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RESEARCH ARTICLE (ORIGINAL)

Non-face-to-face consultations with family nurses: A pre-experimental study with older adults living alone in the community

Consulta não presencial do enfermeiro de família: Um estudo pré-experimental com pessoas idosas isoladas

Consultas no presenciales con enfermeros de familia: Un estudio preexperimental con personas mayores aisladas

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Abstract

Background: Loneliness and social isolation are significant public health issues. Family nurses play a vital role in identifying and preventing these phenomena and designing interventions to address them.
Objective: To evaluate the impact of non-face-to-face follow-up consultations with family nurses on social isolation, quality of life, and disease self-management of older adults living alone in the community.
Methodology: This pre-experimental study utilizes a one-group pretest-posttest design on a sample of 24 older adult patients. The Lubben Social Network Scale–6 (LSNS-6), the World Health Organization Quality of Life Group (WHOQOL) - OLD scale, and the Portuguese Version of the Therapeutic Self-Care Scale were used for data collection.
Results: Following the intervention, patients' satisfaction with the family nurse's follow-up improved ($p < 0.001$). Additionally, there was a 33.3% increase in self-care management and a reduction in the risk of social isolation (45.8% to 33.3%). Although not statistically significant, there was also an increase in the global score of the quality of life variable.
Conclusion: The non-face-to-face telenursing consultations positively affected the older adult patients' satisfaction with the family nurse's contact and follow-up, reduced social isolation, and improved self-care activities.

Keywords: aged; social isolation; quality of life; self-care; telenursing

Resumo

Enquadramento: A solidão e/ou isolamento social (IS) representa um problema de saúde pública. Os enfermeiros de família (EF), têm um papel crucial na prevenção, identificação e intervenção dos mesmos.
Objetivo: Avaliar o impacte do acompanhamento por consulta não presencial do EF no IS, qualidade de vida (QdV) e autogestão da doença de pessoas idosas (PI) a viver só na comunidade.
Metodologia: Estudo pré-experimental com desenho pré e pós, com 24 PI. Utilizou-se na recolha de dados: a escala breve de redes sociais de Lubben, a escala *World Health Organization Quality of Life Group* e o instrumento de autocuidado terapêutico.
Resultados: Após a intervenção verificou-se uma melhoria no acompanhamento pelo EF ($p < 0{,}001$), um aumento de 33,3% na gestão do autocuidado e redução do risco de IS (45,8% para 33,3%). Na QdV houve um aumento no score global, contudo não estatisticamente significativo.
Conclusão: O acompanhamento por consulta não presencial do EF teve efeito positivo no contacto e acompanhamento pelo EF, mitigação do IS e na melhoria de atividades de autocuidado.

Palavras-chave: pessoa idosa; isolamento social; qualidade de vida; autocuidado; telenfermagem

Resumen

Marco contextual: La soledad o el aislamiento social (IS) constituyen un problema de salud pública. Los enfermeros de familia (EF) desempeñan un papel crucial en la prevención, identificación e intervención en estos problemas.
Objetivo: Evaluar el impacto del seguimiento mediante consulta no presencial del EF en el IS, la calidad de vida (QdV) y la autogestión de la enfermedad en personas mayores (PI) que viven solas en la comunidad.
Metodología: Estudio preexperimental con diseño previo y posterior, con 24 PI. Para la recogida de datos se utilizó la escala breve de redes sociales de Lubben, la escala *World Health Organization Quality of Life Group* y el instrumento de autocuidado terapéutico.
Resultados: Tras la intervención, se produjo una mejora de la supervisión por parte de los EF ($p < 0{,}001$), un aumento del 33,3% en la gestión del autocuidado y la reducción del riesgo de IS (45,8% para 33,3%). En la QdV hubo un aumento de la puntuación global, pero no fue estadísticamente significativo.
Conclusión: El seguimiento mediante consulta no presencial con el EF tuvo un efecto positivo en el contacto y acompañamiento por parte del EF, la reducción del IS y la mejora de las actividades de autocuidado.

