Loneliness amongst Older Hospital Inpatients: Prevalence and Associated Factors

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Abstract

Aims

The impact of loneliness on health and well-being appears to be most pronounced in later life. The aim of this study was to establish the point prevalence of loneliness and examine associated factors amongst hospital inpatients aged ≥70 years.

Methods

The UCLA Scale was used to measure symptoms of loneliness. Scores ≥50 indicate high levels of loneliness. Linear regression models were used to assess the association of covariates with lonely symptoms.

Results

Almost 1 in 6 patients (Proportion 0.15 (95% CI 0.09–0.23)) reported high levels of loneliness.

Age ≥90 years, number of days since last hospital visit, number of medications prescribed, and a prior diagnosis of depression were independently associated with a higher burden of lonely symptoms.

Patients with depressive symptoms (CES-D ≥16) were more than 5 times more likely to report high levels of loneliness than those who were not depressed (24% vs 4%, X^2=7.96; p=0.005).

Discussion

Given the impact loneliness can have on health-related outcomes, as well as the likelihood of continued restrictions on visiting and congregating in hospital, innovative solutions to prevent loneliness and social isolation for older patients in hospital and keep them connected with the outside world are therefore required.

Introduction

Loneliness, a perceived deficit between actual or desired quantity or quality of relationships, can occur at any age, and is indeed most prevalent in the late teens and early twenties.[1] However, the impact of loneliness on health and well-being appears to be most pronounced in later life, and has been brought into focus by the COVID-19 pandemic, where we saw increasing numbers of older people shielding or cocooning for long periods.[2]

Loneliness affects 1 in 4 community-dwelling older people to some degree.[3] Older people with loneliness are more likely to present to their general practitioner and to hospital for unscheduled care.[4] Once admitted to hospital, higher levels of loneliness are associated may be associated with prolonged length of stay, as well as an increased risk of subsequent admission to a nursing home, with over one third of nursing home residents reporting high levels of loneliness.[5,6] The combination of loneliness and social isolation is also significantly associated with early mortality.[7]

While long recognised as a problem potentially affecting older people in hospital,[8] little work has been done to date to examine loneliness amongst older people in hospital. The aim of this study therefore is to ascertain the point prevalence of, and risk factors for, loneliness amongst older inpatients in a specialist geriatric ward setting.

Methods

This is a point prevalence study of loneliness and its associated factors in a cohort of inpatients aged ≥70 years on specialist Geriatric Medicine Wards.

The study site was a 146 bed Geriatric Medicine Unit comprising acute medical, rehabilitation and longer-stay wards, within a 900-bed urban university teaching hospital. The majority of the 146 beds (n=86) were in single-occupancy rooms.

Participants were eligible for inclusion if they were aged ≥70 years and a current inpatient on a specialist Geriatric Medicine Ward. Patients were excluded for participation if they were unable to give informed consent, were too unwell to complete the assessment or were isolating due to COVID-19 infection control protocols. As this was a point prevalence study all assessments were completed on a single day.

The University of California, Los Angeles (UCLA) Scale was used to measure symptoms of loneliness. The UCLA Scale is a well-validated 20-item Likert scale, scored from 20 to 80, with higher scores indicating greater levels of loneliness.[9] Scores of 20-34 indicate low levels of loneliness, 35-49 indicates moderate levels of loneliness and scores ≥50 indicate high levels of loneliness.

The Centre for Epidemiological Studies Depression Scale (CES-D) was used to measure depressive symptoms. The CES-D is a 20-item Likert Scale, scored from 0 to 60, with higher scores indicating a higher burden of depressive symptoms. A cut-off score of 16 indicated clinically significant depressive symptoms.[10]

All assessments were carried out by medical students who received training in administering the questionnaires. Additional data were collected from medical notes including basic demographic details and living arrangements, prior diagnosis of depression and dementia, a count of the number of medical comorbidities listed on the patients file and the number of medications prescribed.

