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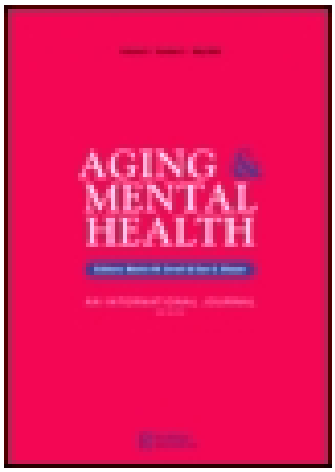

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Is loneliness in later life a self-fulfilling prophecy?

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Is loneliness in later life a self-fulfilling prophecy?

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Objectives: There are many stereotypes about ageing and later life. We looked at the association between expectations and stereotyping of loneliness in old age and actual self-reported loneliness status 8 years later in English Longitudinal Study of Ageing (ELSA).
Method: Data from 4465 ELSA core members aged over 50 who responded to Waves 2 (2004) did not report loneliness in Wave 2, and responded to loneliness questions at least once between Waves 3 and 6 (2006−2012) were used in multivariable repeated measures logit regression analysis to estimate relationship between perceived stereotypes and expectation of loneliness in older age and actual loneliness reported within 8 years of follow-up.
Results: Twenty-four per cent of respondents from the analytical sample agreed at Wave 2 that old age is time of loneliness and 33% expected to be lonely in old age. Loneliness was reported by 11.5% of respondents at Waves 3−6. Both stereotypes and expectation were significantly associated with later reported loneliness (OR 2.65 (95% CI 2.05−3.42) for stereotypes and 2.98 (95% CI 2.33−3.75) for expectations in age-sex adjusted analysis). Both variables significantly predicted future loneliness even when socio-demographic circumstances were taken into account and both variables were mutually adjusted although the effect was reduced (OR's 1.53 (95% CI 1.16−2.01) for stereotypes and 2.38 (95% CI 1.84−3.07) for expectations).
Conclusions: Stereotypes and expectations related to loneliness in the old age were significantly associated with reported loneliness 8 years later. Interventions aimed at changing age-related stereotypes in population may have more impact on reducing loneliness than individually based services.

Keywords: ELSA; loneliness; age-stereotypes; expectation

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Introduction

Later life can be a time of challenge exemplified by changes in roles such as becoming a (great)grandparent, retirement and other significant life events such bereavement, and potential reductions in social network and support (Dahlberg, Andersson, McKee, & Lennartsson, 2015). It can also mean ill-health, reduced mobility of self or others which may compromise opportunities to build up new friendships or maintain existing relationships (Van Baarsen, Snijders, Smit, & Van Duijin, 2001). Less obvious, but potentially more problematic for the ageing individual, are stereotypes about old age and later life reflecting the negative assumptions of older people held by contemporary society. At the most basic level stereotypes are characterized as '(a) assignment of individuals into groups based on some distinguishable clues, (b) assumption that all group members share the same characteristics, (c) assumption that being included to that group, individual would gain the same characteristics' (Hill, 2001). There is an extensive body of research examining stereotypes of later life (Macia & Lahman, 2009; Ory, Hoffman, Hawkins, Sanner, & Mockenhaupt, 2003), which provides evidence of an inverse relationship between negative stereotypes and physical and mental health status (O'Brien & Hummert, 2006). Furthermore age-stereotyping may influence individual behaviour because of the internalizing of specific characteristics 'expected' among older people (Levy, 2003) which then confirms and reasserts the general stereotype and consequently influences the life style and later health (Blane, Kelly-Irving, d'Errico, Bartley, & Montgomery, 2013). These age-stereotypes influence the expectations of old age held by older people themselves and the wider society. Carr et al. declared that 'people assess their health related quality of life by comparing their expectations with their experience', thus self-stereotype themselves according to their neighbourhood, friends, and same-age-peers (Carr, Gibson, & Robinson, 2001). People compare their circumstances in old age with what they expected and this might be a powerful predictor of quality of life in older age.

