

Awareness of Risk Factors for Loneliness among Third Agers

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Abstract

Awareness of risk factors for loneliness is a prerequisite for preventive action. Many risk factors for loneliness have been identified. This paper focuses on two: poor health and widowhood. Preventive action by developing a satisfying social network requires time and effort and thus seems appropriate for people unexposed to risk factors, i.e. third agers and non-lonely persons. The third age is the period in old age after retirement, before people's social relationships deteriorate. Three questions are addressed. Are older adults aware of poor health and widowhood as risk factors for loneliness? Are there differences in awareness between third and fourth agers? Are there differences in awareness between lonely and non-lonely older adults? After being introduced to four vignette persons, 920 respondents from the Longitudinal Aging Study Amsterdam were asked whether they expected these persons to be lonely. Older adults, especially third agers, expected peers exposed to the risk factors to be lonely more often than peers who were unexposed. The results indicate that awareness of loneliness-provoking factors is high among third agers, which is a first step towards taking actions to avoid loneliness. Compared to lonely older adults, non-lonely ones expected peers to be lonely less often, suggesting the latter's lower awareness of the risk factors. The results might remind policymakers and practitioners that combating loneliness might require early action.

Key words: loneliness, awareness, risk factors, third age, preventive action

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Introduction

A sense of loneliness can have negative effects on various aspects of life, e.g. a decrease in well-being (De Jong Gierveld 1998), low self-esteem (Guiaux 2010), and poor mental and physical health (Cacioppo *et al.* 2002; Heinrich & Gullone 2006; Ó Luanaigh & Lawlor 2008; Routasalo & Pitkala 2003). Loneliness is a situation perceived by an individual as featuring an unpleasant or unacceptable lack of social relationships (Peplau & Perlman 1982). Because of the negative consequences of loneliness, numerous interventions to alleviate loneliness have been developed. Unfortunately, only a few interventions succeed in reducing loneliness (Cattan *et al.* 2005; Findlay 2003; Masi *et al.* 2011b). In their review, Cattan *et al.* (2005) observed that interventions aiming at homogeneous groups of lonely persons, i.e. people in similar circumstances, are most likely to be successful. Masi *et al.* (2011) concluded that individual interventions have the highest likelihood of success. Both studies underlined the importance of a tailor-made intervention, i.e. people with a problem benefit most from interventions aiming at that specific problem. Other success factors for loneliness-reducing interventions are: giving participants the opportunity to influence the intervention trajectory, a high quality of professionals or volunteers, building on existing social networks, and developing social skills and self-esteem (Cattan *et al.* 2005; Findlay 2003; Fokkema & Van Tilburg 2007; Masi *et al.* 2011a).

Apparently, it is not easy to alleviate feelings of loneliness. Preventive action could help people avoid it. An initial step in this direction is to become aware of the risk factors to which one may be exposed in the future (Weinstein *et al.* 2002). We therefore study older

adults' awareness of risk factors for loneliness. There are two types of risk factors. The first type are dispositional factors that make individuals more vulnerable to loneliness, such as lack of self-esteem or mastery (Pinquart & Sörensen 2001). Their negative self-evaluation restrains them from establishing or maintaining satisfying social relationships (Guiaux 2010; Peplau *et al.* 1982). The second type are life events that trigger loneliness, such as institutionalisation, migration, loss of loved ones, and changes in socio-economic status (Pinquart & Sörensen 2001). Life events often have negative effects on the composition of the personal network and can therefore cause loneliness. We stress that being exposed to risk factors for loneliness increases the likelihood of someone becoming lonely, but loneliness is not necessarily the result of this exposure. This study focuses on risk factors for loneliness that are likely to befall older adults. As dispositional factors do not befall on people, we focus on life events, specifically two life events that are common in old age: poor health and widowhood. Poor health makes people dependent on the help of others, which in turn is associated with loneliness (Routasalo & Pitkala 2003). People's health determines the extent to which they can go out and participate in social activities. With fewer social activity options, persons in poor health are more likely to be lonely (De Jong Gierveld 1998; Savikko *et al.* 2005). The loss of a partner is one of the most far-reaching life events in relation to loneliness (Dykstra & De Jong Gierveld 2004; Fokkema *et al.* 2012; Victor *et al.* 2000). Partners are the primary source of support and fulfil most needs for intimacy and attachment, especially when the quality of the relationship is high (De Jong Gierveld *et al.* 2009; Pinquart 2003). In old age, losing a partner is more likely to happen due to death than divorce. The first research question addressed in this study is: To what extent are older adults aware that poor health and widowhood are risk factors for loneliness later in life?