Data was analysed using Stata (Statacorp, Texas). Proportions were presented with 95% confidence intervals. Linear regression models reporting β-coefficients with 95% confidence intervals were used to assess the association of covariates with lonely symptoms (measured by UCLA Scale). These covariates were chosen a priori based on their likelihood of association with loneliness and were sex, age, ward type, whether the patient lived alone, when the patient last had a visitor, number of medical comorbidities, number of prescribed medications, history of dementia and history of depression. A p-value ≤0.05 was regarded as of statistical significance.

All patients provided informed consent. Ethical approval was given by Tallaght University Hospital and St James' Hospital Research Ethics Committee and also by the Research and Innovation Committee in St James' Hospital (Project ID 1858).

Results

107 of 146 inpatients were included in the study (50% on acute geriatric medicine ward, 36% on a geriatric medicine rehabilitation ward and 13% on a geriatric medicine transitional care ward).

39 patients were not included (13% on acute geriatric medicine ward, 38% on geriatric medicine rehabilitation ward and 49% on a geriatric medicine transitional care ward). Of those who didn't participate, assessments were incomplete on 20% (n=8), while the remainder (n=31) were either too unwell to participate or unable to give informed consent.

Prevalence of Loneliness

The mean UCLA score was 37.3 (95% CI 34.9 – 39.8).

The proportion of patients with high levels of loneliness was 0.15 (95% CI 0.09 – 0.23); 0.40 (95% CI 0.31 – 0.50) with moderate levels of loneliness and 0.45 (95% CI 0.36 – 0.55) with low

levels of loneliness. Differences in baseline characteristics by symptoms of loneliness are shown in Table 1. There were no statistically significant differences between groups.

Factors Associated with Loneliness

As shown in Figure 1, patients reporting higher levels of loneliness also reported a higher burden of depressive symptoms. Patients with depressive symptoms (CES-D ≥16) were more than 5 times more likely to report high levels of loneliness than those who were not depressed (24% vs 4%, X^2 = 7.96; p = 0.005).

As shown in Table 2, linear regression models demonstrated that age ≥90 years, number of days since last hospital visit, number of medications prescribed, and a prior diagnosis of depression were independently associated with a higher burden of lonely symptoms.

Discussion

In this study we ascertained the point prevalence of loneliness in a cohort of inpatients aged ≥70 years on specialist geriatric wards. We found that over half of inpatients reported some degree of loneliness while in hospital, with over 1 in 7 reporting high levels of loneliness.

While loneliness is a well-established risk factor for hospital admission and healthcare use,[4,5] relatively few studies to date have examined the prevalence of loneliness amongst older people in hospital. A French study of older hospital inpatients found that 37% reported loneliness while in hospital, but this involved a mixed sample of both psychiatry and geriatric medicine wards.[11] To our knowledge this is the first prevalence study of loneliness amongst older medical inpatients, with a mean age of 83 years and an average of four medical diagnoses.

We further found that higher levels of loneliness were associated with a higher burden of depressive symptoms. In line with community-based studies,[12] older inpatients with loneliness were significantly more likely to also report significant depressive symptoms and to have an established diagnosis of depression. Other factors independently associated with symptoms of loneliness were age ≥90 years, a higher number of prescribed medications and, importantly given the context of visiting restrictions in healthcare post-COVID, the number of days since a visit from a relative or friend.

Loneliness while in hospital may therefore be exacerbated by restrictions on visiting, but also by other measures such as the increased use of single rooms for infection control [13] and by the closure of congregating areas such as common rooms or television rooms. These measures have been essential in order to control the spread of COVID-19 in acute hospitals but mean that older inpatients spend increasing amounts of time on their own in single

rooms, notwithstanding the fact that single rooms appear to be the preferred option for many older inpatients now.[14]

In summary, this study outlines the significant burden of lonely symptoms amongst older people in hospital, with 15% reporting high levels of loneliness. Several community-based interventions have been shown to reduce symptoms of loneliness and social isolation amongst older people [15] but little or no work has been done to examine interventions targeting loneliness amongst older patients in hospital. Given the impact loneliness can have on health-related outcomes, as well as the likelihood of continued infection-control related restrictions on visiting and congregating in hospital, innovative solutions to prevent loneliness and social isolation for older patients in hospital and keep them connected with the outside world are therefore required.