Loneliness may be defined as the 'discrepancy between one's desired and achieved levels of social interaction' (Peplau & Perlman, 1982) and one of the most enduring stereotypes of old age is that it is a time of loneliness. One feature of loneliness is that it is a subjective experience and second that it involves a negative effect. It includes feelings about a lack of connections with other people and can be present even in the presence of social network. It is more strongly associated with qualitative rather than quantitative characteristics of relationships (De Jong Gierveld, 1998; Hughes, Waite, Hawkley, &

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Cacioppo, 2004). As such it is important to differentiate between loneliness and social isolation (De Jong Gierveld, Van Tilburg, & Dykstra, 2006). Loneliness is a negative subjective experience while social isolation is the objective condition of not having ties with other people (Dykstra, 2009). For example, work published by PEW Research Center showed that 19% people aged between 18 and 29 expect that they will be lonely when they will be older compared with 23% of those aged 30−49 and 31% in the 50−64 age group (Taylor, Morin, Parker, Cohn, & Wang, 2009). There is an extensive body of quantitative work investigating loneliness in later life which has focussed upon determining the extent of loneliness and how this varies over time; identifying those most at risk and evaluating interventions to remediate loneliness. According to previous research focusing on older population and on risk factors causing loneliness, two thirds of English population aged over 65 report that they do not experience or feel loneliness and only small percentage of population report that they feel lonely always (Victor, Scambler, Bowling, & Bond, 2005). However, there has been little investigation as to how the experience of loneliness in later life is influenced by expectations about old age. The aim of this analysis was to determine if those, who think that old age is time of loneliness and expect that, as they get older, they will become more lonely, report higher rates of loneliness that those who do not support these views. This aim was assessed by using data from the English Longitudinal Study of Ageing (ELSA) in which responders were asked whether they agreed that old age was a time of loneliness and whether they expected to be lonely in older age.

Methods

Data

Our analysis was performed on a subsample of data obtained from the ELSA which is designed as a representative sample of the population aged over 50 years who live in private addresses in England. Those aged over 50 who participated in the Health Survey for England (HSE) in 1998, 1999 and 2001 were invited to participate in the first wave of ELSA in 2002. The study has collected data biennially since 2002 with biological samples every four years. Participants gave full-informed written consent to participate in the study and ethical approval was obtained from the London Multicentre Research Ethics Committee. Further details of ELSA can be found at http://www.ifs.org.uk/elsa/documentation.php.

Sample

Our analytical sample was constructed from those who were core members of ELSA and responded to Wave 2 and at least one of Waves 3−6. From those who answered questions about loneliness and other variables from Wave 2 used in the analysis ($N = 6347$) those who reported loneliness were excluded as ineligible for this analysis (1167 individuals). Furthermore those with missing data on loneliness in all further four waves (Waves 3−6) were also excluded (715 individuals). Thus, final analytical sample consists of 4465 individuals with at least one valid response to loneliness between Waves 3 and 6. Overall, we had 14,120 records of loneliness from these responders.

Variables

Loneliness

In the ELSA loneliness was measured by the three-item short form of UCLA Loneliness Scale from Wave 2 onwards. This instrument is a well-documented and widely used (Russel, 1996) and is composed of three questions ‘How often do you feel you lack companionship’, ‘How often do you feel left out’ and ‘How often do you feel isolated from others’. Each item was measured on a 3-point Likert scale ranging from hardly ever/never, some of the time, and often, and resulting in a theoretical range of 3−9, with a higher score indicating greater loneliness. The score was then dichotomized and those who scored 3−5 (three bottom quartiles) were classified as ‘not lonely’ and those with scores 6−9 (upper quartile) as ‘lonely’ (Steptoe, Shankar, Demakakos, & Wardle, 2013).

