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EMPIRICAL STUDIES

Older adults' provision of informal care and support to their peers – A cornerstone of swedish society: Demographic characteristics and experiences of social isolation

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Abstract

Background: Family members provide the majority of informal care for older adults in Sweden. Nevertheless, by providing a range of assistance, peers often emerge as a central to counter social isolation among older adults. Therefore, there is a need to know more about what informal care provision by older adults to their peers means for different groups of older adults.

Aim: This study investigated the types of informal care and support that older adults provide to their peers in Sweden, and how these types of care and support are associated with demographic characteristics and social isolation. We also compared older adults who provide informal care and support with those who do not.

Method: For this purpose, we used a national online survey named "Involuntary loneliness among senior citizens" answered by 10,044 older adults enrolled in the Swedish Citizen Panel. We adopted a mixed-method design to analyse the survey data, including free-text options ($n = 2155$) and numerical data. Social isolation was assessed using a score built from the social loneliness items of the UCLA Loneliness Scale.

Results: In our population, 21.5% of the older adults were providing informal care and support to their peers. Practical/instrumental help was frequently offered by younger participants (<75 years), men and respondents who were less socially isolated. On a general level, the factors that were positively associated with giving informal care and support to peers were older age, being male, retired, married/living in a relationship, living in an urban area/big city and exhibiting greater isolation. Focusing specifically on social support shows that older participants (>80) and those experiencing less social isolation (score < 24) were more engaged in social activities.

Elin Siira and Patricia Olaya-Contreras equally contributed to this study.

Conclusion: This paper is unique in exploring the informal peer-caregiver's perceptions of isolation. Data were collected during the COVID-19 pandemic; this highlights the need to recognise informal care and support between older adults and to acknowledge their contributions as an essential component of Swedish civil society, especially during a societal crisis.

KEYWORDS
informal care, older adults, peer support, social isolation

INTRODUCTION

Ageing populations are expected to challenge care systems in European countries [1, 2]. For instance, in Sweden, the type of universal system for eldercare typical of Nordic welfare is diminishing, while family caregiving is increasing [3]. Family members provide the majority of informal care for older adults in Sweden [4, 5]. However, the informal care panorama of older adults also includes caring relationships with peers, such as friends and neighbours, who may also be "older" [6–8]. By providing a broad range of assistance to friends and neighbours, peers often emerge as a central part of attempts to counter social isolation among older adults. Previous research shows that instrumental and emotional support between nonfamily members is linked to loneliness and well-being. However, the evidence on how different types of support relates to loneliness are scarce [9, 10]. Social isolation is an ambiguous phenomenon that continues to emerge in a variety of contexts, indicating that we need to know more about what this type of informal care means to different groups of older adults.

Informal care provided by nonfamily members is typically associated with "lighter" care tasks, such as socialising and practical tasks [6, 11] – activities that are sometimes distinguished from so-called "heavier" informal care. Nevertheless, there is a need to consider the variety of "lighter" forms of informal care [12, 13] as these types of care tasks can be significant, for example, in enabling older adults to remain in their own homes at the end of life, when residential care might otherwise have been an option [14]. Generally, informal care between older adults and nonfamily members is seldom included in or treated as a residual category in large surveys [11]. To date, there is little knowledge based on larger samples of older adults regarding the type of informal care and support activities that older adults provide to nonfamily older adults [15] and how this care provision is associated with social isolation. Furthermore, there is sparse knowledge on gender and age differences related to the provision of this type of care and support. To the best of our knowledge, this is the first study based on a larger sample of individuals exploring older adults' provision of informal care to nonfamily older adults (i.e. peers) and its relation to the individuals' experience of social isolation.

This study aims to investigate what types of informal care and support older adults provide to their peers and how these are associated with demographic characteristics and social isolation. It also aims to compare older adults providing informal care to their peers with those who do not, to identify predictive factors of providing informal care and support among older adults. This paper defines older adults' "peers" as their friends, neighbours, acquaintances and the like who are in the same age group.

Previous research on informal care activities between older adults and nonfamily members

Providing support to nonfamily members outside one's household can be considered to be part of an active social life for older adults and to reflect wider social engagement [15]. This study focuses on care and support activities among older adults outside formal or professional settings. Thus, it addresses activities that are characterised by a high degree of informality. In general, informal care is a fairly heterogeneous activity [16, 17], which is also the case among older Swedes and their peers [7]. Therefore, in this paper, we use a broad definition of informal care, rather than a definition that solely concerns personal care [13]. We include activities such as volunteering, which has been identified as a care activity in qualitative research on informal care among older adults in Sweden [7].

Peers, such as friends and neighbours, may provide a broad range of assistance to older adults depending on the context [11, 18, 19]. In Sweden, it has been found that informal care between older adults and their peers involves social activities, such as visiting others, practical activities, such as assisting with shopping or

providing transport, activities related to care needs and health problems, such as keeping an eye on another person or talking about illness and death, and organised activities, such as volunteering to help other older adults [7]. Practical activities and social activities are described in studies on informal care between older adults and friends and neighbours of different ages in Canada [11], the US [6] and the UK [18, 20].