Declarations of Conflicts of Interest:

None declared.

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Table 1: Baseline Characteristics by Lonely Symptoms

	No / Low Loneliness N = 48	Moderate Loneliness N = 43	High Loneliness N = 16
Mean Age (Years), 95% CI	82.8 (81.2 – 84.5)	83.0 (80.7 – 85.3)	85.4 (81.7 – 89.1)
Age Category (Prop, 95% CI):			
- 70-79 years	0.31 (0.19 – 0.46)	0.28 (0.16 – 0.44)	0.19 (0.05 – 0.49)
- 80 -89 years	0.56 (0.42 – 0.70)	0.49 (0.34 – 0.64)	0.44 (0.20 – 0.70)
- ≥90 years	0.13 (0.06 – 0.26)	0.23 (0.13 – 0.39)	0.38 (0.16 – 0.65)
Female Sex, Prop (95% CI)	0.71 (0.56 – 0.82)	0.67 (0.51 – 0.80)	0.69 (0.40 – 0.88)
Ward Type:			
- Acute Medical	0.46 (0.32 – 0.60)	0.58 (0.42 – 0.72)	0.44 (0.20 – 0.70)
- Rehabilitation	0.46 (0.32 – 0.60)	0.30 (0.18 – 0.46)	0.25 (0.09 – 0.54)
- Long Stay	0.08 (0.03 – 0.21)	0.12 (0.05 – 0.26)	0.31 (0.12 – 0.60)
Living Alone	0.48 (0.34 – 0.62)	0.58 (0.42 – 0.72)	0.73 (0.43 – 0.91)
Mean No. of Days Since Last Visit, 95% CI	5.13 (1.36 – 8.89)	7.76 (2.68 – 12.85)	7.93 (-2.39 – 18.25)
Mean No. of Comorbidities, 95% CI	4.09 (3.58 – 4.59)	3.73 (3.29 – 4.17)	4.19 (3.43 – 4.95)
Mean No. of Medications, 95% CI	8.26 (6.95 – 9.56)	8.80 (7.13 – 10.47)	10.19 (8.22 – 12.15)
Diagnosis of Dementia	0.34 (0.22 – 0.49)	0.34 (0.21 – 0.50)	0.56 (0.30 – 0.80)
Diagnosis of Depression	0.15 (0.07 – 0.29)	0.15 (0.06 – 0.30)	0.19 (0.05 – 0.49)

Notes:

Abbreviations: Prop. = Proportion; CI = Confidence Interval; No. = Number.

Loneliness measured with University of California, Los Angeles Loneliness Scale (UCLA). Scores of 20-34 indicate low levels of loneliness, 35-49 indicates moderate levels of loneliness and scores ≥50 indicate high levels of loneliness.

Diagnosis of Dementia and Depression based on prior doctor's diagnosis, after review of medical records.

Loneliness and Depressive Symptoms

There was a graded association between symptoms of loneliness and depressive symptom burden, with higher levels of loneliness associated with greater depressive symptoms. See Figure 1.

Table 2: Linear Regression Model with Lonely Symptoms (UCLA Score) as Dependant Variable

| UCLA Score	B-coefficient (95% CI)	t	p
Age Category (Ref: 70-79 years):			
- 80 -89 years	0.12 (-5.85 – 6.08)	0.04	0.968
- ≥90 years	7.64 (0.71 – 14.56)	2.19	0.031
Female Sex	-4.63 (-10.11 – 0.85)	-1.68	0.097
Ward Type (Ref: Acute Medical)			
- Rehabilitation	-2.09 (-7.42 – 3.25)	-0.78	0.440
- Long Stay	3.51 (-4.20 – 11.22)	0.90	0.368
Living Alone	4.46 (-0.42 – 9.33)	1.82	0.073
Days since last visit	0.06 (0.02 – 0.09)	2.90	0.005
Comorbidities	-0.91 (-2.61 – 0.78)	-1.07	0.287
Medications	0.85 (0.26 – 1.44)	2.86	0.005
Diagnosis of Dementia	0.52 (-4.57 – 5.62)	0.74	0.464
Diagnosis of Depression	2.56 (-4.35 – 9.46)	2.90	0.005