Expectation and stereotypes

Questions about expectations of loneliness and stereotypes towards loneliness were asked only in Wave 2 of ELSA study. Respondents were asked to what extent they agree or disagree with following two statements: ‘As I get older I expect to get more lonely’ (expectations) and ‘Old age is time of loneliness’ (stereotypes). Answers for both statements were given on a 5-point Likert scale ranging from ‘strongly agree’ to ‘strongly disagree’. For the purpose of our analyses we have dichotomized the answers as ‘strongly agree/slightly agree’ vs ‘neither/slightly disagree/strongly disagree’.

As the proportion of missing data for each variable was less than 10%, we did not use multiple imputations in the analysis (Hippisley-Cox et al., 2007).

Covariates

An extensive range of variables potentially related to loneliness was included in multivariable analysis as covariates. Age was used in the analysis as a continuous variable. Marital status was dichotomized into those without a partner (single/divorced/separated/widowed) and those living with a partner (married/remarried/cohabiting). Working status was characterized as (self-)employed, or retired and/or not working. To describe social status, the short version of NS-SEC 3-category classification was used with following categories: managerial/professional, intermediate and routine/manual. The highest education qualification was grouped into 3 categories: those with degree and higher, those with intermediate level of education and those without qualification. Self-rated health was classified using 5-point Likert score scale and dichotomized as good and poor health. Depressive symptoms

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were assigned to those who scored 3 or more on the eight-item scale of Centres for Epidemiologic Studies Depression Scale (CES-D) (Radloff, 1977). We tested sensitivity of the CES-D with the full range of eight questions (which includes one on loneliness) and CES-D without the loneliness question. The results did not differ, so for the multivariable analysis, CES-D-8 with cut point ≥3 was used (Chou, 2008; Doshi, Cen, & Polsky, 2008; Kohout, Berkman, Evans, & Cornoni-Huntley, 1993; Rice, Lang, Henley, & Melzer, 2011). A subjective-age perception variable was constructed by comparing participants age with their age given in response to the question 'How old do you feel that you are' and categorized as feeling older, feeling the same age and feeling younger (Bowling & Dieppe, 2005; Taylor et al., 2009; Han & Richardson, 2014). A summary social network score (social connection) was generated from responses to questions asking if participants had close relationship with friends and/or family and/or children and/or own partner and categorized into those with less than 2 and those with 2 or more contacts. Social inclusion was constructed as summary score from information about membership in clubs and/or societies and/or church group and/or being active member of neighbourhood community. For information about household income existing derived variable (categorized into quintiles) was used (Pinquart & Sorensen, 2001). Household size was used as continuous variable.

Statistical methods

After describing main characteristics of the study sample we focused on the association between two main exposures, other covariates from Wave 2 and loneliness at Waves 3−6. In this analysis we have included all individuals with exposure measures collected in Wave 2 and any available outcome in Waves 3−6. It meant that for each member of analytical sample we had between one and four measures of loneliness. We have conducted repeated measures analysis using random-effect logit model. Unadjusted estimates of odds ratios (ORs) were calculated together with 95% confidence intervals (CIs) for all exposures included in the analysis. Sex interaction was tested in all steps of the analysis by Wald test. As there were no statistically significant differences between men and women for two main exposures of interest, our results are presented as sex-adjusted rather than stratified by sex after the unadjusted analysis. Univariable random-effect logit regression analysis was followed by multivariable analysis adjusting for range of covariates. This has been done in several steps. In the first step ('Adjusted 1'), the association between stereotypes and expectations reported in Wave 2 and loneliness from Waves 3−6 was adjusted for age and sex. In next step ('Adjusted 2') regression models additionally included marital status, social connections, social inclusion and household size. In the third step ('Adjusted 3') household income, social class, education, self-rated health, CES-D and self-perceived age were further added into the models. In the final step we mutually adjusted for both main exposures. Statistical analysis was carried out using STATA version MP 13.0

Results

Characteristics of the sample

Our analytical sample consisted of 4465 core members present in Wave 2 who did not report loneliness in Wave 2 and who had answered at least ones to questions related to loneliness between Waves 3−6. In comparison with the overall ELSA sample our analytical subsample was younger at the beginning of the study: mean age in our sample is 64.1 in Wave 2 compared with 65.8 for the whole ELSA sample. Key differences in our analytic sample compared with overall ELSA sample were the increased level of labour force participation for men (48.8% vs 33.8%) and lower prevalence of reported poor self-rated health (17.4% vs 27.4%). Other differences between our subsample and the main sample were small.