In Canada, help with transportation was the most common among friends and home maintenance was the most common among neighbours [11]. In the US, socialising and instrumental care were found to be the most common among neighbours, friends and other non-kin caregivers [6]. Other practical tasks described in these studies were paying bills, doing housework and preparing meals [11, 18], helping with technical equipment [20] and gardening [18]. Activities such as looking after someone [18], personal care [6, 11] and help in case of an emergency [20] are also described in these studies.

Prevalence of informal care provision among older adults

There is a high level of informal care activities among older adults in Sweden [12] compared to that of other European countries. In Sweden, 37% of people aged 50 years or older provide informal help to family, friends or neighbours; only 16% or less provides such help in Germany and Greece [21]. Furthermore, 8% of the older swedes provides help to neighbours; only 4% provides such help in Portugal and Poland [22].

Older adults (+65 years) in Sweden provide 41%–49% of all hours of informal care, while older adults in Spain provide only 22%–33% [23]. In a study from Italy, 26% of the older adults provides informal care to a person outside their own household [15]. Among those aged 60–74 years in Sweden, 57% identify themselves as informal caregivers for someone outside their household [24].

Characteristics of older adults providing informal care to nonfamily members

Providing informal care is a gendered task. For example, providing informal care and help is more common among European women (older than 50 years) than men [21]. However, in the Canadian context, gendered patterns are not as obvious with regard to informal care provision between older adults and their friends or neighbours [11]. In the context of family care, engaging in instrumental care involving cooking, cleaning or other chores is more common among men in Sweden, while more women address health problems [25]. We hypothesised that gender differences would be linked to the type of activity constituting the informal care that older adults provide to their peers (H1).

Research shows that informal care provision among older adults and nonfamily members varies with age. In the Italian context, providing informal care to nonfamily members is more common with the advancement of age [15]. In contrast, in Sweden, informal help is more common among older adults aged 60–74 years compared to those 75–84 years among people who provided informal care to others outside their own household [24]. Therefore, we hypothesised that providing informal care to peers would be more common among "younger"" (<75) older adults and less common among "older" (>80) adults (H2).

Informal care between nonfamily members: loneliness

In broad terms, loneliness is a negative feeling related to experiencing a lack of social relationships [26, 27], including both intimate and more distant forms of social engagement in old age [28]. Supportive relationships between nonfamily members mitigate loneliness among older adults [29]. There is some evidence that providing support and instrumental help to others (family members or close relatives) is a protective factor against loneliness among older adults [10, 30]. Therefore, we hypothesised that older adults' involvement in care relationships with their peers would be associated with a lower degree of social isolation in comparison with older adults who did not provide informal care (H3).

MATERIALS AND METHOD

Design

This is a survey study based on a subsample of the Swedish Citizen Panel survey consisting of older adults. To analyse the survey data quantitatively and qualitatively, we applied a mixed-method design with a deductive theoretical approach [31]. The study has a qualitative component – a thematic analysis of free-text answers regarding informal care provision – and a quantitative core, with statistical analysis of data on providing informal care, demographic characteristics and social isolation. Data for the two components were gathered simultaneously and mixed as part of the data analysis.

Data collection and sample

Data from the Swedish Citizen Panel survey were used. This web survey panel had more than 75,000 respondents at the time. The purpose of the Swedish Citizen Panel is to facilitate an infrastructure for collecting data from online questionnaires for different research purposes. The panel consists of self-recruited respondents (persons who enrolled through their own initiative; 78%) and probability-based respondents (persons who were randomly selected to represent the Swedish population; 23%). The probability-based respondents were recruited via mail. Data collection through the Swedish Citizen Panel is managed by the Laboratory of Opinion Research (LORE) at Gothenburg University [32].

Our survey "Involuntary loneliness among senior citizens" was distributed online to a sample of 13,327 self-recruited and probability-based panel respondents aged 65 years or older in the Swedish Citizen Panel. To select our sample, stratified random sampling (by age) was employed. Two reminders were sent out to respondents. The sample yielded 10,044 complete responses (more than 80% complete item responses) with a participation rate of 75%. The survey was conducted in June 2020 amid the COVID-19 pandemic. All the demographic characteristics of the respondents were documented and provided by LORE [32].

Measurements of providing informal care to peers

The first section of the survey included one screening question asking the respondents whether they provided informal care and support or in other ways helped another older adult who was not a family member (a friend, neighbour or acquaintance): "Do you provide support or in other ways help someone who is 65 years or older and who is not a family member or a relative?" (yes/no). In this study, the respondents (10,044) either answered "yes" *and* indicated what type of informal care and support they provided or "no" (that they did not provide informal care and support). Table 1 shows the main differences between the self-recruited respondents and the probability-based respondents.

A total of 2169 respondents also responded to the question, "What type of support do you provide?", as a free-text answer. In total, 2155 participants and their answers were included in the analysis. Fourteen answers were not applicable, that is, they contained information on family care. Societal crises such as the COVID-19 pandemic cause civil society to respond [33], activating peer support, for example [34]. These conditions provide an opportunity to study peer-to-peer support.