Palabras clave: personas mayores; aislamiento social; calidad de vida; autocuidados; telenfermería

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Introduction

Population aging is a reality in Portugal, with the number of older adults (individuals aged 65 years and older) expected to increase from 2.2 to 3.0 million between 2018 and 2080, according to data from Statistics Portugal [INE] (2020). This situation creates new opportunities for health professionals but also poses new challenges that must be addressed. Among these challenges is the rise in loneliness and social isolation (SI), considered a public health problem among older adults. Globally, research estimates that 10% - 43% of individuals experience loneliness and/or SI (Adepoju et al., 2021). A recent population-based study in the United States found that 24% of older adults, who account for 7.7 million individuals, have suffered from SI (Cudjoe et al., 2020), and data from the 2021 Older Population Census (*Operação Censos Sénior 2021*) carried out by the Portuguese National Republican Guard [GNR] (2021) showed that 44,484 older adults lived alone and/or isolated in Portugal. To prevent the negative impacts of loneliness and/or SI, health professionals must make appropriate assessments to mitigate modifiable risk factors and develop interventions aimed at reducing the incidence of these phenomena in older adults. The literature has identified Information and Communication Technologies (ICT) as a resource to combat loneliness and/or SI among older adults (Ibarra et al., 2020). According to the Portuguese National Strategic Telehealth Plan, ICT present an answer to the challenges and opportunities of a society with increased life expectancy through health promotion and care development (Serviços Partilhados do Ministério da Saúde [SPMS], 2019). The Plan also underscores the significance of ICT in optimizing resource management, reducing the number of patient visits to healthcare facilities, and improving care coordination (SPMS, 2019). Hence, this study aims to assess the impact of teleconsultations with family nurses on the SI, quality of life (QoL), and disease self-management of older adult patients living alone in the community.

Background

Demographic aging is a global occurrence. Data from the 2021 Census shows a decline in the Portuguese population's age composition in relation to 2011. Presently, older adults comprise 23.4% of the Portuguese population (INE, 2022), with the aging population index rising significantly since 2011, from 128 to 182 older adults per 100 young adults (INE, 2022). Loneliness and SI can affect individuals at any age but are more common in older adults due to factors such as reduced social interactions, retirement, physical and mental health issues, and grief for lost loved ones (Prohaska et al., 2020).

According to Eurostat (2020), approximately 512,000 older adults in Portugal live alone and may experience particular difficulties in their daily lives resulting from the SI imposed during the COVID-19 pandemic. Thus, implementing strategies to prevent and/or mitigate loneliness and SI is urgent as these phenomena are viewed as 21st century public health problems, which the COVID-19 pandemic has exacerbated (Prohaska et al., 2020). The literature highlights the use of ICT by health professionals (Ibarra et al., 2020) as a potential avenue for mitigating the effects of SI and/or loneliness in older adults, particularly in those who live in rural areas and/or have functional limitations that affect their mobility (Czaja et al., 2018). However, it is essential to note that ICT should not replace human interaction but rather enhance connection opportunities (Czaja et al., 2018). Roíg Cabo et al. (2021) point out that the development of ICT has created new care delivery scenarios for health professionals and populations. Therefore, it is crucial to reflect on how health professionals, particularly nurses, can use ICT to reduce or avoid loneliness and/or SI and improve the QoL of older adults. One approach is telenursing, which consists of using ICT to provide nursing care remotely, with the nurse and the patient not physically present in the same place (Ordem dos Enfermeiros, 2021). This presents a favorable scenario for health professionals to maintain contact and monitor the health status of older adults, as well as a way to rethink the relationships established between nurses and patients (Gálvez, 2022). However, including telenursing in the care delivery resources should not be mistaken for a technological fad and/ or justified by financial interests (Mussi et al., 2018). It should be understood as a means to promote comfort for patients needing care.

Research question

How do teleconsultations with family nurses impact the SI, QoL, and disease self-management of older adult patients living alone in the community?

Methodology

A pre-experimental study using a one-group pre-test-posttest design was conducted between March and June 2021 at a Family Health Unit in the Central Region of Portugal upon receiving approval from the Health Ethics Committee (opinion no. 098-2020). The study collected data at two different times: before participants received the intervention (Moment [M] 1) and after participants received the intervention (Moment [M] 2). The study's sample was chosen using a non-probability convenience sampling method. Inclusion criteria required participants to be older adults aged 65 and over, living alone in the community, and enrolled in the Family Health Unit where the study was conducted. Older adults who were institutionalized, diagnosed with cognitive impairment as noted in their medical records, or with a score for cognitive impairment in the Mini-Cog©, and those without access to ICT were excluded from the study. Initially, the study identified 318 older adults who were eligible to participate. After applying the inclusion and exclusion criteria, 43 individuals were selected. However, 17 of the selected individuals declined to participate. Of

the remaining 26 individuals, two were deemed to be at risk and socially vulnerable. Consequently, these two individuals were excluded from the study's sample and referred to appropriate community institutions. Thus, the study's final sample comprised 24 older adults who participated in the implementation phase of the telenursing consultation intervention.