A preventive action to avoid loneliness with high potential is to invest in the social network. According to the convoy model (Kahn & Antonucci 1980), people are surrounded by a network of significant others that can protect them from becoming lonely. The social network needs to be quantitatively and qualitatively maintained so that if someone is confronted with a negative life event, a sufficient social network is available. People need to have several others to share their deep emotional feelings with, so if one of them is lost others can help fill part of the gap. Investing in the social network takes effort and time, hence preventive action should be taken early enough, i.e. before one is exposed to the risk factors for loneliness. We therefore argue that awareness of risk factors for loneliness is important for older adults not yet confronted with poor health or widowhood. We also argue that preventive action is more feasible for those who do not feel lonely than for those who do. People who already feel lonely are likely to benefit more from actions that reduce loneliness rather than from actions that prevent further loneliness from occurring. Preventive action is thus more appropriate for healthy older adults who still have their partner and for non-lonely older adults, but we don't know to what extent these older adults are aware of these risk factors. Our second and third research questions thus are: Is there a difference in the awareness of poor health and widowhood being risk factors for loneliness between older adults who are in good health and married and older adults who are in poor health, widowed or both? And: Is there a difference in the awareness of poor health and widowhood being risk factors for loneliness between older adults who feel lonely and older adults who do not?

The third and fourth ages

Two life stages are commonly distinguished in older adults, the third and the fourth age (Baltes & Smith 2003; Gilleard & Higgs 2002; Komp 2011; Laslett 1991). The concept of a third and fourth age have been developed to describe transformations in later life in contemporary society. In the past, later life started after retirement and was considered a single phase of life when older adults disengaged from society due to a loss of social roles (Cumming & Henry 1961; Townsend 1963). Nowadays retirement tends to be perceived as the start of a new phase of life with many opportunities for creating new social roles rather than merely losing old ones (Laslett 1991). This is possible because many older adults in Western societies now enjoy extended longevity, i.e. a prolonged life in relatively good health (Baltes & Smith 2003; Oeppen & Vaupel 2002), tend to be more financially independent, for instance thanks to a greater pervasiveness of pensions and social assistance benefits (Gornick *et al.* 2009; Komp 2011), and no longer have the responsibility of childcare. This phase is called the third age. Since the concept of third age originated it has been expanded beyond demographic and social indicators such as age, retirement and care responsibilities and now also emphasizes lifestyle factors. The third age is portrayed as a time in life without any worries, a time for self-realisation, leisure, learning, and good quality of life (Gilleard *et al.* 2005; Laslett 1991; Wiggins *et al.* 2004). In a way, the third age represents all the positive aspects of old age without the negative ones. If the third age is indeed a period without worries, third-agers may not be aware of the risk factors for loneliness lurking in the future.

The third age is logically followed by the fourth age, which resembles what old age was considered to be before these socio-demographic changes. The fourth age is characterized by inactivity, poor health and a loss of personal relationships. It is a phase

when people disengage from society and lose their social roles (Cumming & Henry 1961; Komp *et al.* 2009; Townsend 1963). The trajectory of the third and fourth ages is not a fixed one. People can move in and out of the third age, e.g. if they retired and start working again, or if they were ill and recovered. Other people may skip the third age, e.g. if they are already in poor health when they retire. The loss of social roles marking the transition from the third to the fourth age is caused by life events, especially diminishing health and death, rather than age as such (Clarke *et al.* 2011). In this study we view these as markers of the transition between the third and fourth age.

Older adults and the loneliness of others in later life

To assess their awareness of poor health and widowhood being important risk factors for loneliness in later life we asked older adults about the loneliness of others, using vignettes about various fictional individuals. Vignettes are used because we are interested in assumptions rather than personal experiences. Vignettes allow respondents to voice personal opinions even if they have no personal experience to draw from (Torres 2009).