TABLE 1 Characteristics by total sample self-recruited participants and randomly selected participants (n = 10,044)

	Self-recruited participants n = 8862 (88.2%)	**Randomly selected participants n = 1182 (11.8%)**
Providing care/support to another older adult		
Yes	1894 (21.4)	261 (22.1)
No	6968 (78.6)	921 (77.9)
Sex[a]		
Women	2856 (32.3)	485 (41.0)
Men	6006 (67.8)	697 (59.0)
Age[b,c]		
65–69	2838 (32.0)	388 (32.8)
70–74	3104 (35.0)	504 (42.6)
75–79	2109 (23.8)	267 (22.6)
80–84	619 (7.0)	23 (1.9)
85–89	162 (1.8)	0 (0.0)
≥90	30 (0.3)	0 (0.0)
Marriage status[a]		
Married	5316 (60.0)	760 (64.3)
Divorced living alone	1127 (12.7)	119 (10.1)
Never married living	1088 (12.3)	126 (10.7)
Alone/ widowed	1333 (15.0)	177 (15.0)
Living with a partner		
Personal income		
Less than– 22,999 kr	2962 (35.0)	399 (35.6)
23,000– 29,999 kr	1649 (19.5)	226 (20.1)
30,000– 44,999 kr	2252 (26.6)	319 (28.4)
45,000– 64,999 kr	1082 (12.8)	124 (11.1)
More than 65,000 kr	527 (6.2)	54 (4.8)
Education[a,b]		
Compulsory school	450 (5.1)	60 (5.1)
Upper secondary school	2563 (28.9)	222 (19.0)
University	5845 (66.0)	888 (75.9)
Geographical location		
Countryside	1086 (12.5)	117 (12.6)
Sub-urban	1736 (20.0)	195 (21.0)

TABLE 1 (Continued)

	Self-recruited participants $n = 8862$ (88.2%)	Randomly selected participants $n = 1182$ (11.8%)
Urban area/ city	5865 (67.5)	615 (66.3)
Employment status		
Working	1123 (12.7)	146 (12.4)
Not working/ retired	7331 (88.0)	998 (84.7)
Other	382 (4.3)	34 (2.9)
Place of birth		
Sweden	8332 (94.1)	1111 (94.2)
Other European country	449 (5.1)	58 (5.0)
Country outside Europe	78 (0.9)	10 (0.8)
Social Isolation score[c]		
Isolation score > 24	1984 (22.3%)	198 (16.7%)
Isolation score median value (min–max)	8907 (20) (10–39)	1189 (19) (10–35)

[a]The chi-squared test p-value significant $p < 0.05$;

[b]the Fisher's exact test p-value significant $p < 0.05$;

[c]Kruskal–Wallis test p-value significant $p < 0.05$ and independent-sample Jonckheere–Terpstra test for ordered alternatives. Total numbers for each variable can vary because of missing values.

Social isolation

To measure social isolation, we built a score based on the social loneliness items of the Swedish translation of the UCLA Loneliness Scale [35–37]. The scale consists of three dimensions of the overarching loneliness construct: isolation (10 negatively worded items), relational connectedness (5 positively worded items) and collective connectedness (5 positively worded items) [35]. The scale has been documented as reliable and valid using both the 20-item scale and the 10-item scale among different populations [38]. However, the scale is controversial. It does not assess a general experience of loneliness; it evaluates a three-facet mental representation of social connection [39]. Therefore, it can be used either as a global, unidimensional measure or as separate emotional and social subscales [39–41]. In this study, the social isolation score was built using items 2, 3, 7, 8, 11, 12, 13, 14, 17 and 18 from the UCLA scale, in line with previous studies [40–43]. Scores can range from 0 to 40, with a higher score indicating a higher degree of social isolation.

Qualitative component: deductive analysis of free-text answers

We deductively coded each of the 2155 answers in relation to four themes of activities found in previous research [6, 7, 11, 18, 20] using thematic analysis [44]. The aim was to conceptualise groups of informal care activities and their characteristics and to organise each free-text answer into one group, while also being open to the emergence of new themes. First, ES became familiar with and coded the data into themes. The codes and themes were then discussed and refined through group discussion involving all the authors. The themes that organised the coding process were social activities, practical/instrumental activities, caregiving activities and volunteering activities/ other organised activities. Regarding the respondents who indicated being involved in more than one activity, the answers were organised according to the first and/or most prominent activity in their answers. Respondents whose answers could not be defined as one informal care activity were sorted into a fifth theme called "a little of all/ varied". To strengthen the description of the qualitative components regarding the types of informal care provision, we constructed a quantitative variable by transforming the qualitative data into five categories, and then into numbers, to analyse the amount and the type of informal care [45]. Participants who did not provide informal care or support did not answer what type of informal care or support they provided. Therefore, they were added to the variable with the category "do not provide support" (the sixth category). To enhance the credibility of the study, we adhered to STROBE guidelines [46] and relevant parts of the Consolidated Criteria for Reporting Qualitative Research [47].

Quantitative component: statistical analysis

Type of informal care was handled as a categorical variable in the descriptive analyses and as a dichotomous variable in the multivariate analyses. The social isolation score was handled as ordinal data. For a score higher/lower than the median value plus a standard deviation, the cutoff value was set at ≤24 as low and >24 as high; scores ≥24 indicated more isolation. Missing values were imputed using mean imputation, using the participant´s mean on the other items in the scale, provided that no more than 10% was missing. To compare proportions in the different groups, the chi-squared test, as a two-tailed test, and the Fisher's exact test were employed. For multiple-group comparisons, the Kruskal–Wallis test, the independent-sample median test and the pairwise comparisons test were

performed. To test the association between the outcome variable, defined as binary categories (providing informal care or support; yes/no), and the demographic variables/social isolation, the odds ratios (OR) and confidence intervals (95% CI) were calculated. A logistic regression was performed to test the associations between the outcome variable (providing informal care or support; yes/no) and the variables of interest. The final models were adjusted for sex, level of education and type of recruitment. Nonrespondent analysis was performed comparing the whole population 65+ available in the Panel with our sample (10,044). For all tests, the level of statistical significance was set at 5%. To conduct the statistical analysis, IBM SPSS Statistics, version 27 (IBM Corp., Armonk, N.Y., USA), software was used.