A questionnaire was used to collect data in M1 and M2. The questionnaire consisted of five parts:

Part 1 – Including the sociodemographic description of the sample, such as age, gender, marital status, education, health surveillance consultations, contact with family members or significant others, support from formal and/or informal caregivers, health status, and mobility. The study assessed loneliness using the question "Do you often feel lonely?" answered on a 4-point Likert scale where 1 indicated *always* and 4 indicated *never*, thus, a higher score meant a lower prevalence of loneliness (Paúl & Ribeiro, 2009). Part 1 of the questionnaire also utilized a Visual Analogue Scale (VAS) from 0-10 to assess satisfaction levels with access to the health unit, contact with the family nurse, and subsequent follow-up.

Part 2 – Including the Mini-Cog© - a quick screening tool for early detection of dementia, developed by Borson et al. (2000) and translated into several languages, among which European Portuguese. The Mini-Cog© has a total score of 5, with scores ≥ 3 being considered normal (without cognitive impairment).

Part 3 – Including the World Health Organization Quality of Life Group (WHOQOL) - OLD scale validated for the Portuguese population by Vilar, Sousa & Simões (2016) and used to assess QoL. The 28-item Portuguese version uses a 5-point Likert scale, ranging from 1 to 5. It includes seven facets: Sensory Functioning, Autonomy, Past, Present, and Future Activities, Social Participation, Death and Dying, Intimacy, and Family/Family Life. Items 1, 2, 3, 7, 8, 9, and 10 have inverted scores. The scale provides a total score and a score for each facet (obtained by adding the scores of the items), with higher scores corresponding to better QoL.

Part 4 – Including the evaluation of the social support networks of the study's participants through the Lubben Social Network Scale–6 (LSNS-6), which gauges SI in older adults living in the community by assessing perceived social support obtained from their friends and family. The scale was validated for the Portuguese population by Ribeiro et al. (2012) and is composed of two factors: "family relationships" (3 items) and "friendship relationships" (3 items). The responses to the items range from 0 to 5 points, and the total score, which ranges from 0 to 30 points, is the sum of the item scores. Individuals with a score < 12 are identified as socially isolated. The internal consistency of this scale was deemed adequate (Cronbach's alpha = 0.798).

Part 5 – Including the Portuguese version of the Therapeutic Self-care Instrument (Doran & Sidani, 2005; Portuguese version by Cardoso et al., 2014) used to assess self-care. The scale measures an individual's ability to perform self-care activities in four categories: taking medication as prescribed, recognizing and managing symptoms, performing regular activities of daily living, and recognizing and effectively managing changes in health conditions. It consists of 12 items, and responses are scored on a 5-point Likert scale ranging from 0 = *I don't know, or I can't* to 5 = *I know, or I can*, reflecting individuals' needs for learning or resources. The validation study found this instrument unidimensional, explaining 81.318 of the total variance. The instrument's internal consistency was deemed excellent, with the Cronbach's Alpha test yielding a score of $\alpha = 0.979$.

The study's lead author was responsible for coordinating the implementation of the telenursing consultations. These occurred approximately every 15 days between April and June 2021, corresponding to four follow-up telenursing consultations (Table 1). During this phase, the non-face-to-face telephone consultations were scheduled according to the participant's availability. A guiding script was developed for the telenursing consultation by telephone, based on the recommendations of the Portuguese Nursing Regulator (*Ordem dos Enfermeiros*) for non-face-to-face nursing consultations (Ordem dos Enfermeiros, 2021). Four consultations were conducted and recorded using the *SClínico* software program. The consultations lasted an average of 20 to 30 minutes. The participants' free and informed consent was obtained during the face-to-face interviews, and all ethical principles were respected.

