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Worry about debt is related to social loneliness in older adults in the Netherlands

Supplemental files for online publication

APPENDIX TABLE 1:

Measurement and coding of the focal variables used in the analysis

Variables (LASA label)	Questionnaire item	Response options and coding
Social loneliness (ilosoc)	5 items of the 11-item De Jong Gierveld Loneliness Scale (Tilburg, <i>et al.</i> 2004) Response options: 1=no 2=more or less 3=yes	Range of summary variable: 0-5 Coding: 1=yes, more or less 0=no Distribution: 0=no loneliness, 60.6% 1, 18.2% 2, 9.6% 3, 5.4% 4, 3.9% 5=severe loneliness, 2.2%
Emotional loneliness (iloemo)	6 items of the 11-item De Jong Gierveld Loneliness Scale (Tilburg, <i>et al.</i> 2004)	Range of summary variable: 0-6 Coding: 1=yes, more or less 0=no Distribution: 0=no loneliness, 63.4% 1, 14.7% 2, 7.7% 3, 5.7% 4, 3.4% 5, 2.7 6=severe loneliness, 2.2%
Subjective debt burden (iqloanb)	How difficult is it for your household to repay these loans?	Response options and coding: 1=keeping up, no difficulties, 97.7% 2=keeping up, struggle from time to time, 1.7% 3=keeping up, constant struggle, 0.3% 4=falling behind further and further, 0.2% 5=we are so far behind that we have real problems, 0.1%
Subjective debt burden missing	Indicator variable	Coding: 1=value is missing 0=value not missing
Objective debt burden (DTI ratio)	Monthly debt repayment amount / monthly household income (income category midpoints plus lower bound of top category)	Range of ratio: 0-0.93 0=86.8% >0=12.3%

APPENDIX TABLE 2:Measurement and coding of mediator variables used in the analysis

Variables (LASA label)	Questionnaire item	Response options and coding
Social participation (isocp46 isocp47 isocp48 isocp49 isocp50 isocp51 isocp52)	1. Visiting a cultural institution (cinema, museum, exhibition, gallery, stage show, concert, ballet or opera) 2. Going out on an excursion (to the forest, heath, dunes, nature or amusement park, recreation, zoo or buildings of interest) 3. Participating in social cultural center, society, club or community center or club nights, billiards, card or bingo nights 4. Going out to a café, restaurant or dance hall 5. Carrying out sports activities outdoors (e.g. swimming, hiking, biking, fishing or football) 6. Attending sport events and games 7. Going shopping for pleasure	Possible/actual range of summary variable: 7-35 Response options and coding: 1=almost never 2=a few times a year 3=every month 4=a few times a month 5=every week 6=a few times a week 7=every day
Social participation missing	Indicator variable	Coding: 1=value is missing 0=value not missing
Network size (inwsize)	Count of individuals age 18 and older with whom the respondent is in touch regularly and who are important to the respondent	Possible range: 0=80 Range in data set: 0-70
Network size missing	Indicator variable	Coding: 1=value is missing 0=value not missing
Anxiety (ianxint)	Hospital Anxiety Depression Scale HADS-A (Spinhoven, <i>et al.</i> 1997, Zigmond and Snaith 1983)	Possible range of summary variable: 0- 21 Range in data set: 0-20 Response options and coding: 0=rarely or never 1=some of the time 2=occasionally 3=mostly or always
Anxiety missing	Indicator variable	Coding: 1=value is missing 0=value not missing
Depression (icesdint)	Center for Epidemiologic Studies 20- item Depression Scale CES-D (Beekman, <i>et al.</i> 1997, Radloff 1977)	Possible range of summary variable: 0- 60 Range in data set: 0-39 Response options and coding: 0=rarely or never 1=some of the time 2=occasionally 3=mostly or always
Depression missing	Indicator variable	Coding: 1=value is missing 0=value not missing

APPENDIX TABLE 3:Measurement and coding of psychological control variables used in the analysis

