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## Short Communication

# Lonely at the bottom: a cross-sectional study on being ill, poor, and lonely



H. Bosma <sup>a,\*</sup>, M. Jansen <sup>b,c</sup>, S. Schefman <sup>d</sup>, K.J. Hajema <sup>c</sup>, F. Feron <sup>a,c</sup>

<sup>a</sup> Maastricht University, CAPHRI, Social Medicine, P.O. Box 616, 6200 MD Maastricht, The Netherlands

<sup>b</sup> Maastricht University, CAPHRI, Health Services Research, P.O. Box 616, 6200 MD Maastricht, The Netherlands

<sup>c</sup> GGD Zuid Limburg, Academische Werkplaats Publieke Gezondheid, P.O. Box 2022, 6160 HA Geleen, The Netherlands

<sup>d</sup> Veiligheidsregio Limburg-Noord, P. O. Box 11, 5900 AA Venlo, The Netherlands

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## Introduction

Since the 1980s, neo-liberalism has been pervading all corners of society.<sup>1</sup> Governments have been drawing back and, whether or not with the help of others, people have to increasingly solve their own problems.<sup>2</sup> Particularly when there are health problems, people increasingly need a supportive social network<sup>3</sup> or a higher income that may facilitate them to buy help and services.<sup>4</sup> It is unclear whether people with an illness and low income have sufficient social resources to compensate for their lack of income. This report will therefore provide insight into whether or not people with an illness and low income not only lack the financial resources, but also the social resources to cope with disease and other life difficulties.

Data was available from a large epidemiological monitoring survey from two regional public health services in the south of The Netherlands in 2012 (<http://www.ggd.nl/over-ggd-ghor-nederland/english/>). Data was based on self-administered

questionnaires among 24,978 randomly selected, independently living adults between 17 and 65 years old (response rate: 41.3%). Although weighting factors were available to correct for over- and underrepresentation of certain groups (particularly according to age and socio-economic status), un-weighted findings were presented, as weighting did not result in different findings. The 10,029 people (40.6%) who reported at least one illness out of a list of nineteen illnesses that doctors had treated or controlled in the last 12 months (i.e. type 2 diabetes (4.0%), stroke (1.0%), heart attack (1.4%), other heart condition (1.1%), cancer (2.8%), migraine (6.6%), high blood pressure (12.8%), constricting arteries in abdomen or legs (1.2%), lung disease (6.2%), psoriasis (1.7%), chronic eczema (2.8%), dizziness leading to falls (2.3%), severe gut-related problems lasting longer than three months (3.3%), involuntary loss of urine (1.9%), wear of the joints (arthrosis) (7.4%), inflammation of the joints (rheumatoid arthritis) (4.7%), severe back problems (including hernia) (7.8%), other severe problems related to neck or shoulders (8.2%), and other severe problems related to arms (4.8%) were selected.

\* Corresponding author.

E-mail address: [hans.bosma@maastrichtuniversity.nl](mailto:hans.bosma@maastrichtuniversity.nl) (H. Bosma).  
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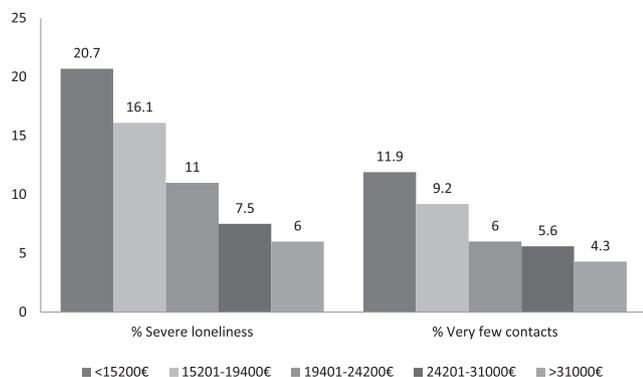
Statistics Netherlands provided tax-based data on annual equivalent net income in five predefined categories, according to which quintile of the Dutch income distribution people were assigned to: 1. 0–20% (max 15,200€) (14%), 2. 20–40% (max 19,400€) (17%), 3. 40–60% (max 24,200€) (22%), 4. 60–80% (max 31,000€) (25%), and 5. 80–100% (>31,000€) (22%). Equivalent income indicates that the number of people living from the sum of incomes in a household is taken account of.

The frequency of contact with family members, friends, and neighbours was asked for (each having five response categories: 1. more than one contact per week, 2. three contacts per month, 3. two contacts per month, 4. one contact per month, 5. less than 1 contact per month, and 6. seldom or never). Contacts were not further defined (e.g. we do not know whether or not people also considered online contacts). Very few contacts was defined by scoring higher than 10 on the summed network scale (theoretically ranging from three to 18) which is equivalent to less than two contacts per months with friends, family, or neighbours (7%). The 11 items from the De Jong-Gierveld scale were used to measure loneliness.<sup>5</sup> Two sample items are 'I miss having a really close friend' and 'I experience a general sense of emptiness'. Based on the sum score of the items, severe loneliness was defined by scoring nine, 10 or 11 on the loneliness scale (theoretically ranging from 0 to 11) (11%). Very few contacts and severe loneliness, reflecting both the quantity and quality components of social networks and social support, were considered proxies for the social resources that people have.