Ethical considerations

We obtained ethical approval for the survey from the Regional Ethical Review Board, Sweden, in March 2020 (reference 798-17). Before participating in the Swedish Citizens Panel, individuals are informed about and need to approve the general terms and conditions and the privacy policy of the Citizens Panel. For more information on the general terms and conditions, please visit the Swedish Citizen Panels web page [48]. Prior to participating in the survey "Involuntary loneliness among senior citizens", respondents were informed of the purpose of the survey and the possibility of contacting the primary investigator to ask questions and give comments. LORE assures all participants in the Citizens Panel that personal data are handled in accordance with the General Data Protection Regulation (GDPR) [49].

RESULTS

This section describes the general characteristics of the total sample. In this sample (n = 10,044), the majority of the participants were married (60.2%), men (66.7%; 6703), between 70 and 74 years of age (36%), followed by 65–69 years of age (32.1%). The self-recruited participants were older and more educated than the participants recruited at random; there were also more men than women, and the majority of them were married (Table 1). There were no statistically significant differences regarding the type of informal care provided, monthly income, employment status, the size of the municipality in which they live or their country of birth (94% Sweden, 5% another European country and 1% outside Europe; Table 1).

An additional nonrespondent analysis showed that when comparing the nonresponders – from the whole population, that is, 65+ available in the Panel – with the responders to the question "Do you provide support or in other ways help someone who is 65 years or older and who is not a family member or a relative?" response was associated with being female, younger age and with high income (data not shown).

Description of the themes of informal care and support activities

The qualitative analysis yielded five themes of informal care and support. Each of the themes had a different intent/meaning pointing to their separate characteristics. *Social activities* entailed conversing with others, providing company and spending time together. *Practical instrumental activities* involved in activities, such as shopping and housework/gardening, help with technology and financial support. *Caregiving activities* entailed providing support in the event of illness/disease, maintaining contact with formal care and keeping an eye on another person. *Volunteering/other organised activities* involved volunteering, having contractual care assignments or sponsoring an organisation/association. The theme *a little of all/varied* included answers that portrayed several activities or informal care and general support such as "everyday chores". The intent/meaning of the activities was to lift someone's spirits, help out when a person could not manage on his/her own, be there for someone in times of health problems or loss, or play a set role as part of an organisation, association or club. See Table 2 for a description of the themes.

The prevalence of providing informal care and support to peers

Out of 10,044 participants, 2155 (21.5%) provided some kind of help or support to their peers (Table 1). The most common informal care activity among the providers of informal care and support (n = 2155) was providing practical/instrumental help (50.6%), followed by social activities (25.1%). Of the respondents, 8.1% engaged in volunteering/other organised activities and 10.5% in a little of all/varied activities. Only 5.7% of the respondents engaged in caregiving activities (Figure 1).

Comparisons of type of informal care by gender and age

Of the 2155 persons who provided informal care and support, more men (61.7%; n = 1330) were represented than women (38.3%; n = 825). Some gender differences were

TABLE 2 Description of the groups of care activities and examples of free-text answers ($n = 2155$)

Groups of activities	Activities	Intent/meaning of activities	Example of free-text answers in
Social activities	Conversating with others (often via phone and sometimes social media) Provide company, companionship or social contact (for example via visits) Spending time together (on some occasions while doing leisure activities)	To spirit others, provide hope, entertain oneself and others, or to check in on how a person is doing (sometimes if a person was lonely)	"I call often and try to cheer up a few persons who are very lonely" "Visit them in their garden every other week, text them several times a week. I often say hello and chat with them"
Practical/ instrumental activities	Shopping, doing errands (such as picking up mail) or providing transport Housework/gardening (including cleaning and smaller house repairs) Provide support with technology (such as phones, computers, IT) and/or administrative help (paying bills etc.) Financial support to another person (sometimes regularly and sometimes on specific occasions such as to return a favor)	To help out with things that the other person did not manage on his/her own. Sometimes for a set period of time.	"Run errands. Shop groceries, pick up medicines from the pharmacy and pick up mail deliveries" "Help out with IT issues and equipment such as Iphone, Mac and TV, and gardening and snow shoveling. Also in giving a ride and in communications with companies or governmental authorities such as the tax authorities"
Caregiving activities	Provide support and comfort in case of illness/disease (including at times of loss) sometimes in shape of physical activity Supporting in contacts with health care or social care (such as home care services or at doctor's appointment) Keeping an eye on persons to make sure they are alright (for example, by calling or visiting)	Being there for a person in need of support due to health problems or loss. For example, to provide support in carrying out activities and get out of the house.	"Conversations, care and practical help when a person is weak or ill" "My schoolmate has Alzheimer's disease and is not well. I try to visit and keep track on the progression"
Volunteering/ organized activities[a]	Volunteer or in other ways being active in an organization, association or a club Have contractual care assignments (such as being a trustee for another older person) Provide financial support to an organization/association	Having a set role or assignment that involved providing support to other older people and/or being part of an organization, association or club	"I'm a volunteer in two organizations who accompany and assist older persons" "I'm a trustee for an older man with dementia. We talk, have coffee and discuss things. I shop for him, drive him to the hairdresser and take care of his finances and so on"
A little of all/varied	Participants in this group described being engaged in several activities from the other groups with no activity being more prominent than the other or their answers were of a general nature.		"I talk to my neighbor, a woman soon to be 80 years old, help her with minor things. It can be everything from gardening to difficulties managing internet. And I listen to her and her worries about everything from health problems to the need for social distancing" "General helpfulness"