Variables (LASA label)	Questionnaire item	Response options and coding
Perceived self-efficacy (ialcos)	12-item Bosscher and Smit (1998) General Self-Efficacy Scale (GSES- 12)	Possible range: 12-60 Range in data set: 23-60 Response options and coding: 1=Strongly agree to 5=Strongly disagree
Perceived self-efficacy missing	Indicator variable	Coding: 1=value is missing 0=value not missing
Mastery (imastry7)	7-item Pearlin Mastery Scale (Pearlin and Schooler 1978)	Possible range: 7-35 Range in data set: 11-35 Response options and coding: 1=Strongly agree to 5=Strongly disagree
Mastery missing	Indicator variable	Coding 1=value is missing 0=value not missing

APPENDIX TABLE 4:

Measurement and coding of socio-demographic characteristics used in the analysis

Variables (LASA label)	Questionnaire item	Response options and coding
Gender (sex)	Sex of respondent	Response options and coding: Male=1 Female=0
Age (byear)	2015-birth year of respondent	Range: 58-98 Response: open-ended response
Married or partnered (imarst)	Marital status:	Response options: 1=never married 2=married 3=divorced 4=widowhood 5=registered partnership Coding: 1=Married, partnered 0=Never married, divorced, widowhood
Education (aeducat)	Education level attained (categorical)	Response options and coding: 1=Elementary not completed, 2.3% 2=Elementary, 11.7% 3=Lower vocational, 19.1% 4=Intermediate, 15.7% 5=Intermediate vocational, 19.0% 6=Secondary, 3.7% 7=Higher vocational, 19.1% 8=College, 1.3% 9=University, 8.1%
Household size (inupers)	Other persons in household	Response options and coding: 0=no other person, 28.1% 1 other person, 64.7%* 2 other persons, 4.8% 3 other persons, 1.7% 4 other persons, 0.4% 5 other persons, 0.2% 6 other persons, 0.1% *includes missing value replacements
Household size missing		Coding: 1=value is missing 0=value not missing
Paid job at present (ijob1)	Paid job at present	Response options and coding: 1=yes 0=no
Paid job at present missing		Coding: 1=value is missing 0=value not missing
Monthly net household income (iincat)		Possible/actual range: 1 to 24 Response options and coding: 1=454-567 Euro, 0.2% 2=568-680 Euro, 0.1% 3=681-794 Euro, 0.4% 4=795-907 Euro, 0.5% 5=908-1,021 Euro, 2.0%

		6=1,022-1,134 Euro, 4.6%
		7=1,135-1,361 Euro, 4.5%
		8=1,362-1,588 Euro, 7.2%
		9=1,589-1,815 Euro, 7.0%
		10=1,816-2,042 Euro, 8.1%
		11=2,043-2,269 Euro, 7.6%
		12=2,270-2,495 Euro, 16.3%*
		13=2,496-2,722 Euro, 8.0%
		14=2,723-2,949 Euro, 5.2%
		15=2,950-3,176 Euro, 5.0%
		16=3,177-3,403 Euro, 3.7%
		17=3,404-3,630 Euro, 4.0%
		18=3,631-3,857 Euro, 2.5%
		19=3,858-4,084 Euro, 2.1%
		20=4,085-4,311 Euro, 2.6%
		21=4,312-4,537 Euro, 1.5%
		22=4,538-4,991 Euro, 2.1%
		23=4,992-5,445 Euro, 1.1%
		24=5,446 Euro or more, 3.7%
		*includes missing value replacements
Income category missing	Indicator variable	Coding: 1=value is missing 0=value not missing
Monthly net household income, midpoints	Categories 1 to 23 replaced by category midpoint Category 24 replace by lower bound	Possible/actual range: €510.50 to €5,446
Monthly debt repayment (iqloanm)	How much money do you spend every month on debt repayment? If you don't know the exact amount, please give us your best estimate.	Range of continuous variable: €0-€2,000 Response option: open-ended amount in Euros per month
Number non-mortgage debts (iqloan1 iqloan2 iqloan3 iqloan4 iqloan5 iqloan6)	Which of the following types of credit and loan do you currently have? Please answer yes or no for each type.	Response options: Credit card: 1=yes, 0=no Personal loan: 1=yes, 0=no Mortgage: 1=yes, 0=no Short-term credit: 1=yes, 0=no Loans from family, friends or acquaintances: 1=yes, 0=no Other loans: 1=yes, 0=no Coding of summary variable: 0 debt types, 93.2% 1 debt type, 5.3% 2 debt types, 1.4% 3 debt types, 0.1% 4 to 6 debt types, 0.0%
Homeowner (ihowner)	Ownership of home	Response options and coding: 1=yes 0=no
Homeowner missing	Indicator variable	Coding: 1=value is missing 0=value not missing

