Article

Are young adults with long-standing illness or disability at increased risk of loneliness? Evidence from the UK Longitudinal Household Study

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Abstract

Background: Recent evidence has shown that young adults experience significant levels of loneliness, and those with long-standing illness or disability (LSID) may be particularly vulnerable. This study investigated whether young adults with LSID were more likely to experience loneliness than their 'healthy' peers, after accounting for key socio-contextual and health-related factors associated with loneliness.

Design and Methods: The sample consists of 4510 16-24-year-old individuals from Wave 9 of the UK Household Longitudinal Study (UKHLS). Loneliness was measured using the UCLA 3-item loneliness scale, in addition to a direct indicator of frequency of loneliness. Correlation tests measured associations between both measures of loneliness and LSID. Ordinal logistic regression was used to examine the association between LSID and UCLA loneliness, after accounting for key demographic and socio-contextual variables.

Results: Results from the correlation tests demonstrated significant associations between LSID and both measures of loneliness. Results from the ordinal logistic regression models indicated that chronic illness was significantly associated with loneliness, after accounting for various demographic, social, and well-being factors. In addition, individuals with fewer close friends reported higher loneliness, as did those with poorer mental health, and low well-being scores. Younger participants, age brackets 16-18 and 19-21, were found to report higher loneliness than the individuals aged 22-24-year-old.

Conclusions: Overall, the study found significant evidence of associations between the presence of LSID and loneliness in young adults (16-24 years old), suggesting these individuals are at an increased risk of loneliness, and could be a focus for future public health interventions.

Introduction

Increasing rates of loneliness, defined as the absence of desired social connections, or a sense of isolation experienced by an individual, is an area of significant concern in the UK,[1] with negative implications for both personal social well-being and life-long health.[2] Recent evidence demonstrates that loneliness affects a large proportion of the UK adult population (classified as those aged 16 and over) for a substantial period of time.[3] When surveyed, 5% of adults living in England reported that they felt lonely either 'often' or 'always', 6% described feeling lonely 'at least some of the time', and a further 24% reported loneliness 'occasionally'.[3] Although loneliness has been well researched amongst older adults,[4,5] literature relating specifically to young adults (aged 16-24) is limited, despite early evidence suggesting this age group has a similarly high prevalence of loneliness as older adults.[6-9] Given that late adolescence into adulthood is a major transition for many young people, it may serve as a particularly vulnerable developmental period for loneliness.[9-11] Moreover, research suggests the negative effects of loneliness are only compounded throughout an individual's lifetime, making young adulthood an important time to target loneliness.[12]

Recent prevalence estimates indicate higher levels of loneliness among young adults with long standing illness or disability (LSID), such as chronic disease, in comparison to their 'healthy' peers (ONS 2018),[7] suggesting that LSID may serve as a risk factor for loneliness for young people. It is suggested that this sub-set of young adults face more barriers to establishing and maintaining satisfactory peer relationships throughout adolescence and into adult life, including the burden of symptoms and treatment, time needed to attend hospital appointments, and fear of rejection from peers due to their illness.[13] These factors all have the potential to cause disruption in this important period of social development.[13]

Significance for public health

Loneliness has become a major public health concern in the UK, with negative implications for both personal well-being and life-long health. Recent evidence has shown that young adulthood is a significantly vulnerable period for loneliness, and prevalence estimates indicate that young adults with long-standing illness or disability may be particularly at risk for loneliness. The current study advances previous research by explicitly investigating the extent to which long-standing illness or disability is associated with loneliness among young adults, after accounting for key socio-contextual and health-related factors. Results demonstrate a significant relationship between chronic illness and loneliness, thus suggesting that interventions to alleviate loneliness may be particularly needed among this population. These findings will be relevant to the health professionals who regularly come into contact with young people who experience long-standing illness or disability.

Though a range of literature has investigated loneliness among individuals with LSID, research tends to cover the whole adult population, rather than explicitly investigating young adults.[8,14] To date, these studies have focused on estimating general prevalence data, with young adults included as one age group within the full sample. Thus, the overall aim of the current study is to examine the extent to which long-term (>12 months) illness or disability (*i.e.*, LSID) is associated with loneliness among young adults, after accounting for key socio-contextual and health-related factors.[15]

A meta-analysis of research on loneliness in relation to children and adolescents with chronic physical conditions, some of which include 'healthy' control peers for comparison, found a small, but significant link between those with chronic conditions and loneliness ($g=0.13$ $p=0.035$, and 95% CI [0.01, 0.26]).[16] The predominant theories in the literature for this association include periods of absence from school due to ill health, physical impairment and reduced ability to partake in opportunities to socialise with peers.[8,16,17] However, the majority of studies identified for this meta-analysis are US based, and they range from 1985 to 2015 in date. The different setting and time periods mean findings may not be directly applicable to young adults in the UK today, with differences in social circumstances and health systems across countries and time periods.

