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Retrospective feelings of loneliness during the COVID-19 pandemic among residents of long-term care facilities

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ABSTRACT

The novel coronavirus disease (COVID-19) has had an incisive effect on residents living in long-term care facilities (LTCFs). Local governments have introduced restrictive measures because of the danger posed by this virus. One increasing negative effect of these implementations among residents living in LTCFs is their subjective feelings of loneliness. This study assumed that these measures weighed heavily particularly on residents living in LTCFs, as this group of older people could not decide for themselves whether or how they should be implemented. Thus, this study investigated the retrospectively reported subjective loneliness of residents living in LTCFs. On a large-scale Swiss survey ($N = 828$; mean age: 87.78, 75% female), residents of 22 LTCFs filled out a questionnaire on their subjective feelings of loneliness during the pandemic. The retrospective loneliness scores of the residents living in LTCFs were found to exceed those reported in other studies focusing on community-dwelling older people. Multivariate regression analyses showed that females, individuals with lower values of joy in life and life satisfaction, and individuals who were not satisfied with the manner in which their care home coped with the COVID-19 measures significantly felt lonelier. Therefore, the subjective feelings of loneliness of residents in LTCFs should be monitored very carefully. As the measures have still not been completely lifted, residents of LTCFs are assumed to still experience social isolation and be at high risk of encountering prolonged feelings of loneliness, which can be detrimental to their mental health and well-being.

1. Introduction

Since 2019, the novel coronavirus disease (COVID-19) has now reached all parts of the world, and government recommendations stemming from its spread have created a pattern of physical distancing and quarantine worldwide, particularly for older adults living in LTCF. Owing to the measures that have prevailed since the outbreak of the pandemic, fewer volunteers have been working in nursing homes, fewer visits of family caregivers, friends, and grandchildren have occurred, visit bans have been implemented, and residents have not been allowed to go out [1]. Thus, social isolation and the risk of feeling lonely have increased [1]. A recent survey in Switzerland showed that feelings of loneliness among community-dwelling older people increased after the recommendation of social distancing and slightly decreased again after the restriction relaxation in the summer of 2020 [2], demonstrating the relationship between loneliness and COVID-19 restrictions. Currently, these measures (especially to protect older adults) are still partially in place, and even if they have been lifted, the consequences of strict visiting bans are not likely to have disappeared directly afterward [1,3]. Therefore, a prolonged feeling of loneliness occurs in such cases and can be detrimental to residents' mental health and well-being [4].

1.1. Theoretical assumptions

The definition of loneliness in this study is consistent with that of Dykstra [5], who describes loneliness as a negative, subjective experience that is more strongly associated with the qualitative rather than the quantitative characteristics of relationships. Therefore, loneliness can be considered a subjective feeling of lacking social contact [2]. Previous research has shown that socially isolated individuals are at a greater risk of loneliness [6]. However, socially isolated people are not necessarily lonely, and lonely people are not necessarily socially isolated [7]. Where people rest on the subjective loneliness continuum depends on their expectations and current situations [5].

Seifert and Hassler [2] reported that COVID-19-related recommendations for community-dwelling older people to maintain physical distancing directly or indirectly affected their loneliness. When the Swiss Federal Office of Public Health published the first case of COVID-19 in February 2020, the measures drastically intensified, especially in long-term care facilities (LTCFs), mainly due to the pressure caused by the many deaths in LTCFs reported in the media [8]. Thus, it can be assumed that these recommended measures were enforced more strictly in LTCFs than in older people living at home. Huxhold and Tesch-Römer [9] pro-

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posed that it was possible that the effect of feelings of loneliness during the COVID-19 pandemic was stronger for residents of LTCFs, for example, due to restrictive visitor bans and because they could not decide for themselves to what extent they wanted to comply with the government's recommendations. Even if residents of LTCFs felt lonely, they were not able to invite friends or families and maintained social contact mostly by telephone [10]. Even before the COVID-19 pandemic, a meta-analysis by Gardiner, Laud, Heaton, and Gott [11] found that residents in LTCFs had higher scores of loneliness than older people living at home. Nevertheless, little is known about how feelings of loneliness have changed during the pandemic among seniors living in LTCF so far [12–14], and there is a great need for studies that survey the relationship between COVID-19 measures and their effect on loneliness using representative data [14].