APPENDIX TABLE 5:

Full results of parameter estimates (Standard Error) from OLS regression of social and emotional loneliness on subjective and objective debt burden, potential mediator variables, psychological and socio-demographic control variables, N=1,606

Variable	(1) Social loneliness B (C.I.)	(2) Emotional loneliness B (C.I.)	(3) Social loneliness B (C.I.)	(4) Emotional loneliness B (C.I.)
Subjective debt burden	0.41** (0.15, 0.67) p=0.002	0.12 (-0.18, 0.41) p=0.43	0.36** (0.12, 0.61) p=0.004	0.04 (-0.24, 0.31) p=0.79
Subjective debt burden missing	0.26 (-0.25, 0.77) p=0.32	-0.16 (-0.74, 0.42) p=0.58	-0.05 (-0.54, 0.44) p=0.84	-0.53 (-1.08, 0.02) p=0.06
Objective debt burden (DTI)	0.43 (-0.49, 1.34) p=0.36	0.74 (-0.30, 1.79) p=0.16	0.22 (-0.64, 1.08) p=0.62	0.47 (-0.50, 1.44) p=0.35
<u>Mediator variables:</u>				
Social participation			-0.02*** (-0.04, -0.01) p<0.001	-0.01 (-0.02, 0.01) p=0.21
Social participation missing			1.19 (-0.15, 2.54) p=0.08	-0.80 (-2.32, 0.72) p=0.30
Network size			-0.02*** (-0.03, -0.02) p<0.001	-0.01*** (-0.02, -0.01) p<0.001
Network size missing			-0.30 (-1.24, 0.64) p=0.53	0.13 (-0.93, 1.19) p=0.81
Anxiety			0.01 (-0.02, 0.04) p=0.35	0.02 (-0.01, 0.05) p=0.24
Anxiety missing			-0.06 (-2.61, 2.48) p=0.96	1.94 (-0.92, 4.81) p=0.18
Depression			0.04*** (0.03, 0.06) p<0.001	0.08*** (0.06, 0.10) p<0.001
Depression missing			-0.68 (-1.98, 0.62) p=0.31	-0.31 (-1.77, 1.16) p=0.68
<u>Control variables:</u>				
Mastery	-0.06*** (-0.07, -0.04) p<0.001	-0.07*** (-0.09, -0.05) p<0.001	-0.02* (-0.04, 0.00) p=0.01	-0.01 (-0.03, 0.01) p=0.17
Mastery missing	0.99* (0.11, 1.87) p=0.03	0.31 (-0.70, 1.32) p=0.55	1.07* (0.22, 1.93) p=0.01	0.29 (-0.67, 1.25) p=0.56
Self-efficacy	-0.02* (-0.03, 0.00) p=0.01	-0.03*** (-0.05, -0.02) p<0.001	0.00 (-0.02, 0.01) p=0.51	-0.01 (-0.03, 0.00) p=0.07
Self-efficacy missing	-0.49 (-1.96, 0.98) p=0.51	-0.65 (-2.33, 1.03) p=0.45	-1.33 (-3.14, 0.47) p=0.15	-0.39 (-2.43, 1.65) p=0.71
Gender	0.33*** (0.20, 0.45) p<0.001	0.26*** (0.12, 0.40) p<0.001	0.26*** (0.14, 0.38) p<0.001	0.25*** (0.12, 0.39) p<0.001
Age	-0.01 (-0.01, 0.00) p=0.20	0.01 (0.00, 0.01) p=0.29	-0.01 (-0.02, 0.00) p=0.05	0.01 (0.00, 0.02) p=0.08
Married or partnered	-0.12 (-0.29, 0.06) p=0.18	-0.68*** (-0.88, -0.48) p<0.001	0.02 (-0.15, 0.18) p=0.83	-0.51*** (-0.70, -0.32) p<0.001
Education	0.05** (0.02, 0.08) p=0.003	-0.02 (-0.05, 0.02) p=0.40	0.07*** (0.04, 0.10) p<0.001	-0.01 (-0.04, 0.03) p=0.73
Household size	-0.09 (-0.20, 0.03) p=0.14	-0.17* (-0.30, -0.04) p=0.01	-0.12* (-0.23, -0.01) p=0.03	-0.20** (-0.32, -0.08) p=0.002
Household size missing	0.34 (-1.43, 2.10) p=0.71	0.31 (-1.70, 2.33) p=0.76	0.24 (-1.43, 1.90) p=0.78	-0.19 (-2.06, 1.69) p=0.84
Paid job at present	-0.07 (-0.23, 0.10) p=0.43	-0.05 (-0.23, 0.14) p=0.63	-0.04 (-0.19, 0.11) p=0.60	0.02 (-0.15, 0.19) p=0.82