Table 1

Non-face-to-face Consultations – The Moments and Objectives of the Intervention

Moment	Objectives
1st consultation (*n* = 24)	To identify the nursing attention *foci*, diagnoses, and interventions; To define goals and objectives.
2nd and 3rd consultations (*n* = 24)	To analyze the difficulties experienced in performing the tasks defined in the 1st consultation and readjust the care plan if necessary; To encourage adherence to the therapeutic regime; To learn new behavior patterns that promote health and psychological and social well-being; To program recreational activities that stimulate motor (physical exercise) and cognitive (perception, memory, and creativity) functions.
4th consultation (*n* = 24)	To evaluate the goals and objectives set in the 1st non-face-to-face consultation.

The data were collected between March 1 and June 24, 2021, and included four phases: *i)* participant selection according to the study's inclusion and exclusion criteria; *ii*) contacting all selected individuals by telephone to provide information on the study (objectives and characteristics) and invite them to participate in the study. Once the invitation was accepted, a face-to-face interview was scheduled at the participants' homes for data collection in M1 (March 2021). Throughout the process, all the COVID-19 safety measures issued by the Portuguese Directorate-General for Health were respected; *iii)* implementation of the intervention by scheduling the non-face-to-face consultations; *iv)* telephone interview after prior scheduling with the participant (June 2021) for data collection in M2 (the three questions to assess satisfaction with access to the health unit and the contact with the family nurse and subsequent follow-up from part 1, and parts 4, 5, and 6 of the questionnaire were applied).

The absolute frequency, relative frequency, mean (*M*) and standard deviation (*SD*), minimum and maximum values, were used in the descriptive statistical analysis.

Before implementing inferential statistics, normality was assessed using the Kolmogorov-Smirnov test, which showed that the data did not have a normal distribution ($p < 0.05$). Consequently, non-parametric tests were employed for inferential statistics. The Wilcoxon test was used to compare the means of two paired groups for the following variables: assessment of satisfaction with access to the health unit, contact with the family nurses and subsequent follow-up, QoL, social support networks, and therapeutic self-care. McNemar's test was used to assess SI (a nominal variable). Data were analyzed using IBM SPSS Statistics software - version 26.0. The p-value < 0.05 was considered statistically significant.

Results

Sample description:

The sample consisted of 24 older adults without cognitive impairment. The study used the Mini-Cog© to assess signs of cognitive impairment in its sample. The majority of the participants were women (75%; n = 18) and had a mean age of 77.38 years (*SD* = 7.20). Also, most of the sample (83.2%; *n* = 20) consisted of widows with a mean of 12.83 years of widowhood (*SD* = 11.42). Regarding education, 41.7% of the participants had no schooling (0 years of schooling; *n* = 10), 29.2% completed the first four years of basic education (*n* = 7), and 16.7% had 1-3 years of basic education (*n* = 4).

Satisfaction with access to the health unit, contact with the family nurse, and subsequent follow-up

In the first phase of the study (M1), the levels of satisfaction with the "Contact with the family nurse" variable were deemed adequate, with a mean of 4.58 (*SD* = 4.47). In the second phase (M2), there was a significant improvement in the mean, which increased to 7.71 (*SD* = 1.57) after the intervention was implemented ($Z = 91$; $p < 0.001$). Regarding the participants' satisfaction with the "Family nurse's follow-up" variable, the mean was 4.38 (*SD* = 4.57) in the first phase (M1). After the intervention (M2), the participants' mean satisfaction with the family nurse's follow-up significantly increased to 7.67 (*SD* = 1.58; $Z = 91$; $p < 0.001$). In terms of satisfaction with the variable "Access to the health unit," the study observed that the initial mean of 7.88 (*SD* = 7.20) increased to 8.46 (*SD* = 1.44). Nevertheless, this difference was not considered statistically significant ($Z = 3$; $p = 0.18$; see Table 2).

Table 2

Sample Description Regarding the Satisfaction with Access to the Unit, Contact with the Family Nurse, and Subsequent Follow-up Before and After the Intervention

Satisfaction	Before	After	Test
	M ± *SD*	*M* ± *SD*	
Access to the health unit(*)	7.88 ± 7.20	8.46 ± 1.44	$Z = 3$; $p = 0.18$[(1)]
Contact with the family nurse*	4.58 ± 4.47	7.71 ± 1.57	$Z = 91$; $p < 0.001$[(1)]
Family nurse's follow-up*	4.38 ± 4.57	7.67 ± 1.58	$Z = 91$; $p < 0.001$[(1)]

Note. *M* = Mean; *SD* =Standard deviation. *0-10 Score; [(1)] Wilcoxon test.

