expectations impact the results of care if it is given by different types of caregivers.

There appears to be a difference between care and support, with care being associated with lower wellbeing and support generally with higher wellbeing (Landau and Litwin, 2001; Levy et al, 2017). This notion might explain our finding of informal care being less conducive to wellbeing than other types of care. Several previous studies report similar findings (Ouyang et al, 2019; Zwar et al, 2019). But these findings are not consistent, as others report it to be associated with higher levels of wellbeing for some participants and lower for others (Abramowska-Kmon et al, 2023). Djundeva et al. (2015) concluded that there was a U-shaped relationship between the amount of care received from children and wellbeing of older adults. So, receiving either no help or too much help from children both resulted in lower levels of wellbeing. This might point at care being perceived as support and having a positive effect on wellbeing when the amount of informal care is low, but care resulting in a decline in wellbeing when care increases and results in miscarried helping and feelings of being a burden.

When support turns into caregiving, informal care might become too much of a burden to caregivers, resulting in miscarried helping and overinvolvement (Coyne et al, 1988). The link between informal care and autonomy and competence may thus be stronger than the link between informal care and relatedness. Because more informal care has been shown to reduce feelings of autonomy (Zwar, König, et al. 2021) and competence, this could explain the negative effect of informal care on wellbeing. Allen and Wiles (2014) report that older adults tended to be unhappy with their received care or support when they felt it hindered them in their feelings of independence. In addition, Carr et al. (2017) report that receiving emotional support for men with severe functional limitations actually resulted in lower levels of wellbeing, possibly due to reduced feelings of autonomy.

When support turns into caregiving, it might also result in feelings of being a burden. Multiple studies point at feelings of being a burden arising from informal care (Martire et al, 2003; Ford, 2012; Nieuwenhuis et al, 2018; Bredewold et al, 2019). Since we did not find any differences in wellbeing between respondents who do not receive care and respondents receiving co-residential care, our results suggest that feelings of being a burden or miscarried helping generally do not arise in the case of coresidential care. This is in line with spousal care correlating with higher levels of wellbeing in previous studies (Allen and Wiles, 2014; Carr et al, 2017), and care provided by other informal carers, mostly children, correlating with lower levels of wellbeing (Thomas, 2010). This may be because coresidential care is typically provided by the spouse and people expect and prefer to be cared for by their spouse (Byrne et al, 2009; Li and Dai, 2019). However, meeting caregiving expectations may work differently in other relationships, such as with adult children. This is also related to the notion of reciprocity, that it matters who provides care, and what we feel we can expect from them (Fyrand, 2010). Our findings suggest that one may feel ambivalent in instances of receiving care from children, which may result in feelings of being a burden to them. The positive impact of relatedness on wellbeing through daily social interaction with a loved one seems to be negated by another side of relatedness, namely the desire to be able to contribute to one's social environment.

Reciprocity shows how relatedness as a concept is not unambigious, and might result in different interpretations and outcomes of the care that is given. But relatedness also might be useful in explaining our findings on publicly paid care. For publicly paid care we found evidence of a moderation effect by quantity of public care. Although more hours of publicly paid care did not contribute to wellbeing when functional limitations were low, they led to the highest levels of wellbeing when functional limitations were high (the tipping point being around 19 points on the functional limitations scale).

This finding could be understood through the lens of relatedness, in combination with the professional nature of the relationship reducing the likelihood of feeling like a burden. The degree of differentiation between publicly paid caregivers in the Netherlands is very high, often resulting in a variety of caregivers with very narrowly defined job descriptions. An increased number of caregiver hours could lead to the development of positive social interactions between these caregivers and the older adult. It is possible, then, that the more formal care someone receives, the stronger the attachment becomes. These moderation effects (confirmed for publicly paid care, and plausible for privately paid care) could explain contradictory findings from previous studies on the association between formal care and wellbeing. For instance, (Abramowska-Kmon et al, 2023) found that formal care associated negatively with wellbeing, whereas others report that life satisfaction is higher among older adults that receive formal care (Chesterman et al, 2001; Brown, 2007; Lee et al, 2018), than the ones that receive informal care. It is thus plausible that if more formal care increases feelings of relatedness, the positive effect on wellbeing becomes stronger. Carr, Cornman, and Freedman (2017) show that feelings of social connectedness result in higher levels of wellbeing, and Ashida and Heaney (2008) theorize that it might even be more important than support.

But, professionality and receiving specialist care might also explain why informal care was associated with less wellbeing while formal care was associated with more wellbeing (especially when care need was high). In our sample, there was a substantial proportion of respondents with a high number of functional limitations who received only informal care. This may suggest that this lower wellbeing reflects a gap created by the need to supplement informal care with formal care.