Methods

Sample

This study utilises data from Wave 9 of the UK Household Longitudinal Study (UKHLS), a large longitudinal survey that annually collects data from individuals over the age of 10 across 40,000 households.[15,18] Comprised of both face-to-face interviews and self-completion components, UKHLS covers a wide variety of subjects including; demographic characteristics, health and well-being, education, employment and social life.[18] Fieldwork for Wave 9 data was conducted between 5th January 2017 and 24th May 2019.[18] The sample for this study consists of young people ages 16-24, resulting in a total of 4523 individuals. Of this subset of the data, individuals were included in further analysis if they gave valid responses to questions concerning presence of LSID and at least one measure of loneliness.

There are no ethical issues or concerns with using this data, as it fully anonymised. The data collection for the UKHLS study as a whole (led by a team at the Institute for Social and Economic Research at the University of Essex) has been approved by the University of Essex Ethics Committee.[19] UKHLS data is freely available to researchers through online registration through End User Licence (EUL).[15]

Measures

Loneliness

Loneliness was measured using two different scales: a direct indicator capturing the frequency of loneliness,[20] and the 3-item UCLA scale.[21] The direct indicator was measured on a 5-point Likert scale, ranging from 'never' to 'often or always.' The 3-item UCLA scale was recoded to a 3-point scale, representing low, moderate, and high levels of loneliness.

Long-standing illness or disability

The presence of long-standing illness or disability was recorded by yes or no responses to the question "Do you have you had a long standing, physical or mental impairment, illness or disability (LSID)?". Long-standing was referred to as lasting, or likely to last, over a period of 12 months. This measure is 'self-reported' and thus gives the respondents own view of their health status.

Demographic characteristics

Basic demographic characteristics were measured as follows. Age was categorised into 3-year age brackets; 16-18, 19-21, and 22-24 respectively. Gender was recorded as male or female. Ethnicity was self-reported at interview. Due to the homogeneous UK White sample, ethnicity was recoded as a binary outcome, either White or Other, for the purposes of this study.

Socio-contextual and health-related factors

A variety of socio-contextual and health-related factors were accounted for in the current study. Given evidence that individuals who lack satisfactory social relations experience loneliness,[11,22,23] the current study controlled for an individual's number of close friends, measured continuously, and use of social media sites, categorised by how many hours they spent interacting with friends through these sites each day. Due to evidence within adult samples,[11,24,25] the current study also controlled for education level, binary self-reported general health ("good or better", "fair or worse"), employment, mental health (*i.e.*, Short Form Health Survey, SF-12),[26] and subjective wellbeing (*i.e.*, General Health Questionnaire, GHQ).[27]

Analyses

The current study used a combination of correlation tests and regression techniques to assess the associations between LSID and loneliness among young adults. All statistical analyses were conducted in SPSS 26.0. Baseline demographics were reported as mean±SD for continuous variables or n (%) for categorical and ordinal variables, split by whether individuals had a LSID or not. Correlation (*i.e.*, Mann U Whitney) and association (*i.e.*, χ^2) testing was conducted between each variable and presence of LSID, including both direct and UCLA 3-item measures of loneliness. Ordinal logistic regression analysis was conducted to predict loneliness based on LSID, controlling for socio-contextual and health related factors. The 3-item UCLA measure of loneliness was used in the regression models, given recent measurement recommendations for young adults.[20] For simplicity, the study used a complete-case approach to missing data.

Results

Demographic characteristics

4523 individuals from the UKHLS Wave 9 dataset were aged 16-24 years, representing 12.54% of the original dataset. Of these 4523 individuals, 811 (17.9%) responded that they had a "long-standing (>12 months or likely to last >12 months, physical or mental impairment, illness or disability", while 3699 (81.8%) did not, and no data was available for 13 (0.3%). This left a final dataset of 4510 individuals to be included in this analysis. The full characteristics of the sample participants are outlined in Table 1, described by whether they have a LSID. The mean age of the group was 19.90 (SD=2.603). 54.0% of the participants were female, and 46.0% were male. 3001 of the participants were White, with 1492 recorded as Other, and there was no ethnicity data available from the remaining 17 participants.