Paid job at present missing	-0.28 (-1.51, 0.95) p=0.66	0.57 (-0.84, 1.98) p=0.43	-0.46 (-1.67, 0.76) p=0.46	0.83 (-0.54, 2.20) p=0.23
Income categories	-0.02* (-0.03, 0.00) p=0.02	-0.01 (-0.03, 0.01) p=0.18	-0.01 (-0.02, 0.01) p=0.30	0.00 (-0.02, 0.01) p=0.59
Income category missing	0.06 (-0.21, 0.32) p=0.67	-0.01 (-0.31, 0.29) p=0.94	0.01 (-0.24, 0.26) p=0.95	-0.08 (-0.36, 0.21) p=0.60
Number non-mortgage debts	-0.19 (-0.40, 0.02) p=0.07	-0.21 (-0.45, 0.03) p=0.09	-0.17 (-0.37, 0.03) p=0.09	-0.17 (-0.39, 0.05) p=0.13
Homeowner	-0.28*** (-0.42, -0.14) p<0.001	-0.02 (-0.17, 0.14) p=0.83	-0.11 (-0.24, 0.03) p=0.12	0.16* (0.01, 0.31) p=0.04
Homeowner missing	0.91 (-0.75, 2.56) p=0.28	-0.24 (-2.13, 1.65) p=0.81	0.68 (-0.88, 2.24) p=0.39	-0.10 (-1.86, 1.66) p=0.91
Constant	4.08*** (3.17, 4.98) p<0.001	5.22*** (4.18, 6.25) p<0.001	3.03*** (2.06, 4.00) p<0.001	2.32*** (1.23, 3.42) p<0.001
F (df)	11.47*** (20) p<0.001	19.16*** (20) p<0.001	16.97*** (28) p<0.001	25.46*** (28) p<0.001
R2 adjusted	0.13	0.19	0.22	0.30
F change			26.95*** p<0.001	33.36*** p<0.001

Note: *** p<0.001, ** p<0.01, * p<0.05

APPENDIX TABLE 6:

Mediation analysis: Indirect effect of subjective debt burden on social and emotional loneliness, N=1,606

	Social loneliness Effect (Boot S.E.)	Social loneliness Boot Confidence Interval	Emotional loneliness Effect (Boot S.E.)	Emotional loneliness Boot Confidence Interval
Total	0.06 (0.07)	-0.05 to 0.23	0.08 (0.08)	-0.05 to 0.27
Social participation	0.01 (0.01)	-0.02 to 0.04	0.01 (0.01)	-0.01 to 0.02
Network size	0.01 (0.03)	-0.05 to 0.09	0.01 (0.02)	-0.02 to 0.04
Anxiety	-0.01 (0.01)	-0.05 to 0.01	-0.01 (0.01)	-0.03 to 0.01
Depression	0.04 (0.04)	-0.02 to 0.13	0.08 (0.07)	-0.03 to 0.23