When we think about others we often use stereotypes to formulate a preliminary opinion (Hilton & Von Hippel 1996; Macrae & Bodenhausen 2000). Stereotypes are beliefs about the characteristics, attributes and behaviour of members of a certain social group. Some stereotypes are accurate representations of reality, others aren't, or are only to a certain degree (Hilton & Von Hippel 1996). One of the most common stereotypes about older adults in Western society is that they are lonely (Dykstra 2009; Whitbourne & Sneed 2002). In an American survey conducted in 2004, 49% of respondents indicate that loneliness is a serious problem among older adults, another 42% view loneliness as

somewhat of a problem (Abramson & Silverstein 2006). In several other Western countries, most adults of various ages also believe that older adults are rather lonely (Tornstam 2007; Victor *et al.* 2002; Walker 1993). Because of their shared socialisation experiences, a society's individuals are assumed to have the same stereotypes stored in their memories (Macrae & Bodenhausen 2000). This means persons in the stereotyped group recognise and in some cases share the stereotypes applying to their own group (Levy 2003). Because of the loneliness stereotype, we assume that older adults view other older adults as lonely. However, some older adults may be considered lonelier than others. The fourth age represents true old age (Laslett 1991), the age of loss. Hence we expect older adults to more frequently perceive others in the fourth age, i.e. in poor health or widowed, to be lonely than persons in the third age, who are in good health and married (Hypothesis 1).

According to social identity theory (Tajfel & Turner 1979), people have a need for a positive self-image, which they derive from the social groups they belong to (Kite & Wagner 2002; Tajfel & Turner 1979) – known as an in-group. An in-group consists of people like oneself. Third-agers consider other third-agers to be their in-group. To maintain a positive self-image, people are more positive about their in-groups (Allport 1954; Brewer 1999). Out-groups are groups of people one does not belong to and consist of people unlike oneself. Fourth-agers deviate from third-agers because they have started disengaging from the society third-agers are still part of. Third-agers can thus perceive fourth agers as an out-group. There is no reason for people to be positive about out-groups (Allport 1954; Brewer 1999). People can be more apt to use stereotypes about out-groups than about their own in-group. We therefore expect third-agers to consider fourth-agers to be lonely more often

than fourth-agers themselves do (Hypothesis 2a), and to consider third-agers to be lonely less often than fourth-agers do (Hypothesis 2b).

Avoiding loneliness is only possible for non-lonely persons. This is why awareness of the risk factors for loneliness is more important for them than for lonely persons. Even though fourth-agers are at a greater risk of loneliness than third-agers, not all fourth-agers are lonely and some third-agers are. Loneliness is associated with undesirable social behaviour such as social-skill deficits, self-absorbedness, shyness and anxiety (Jones *et al.* 1982; Tsai & Reis 2009; Wittenberg & Reis 1986). This generally makes lonely persons perceive others more negatively and specifically as more lonely than non-lonely persons do (Cacioppo *et al.* 2000; Jones *et al.* 1981). Such perceptions make people act more negatively towards others, which can have a negative effect on the number or quality of their social relationships and in turn can aggravate loneliness (Miller *et al.* 2007). A possible explanation of this negative perception is that due to their low self-esteem, lonely persons anticipate rejection from others. They devalue others to maintain their own positive self-image (Jones *et al.* 1981). We therefore expect lonely older adults, in contrast to non-lonely adults, to more frequently view others as lonely (Hypothesis 3).

In this study we also consider the role of age and gender. It is argued that age alone is not related to loneliness. However, with increasing age people are more likely to experience diminishing health as well as widowhood, which can in turn trigger loneliness (Jylhä 2004; Pinquart & Sörensen 2001; Routasalo & Pitkala 2003). We assume people are aware of this association and do not expect age differences in the perceived loneliness of others. With regard to gender, there is no reason to assume men and women have a different perception of the loneliness of others.

Methods

Sample

The Longitudinal Aging Study Amsterdam (LASA) is a continuing study of the physical, emotional, cognitive and social functioning of older adults (Huisman *et al.* 2011). First conducted in 1992/1993, the representative national survey consisted of 3107 persons between the ages of 55 and 85. The sample was stratified by sex and age, and respondents were selected from the registers of 11 municipalities, varying in religion and urbanisation. In 2002/2003 a new sample of respondents aged 55 to 64 was selected from the same municipalities. Follow-ups were conducted at three-year intervals. For the 2010 study, all 1546 respondents who completed the interview in the 2008/2009 observation were approached to take part in a side-study. They received a questionnaire by mail. The response rate was 78%. Non-response was due to death (1%), failure to reply (16%), or refusal due to lack of interest or poor health (5%).