## Lonely at the bottom

In this group of ill people, those in the lowest income group had more frequent reports of severe loneliness and having very few contacts: 6.0% of the people in the highest income group reported severe loneliness compared with 20.7% in the lowest income group ( $P \leq 0.001$  based on  $\chi^2$ -test) (see Fig. 1). Corresponding percentages for very few contacts were: 4.3% versus 11.9% ( $P \leq 0.001$  based on  $\chi^2$ -test).

Controlling for age and sex, odds ratios of severe loneliness and having very few contacts for the lowest income group were at least three times as high as in the highest income group. Odds ratios and 95% confidence intervals were 4.28



**Fig. 1 – Percentages of ill people reporting severe loneliness or very few contacts according to equivalent net income.**

(3.43–5.35) and 3.46 (2.65–4.54), respectively (not tabulated). The possible confounding by ethnic background (six categories), marital status (four categories), educational level (nine categories), and employment status (nine categories) was explored. As indicated by the reduction of the odds ratios for income, only being divorced or work disabled partly 'explained' why low income was linked to severe loneliness and very few contacts. However, with control for these variables, odds ratios of severe loneliness and very few contacts for the lowest income group remained strongly elevated, i.e. 2.52 (1.98–3.22) and 2.60 (1.95–3.47), respectively.

Some further not tabulated findings emphasize the robustness of the associations. Income did not affect the outcomes differently in young and old respondents, nor in males and females. This was tested by multiplicative interactions between income and age ( $P$ -values of the interactions regarding severe loneliness and very few contacts were 0.84 and 0.27, respectively) and between income and sex ( $P$ -values were 0.16 and 0.92, respectively).

When illness was defined by two or more illness reports (instead of one or more), findings were about similar. In this group of 4570 people, 25.1% in the lowest income group reported severe loneliness versus 8.0% in the highest income group ( $P \leq 0.001$  based on  $\chi^2$ -test). Corresponding percentages for very few contacts were 14.0% and 4.9% ( $P \leq 0.001$  based on  $\chi^2$ -test).

Being in the lowest income group was also related to poor social outcomes when studying the association in the separate 19 illness groups, although not (statistically) significantly so in groups with a small prevalence, such as people who reported a stroke or heart condition. Finally, the association between income and severe loneliness and very few contacts was confirmed when using the continuous versions of both outcome variables and ordinary least squares regression analyses.

## Wider social processes intersecting

The findings in a large group of Dutch ill adults indicate strong associations of low equivalent income with severe loneliness and very few contacts. The associations, being partly based on a higher prevalence of divorce and work-related disability in the lowest income group, suggest that wider adverse social processes might be intersecting and accumulating in ill people with a low income. The higher divorce rates might be symptomatic of the increasingly loosely knit connections between people.<sup>6</sup> The increased work disability might be indicative of processes of social exclusion in which falling ill is not only related to income drops and difficulties in returning to work, but also to disruption of social networks and a resulting sense of social alienation.<sup>7</sup>

## Governments drawing back

In an era characterized by governments drawing back and people having to first handle problems themselves or with help of their networks, the findings paint an isolated, detached, and alienated picture of life, with a substantial number of people having both an illness and a relatively low

income.<sup>8,9</sup> As policies promoting self-reliance, own responsibility and self-management become even more important, the question is raised what will this do to these people who apparently not only lack the financial resources, but also the social resources to cope with life's difficulties. More research is needed to find out whether a similarly gloomy pattern of adversity can be detected in other countries with samples that are less affected by non-response and with additional measures of social resources, and whether explanations can be found that can be used in building tools for interventions.

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## Author statements

### Ethical approval

Data collection of this surveillance information constitutes an official statutory task of the Regional Public Health Services. For this study, secondary analyses of anonymous datasets were used according to the Code of Conduct for Health Research of the Dutch Federation of Biomedical Scientific Societies.

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None.

### Competing interests

None declared.

## REFERENCES

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1. Coburn D. Beyond the income inequality hypothesis: class, neo-liberalism, and health inequalities. *Soc Sci Med* 2004;58:41–56.
2. Galvin R. Disturbing notions of chronic illness and individual responsibility: towards a genealogy of morals. *Health (London)* 2002;6:107–37.
3. Holt-Lunstad J, Smith TB, Layton JB. Social relationships and mortality risk: a meta-analytic review. *PLoS Med* 2010;7:e1000316.
4. Mielck A, Kiess R, von dem Knesebeck O, Stirbu I, Kunst AE. Association between forgone care and household income among the elderly in five Western European countries – analyses based on survey data from the SHARE-study. *BMC Health Serv Res* 2009;9:52.
5. De Jong Gierveld J, Kamphuis FH. The development of a Rasch-type loneliness-scale. *Appl Psych Meas* 1985;9:289–99.
6. Putnam Robert D. *Bowling alone: the collapse and revival of American community*. New York: Simon & Schuster; 2000.
7. Holland P, Burström B, Whitehead M, Diderichsen F, Dahl E, Barr B, Nylén L, Chen WH, Thielen K, van der Wel KA, Clayton S, Uppal S. How do macro-level contexts and policies affect the employment chances of chronically ill and disabled people? Part I: the impact of recession and deindustrialization. *Int J Health Serv* 2011;41(3):395–413.
8. Mental Health Foundation. *The lonely society*. London: Mental Health Foundation; 2010.
9. Van den Brink CL, Savelkoul M. Gezondheidsmonitor GGD'en, CBS en RIVM. In: *Volksgezondheid Toekomst Verkenning, Nationaal Kompas Volksgezondheid*; 2013.