[a]($n = 12$ participants were working as formal caregivers: selected at random $n = 0$ and self-recruited $n = 12$).

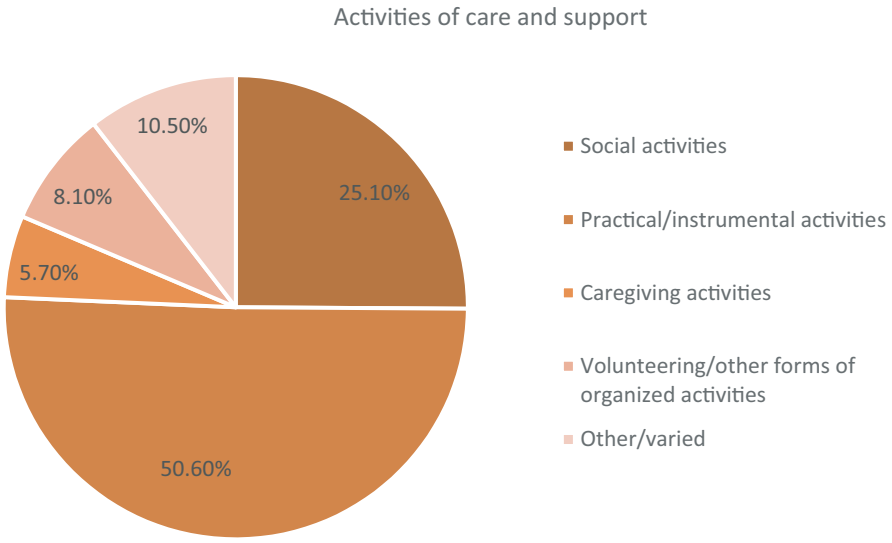

FIGURE 1 Prevalence of providing informal care and support to another older adult in the total sample ($n = 2155$)

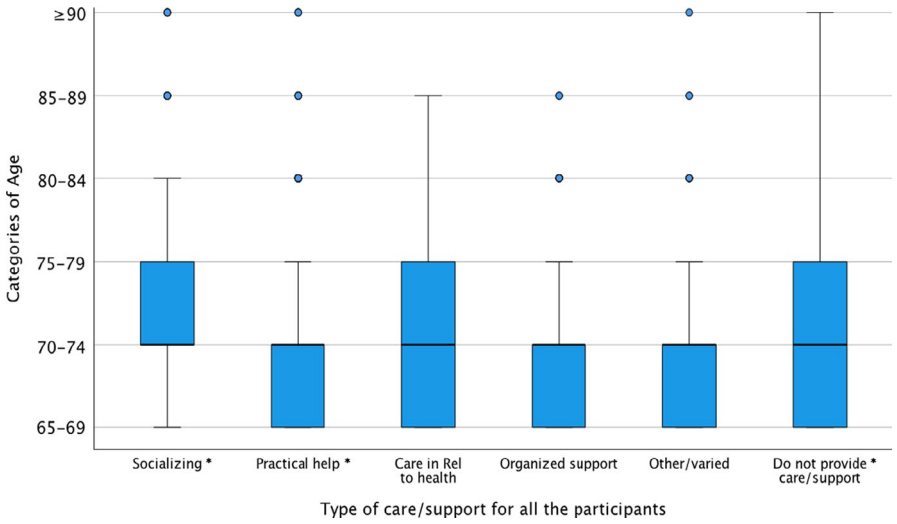

FIGURE 2 Median and percentiles of age (min-max) values for the participants giving and not giving care/support in the study ($n = 10044$). Independent-sample Kruskal–Wallis test, independent-sample Jonckheere–Terpstra test for ordered alternatives and median test; *Significance level of 0.05 adjusted by the Bonferroni correction for the multiple test

also found. Of the men, 71.3% ($n = 778$) provided practical/instrumental help in comparison to women (28.7%; $n = 313$) ($p < 0.001$). More men (63.2%; $n = 110$) also provided volunteering/other organised support than women (36.8%; $n = 64$) ($p < 0.001$).

Figure 2 shows the types of informal care by the median values of the age of the participants. Statistically significant differences were found among the groups by type of informal care and support and the age of the participants. Older participants (≥80 years) were most frequently involved in social activities rather than other kinds of informal care and support.