1.2. Research aims

This study investigated subjective loneliness among 70+ seniors living in LTCFs in Switzerland. As there have already been differences in feelings of loneliness between residents of LTCFs and community-dwelling older people before the pandemic, a retrospective question form was used to obtain a balanced answer from the respondents and an understanding of how the pandemic changed their individual feelings of loneliness in the LTCFs. The loneliness data from this study were also compared with those from other surveys of older people living at home. This study also aimed to determine the association between loneliness experienced and various independent variables to gain a better understanding of the indicators of loneliness during the pandemic period in older adults living in LTCFs.

2. Materials and methods

2.1. Participants

The sample of this study was recruited from a large survey of adults living in what are known in Zurich as *Alterszentren*, which are municipal retirement homes common in Switzerland's German-speaking sections. Typically, older adults enter these LTCFs with less nursing care at the time of entry, but they can opt to have nursing care until the end of their lives. In Zurich, the average age of entry into these LTCFs is 84.6 years (with an average stay of 4.4 years), predominantly with low nursing care levels. According to "BESA," the official Swiss classification system, about 28.2% of all residents had no care level in 2020 [15]. In May 2021, all 1614 residents of 22 *Alterszentren* were approached to complete an eight-page standardized questionnaire with closed-ended questions to evaluate their satisfaction with living in a retirement home. The questionnaire could be filled out by the target individual or, if necessary, with the support of (or completely by) family or friends. A total of 70.9% of the participants completed the questionnaire alone, 23.4% were supported by their relatives or acquaintances, and 5.7% had their questionnaire completely filled out by their relatives or acquaintances. All the participants provided verbal informed consent, and the study was conducted according to the guidelines of the ethics committee of University of Zurich.

Of the 1614 respondents, 876 returned the questionnaire (54.3% response rate). For the sample of this study, only individuals aged 70 and older were included to obtain a sample comparable to those of other studies. Eventually, data from 828 people were analyzed for this study. The participants' characteristics are presented in Table 1.

2.2. Measures

A loneliness short scale was added to the pool of questions of the large survey. Following Huxhold and Tesch-Römer [9], the same sample of six items from the loneliness scale of de Jong Gierveld, Van Tilburg, and Dykstra [6] was selected as a short scale for loneliness. Thus, the six items chosen for this study, as shown in Table 2, did not exactly match the sample of items on the official short scale proposed in the online manual [16]. A retrospective format was chosen to determine how the participants currently assessed the pandemic period compared with the previous period (see Table 2 for the questions). Thus, the short scale was introduced with an explanatory sentence indicating that the answers should be given as a comparison of the time before the pandemic with that during the pandemic (up to the time of the survey) in each subsequent question.

Table 1
Sample characteristics.

Characteristics	Categories	N	Percent (valid)
Gender	Female	621	75.0
	Male	207	25.0
Age	70–79	103	12.4
	80–89	348	42.0
	90+	377	45.5
Education	Compulsory education	301	37.3
	Secondary	432	53.5
	Tertiary	75	9.2
	Not specified	21	
Care level (BESA)	0 (none)	379	47.7
	1+	416	52.3
	Not specified	33	
Total		**828**	**100%**

The intensity for feelings of loneliness during a pandemic in LTCFs were identified using regression models [14], and various independent variables were applied. These independent variables were classified into sociodemographic variables (age, gender, education, and care level), well-being variables (joy in life, autonomy, subjective well-being, and life satisfaction), and satisfaction with the in-house COVID-19 measures. The last variable was developed from the following three items: (1) "In general, how satisfied are you with how your *Alterszentrum* (LTCF) has handled the COVID 19 pandemic so far?", (2) "How satisfied are you with how the protective measures have been implemented in your *Alterszentrum*?", and (3) "How satisfied are you with the way you were informed about the protection measures by the *Alterszentrum*?" A one-factor solution emerged from a factor analysis of these three items. Thus, a mean score called "Satisfaction with the in-house COVID-19 measures" was developed and used as an independent variable to explain subjective feelings of loneliness.