In this study we distinguished between third and fourth agers. We considered older adults to be third agers if they had retired, had no children living at home to take care of, and were still in relatively good health. In addition, widowed older adults are never considered to be third agers. Older adults were considered fourth agers if they were retired, had no children at home to take care of, and were in poor health, widowed, or both. Calendar age was not considered an indicator for either the third or the fourth age. In line with these characteristics, we excluded respondents who had not yet retired (N = 117), had children living at home (N = 52), had never married (N = 46), were divorced (n = 58), or were married but not living with their spouse (N = 7). Each respondent was introduced to four

vignette persons. Respondents who failed to answer for all vignette persons whether they considered the vignette person lonely were excluded from the analyses. After these selections, the data consisted of 920 respondents who answered questions on 3591 fictional persons. Logistic regression analysis of the non-response showed that, compared to the 626 older adults who did not participate in this study, the 920 older adults in the analyses were older but did not differ in gender.

Measurements

Vignette person loneliness. Respondents were introduced to four vignettes about fictional persons of various health and marital statuses and age. An example of a vignette is: 'Mrs. Berg is 69 years old and married. Mrs. Berg is in good health.' Respondents were asked to estimate whether they thought the individual in the vignette was lonely or not.

Vignette person characteristics. The vignette person's health status was simplified to 'is in good health' or 'has several chronic diseases that cause limitations'. Partner status was simplified to married or widowed. For respondents younger than 75, fictional persons were either the same age as the respondent or 15 years older. For respondents above 75, fictional persons were either the same age as the respondent or 15 years younger. The vignette's gender was matched to the respondent's gender. The vignettes were kept simple in order to keep the number of possible vignettes small. Respondents were introduced to four of the eight possible fictional persons.

Respondent characteristics. Information on the respondents' gender, age and marital status was obtained from the population register; health status was obtained from the 2008/2009 LASA observation. Two health indicators were used to measure health status.

Experience of health problems that limit normal activities was measured by a direct question with possible answers 'no limitations', 'light limitations' and 'severe limitations'. Functional limitations were measured by six questions about activities of daily living (Katz *et al.* 1963), e.g. 'Can you sit down and stand up from a chair?' with response categories ranging from 1 'no I cannot' to 5 'yes, without help', resulting in a scale ranging from 6 'many limitations' to 30 'no limitations' ($\alpha = 0.80$). Scores of 24 and lower indicate physical malfunctioning.

Respondent loneliness. Loneliness was measured with the question 'If we divide people into not lonely, moderately lonely, severely lonely and extremely lonely, how would you categorize yourself?'. We used this single-item measurement because it invites respondents to classify themselves as lonely or not lonely much in the same way they classified the vignette persons. It has been suggested that a single-item measurement is a valid way to measure loneliness (Victor *et al.* 2005).

Procedure

We distinguished between respondents in the third or fourth age based on their health indicators and marital status. Respondents with no health problems limiting normal activities and an ADL score of 24 or higher were considered to be in good health. All the others were considered to be in poor health. Respondents who were in good health and were married were considered to be third agers; those in poor health, widowed or both to be fourth agers.

Multivariate logistic regression has been conducted on perceived vignette person's loneliness. To test Hypothesis 1, we included vignette person characteristics, i.e. the vignette person was in poor health and married, in good health and widowed, or in poor health and widowed. Vignette persons in good health and married were the reference category. To

facilitate the testing of Hypotheses 2a and 2b we included respondent characteristics (whether the respondent was in the third or the fourth age) and an interaction effect of the vignette and respondent, both in the third age. To test Hypothesis 3, the regression equation was extended to include whether the respondent was lonely or not. Respondent's gender and vignette's and respondent's age were included as control variables. Responses on four vignette persons were nested in the respondents and analyses were conducted by means of the logistic multilevel option in MLwiN. No multicollinearity issues occurred. To ease interpretation of the logit regression we calculated the probability of vignette persons being considered as lonely. We transformed the estimates of the regression into probability (P) with the formula $P = 1 / (1 + e^{-Z})$. Z is the regressions' estimate.

Results

In this study we distinguished between respondents in the third age (N = 412) and the fourth age (N = 508). Respondents in the third age were on average 70.7 years old ($SD = 6.6$). Respondents in the fourth age were on average 5.3 years older ($SD = 8.1$, $\chi^2 = 47.3$, $p < 0.001$). There were relatively fewer women among third agers (44%, N = 181) than among fourth agers (67%, N = 338, $\chi^2 = 75.3$, $p < 0.001$). Third agers considered themselves lonely less frequently than fourth agers (12% and 37% respectively, $t_{(890)} = -9.4$, $p < 0.001$). About half the fourth-age respondents were in poor health and married (54%), about a fifth was in good health and widowed (21%), and about a quarter was in poor health and widowed (25%).