Correlation and association between LSID and loneliness

The current study used correlation and chi-square testing as a preliminary analysis of the relationship between LSID and loneliness. There was a statistically significant association between LSID and direct loneliness score, χ^2 (2) = 132.794, p=0.000, with a significant correlation between the variables, r= 0.176 p=0.000. There was also a statistically significant association between LSID and the 3-item UCLA scale loneliness score, χ^2 (2) = 162.613, p=0.000, with a significant correlation, r = 0.1898, p=0.000. Comparison between direct and 3-item UCLA loneliness scores across LSID showed similar results, with a slightly stronger association found in 3-item UCLA scores.

Ordinal logistic regression

Results from the ordinal logistic regression, presented in Table 2, demonstrate that LSID was a statistically significant predictor of loneliness (OR 1.294; 95% CI 1.024–1.663, p=0.031), after accounting for basic demographic, mental health, and well-being factors. However, the true nature of this association may be small, as the lower boundary of the confidence interval is close to including 1. A range of demographic and socio-contextual variables were also found to be significantly associated with loneliness. There was a small but statistically significant association between age and loneliness, with young people age 16-18 (OR 1.390; 95% CI 1.039–1.860, p=0.027) and age 19-21 (OR 1.270; 1.032–1.562, p=0.024) reporting higher loneliness in comparison to the older age group (22-24 years). Young adults with more close friends reported lower loneliness (OR 0.954; 95% CI 0.930–0.980, p=0.000). Additionally, higher (*e.g.*, better) mental health scores were associated with lower loneliness (OR 0.946; 95% CI 0.936–0.957; p=0.000), and higher subjective well-being was associated with lower loneliness (OR 1.120; 95% CI 1.096–1.146, p=0.000). There was no association between loneliness and sex, ethnicity, or general health after accounting for other factors.

Discussion

By drawing on a large, nationally representative sample of UK young adults, relying on universally recommended measurement of loneliness,[20] and accounting for an assortment of socio-contex-

Table 1. Characteristics of sample participants described by presence of LSID.

Characteristic	LSID Yes n = 811	LSID No n = 3699	Total n = 4510
Male	40.3%	47.3 %	46.0 %
Age			
16 – 18 years	30.6%	36.5%	35.4%
19 – 21 years	40.3%	47.3%	46.0%
22 – 24 years	59.7%	52.7%	54.0%
White	75.2%	64.6 %	66.5 %
Direct loneliness			
Hardly ever/never	34.3%	54.5%	50.8%
Some of the time	42.0%	34.6%	35.9%
Often	23.8%	11.0%	13.3%
UCLA-Loneliness score			
Low	35.5%	57.5%	52.9%
Moderate	47.4%	36.3%	37.9%
High	17.0%	6.1%	9.2%
Good or better general health	70.9%	94.2%	90.0%
Social media use daily			
No social media	8.5%	8.3%	8.4%
No hours	3.0%	1.6%	1.9%
>1 hour	19.9%	20.0%	20.0%
1 – 3 hours	37.7%	40.4%	40.0%
4 – 6 hours	17.1%	18.2%	18.0%
7+ hours	13.7%	11.4%	11.6%
Employment			
1 – management and professionals	13.0%	15.1%	14.5%
2 – intermediate	12.3%	13.1%	12.7%
3 – routine employment	24.1%	34.2%	31.8%
4 – unemployed	14.6%	5.2%	8.5%
5 – full time student	36.0%	32.5%	32.5%
Highest educational qualification			
Higher degree	39.7%	43.2%	42.5%
A-level (or equivalent)	25.4%	28.9%	28.3%
GCSE (or equivalent)	2.7%	1.6%	1.8%
Other qualification	10.9%	5.5%	6.5%
No formal qualification	1.2%	1.4%	1.4%
Number of close friends, mean (SD)	4.8 (4.8)	5.2 (4.1)	5.1 (4.2)
Mental health (SF-12), mean (SD)	38.0 (13.9)	47.1 (10.8)	45.5 (12.0)
Subjective wellbeing (GHQ)	15.1 (7.7)	10.9 (5.5)	11.7 (6.2)

LSID, long-standing illness or disability; GHQ, General Health Questionnaire.

tual and health-related factors, the study provides novel insight into the relationship between LSID and loneliness. Given the increased acknowledgement of loneliness as a serious public health concern,[1] results from this study demonstrate that young adults with LSID may be particularly at-risk for the negative ramifications of loneliness.[1] Moreover, with research showing these consequences compounded throughout the lifespan,[12] identifying those most at risk for loneliness during young adulthood offers early opportunities for prevention efforts.