2.3. Analytical strategy

As in the study of Huxhold and Tesch-Römer [9], a loneliness score was calculated based on the mean of the six items. If this total score exceeds a threshold value of 2.5, then it is an indicator that an individual is considered lonely. Scores equal to or below 2.5 indicate that the individual is not considered lonely.

SPSS (version 27) was used for the statistical analyses. In addition to descriptive analyses, three hierarchical linear regressions were conducted to analyze the predictors of loneliness in a multivariate format. As dependent variable we used the loneliness scale and as independent variables we used the standard demographic characteristics (age, gender, education), health and wellbeing (care level, joy in life, autonomy, subjective well-being, life satisfaction) and satisfaction with the in-house COVID-19 measures.

3. Results

On a large-scale Swiss survey (N = 828; mean age: 87.78, 75% female), residents of 22 LTCFs filled out a questionnaire on their subjective feelings of loneliness during the pandemic. Table 1 presents the characteristics of the sample.

In the retrospective assessment focusing on the time during the pandemic compared with that before the pandemic, 23.5% of the respon-

Table 2
Items from the Loneliness Scale.

Item	Item in German	Item in English	Mean	Standarddeviation
	In der Pandemiezeit (ab März 2020 bis heute) im Vergleich zur Zeit vor der Pandemiezeit (vor 2020) …	In the pandemic period (from March 2020 until today) compared with the pre-pandemic period (before 2020) …		
1	habe ich Personen vermisst, bei denen ich mich wohlfühle?	… I miss having people around me.	2.69	1.010
2*	habe ich genug Menschen um mich gehabt, die mir helfen würden, wenn ich Probleme habe.	… There is always someone I can talk to about my day-to-day problems.	2.06	.776
3	habe ich mich häufig im Stich gelassen gefühlt.	… I often feel rejected.	1.72	.807
4*	habe ich genug Menschen um mich gehabt, auf die ich mich wirklich verlassen kann.	… There are many people I can trust completely.	1.95	.762
5	habe ich Geborgenheit und Wärme vermisst.	… I miss the pleasure of the company of others.	2.30	.990
6*	habe ich genug Menschen um mich gehabt, mit denen ich mich eng verbunden fühle.	… There are enough people I feel close to.	2.27	.799
	Total mean		2.17	.597
7a	Wie zufrieden sind Sie im Allgemeinen damit, wie Ihr Alterszentrum bis anhin mit der COVID-19-Pandemie umgegangen ist?	In general, how satisfied are you with how your *Alterszentrum* (LTCF) has handled the COVID 19 pandemic so far?	4.36	.861
7b	Wie zufrieden sind Sie damit, wie die Schutzmassnahmen in Ihrem Alterszentrum umgesetzt wurden?	How satisfied are you with how the protective measures have been implemented in your *Alterszentrum*?	4.44	.760
7c	Wie zufrieden sind Sie damit, wie Sie über die Schutzmassnahmen von den Alterszentren informiert wurden?	How satisfied are you with the way you were informed about the protection measures by the *Alterszentrum*?	4.44	.785
	Total mean		4.40	.704

Loneliness Scale [6]: 1 = "Not at all," 2 = "No," 3 = "Yes," 4 = "Totally agree"; Items 19–21: 1 = "Very unsatisfied," 2 = "Unsatisfied," 3 = "Partly satisfied," 4 = "Satisfied," 5 = "Very satisfied".

* = Means were inverted. High mean values denote high feelings of loneliness, and low mean values indicate low feelings of loneliness. People with a total mean of > 2.5 were classified as "lonely.".

Table 3
Multivariate linear regression.