Notes:

Linear regression Model reporting β-coefficient with 95% confidence intervals with UCLA score as dependent variable.

Abbreviations: Ref = reference; CI = Confidence Interval.

Diagnosis of Dementia and Depression based on prior doctor's diagnosis, after review of medical records.

Figure 1: Mean Depressive Symptoms (By CES-D) by level of reported Loneliness
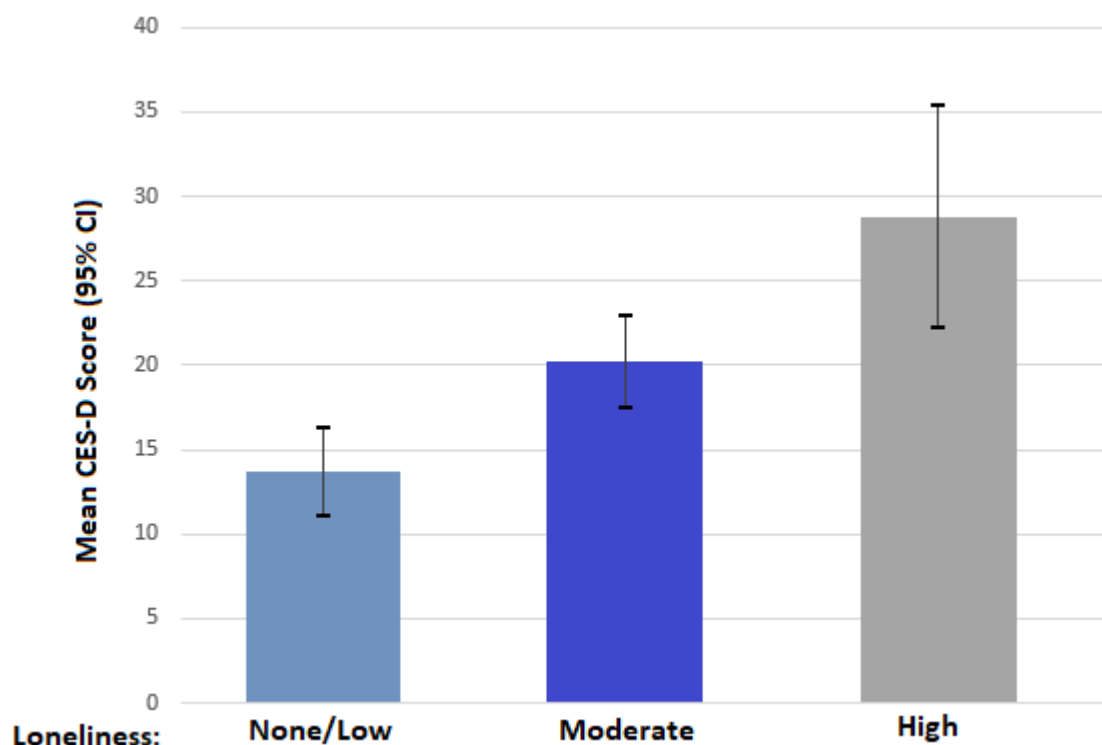
Notes:

Loneliness measured with University of California, Los Angeles Loneliness Scale (UCLA). Scores of 20-34 indicate no/low levels of loneliness, 35-49 indicates moderate levels of loneliness and scores ≥50 indicate high levels of loneliness.

Depressive symptoms measured with 20-item Centre for Epidemiological Studies Depression Scale (CES-D).