In Hypothesis 1 we expected older adults to consider fourth agers to be lonely more often than third agers. The results from the regression analysis support our hypothesis

(Table 1). Vignette persons in poor health and married, in good health and widowed, and in poor health and widowed were considered to be lonely more often than vignette persons in good health and married, as indicated by the three positive and significant effects. To further illustrate these estimates we calculated the percentages of vignette persons in different life stages that were considered lonely. Of the vignette persons in the third age (N = 1226), 21% were considered to be lonely, as were 82% of those in the fourth age (N = 2365). There was a further differentiation among the vignette persons in the fourth age: 95% of those in poor health and widowed (N = 573), 82% of those in poor health and married (N = 1008) and 73% of those in good health and widowed (N = 784) were considered to be lonely.

In hypothesis 2a we expected third-age older adults to consider their fourth-age counterparts to be lonely more often than older adults in the fourth age do. Based on the estimate of 0.58 for main effect of respondents' life stage, the estimates of main effects for vignette persons' life stage and the estimate of -0.64 for interaction of respondents' and vignette persons' life stage (Table 1), we calculated probabilities of being lonely for various combinations (Table 2). The probabilities of vignette persons in the fourth age being considered lonely were higher for third agers than for fourth agers, supporting Hypothesis 2a. In addition, there was particular support from the results for the vignette persons in good health and widowed (0.85 and 0.71 respectively) and those in poor health and married (0.91 and 0.81 respectively). The probability of vignette persons in poor health and widowhood being considered lonely was high for both third- and fourth-age respondents (0.98 and 0.96 respectively). Hypothesis 2b, stating that third agers view other third agers as lonely less often than fourth agers do, is not supported. Table 2 shows that the probability of

a vignette person in good health and married (i.e. a third ager) being considered lonely was equal for respondents in both life stages (0.18).

According to Hypothesis 3, lonely older adults perceive others to be lonely more often than non-lonely older adults do. The results support the hypothesis, as indicated by the estimate of 1.07 (Table 1). We calculated the probability of vignette persons being considered lonely by lonely or non-lonely third- and fourth-age respondents (Table 2). The probabilities show that non-lonely third-age respondents viewed all the vignette persons to be lonely less often than their lonely third-age counterparts: 0.14 and 0.32 respectively for vignette persons in good health and married. Non-lonely fourth-age respondents also viewed all the vignette persons to be lonely less often than their lonely fourth-age counterparts. The differences in the probability of vignette persons in poor health and widowed being considered lonely by lonely and non-lonely respondents were very small. Vignette persons in poor health and widowed were apt to be considered lonely by almost all respondents.

We also considered the role of age and gender. Contrary to what we expected, there was an effect of age on the perceived loneliness of vignette persons. The older the vignette person, the more often she was considered lonely (estimate = 0.07, Table 1). By contrast, the older the respondents the less they considered the vignette persons lonely (estimate = -0.06). No gender effect was observed. Both men and women considered vignette persons of the same gender to be lonely to the same degree.

Discussion

In this study we explored the extent of older adults' awareness of two risk factors for loneliness: poor health and widowhood. Awareness of risk factors for loneliness is a prerequisite for taking preventive action (Weinstein *et al.* 2002), which we assume to be a successful way to combat loneliness. We asked older adults about the loneliness of fictional persons described in vignettes, who were either in the third age, i.e. in good health and married, or in the fourth age, i.e. in poor health, widowhood or both. The respondents perceived fourth agers to be lonely more often than third agers. This indicates that older adults are generally aware that poor health and widowhood are risk factors for loneliness. Preventive action to avoid loneliness requires time and effort, therefore people should preferably take action before they are confronted with risk factors for loneliness and before they become lonely. For this reason we focused on differences in awareness between third agers, who are not confronted with poor health and widowhood themselves, and fourth agers, who are, and between lonely and non-lonely older adults. Since preventive action is most feasible for third agers and for the non-lonely, they should ideally be the most aware of risk factors for loneliness. With regard to the differences between third agers and fourth agers, our results showed that third agers consider fourth-age vignette persons to be lonely more often than fourth agers do. This means that third agers are aware that poor health and widowhood are risk factors for loneliness in the fourth age. With regard to the difference between lonely and non-lonely older adults, in line with previous research (Jones *et al.* 1981) we observed that non-lonely older adults perceive vignette persons to be lonely less often than lonely older adults do. This positive attitude may lead to better quality in social relationships, which in turn reduces the chances of becoming lonely (Miller *et al.* 2007).