Predictors	Model 1	Model 2	Model 3
	B/Beta	*B/Beta*	*B/Beta*
Age	.002/ .019	.002/ .021	.001/ .008
Female (ref. men)	.144/ .104**	.137/ .099**	.119/ .087**
Education	.048/ .050	.021/ .021	.033/ .035
Care level (ref. no need for care)	.065/0.055	.018/ .015	.028/ .023
Joy in life		.161/ .245***	.110/ .169***
Autonomy		.014/ .021	.008/ .012
Subjective well-being		.025/ .033	.038/ .051
Life satisfaction		.167/ .238***	.129/ .184***
Satisfaction with the in-house COVID-19 measures			.256/ .304***
F / df/ p	3.346/4/< 0.05	24.598/8/< 0.000	32.279/9/< 0.000
R^2	.018	.225	.302
N (valid)	720	684	679

Dependent variable: Loneliness: 1 = "Not at all," 2 = "No," 3 = "Yes," 4 = "Strongly agree"; people whose scale value was greater than 2.5 were counted as "lonely." Table 2 shows the scales for the independent variables. Levels of significance: * $p < .05$.

** $p < .01$.

*** $p < .001$.

dents evaluated themselves as lonely (scale value > 2.5). A total of 76.5% of the respondents had a scale value equal to or lower than 2.5 and, thus, were counted as not lonely.

The overall mean of the loneliness scale was 2.17 (SD: 0.597), which shows a slight tendency toward some feelings of loneliness on a scale of one to four. Three subsequent multivariate linear regression models were then set up to identify the most important factors influencing the dependent variable of retrospective subjectively experienced loneliness (Table 3). The independent variables of the first regression model consisted only of the sociodemographic variables measured in the survey. Even though the model was significant ($p < .05$), it explained only a little variance (1.8%). The second regression model additionally contained joy in life, autonomy, subjective well-being, and life satisfaction as independent variables. The second model was also significant ($p < .000$), but it explained 22.5% of variance. To implement COVID-19 measures into the model, a sum score developed from three items was added as another independent variable to the third model. By adding this factor, the third model ($F = 32.279$; $p < .000$) strongly exceeded the second model by explaining the most variance (30.2%). This model further showed that females ($p < .01$), individuals with lower values of joy in life ($p < .000$) and life satisfaction ($p < .000$), and individuals who were not satisfied with the manner in which their care home coped with the COVID-19 measures ($p < .000$) significantly felt lonelier than males, individuals with high values of joy in life and life satisfaction, and individuals who were satisfied with how their care home coped with COVID-19 measures.

4. Discussion

This study is one of the first to retrospectively investigate the experienced feelings of loneliness during the pandemic among a representative sample of older people living in LTCFs in Switzerland. The results

showed a higher level of loneliness than older people living at home. The residents of LTCFs tended to feel an increased feeling of loneliness compared with the time before the pandemic. The most important factors influencing subjectively experienced loneliness were female gender, lower subjective enjoyment of life, lower satisfaction with life, and lower satisfaction with the way the LTCFs dealt with the COVID-19 measures. These factors were found to be the most important predictors.

Among the respondents, 23.5% were considered lonely based on their retrospective assessment (loneliness scale value > 2.5) during the pandemic. A total of 76.5% of the respondents had a scale value lower than 2.5 and were thus considered not lonely. Compared with the results of the community-dwelling survey of Huxhold and Tesch-Römer [9], this value was higher. In the Huxhold and Tesch-Römer survey, only 13.7% of the respondents were classified as lonely. In Seifert and Hassler's study [2], 18.2% of their community-dwelling sample were found to be lonely, and 81.8% were not; these results were determined in accordance with the threshold proposed by Huxhold and Tesch-Römer [9]. These two studies analyzed data only from community-dwelling individuals and had a larger age range (Huxhold and Tesch-Römer: 46–90 years, Seifert and Hassler: 65–95 years) than the current study. Compared with the existing data, a higher percentage of older people living in LTCFs stated that they felt lonely during the pandemic period. This can be considered an indicator that older people in LTCFs suffered more from loneliness than community-dwelling older people. This is consistent with the findings of Hua and Thomas's study [14], in which 28.7% of LTCF residents retrospectively felt lonelier during the pandemic than during the weeks prior to it.