The participants providing practical/instrumental help, volunteering/other organised activities and a little of all/varied help were much younger (65–69 years) than those engaging in social activities ($p < 0.005$). Additionally, the participants providing practical/instrumental help were younger (65–69 years) than those providing caregiving activities (70–74 years; $p < 0.01$). The participants not providing any type of help were older (>75 years) than those engaging in volunteering/other organised support or a little of all/varied help, but they were younger than those providing social activities (Figure 2; $p < 0.000$).

Social isolation by type of informal care and support and some demographic characteristics

Among the participants with higher scores for isolation (scores > 24), the women felt more isolated than the men (25% and 20%, respectively; $p < 0.001$). Social isolation was not statistically significantly associated with giving informal care and support. However, the majority of the participants engaging in social activities (79.5%; $n = 430/541$) had lower scores for social isolation than the other categories ($p < 0.05$). Older participants (≥85 years) reported the greatest social isolation (median value 21.5 vs. grand median = 20; Figure 3). However, the older participants (≥85 years) within the group engaging in social activities (median value = 19) and

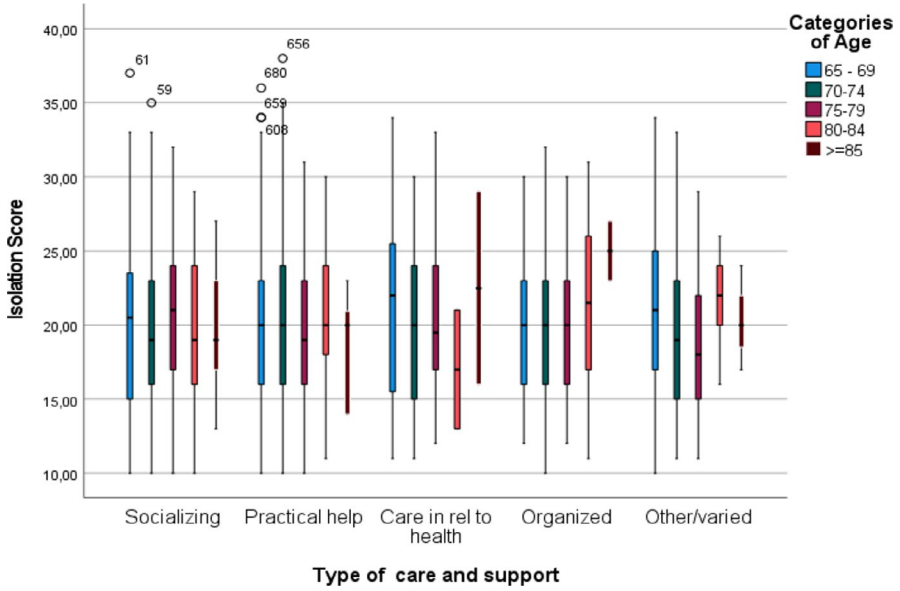

FIGURE 3 Median and percentile (min-max) values of the scores on social isolation for the participants giving care/support in the study ($n = 2155$), by categories of care/support. Independent-sample Kruskal–Wallis test, independent-sample Jonckheere–Terpstra test for ordered alternatives and median test; *Significance level of 0.05 adjusted by the Bonferroni correction for multiple test

practical/instrumental help (median value = 20) had lower social isolation scores than those providing caregiving activities in the same group of age (median value = 22.5 $p < 0.01$; Figure 3). The youngest participants providing caregiving activities felt more socially isolated (median value = 22) than those in the same group of age providing either socialising (median value = 20) or practical/instrumental help (median value = 20; $p < 0.01$; Figure 3). Additionally, higher isolation scores (>24 = 22.3%) were seen among the self-recruited participants than among those recruited at random (>24 = 16.7%) (Table 1).

We observed a trend in the association between isolation score and income: the lower the income, the higher the median/mean scores for isolation ($p < 0.001$). The participants with the lowest incomes exhibited the highest median/mean values for isolation (median = 21 vs. 20, 19 and 18 for the higher incomes; $p < 0.001$). The nonworking participants (pension/retired) exhibited higher median values for isolation than those who worked (median = 20 vs. 19; $p < 0.001$). Moreover, among the participants with higher scores for isolation (>24), those with upper secondary school and compulsory school education felt more isolated than those with a university education (24.3% vs. 20.3%; $p < 0.001$).

Participants living alone due to the loss of a partner (e.g. widowed) exhibited the highest social isolation scores in comparison to those who were married or living with a partner (median = 22 vs. 19 and 21, respectively; $p < 0.001$).

The association between providing informal care and support and the predicted variables in the model

Table 3 shows the adjusted ORs (AORs) and their respective CIs for the variables associated with providing help/support (yes/no) included in the model. Providing informal care and support (yes) was statistically associated with age, gender, marital status, work status, place of residence and social isolation. We observed a trend regarding age ($p < 0.001$): the older the participant, the greater the probability of giving informal care and support to peers. For instance, the probability of giving informal care and support to peers was almost twice as high for the oldest participants (≥85 years) than the youngest participants (<70 years) (Table 3). Being male and being married were positively associated with providing informal care/support to peers (OR = 1.22 and OR = 1.30, respectively). Furthermore, the probability of participants residing in suburban and rural areas giving informal care/support to their peers was lower (OR = 0.84 and OR = 0.81, respectively) than for those living in urban areas (Table 3).