However, it also means non-lonely older adults are less aware of the risk factors for loneliness.

In addition to poor health and widowhood, this study reveals that older adults consider old age itself to be a risk factor for loneliness. Presumably they think that with increasing age, the likelihood that they will be lonely increases too. Although old age is often presented as a life phase characterised by loneliness (Dykstra 2009), it should not be assumed that merely growing older leads to increasing loneliness. Many studies have not found age to be directly related to loneliness (Jylhä 2004; Pinguart & Sörensen 2001; Routasalo & Pitkala 2003) – instead, age effects were explained by their correlates, for instance loss of social contacts, disability, poor health and widowhood. That older adults considered old age to be a risk factor for loneliness may suggest their awareness of various developments in old age increasing such risk. However, we will not rule out the possibility that stereotyping played a role. Previous studies show that older adults hold stereotyped images of other older adults (Abramson & Silverstein 2006; Levy 2003), hence perceiving old age as a risk factor for loneliness can become a self-fulfilling prophecy (Hilton & Von Hippel 1996) with older adults viewing loneliness as inevitable and abandoning any efforts to combat it. Fortunately, the results of our study indicate that the oldest adults have a less stereotypical perception of loneliness in old age. They seem to uphold a more positive view about their in-group. The older people are, the less they consider others to be lonely. They may be doing this with the goal of maintaining a positive self-identity.

In other studies, the third age is often portrayed as a time in life for self-realisation, leisure, learning and good quality of life (Gilleard *et al.* 2005; Laslett 1991; Wiggins *et al.* 2004). It is perceived to be a time in life without worries. We argue that the third age is not

such a worry-free period. The results of our study show that third agers are aware of the risk factors for loneliness characteristic of the fourth age. Most third agers eventually become fourth agers. By portraying fourth agers as lonely, third agers agree that loneliness is something people like themselves can encounter in the future. There are other dark clouds over their future too, such as frailty, loss of identity and a reduced sense of control (Baltes & Smith 2003). Considering these negative prospects lurking, the third age may be perceived as a phase of life without worries – for now, but not in the future. This requires a revision of the optimistic nature of the third age.

There are some limitations to this study. Firstly, our results show that to a certain extent, older adults are aware of poor health and widowhood as risk factors for loneliness in older age. However, their awareness of other risk factors such as institutionalisation, decreasing socio-economic status and low everyday competence remains unclear. Secondly, we do not know if the awareness we observed is present at all times or is induced by the data-collection process. Thirdly, we assume that preventive action helps in evoking loneliness, yet we know little about preventive actions. We do not know if older adults are willing to take preventive action, if they already do this, or if preventive actions will be successful. Possible negative setbacks of encouraging older adults to take preventive actions should be considered. For instance, when preventive action is not taken or isn't successful, this may lead to a sense of failure, with its ensuing consequences for people's well-being. Furthermore, others may blame older adults if they fail to take the necessary actions. Taking into account these limitations and possible negative setbacks, we suggest to further expand the literature about awareness of risk factors for loneliness by studying whether older adults

are aware of other risk factors for loneliness and by further studying the possibilities and limitations of preventive actions to avoid loneliness.

Conclusion

This study has focussed on an issue not explored in previous loneliness studies, i.e. the perspective of older persons on loneliness among those in similar and other, more loneliness-provoking situations. The results indicate that awareness of loneliness-provoking factors is high among third agers, which is a first step towards taking actions to avoid loneliness when they reach the fourth age. This study might also remind policymakers and practitioners that combating loneliness in later life might require early action. This perspective has not been widely explored, but may be successful, as prevention is often better than cure. The results indicate that third agers are open to such actions.

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Table 1: Multilevel logistic regression analysis of perceived loneliness of vignette persons by vignette persons characteristics and respondent characteristics ($N_1 = 920$ respondents; $N_2 = 3591$ vignette persons)

	Estimate	
Constant	-0.15	
Vignette: age (61-100)	0.07	***
Vignette: poor health & married (vs. good health and married)	3.30	***
Vignette: good health & widowed (vs. good health and married)	2.71	***
Vignette: poor health & widowed (vs. good health and married)	5.12	***
Respondent: female (vs. male)	0.11	
Respondent: age (61-99)	-0.06	***
Respondent: third age (vs. fourth age)	0.58	***
Respondent: third age x Vignette: third age	-0.64	**
Respondent: lonely (vs. not)	1.07	***

Significance levels: $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.