Quality of life (QoL)

The QoL assessment revealed a slight increase in the mean for facets 3, 4, and 7 following the intervention. However, this increase was not considered statistically significant. The study did not observe any differences in the results of facets 1, 2, 5, and 6 between before and after the intervention. Nevertheless, the study confirmed a slight improvement in the mean of the QoL Total Score after the intervention despite the lack of statistically significant differences (Table 3).

Table 3

Sample Description Regarding the Quality of Life Before and After the Intervention

Facets	Before	After	Test[(1)]
	M ± *SD*	M ± *SD*	
Facet 1 – Sensory Functioning	15.42 ± 3.43	15.42 ± 3.43	$p = 1$
Facet 2 - Autonomy	16.96 ± 2.10	16.96 ± 2.10	$p = 1$
Facet 3 – Past, Present, and Future Activities	12.71 ± 2.03	12.75 ± 2.03	$Z = 1$; $p = 0.317$
Facet 4 - Social Participation	14.21 ± 2.26	14.33 ±2.27	$Z = 3$; $p = 0.180$
Facet 5 - Death and Dying	10.92 ± 3.99	10.92 ± 3.99	$p = 1$
Faceta 6 - Intimacy	13.86 ± 2.94	13.86 ± 2.94	$p = 1$
Facet 7 - Family/ Family life	15.25 ± 3.25	15.29 ± 2.26	$Z = 1$; $p = 0.317$
Total Score	99.46 ± 10.60	99.67 ±1 0.61	$Z = 3$; $p = 0.180$

Note. *M* = Mean; *SD* =Standard deviation; [(1)] Wilcoxon test.

Social support networks

Close to half of the older adults reported feeling lonely often or always (41.7%), while 50% said they felt lonely sometimes, and only 8.3% stated they never felt lonely. The results of the "Social support networks" variable showed that 45.8% of the participants were at risk of suffering from SI. In terms of the "Family" and "Friends" dimensions, the mean scores improved slightly after the intervention, although the improvement was not considered statistically significant ($Z = 76$; $p = 0.981$). Regarding the "Risk of isolation" dimension, the intervention resulted in a rise in participants without risk of isolation (from 54.2% to 66.7%), but the difference was not considered statistically significant (Table 4).

Table 4

Sample Description Regarding Social Support Networks Before and After Intervention

Dimensions	Before	After	Test
	M ± *SD*	*M* ± *SD*	
Family	7.08 ± 2.50	7.21 ± 2.34	$Z = 76$; $p = 0.981$ [1]
Friends	5.54 ± 2.95	5.96 ± 2.67	$Z = 76$; $p = 0.981$ [1]
TOTAL MEAN	12.62 ± 4.14	13.17 ± 3.82	$Z = 76$; $p = 0.981$ [1]
CATEGORIES			
< 12 (Risk of isolation)	*n* = 11 (45.8%)	*n* = 8 (33.3%)	$p = 0.508$ [2]
≥ 12 (Without risk of isolation)	*n* = 13 (54.2%)	*n* = 16 (66.7%)	

Note. *M* = Mean; *SD* =Standard deviation; [1] Wilcoxon test [2] McNemar's test.

Family nurse's intervention in therapeutic self-care

Regarding the assessment of therapeutic self-care, the study observed that the mean of self-care activities 2, 4, 5, and 7 increased significantly after the intervention (Table 4). The mean of self-care activities 1, 3, 6, 9, 10, 11, and 12 also increased after the intervention, although without statistical significance (Table 5).

Table 5

Sample Description Regarding Therapeutic Self-Care Before and After Intervention (only the results considered statistically significant are presented)

Care Activities		Before	After	Test [1]
		M ± *SD*	*M* ± *SD*	
2	Do you understand the purpose of your prescribed medications (i.e., their effects on your health)?	4.46 ± 1.06	4.63 ± 0.71	$Z = 10$; $p = 0.046$
4	Can you recognize any bodily changes (symptoms) associated with your health or health status?	3.92 ± 1.18	4.13 ± 0.85	$Z = 15$; $p = 0.025$
5	Do you understand the underlying cause of specific bodily changes (symptoms) related to your illness or health status?	3.71 ± 1.20	4.08 ± 0.88	$Z = 36$; $p = 0.007$
7	Can you carry out the prescribed treatments or activities to manage these bodily changes (symptoms)?	4.25 ± 0.90	4.42 ± 0.78	$Z = 10$; $p = 0.046$

Note. *M* = Mean; *SD* =Standard deviation; [1] Wilcoxon test.