Care sufficiency and control over care, the subjective elements of care, appeared to be most important when functional limitations were relatively low. The main between-effect of care sufficiency was substantial, and the start of perceiving care as sufficient led to greater wellbeing, a finding reported in other studies (Hsu, 2010; Kadowaki et al, 2015). We also found a moderating effect indicating that average levels of wellbeing converged with increasing levels of functional impairment, although sufficient care had a strong positive effect on wellbeing. Thus, the buffering effect of sufficient care appears to weaken as the need for care increases. Perhaps it is the case that with low levels of functional limitations, sufficient care improves autonomy by alleviating functional limitations, whereas this level of autonomy becomes less reachable with more functional limitations. As functional limitations increase, sufficient care may still improve functioning, but the risk of not meeting all needs is higher when functional limitations are high (Spiers et al, 2022). The notion that needing care has a negative effect on wellbeing, despite it being sufficient, is corroborated by Abramowska-Kmon et al. (2023) reporting that older adults who did not need care, had higher levels of wellbeing than the ones who were in need of care but did perceive their care as sufficient. Although we expected that control over care would have a positive main and positive moderating effect on wellbeing, we found only a positive main effect. Previous studies point at control over care also not acting as a mediator in the relationship between receiving care and wellbeing (Kwak et al, 2014). This suggests that older care recipients may feel that being in control of care is less important than receiving sufficient care. An earlier study showed that only care recipients who valued having control of care as important, reported a negative association between using (formal) care and wellbeing (Broese van Groenou, 2020).

Strengths & Limitations

To our knowledge, this was the first study to focus on care in a longitudinal setting while distinguishing for the different care constellations (such as spousal vs other informal care) and privately paid vs publicly paid care. In addition, we also took into account the amount of care received, adding more detail than previous studies. We used a representative sample of the Dutch older population, using data from the LASA study. Because of the data collection methods of LASA, the number of follow-up visits was very high, and missingness due to reasons other than death or moving to a nursing facility was low. The use of multiple waves of follow-up allowed us to assess the impact of changes in care, which provides insight into which elements of care are conducive to wellbeing and should therefore be promoted by policy.

This study also had several limitations. First, despite sufficient sample size, a larger sample would have resulted in more power (which could have led to different results for fixed effects, as fixed effects require data at two time points). Also, it would have allowed us to perform the analysis stratified by gender. This might be fruitful for further studies, because differences based on gender were reported for the relationship between both functional limitations and care wellbeing (Hajek and König, 2016; Carr et al, 2017; Zwar et al, 2022b; Abramowska-Kmon et al, 2023).

Second, there are some objections to biases that arise when conducting a multilevel analysis at multiple time points on nonexperimental data, so we cannot make any conclusions about causality (Dedrick et al, 2009). However, our analysis did not show significantly different results for each of the waves. In addition, the ability to calculate the effect of caregiver changes on wellbeing provides meaningful information. Because the CES-D is very sensitive to change and change can occur after only a few weeks (Radloff, 1977; Vilagut et al, 2016), future studies that conduct analyses on a sample with a shorter time interval between waves could provide even more insight into the impact of caregiver changes on wellbeing. Finally, not all respondents had information on all variables:

control was assessed only in the face-to-face interviews, so respondents with likely the highest levels of care were not asked whether they perceived to be in control over care.

Implications

Our study shows that high levels of informal care appear to affect wellbeing in a negative way, despite its popularity in current policy. As care needs increase, older adults' wellbeing appears to be less affected by functional limitations when they receive publicly paid care. Both findings are in contrast with general findings that receiving informal care is positive for wellbeing, whereas receiving formal care is negative for wellbeing. Our study nuances these views on both types of care, and suggests that the link between care and wellbeing is more complex. Where bonding with formal caregivers could be a positive pathway, receiving too much care from adult children or relatives creates feelings of ambiguity and dependency, and possibly lower levels of self-esteem (Zwar et al, 2022a). Our findings imply that receiving many hours of (formal) care in times of high care need, really helps to endure severe health problems. Policy makers should therefore try to ensure that care teams provide the care that is needed, especially during times of severe functional impairment.
Our results show that care that is adapted to the needs of the care recipient is very important, as either too much or too little care can affect wellbeing. Two forms of care had a tipping point (between 12 and 20 points on the functional limitations scale), and this tipping point could provide valuable information for policy makers trying to improve the wellbeing of older adults through care. Finally, although the subjective elements of caregiving were found to be important for wellbeing, their effect on wellbeing appears to decrease with increasing functional limitations. Interventions aimed at increasing people's experience of sufficient care or having more control over care are therefore less likely to increase wellbeing than interventions aimed at increasing the quantity of care. Given the ageing of the population and the shortage in home care, this raises the question how we can ensure that older home dwelling people will receive the (many) care they will need in the near future.

Conclusion

This study provided us with more detailed insights into the role of caregiving in the relationship between functional limitations and wellbeing. Based on the SDT, concepts as relatedness and autonomy seemed applicable to understand the associations between health, care and wellbeing. We found a moderating effect on the health-wellbeing relationship for type of caregiver, quantity of care, and care sufficiency. The relationship between functional limitations and wellbeing differed according to the quantity of care, especially for high functional limitations. Care sufficiency and control over care appeared to be less conducive to wellbeing at that stage. However, further research is needed to elucidate the mechanisms behind these findings.

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