Overall, the current study found significant evidence of the association between LSID and loneliness in young adults, aged 16-24 years old. The findings add to the evidence base surrounding the impact of LSID on young adult loneliness,[3,7,8,14] and indicate that this association remains after accounting for a variety of other factors related to loneliness. As such, LSID serves as an important risk factor for loneliness, thus suggesting that services for young adults with LSID incorporate strategies to alleviate potential loneliness or identify users who experience significant loneliness. Further, given that findings from previous research suggest barriers to developing and maintaining meaningful friendships for young adults with LSID,[28] including being unable socialise due to ill health, time taken by treatments or hospital appointments, and the real or perceived fear of being rejected by peers due to their condition,[17,28] future research should strive to elucidate the mechanisms through which LSID impacts loneliness.

In addition to the associations between LSID and loneliness, the study also found that having fewer close friends, poorer mental health, and lower well-being each were related to loneliness. These findings align with previous literature,[11,24] and suggest that efforts to alleviate loneliness must acknowledge the myriad of associated factors and may be complex in those with poorer physical health. Further, younger participants (age brackets 16-18 and 19-21) were found to be lonelier than the individuals aged 22-24-year old in the sample. This could be explained by findings in previous literature that highlighted transition periods commonly encountered at this age, such as leaving high school or starting work or further education, as more vulnerable periods for loneliness.[7,10]

Though the current study offers many strengths, several imitations need to be mentioned. First, young people with LSID are a heterogenous group with a wide range of severities, durations and visibility of illness, likely to affect how each person experiences loneliness. The data used in the current study preclude such a nuanced analysis of illness, yet future research would benefit from delineating these differences. Additionally, information on social factors is limited, such that the available variables only give an indication of the quantity of social relations, rather than the quality, which would better represent social life, as individuals are not equally sensitive to loneliness and have different social wants and needs.[29]

Despite these limitations, the findings of this study offer novel insight into the relationship between LSID and loneliness, as well as highlighting the importance of friendship quantity, mental

Table 2. Results from final ordinal regression model.

Parameter	Estimate (SE)	Odds ratio	p-value
Presence of LSID (no LSID as reference)			
Yes LSID	1.294 (0.12)	1.024 – 1.663	0.031*
General health (fair or worse as reference)			
Good or better	1.384 (0.16)	0.991 – 1.879	0.057
Age (22-24 as reference)			
16-18	1.390 (0.15)	1.039 – 1.860	0.027*
19-21	1.270 (0.11)	1.032 – 1.563	0.024*
Sex (female as reference)			
Male	1.162 (0.09)	0.972 – 1.388	0.099
Ethnicity (other as reference)			
White	1.175 (0.10)	0.959 – 1.440	0.120
Employment (full time student as reference)			
(1) management and professionals	1.265 (0.15)	0.948 – 1.688	0.111
(2) intermediate	1.111 (0.15)	0.829 – 1.489	0.481
(3) routine	1.265 (0.21)	1.012 – 1.582	0.039*
(4) unemployed	1.235 (0.18)	0.867 – 1.759	0.243
Highest educational qualification (no qualifications as reference)			
Higher degree	1.331 (0.34)	0.686 – 2.585	0.398
A level	1.269 (0.33)	0.666 – 2.417	0.468
GSCE	1.083 (0.33)	0.563 – 2.082	0.811
Other qualifications	2.263 (0.51)	1.128 – 4.319	0.078
Hours spent interacting with friends through social media (7+ hours as reference)			
No social media	0.743 (0.24)	0.468 – 1.181	0.209
No hours	1.955 (0.34)	0.995 – 3.841	0.052
>1 hour	1.289 (0.17)	0.933 – 1.781	0.124
1 – 3 hours	1.060 (0.15)	0.788 – 1.426	0.700
4 – 6 hours	1.221 (0.17)	0.876 – 1.701	0.239
Number of close friends	0.954 (0.13)	0.930 – 0.980	0.000*
Mental health (SF-12)	0.946 (0.06)	0.936 – 0.957	0.000*
Subjective wellbeing (GHQ)	1.120 (0.11)	1.095 – 1.145	0.000*

LSID, long-standing illness or disability; GHQ, General Health Questionnaire.

health, and subjective wellbeing to loneliness among young adults in the UK. The findings have important implications for practitioners who work with LSID, as well as public health efforts to alleviate loneliness at a national level.

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Ethics approval: The data collection for the UKHLS study as a whole (led by a team at the Institute for Social and Economic Research at the University of Essex) has been approved by the University of Essex Ethics Committee.

Availability of data and materials: UKHLS data freely available to researchers through online registration through End User Licence (EUL).

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