Discussion

Loneliness and SI are considered public health problems among older adults. This study examines the effects of telenursing, involving non-face-to-face consultations, on SI, QoL, and self-care in older adults living in the community. The evaluation of the impact of the non-face-to-face consultations (telenursing) showed a significant improvement after the intervention regarding satisfaction with the family nurse's contact and follow-up. It should be noted that the satisfaction levels were low before the intervention, even though patients reported better access to the health unit. This could be attributed to most older adults going to the health unit for medical consultations and possibly not being contacted or followed up by their family nurse. Thus, telenursing consultations enhance the connection between patients and their family nurses, leading to improved care (Roig Cabo et al., 2021) and more opportunities for connection (Czaja et al., 2018). Additionally, the study examined the impact of the intervention on the QoL of older adults and observed an increase in the total score, but this was not considered statistically significant. Nevertheless, it should be noted that while the results may not be substantial, they are consistent with the findings presented by Páscoa & Gil (2021) and Agrela et al. (2021), which indicate that the implementation of ICT influences the QoL of older adults, promoting dignified and active aging with the construction of new meanings for life.

The study revealed a notable incidence of loneliness and/

or SI (>40%), which is consistent with the findings of other studies that estimate the prevalence of loneliness to be between 5% - 43% (Leigh-Hunt et al., 2017) and isolation to be over 50% among people aged 60 years and older (Nicholson et al., 2019). It is important to note that the study's data were collected during the COVID-19 pandemic and may reflect the social distancing measures introduced in response to the pandemic (Baarck et al., 2022). Given that it is considered a predictor of adverse outcomes (Faísca et al., 2019), there is a pressing need to identify and evaluate SI in older adults and design effective interventions to combat this phenomenon. Family nurses are instrumental, even if not in person, in the development of strategies to minimize the negative consequences associated with SI. Additionally, implementing these interventions is a valuable resource for promoting the quality of care for older adults and their families, as well as their social and community (re)integration.

The intervention decreased the percentage of older adults at risk of SI from 45.8% to 33.3%. Although this outcome was not deemed significant, it is relevant to note that three older adults were no longer at risk of isolation at the end of the intervention. In addition, two systematic literature reviews have highlighted the importance of ICT as a resource to prevent and/or alleviate SI and/or loneliness (Ibarra et al., 2020; Shah et al., 2020).

The study also evaluated the impact of the intervention on therapeutic self-care. Statistically significant differences were observed in four care activities, showing a 33.3% improvement, namely in the management of the disease, the management of the therapeutic regime, and the knowledge of the health-disease process. This was one of the nursing attention *foci* of the implemented intervention and may have contributed to the study's outcomes. The analyzed data emphasize the potential for telenursing to involve patients in self-care and the management of their health/disease process. (Ordem dos Enfermeiros, 2021). Furthermore, these data support the idea that consultations using ICT represent an opportunity and/or a resource to provide support and information, to welcome, to promote safe self-care practices, and to foster the comfort of patients in need of care (Ordem dos Enfermeiros, 2021; Páscoa & Gil, 2021;).

The study has some limitations. The sample size (n=24) restricts the generalizability of the findings. Data were collected during the COVID-19 pandemic, which led to fewer participants, as some eligible individuals declined participation in the study due to fear of contact during the face-to-face interview. Additionally, as the data were collected during the pandemic, they may reflect the loneliness and/or SI resulting from the restrictions imposed by COVID-19, namely the reduction in social contacts.

Conclusion

This study examined the effects of non-face-to-face follow-up nursing consultations on the SI, QoL, and disease self-management of older adults living alone in the community. The findings demonstrate a significant improvement in the contact with the family nurse and subsequent follow-up through non-face-to-face consultations. Additionally, the consultations proved to reduce the risk of SI and promote an improvement in self-care activities. Thus, telenursing consultations can be an alternative for family nurses when in-person interventions are impossible due to circumstances such as pandemics, geographical isolation, or patients' mobility limitations due to health conditions.

Author contributions

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