APPENDIX TABLE 7:

Correlation coefficient of social loneliness and subjective debt burden with potential explanatory variables, borrower-only sample, N=258

Variable:	Social loneliness Pearson r	Emotional loneliness Pearson r	Objective debt burden Pearson r	Subjective debt burden Pearson r
Social loneliness				
Emotional loneliness	0.51***, p<0.001			
Objective debt burden	-0.02, p=0.70	0.03, p=0.61		
Subjective debt burden	0.22***, p<0.001	0.06, p=0.36	0.06, p=0.35	--
<u>Mediator variables:</u>				
Social participation	-0.25***, p<0.001	-0.11, p=0.07	-0.07, p=0.26	-0.08, p=0.18
Network size	-0.27***, p<0.001	-0.25***, p<0.001	0.01, p=0.82	-0.09, p=0.17
Anxiety	0.26***, p<0.001	0.25***, p<0.001	0.02, p=0.75	0.01, p=0.82
Depression	0.37***, p<0.001	0.40***, p<0.001	-0.04, p=0.56	0.14*, p=0.03

Note: *** p<0.001, ** p<0.01, * p<0.05

APPENDIX TABLE 8:

Parameter estimates (Standard Error) from OLS regression of social and emotional loneliness on subjective debt burden, other predictors of loneliness, potential mediators, and socio-demographic control variables, borrower-only sample, N=258

Variable	(1) Social loneliness B (S.E.)	(2) Emotional loneliness B (S.E.)	(3) Social loneliness B (S.E.)	(4) Emotional loneliness B (S.E.)
Subjective debt burden	0.45** (0.17, 0.73) p=0.002	0.25 (-0.06, 0.55) p=0.11	0.39** (0.13, 0.66) p=0.004	0.15 (-0.14, 0.45) p=0.31
Subjective debt burden missing	0.19 (-0.37, 0.75) p=0.50	-0.14 (-0.76, 0.48) p=0.65	-0.10 (-0.65, 0.46) p=0.74	-0.46 (-1.08, 0.16) p=0.14
Objective debt burden (DTI)	0.46 (-0.66, 1.58) p=0.42	0.72 (-0.52, 1.96) p=0.25	0.04 (-1.02, 1.11) p=0.93	0.37 (-0.81, 1.55) p=0.53
<u>Mediator variables:</u>				
Social participation			-0.05** (-0.08, -0.02) p=0.001	-0.01 (-0.05, 0.02) p=0.38
Social participation missing			dropped	dropped
Network size			-0.02** (-0.03, -0.01) p=0.005	-0.02** (-0.04, -0.01) p=0.002
Network size missing			-0.28 (-2.53, 1.97) p=0.81	-0.78 (-3.27, 1.72) p=0.54
Anxiety			0.01 (-0.07, 0.10) p=0.73	-0.04 (-0.13, 0.05) p=0.42
Anxiety missing			dropped	dropped
Depression			0.04* (0.00, 0.08) p=0.04	0.08*** (0.03, 0.12) p<0.001
Depression missing			dropped	dropped
<u>Control variables:</u>				
Mastery	-0.08** (-0.13, -0.03) p=0.003	-0.10*** (-0.16, -0.05) p<0.001	-0.04 (-0.09, 0.01) p=0.14	-0.05 (-0.11, 0.00) p=0.07
Mastery missing	-0.58 (-2.87, 1.72) p=0.62	-0.48 (-3.02, 2.06) p=0.71	-0.03 (-2.21, 2.16) p=0.98	0.32 (-2.10, 2.74) p=0.79
Self-efficacy	-0.02 (-0.05, 0.01) p=0.24	-0.01 (-0.05, 0.02) p=0.44	-0.01 (-0.05, 0.02) p=0.37	-0.01 (-0.04, 0.03) p=0.72
Self-efficacy missing	0.43 (-2.98, 3.83) p=0.80	0.19 (-3.57, 3.95) p=0.92	-0.52 (-3.75, 2.71) p=0.75	-0.91 (-4.48, 2.67) p=0.62
Gender	0.31* (0.01, 0.62) p=0.04	0.15 (-0.19, 0.49) p=0.39	0.22 (-0.08, 0.52) p=0.15	0.06 (-0.27, 0.39) p=0.71
Age	-0.01 (-0.03, 0.02) p=0.59	0.00 (-0.03, 0.03) p=0.85	0.00 (-0.03, 0.02) p=0.82	0.00 (-0.03, 0.03) p=0.81
Married or partnered	-0.33 (-0.87, 0.20) p=0.22	-1.05** (-1.64, -0.46) p=0.001	-0.15 (-0.66, 0.36) p=0.56	-0.81** (-1.38, -0.25) p=0.005
Education	0.06 (-0.02, 0.14) p=0.16	-0.01 (-0.10, 0.08) p=0.84	0.10* (0.02, 0.18) p=0.01	0.03 (-0.06, 0.11) p=0.57
Household size	-0.10 (-0.41, 0.22) p=0.55	-0.11 (-0.46, 0.24) p=0.55	-0.16 (-0.45, 0.14) p=0.31	-0.17 (-0.50, 0.16) p=0.32
Household size missing	5.57** (2.23, 8.92) p=0.001	-0.04 (-3.73, 3.65) p=0.98	3.63* (0.35, 6.91) p=0.03	-2.26 (-5.89, 1.37) p=0.22
Paid job at present	-0.24 (-0.62, 0.14) p=0.22	-0.27 (-0.69, 0.15) p=0.20	-0.16 (-0.52, 0.20) p=0.39	-0.21 (-0.61, 0.20) p=0.31
Paid job at present missing	-0.59 (-3.02, 1.83) p=0.63	-0.12 (-2.79, 2.56) p=0.93	0.08 (-3.03, 3.19) p=0.96	1.00 (-2.44, 4.45) p=0.57