Table 3 shows the probability of respondents not born in Sweden giving informal care to their peers was lower than for those born in Sweden. The participants exhibiting higher isolation scores (>24) were 1.26 times more likely to give informal care and support to their peers than those who were less socially isolated. Moreover, the probability of working and retired participants giving support to their peers was higher (OR = 1.31 and OR = 1.32, respectively) than for participants undertaking other work-related activities.

DISCUSSION

Our study shows that men and younger participants were more likely than women and older participants to be involved in practical/instrumental activities and helping out with things that another older adult could not manage on his/her own. They were also more likely to be engaged in

TABLE 3 Results of the logistic regression analysis describing the associated variables to providing informal care/support (YES/NO) ($n = 9190$)

Providing care/support **Yes $n = 2155$** **No $n = 7889$**	***p*-value** **$_A$OR (95% CI)**
Gender	0.004
Men	1.22 (1.2–1.36)
Women	Ref.
Age (years)	0.001
>85	1.82 (1.20–2.76)
80–84	1. 30 (1.14–1.62)
75–79	1. 29 (1.13–1.50)
70–74	1.17 (1.04–1.33)
65–69	Ref
Marital status	0.001
Married	1.30 (1.12–1.50)
Divorced living alone	0.81 (0.68–0.97)
Never married living alone/widowed	0.86 (0.71–1.04)
Living with a partner	Ref
Geographical location	0.000
Country land	0.84 (0.74–0.95)
Sub-urban	0.81 (0.70–0.94)
Urban/city	Ref
Place of birth	0.006
Non-Swedes	0.73 (0.60–0.89)
Swedes	Ref
Work status	0.042
Employed	1.32 (1.05–1.70)
Retired/pension	1.31 (1.02–1.70)
Other	Ref
Isolation score	0.002
Scores >24 (percentile 75%)	1.26 (1.11–1.43)
Scores <24	Ref.

Note: Total included in the analyses $n = 9190$; AOR (adjusted odds ratio), 95% CI (confidence intervals): adjusted by kind of recruitment and education. Ref: reference category.

volunteering/other organised activities, having a set role or assignment affiliated with an organisation, association or club. Being involved in social activities to lift another person's spirits, provide hope, entertain oneself and others or check how a person is doing was more common among those who were married and among the older participants (≥80). They also feel less isolated than their peers (≥80), living alone or providing other types of support.

The context of informal care outside the family is still poorly understood [15] due to e.g., the lack of descriptions of informal care [17]. This study shows that being older, male, married/in a relationship, an urban/big city resident, employed or on a pension were positively associated with providing informal care and support to peers in comparison to those not providing informal care and support.

The prevalence of providing informal care and support to peers in our sample was 21.5%. The results, together with previous studies of older Swedes' provision of informal care to family, neighbours and others outside their own households [21, 23, 24], confirm that informal care/support activities are a prevalent phenomenon among older adults in Sweden. The contributions of older adults should be recognised as part of Swedish civil society, as has been put forward by previous research [24]. Our findings demonstrate older adults' support of their peers during the COVID-19 pandemic, underlining the significance of civil society and peer support during societal crises, in agreement with previous findings [33, 34].

Providing practical/instrumental help and social activities were the most common activities in our sample, in line with previous research on older adults and friends and neighbours of different ages from Canada [11] and the US [6]. We hypothesised that gender differences would be linked to the type of informal care activities that older adults provide to their peers (H1). Gender differences were confirmed in that more men than women provided practical/instrumental help and engaged in volunteering/other organised activities. Our findings correspond with previous research on family care in Sweden describing how older men are engaged in practical help to a higher degree than women [25] and with reaserch showing that older men are more likely to be enganged in volunteer activities compared to older women [24]. Activities deemed "male" or "female" can be significant for enabling older adults to remain in the own home [23]. Recent research points out that gendered assumptions in theory and research assume that men are reluctant to provide informal care and only do so if there is no woman who will, when, in fact, the motives for informal care may be similar among men and women [50]. Our findings highlight the need to address types of informal care activities and older adults' motives in relation to gender. This study was conducted in Sweden, where welfare is based on a universal dual-earner model and where informal care for older adults is assumed to be a voluntary undertaking (i.e. family care is not stipulated by law). Hence, the results may be different in countries such as Spain, where the gendered patterns of informal care among family caregivers are somewhat different [23].

In Sweden, providing informal care is more common among the youngest older adults (<75 years) than among those who are older [24]. In our sample, older adults were more likely to provide care and were more often engaged in social activities than younger participants, while the latter were more often involved in practical/instrumental

activities and volunteering/other organised activities. Hence, the second hypothesis was confirmed to an extent (H2). There were few participants within the oldest age group (>90); however, a trend related to age was confirmed in the study: the older the person is, the more likely he/she is to provide informal care or support. There is a need to recognise the type of informal care activities in which older and younger age groups of older adults are involved.