In our sample approximately 48% were males. Seventy-seven per cent of participants were married, remarried or lived with a partner. Approximately 38% of respondents were in managerial/professional social class. The highest educational qualification was reported by 17% and intermediate by 56% of participants. Depressive symptoms were reported by approximately 13% respondents. Social connection was reported by more than 97% of respondents. The majority of participants, more than 77%, 'felt younger' (than their biological age) and almost 17% the same as their biological age. Social inclusion was reported by 79% of participants. Sixty-four per cent of our sample lived in households consisting of 2 people and over 16% lived alone.

Approximately one third, 32%, of respondents strongly or slightly agreed with the statement that they expected to get lonelier as they get older and 24% agreed with the statement that loneliness was part of old age (Table 1). The non-parametric correlation between both statements was 0.45.

Regression analysis

Our univariable analysis demonstrated a significant association between loneliness and both main exposure variables (expectations and stereotypes). The gender-specific ORs of loneliness in Wave 6 were 2.26 and 2.94 for stereotypes for men and women and 2.51 and 3.47 for expectations. All these associations were highly statistically significant with $p < 0.001$ (95%CI for all the ORs are shown in Table 2). Sex interactions with main exposures were not significant, and thus results for combined sample of men and women are presented in adjusted models. Age, sex, social status, working status, employment status, education, marital status, social connection, social inclusion, self-rated health, depression, self-perceived age, household size and household income were all significantly related to future loneliness (Table 2). All these variables were retained in the multivariable analysis.

Results from the multivariable analyses are shown in Table 3 in four steps of adjustment. OR for stereotypes reduced slightly from 2.69 in unadjusted analysis to 2.32 in adjusted model 3 but remained highly significant. OR for expectations also reduced only slightly from 3.00 in

Table 1. Descriptive characteristics of study sample.

		All	Men	Women
Total *N*		4.465	2135	2330
Mean age (years)	64.1	64.0	64.2	
Stereotypes towards loneliness[1] (%)	Strongly/slightly agree	23.9	22.6	25.0
Expectation of loneliness[1] (%)	Strongly/slightly agree	32.5	33.0	32.0
Marital status[1] (%)	Living alone[2]	23.4	15.6	30.4
Working status[1] (%)	Working	46.8	44.1	49.2
Social class (%)	Managerial/professional	38.2	46.7	30.5
	Intermediate	26.1	19.3	32.1
	Routine/manual	35.8	34.0	37.4
Education (%)	Degree/higher	17.1	22.3	12.4
	intermediate	56.0	56.1	56.1
	No qualification	26.8	21.6	31.5
Self-rated health[1] (%)	Poor	17.4	18.0	17.0
CES-D[1] (%)	depression	12.9	10.6	15.0
Self-perceived age (%)	Feel younger	77.5	75.1	79.6
	Feel the same age	16.9	18.7	15.2
	Feel older	5.7	6.2	5.2
Social connection[1] (%)	Yes	97.3	97.2	97.4
Social inclusion[1] (%)	Yes	79.2	80.3	78.2
Household income (%)	1st Q (the lowest)	12.7	9.4	15.7
	2nd Q	15.4	14.0	16.6
	3rd Q	19.7	19.9	19.6
	4th Q	23.6	24.5	22.9
	5th Q	28.6	32.3	25.3
Household occupancy (%)	1	16.4	10.6	23.1
	2	64.1	67.3	61.4
	More	19.5	22.1	15.5
Loneliness[1] Waves 3−6 (%)	Yes	11.5	9.4	13.5

[1] Binary variables; we show % of only one category.
[2] Living alone means single/divorced/separated/widowed.