Variable	(1) Social loneliness B (S.E.)	(2) Emotional loneliness B (S.E.)	(3) Social loneliness B (S.E.)	(4) Emotional loneliness B (S.E.)
Income categories	0.02 (-0.02, 0.07) p=0.27	0.02 (-0.03, 0.07) p=0.41	0.03 (-0.02, 0.07) p=0.22	0.02 (-0.03, 0.07) p=0.42
Income category missing	0.41 (-0.22, 1.04) p=0.20	0.16 (-0.53, 0.86) p=0.65	0.16 (-0.44, 0.76) p=0.60	-0.14 (-0.80, 0.52) p=0.67
Number non-mortgage debts	-0.28* (-0.53, -0.03) p=0.03	-0.20 (-0.48, 0.07) p=0.14	-0.25* (-0.48, -0.02) p=0.04	-0.16 (-0.42, 0.10) p=0.21
Homeowner	-0.15 (-0.63, 0.34) p=0.55	0.33 (-0.21, 0.87) p=0.23	0.00 (-0.47, 0.46) p=0.98	0.49 (-0.02, 1.00) p=0.06
Homeowner missing	-1.58 (-3.97, 0.82) p=0.20	-1.07 (-3.71, 1.58) p=0.43	-1.28 (-3.55, 0.99) p=0.27	-0.51 (-3.03, 2.00) p=0.69
Constant	4.43*** (2.07, 6.80) p<0.001	4.90*** (2.29, 7.52) p<0.001	3.57** (1.13, 6.00) p=0.004	3.36** (0.66, 6.05) p=0.01
F, df	3.24*** (20) p<0.001	3.56*** (20) p<0.001	4.44*** (25) p<0.001	4.65 (25) p<0.001
R2 adjusted	0.15	0.17	0.25	0.26
F change			7.46*** p<0.001	7.17*** p<0.001

Note: *** p<0.001, ** p<0.01, * p<0.05