Social isolation refers to the absence of integration with a broader social network of relationships with other people [39, 41] and is considered to be a surrogate for social loneliness [39, 40, 42]. Therefore, in this study, social loneliness was assessed using a score for social isolation based on the UCLA Loneliness Scale, not as a global, unidimensional measure, but rather as separate social subscale, which has demonstrated a good fit among older adults [40–43]. An association between loneliness and providing support and instrumental help to family members has been reported [10, 30]. To our knowledge, there are no studies on informal care activities provided by older people to their peers in the same age group and the care providers' perceptions of loneliness/social isolation. In our study, the participants with the highest scores for social isolation were more likely to be engaged in caregiving or being older than 85 years. The oldest participants felt most isolated. However, focusing specifically on type of support shows that among the participants older than 85 years who were more likely to be engaged, in social activities or in practical/instrumental help, they felt less isolated than their peers, that is, older than 85 years engaged in caregiving. Moreover, among the youngest participants, those involved in social activities or in practical/instrumental help felt less social isolated than those engaged in caregiving. Hence, our third hypothesis, that involvement in informal care and support relationships would be associated with a lower degree of social isolation/loneliness, was confirmed in some of the cases (H3). In our study, people involved in social activities and practical help felt less socially isolated, in line with previous findings [10, 30]. Nevertheless, a strong feeling of social isolation among our participants may be explained by other sociodemographic factors observed in these groups (i.e. living alone due to the loss of a partner, having a lower level of education, not working at the time of the survey and having a lower income and being female), which agrees with the previous studies [10, 27–29, 51]. An American national survey found that informal caregivers reported less emotional and social support that noncaregivers, as well as caregivers remain vulnerable for worse mental health than noncaregivers, which is in accordance with our findings [52]. To develop the understanding of how providing informal care and support to peers influences mental health and well-being among older adults, it is necessary to address the type of informal care activity they are engaged in, and to take into account the influence of other socioeconomic factors, age and social network when giving informal care or support to peers.

Methodological considerations

Because the study used a cross-sectional design, we could not test causality, although we showed the associations between providing informal care and support to peers and demographic characteristics and social isolation. Geographically, the study participants spread throughout Sweden; nevertheless, our participants do not represent the whole Swedish population; there is an over-representation of participants living in urban areas, men, those who are highly educated with higher income and those who are married/living with a partner. Furthermore, among the self-recruited participants, more men responded to our survey than women. On average, self-recruited respondents on web panels are highly educated, politically interested [53] and intrinsically motivated out of interest, curiosity or the will to help [54]. The high proportion of men among the self-recruited respondents could reflect the fact that older men than women in Sweden take part in forms of civic engagement such as voting and reading newspapers, and experience an ability to deal with public authorities [55] – activities that relate to political interest. Additionally, a greater feeling of isolation was observed among the self-recruited participants than among the participants who were recruited at random. There are few participants with a country of origin other than Sweden. There are stereotypes that older immigrants belong to communities associated with strong social support [56]. In our sample, there was a lower probability of participants not born in Sweden giving informal care/support to their peers. The group "not born in Sweden" contained immigrants from both inside and outside Europe, and the majority had higher education. Hence, this group does not represent all immigrants in Sweden.

However, there were no differences in socioeconomic status or other sociodemographic factors between the self-recruited participants and those recruited at random (Table 1). Additionally, the net participation rate was high (76%). All those factors indicate that our results can be extrapolated to urban populations in Sweden or other Scandinavian countries with similar gender structures, and coming from similar socioeconomic conditions, where a decline in eldercare has prompted an increase in family care [3].

The data for this study were collected in June 2020 during the COVID-19 pandemic in Sweden. At the time, older adults aged 70 years or older were advised to self-isolate at home and ask family, friends and neighbours for help with errands to avoid places where people gather [57]. To date, we do not know how these circumstances affected older adults' provision of informal care to others. We can assume that the situation led to an increase in socialising from a distance to avoid physical contact. This possibly affected the extent to which older adults were engaged in informal care and support. However, our results resemble patterns found by previous research regarding how common these activities are in informal care between older adults and nonfamily members [6, 11].

We included 12 respondents providing formal care in the analysis, as the results did not change when these respondents were removed from the statistical analyses. We consider the information given by the respondents as important to understand how informal care between older adults intersects with formal care. Future research could explore older adults' contributions to formal eldercare and how this care intersects with informal care. It could also investigate how the different roles of older adults affect the construction of older adults as receivers and/or providers of care within healthcare discourse.

Common measures of informal care are likely to underestimate the scale and scope of the informal care to be investigated. Classifying activities of informal care in participants' statements is suggested as a solution to this problem [17]. One way of conducting such studies is to rely on time-use diaries [16]. Our study provides another innovative way to conduct these studies by classifying free-text answers regarding informal care and support activities in a larger survey.

CONCLUSION

Our findings confirm that informal care and support activities are a prevalent phenomenon among older adults and their peers in Sweden. The results suggests that socialising and practical/instrumental help can contribute to well-being of older adults providing informal care and support to peers. However, activities related to caregiving can create a feeling of social isolation. Social and instrumental care tasks may be significant for older adults' well-being and their ability to live independently in times of societal crisis, such as the COVID-19 pandemic. Hence, our findings point to the value of peer-to-peer support during societal crises. Peer-to-peer support implies a diverse set of activities that are associated with gender, age and social isolation.

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CONFLICT OF INTEREST

The authors declare that they have no conflict of interests.

AUTHOR CONTRIBUTIONS

ES, AW, BR, HW and SY managed the data collection via the Swedish Citizen Panel. ES and POC designed the paper and drafted the manuscript. ES conducted the qualitative analysis and participated in the quantitative data assessment. POC conducted the quantitative analysis. All authors read, revised, and approved the final manuscript.

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