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unadjusted model to 2.83 in adjusted model 3. When additionally mutually adjusted for each other, the magnitude of the effect of both main exposures further reduced (OR 1.53 (1.16−2.01) and 2.38 (1.84−3.07) for stereotypes and expectations, respectively), but remained statistically significant.

These analyses demonstrate the importance of both stereotypes and expectations of loneliness in predicting loneliness, independent of socio-demographic status, health circumstances and loneliness status at the start of study period.

Discussion

Our results demonstrate strong association between stereotypes towards and expectations about loneliness and actual loneliness reported within the period of 8 years after the initial survey. In our study acceptance of the stereotype of old age as time of loneliness was reported by almost 24% of our respondents and expectation of loneliness by almost 32%. The likelihood of reported loneliness in Waves 3−6 when agreeing with those two statements in Wave 2 was 2.32 and 2.83 times higher, respectively, compared with those who did not agree with such statements. We show that both stereotypes about, and expectation of, loneliness were positively associated with loneliness status later on and that these associations remained significant even when adjusted for covariates and each other.

Our results related to the prevalence of loneliness are in line with those who use the same instrument in the English population and differ (are higher) from those who use other scales for measuring it (Cattan, White, Bond, & Learmouth, 2005; Victor, Scambler, Bond, & Bowling, 2000). Compared with other European countries using the same loneliness measures we have found that prevalence of loneliness is higher in English population (by about 15% higher compare to low-rate countries such as Denmark and by 2% to higher rate countries such as Italy) (Sundström, Fransson, Malmberg, & Davey, 2009). It is not clear why rates of loneliness are higher in England compared with Europe but one possible contributing factor could be the expectations and stereotypes about old age in England is different to other countries.

Research exploring age-stereotypes can be tracked back to the fifties in the USA, with the development of the first measurement scale (Tuckman & Lorge, 1953). They reported that young people generally accepted traditional misunderstandings and stereotypes about older people such as old age was ‘a time of economic insecurity, poor health, loneliness, resistance to change, and failing

Table 2. The univariable associations between two main exposures and all other covariates from Wave 2 and loneliness in Waves 2−6.

			Loneliness − Wave 6 (2012)	
	Wave 2 (2004)		OR (95%Ci)	*p*-value
Stereotypes towards loneliness[1]	Pooled	Agree	2.69 (2.08−3.47)	<0.001
	Males	Agree	2.26 (1.51−3.36)	<0.001
	Females	Agree	2.94 (2.11−4.10)	<0.001
Expectation of loneliness[1]	Pooled	Agree	3.00 (2.36−3.82)	<0.001
	Males	Agree	2.51 (1.75−3.62)	<0.001
	Females	Agree	3.47 (2.53−4.75)	<0.001
Age		1 year increase	1.03 (1.01−1.04)	<0.001
Gender[1]		Female	1.89 (1.49−2.39)	<0.001
Social status		Managerial/professional	1	
		Intermediate	1.50 (1.11−2.03)	0.008
		Routine/manual	2.28 (1.74−2.98)	<0.001
		P for trend		*<0.001*
Employment status[1]		Employed	0.73 (0.58−0.92)	0.007
Education		Degree/higher	1	
		Intermediate	1.33 (0.95−1.86)	0.10
		No qualification	2.55 (1.77−3.67)	<0.001
		P for trend		*<0.001*
Marital status[1]		Married/partnered	0.36 (0.28−0.47)	<0.001
Self-rated health[1]		Fair/poor	3.39 (2.57−4.47)	<0.001
Depression[1]		Yes	5.30 (3.91−7.17)	<0.001
Self-perceived age		Feel younger	1	
		Feel the same age	0.87 (0.64−1.19)	0.39
		Feel older	2.84 (1.82−4.43)	<0.001
		P for trend		*0.002*
Social connection[1]		Yes	0.47 (0.25−0.90)	0.02
Social inclusion[1]		Yes	0.62 (0.47−0.82)	0.001
Household size		Per 1 person increase	0.70 (0.60−0.81)	<0.001
Household income		1st Q (lowest)	1	
		2nd Q	1.02 (0.69−1.52)	0.92
		3rd Q	0.78 (0.54−1.15)	0.21
		4th Q	0.49 (0.33−0.72)	<0.001
		5th Q (highest)	0.29 (0.20−0.43)	<0.001
		P for trend		*<0.001*

[1] Reference category for binary variables not reported in the table.