Our findings are consistent with the results reported in a study assessing a large sample from LTCFs in Hong Kong during the pandemic [12], in which even higher loneliness scores were found (mean score = 2.9). The lower score of experienced loneliness among the residents of LTCFs in this study (mean score = 2.17) can be explained by the different sets of items used for the short scale. Whereas Shan Wong et al. [12] relied on the original form suggested by de Jong Gierveld, this study followed the proposed item sample of Huxhold and Tesch-Römer [9]. Furthermore, Shan Wong et al. [12] performed an ad hoc assessment of residents' current feelings of loneliness, whereas our study asked the participants to report these feelings in a retrospective manner. These retrospective data are also in accordance with the findings of Hua and Thomas [14], who also examined retrospective loneliness. Nevertheless, the results of Hua and Thomas [14] could still be extended, as we measured a larger and more homogeneous sample. Overall, comparison with published data using the same loneliness scale [9] supports the supposition that baseline loneliness may be higher than that of community-dwelling older adults. Overall, the hypothesis that residents in LTCFs suffer more from loneliness than older people living at home is supported.

In support of previous findings [9,17], age, education, and nursing care level had no effect on the reported feelings of loneliness. Shang Wong et al. [12] found that gender is associated with reported feelings of loneliness, with females being significantly lonelier more often than males. This is a very important finding because there are far more women who seem to be at risk of feeling lonely in nursing homes than men. Furthermore, our data demonstrated several indicators that significantly influence feelings of loneliness during the restrictive COVID-19 measures. Joy in life, life satisfaction, and satisfaction with the implementation of the measures in the home were shown to be relevant factors influencing the experienced loneliness.

4.1. Limitations

The reports of older adults in the present study were deliberately given in a retrospective way. Findings with retrospective bias are considered inconsistent, as some people report more positively while others report more negatively when looking back in time [18]. Recall biases, which refer to overestimation or underestimation, are canceled out on average, especially in constructs that cannot be measured objectively [18]. The implicit theory of change, which indicates that individuals recall their former loneliness by reconstructing a combination of their current state with their assumptions about how their loneliness has probably changed, and the present state effect, which explains how individuals use information on their current state to reconstruct their former state, may be relevant to the results of the present study, as a significant negative association was found between the reported feelings of loneliness, current life satisfaction, and satisfaction with the COVID-19 measures in the institution.

Although the same items were used in this study as in the study from Huxhold and Tesch-Römer [9], there are differences between the two studies, due to which the comparisons must be put into perspective: The people measured in Huxhold and Tesch-Römer [9] were on average younger (45 years and older) than in this study (70 years and older) and the two surveys were not conducted in the same year.

The questionnaire in this study was limited due to the feasibility of the survey in a long-term care institution. Consequently, some sociodemographic and health data could not be assessed, such as the marital state of the residents, which is considered an important predictor of feelings of loneliness [5,12]. Moreover, the numbers and types of chronic conditions [12] were not assessed.

4.2. Conclusion

The results of the present study indicate that the subjective feelings of loneliness of residents in LTCFs should be monitored very carefully. Specifically, the results suggest that these people suffer more from restrictive measures than community-dwelling older people and need to be confirmed in a comparative study. As the measures have still not been lifted completely and unlike the situation before the pandemic, fewer volunteers are working in nursing homes, grandchildren visit their relatives less often, and the nature of visits has changed [1]. It can be assumed that residents of LTCFs still experience social isolation and are at high risk of encountering prolonged feelings of loneliness, which can be detrimental to their mental health and well-being. As feelings of loneliness are obviously higher in residents of LTCFs, it seems desirable to consider how to support LTCFs in seeking a balance between infection prevention and managing the well-being of residents [1]. For example, the increased use of virtual platforms and visual and audio communication may facilitate older people to remain connected [19]. There are recommendations that every resident should have at least one designated family caregiver essential to that resident's daily care and/or well-being who would be permitted to visit LTCFs even if general social visits are restricted [20]. Based on the results of this study, satisfaction with the in-house COVID-19 measures should be an aim of LTCFs. Therefore, transparent information, communication, and explanations of the measures are important. Finally, quality of life factors, which were also shown to be important indicators of loneliness in our study, should be addressed in LTCFs. Maintaining contact with others (in person or by phone or other means) and engaging in (even solitary) purposeful activity have been suggested as key strategies to prevent loneliness [21].

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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