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physical and mental powers'. Such misconceptions about old age and later life have proved remarkably resilient (Kite, Stockdale, Whitley, & Johnson, 2005). Younger people's attitudes and thoughts about old age, and unwitting changes of speech and manners when in contact with older people were mapped by Hummert and researchers from PEW Centre (Hummert, Garstka, Shaner, & Strahm, 1994; Taylor et al., 2009). The wide spread acceptance of these stereotypes lead to their acceptance by older people (Boduroglu, Yoon, Luo, & Park, 2006).

Table 3. An association between expectations and stereotypes of loneliness in Wave 2 and reported loneliness in Waves 3−6: OR and 95% CI.

	Adjusted 1 OR (95% CI), *p*-value	Adjusted 2 OR (95% CI), *p*-value	Adjusted 3 OR (95% CI), *p*-value	Mutually adjusted OR (95% CI), *p*-value
Stereotypes	2.65 (2.05−3.42), <0.0001	2.55 (1.98−3.29), <0.0001	2.32 (1.80−2.97), <0.0001	1.53 (1.16−2.01), 0.002
Expectations	2.98 (2.33−3.75), <0.0001	2.99 (2.36−3.79), <0.0001	2.83 (2.24−3.57), <0.0001	2.38 (1.84−3.07), <0.0001

Adjusted 1 = for age, sex.
Adjusted 2 = Adjusted 1+ marital status, social connections, social inclusion, and household size.
Adjusted 3 = Adjusted 2+ household income, social class, education, SRH, CES-D, and self-perceived age.
Mutually adjusted − Adjusted 3 + expectations/thoughts at the same model.

The relationship between loneliness and self-reported expectations is both novel and intriguing. Of course there are several caveats to our work. Sample attrition is a challenge in all longitudinal studies and there is some suggestion that, in ELSA, attrition is selective amongst those who are most deprived (Steptoe, Breeze, Banks, & Nazroo, 2012). In addition, ELSA excludes those in care homes where levels of loneliness are higher than in the general population. Missingness of the loneliness data among study participants might also affect the findings although it is unlikely that the relatively strong associations identified in this study could be explained by this issue. Finally, we used one specific measure of loneliness – the short version of UCLA loneliness scale – as our outcome variable but we think this measure, being based upon responses to three questions, may be less influenced by feelings of stigma about reporting loneliness than single item measures (Koropeckyj-Cox, 1998).

Conclusions

Quantitative repeated measure analysis of longitudinal data allowed us to evaluate the magnitude of relative differences in loneliness between those who expected loneliness in later life and those who did not, and between those who self-stereotyped that old age is age of loneliness and those who did not. We have demonstrated that age-stereotypes have a significant influence on the experience of loneliness within 8 years after the initial survey in a sample of 'non-lonely' individuals. This novel finding is intriguing and raises potential awareness for interventions to prevent loneliness in later life. It is well established that a range of negative outcomes in terms of health status, health service use and quality of life are associated with loneliness. To date our repertoire of interventions of how to prevent/reduce loneliness (including services such as befriending or group based activities) have been largely unsuccessful. The linking of loneliness with individuals beliefs and expectations of what old age will be like suggests that, potentially, 'mass campaigns' to change these may be more effective in combating loneliness that the types of services currently offered.

Abbreviations

ELSA	English Longitudinal Study of Ageing
UCLA	University of California, Los Angeles
SRH	Self-rated health
CES-D	Centres for Epidemiologic Studies Depression Scale
OR	Odds ratio
95% CI	Confidence interval with 95% of probability

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Disclosure statement

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