Influence of the Covid-19 pandemic on medication reconciliation in frail elderly people at hospital discharge.Professional perception

MARIA JESÚS ROJAS-OCAÑA
University of Huelva

MIRIAM ARAUJO-HERNANDEZ (miriam.araujo@denf.uhu.es)
University of Huelva

SONIA GARCÍA-NAVARRO
Andalusian Health Service

SERVANDO MANUEL BAZ-MONTERO
Andalusian Health Service

MARIA EULALIA MACIAS-COLORADO
Andalusian Health Service

ESPERANZA BEGOÑA GARCIA-NAVARRO
University of Huelva

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Abstract

Background

The current demographic panorama in Spain corresponds to an aging population; this situation is characterized by the need to care for an elderly population, which generates polymedicated and pluripathological individuals. Polymedication is a criterion of frailty in the elderly and a risk factor for mortality and morbidity due to the increased risk of drug interactions and medication errors. A high percentage of medication errors occur at hospital admission or discharge, i.e. in the transition of patients between different levels of care. A key element to prevent or avoid these errors would be treatment reconciliation, something that should be coordinated between different areas of action and with a multidisciplinary approach.There are numerous studies that measure reconciliation at hospital discharge, at admission and even the methodology of reconciliation, but we have not found many studies that measure reconciliation in the context of the pandemic from the point of view of health professionals, their perception, difficulties and strategies carried out, which is essential to begin to glimpse solutions

Methods

Qualitative study based on 21 in-depth interviews and two discussion groups, between Jan-uary and April 2021 (13 nurses, 8 doctors, in rural and urban areas). The discourse was ana-lyzed according to the Taylor-Bodgan model and processed using Atlas.ti software

Results

The areas altered by the health crisis were access to patients, their reconciliation of medication,

and changes in the care modality: greater use of telephone communication, changes in work organization, time dedicated to patient care and family work.

Difficulties encountered during Covid-19: change in medication format, specific characteristics of the patient and their pathologies, and difficulties arising from communication with the patient and their family.

The strategies applied: the collaboration of home assistants and caregivers, emphasis on patient-health professional communication and the use of Information and Communication Technologies (ICT).

Conclusion

The discharge has been interrupted by the health crisis caused by Covid-19, in the traditional access of patients and by the remote care modalities generated by telemedicine

1 Background

The current demographic panorama in Spain corresponds to an aging population; this situation is characterized by the need to care for an elderly population, which generates polymedicated and pluripathological individuals. Polymedication is a criterion of frailty in the elderly and a risk factor for mortality and morbidity due to the increased risk of drug interactions and medication errors. A high percentage of medication errors occur at hospital admission or discharge, i.e. in the transition of patients between different levels of care. A key element to prevent or avoid these errors would be treatment reconciliation, something that should be coordinated between different areas of action and with a multidisciplinary approach.There are numerous studies that measure reconciliation at hospital discharge, at admission and even the methodology of reconciliation, but we have not found many studies that measure reconciliation in the context of the pandemic from the point of view of health professionals, their perception, difficulties and strategies carried out, which is essential to begin to glimpse solutions

2 Materials And Methods

The methodology applied in this study was of a qualitative phenomenological nature, given our interest in the emic approach to the study subjects. This research adheres to coreq guidelines [46]. Our analysis was based on information gathered from 21 in-depth interviews and two discussion groups staged between January and April 2021, with the aim of knowing the influence of Covid-19 on medication reconciliation. Focusing on this dimension in the interviews enabled us to analyze in greater depth the plots that were subsequently superimposed on the discourses generated in the two discussion groups, and with that, the ideas that condition specific ways of acting, facilitating understanding of difficulties and strategies. If, as Mottier says [47],"stories are the means through which actors try to see the reality of others, suggest certain social positions and impose practices, and criticize alternative social arrangements", then the arguments used to understand each of the reactions of the primary care professionals to the pandemic represent the tools by which each of the actors justifies their position and articulates their self-generated discursive strategy to the rest of society. Thus, an inductive analysis of the arguments and the affinity relationships between them was used to obtain the main arguments deployed in the context of this study phenomenon.

2.1 Participants and study environments

The sampling strategy was theoretical sampling, a technique that was developed by Glaser and Strauss [48] and where the sample is selected through the use of a successive strategy, progressive incorporation of informants, and evidence of similar studies [49]. The theoretical population considered the range of healthcare professionals (primary care doctors and nurses) in relation to medication reconciliation in patients over 65, and the locations where they performed their professional activity, which yielded a sample of healthcare professionals from both rural and urban settings. Our final selection was 13 nurses and 8 doctors, of whom 8 belongedto rural areas and 13 to urban areas.

The choice of these groups was driven only by the search for actors with primary care experience and who had been confronted by situations related to medication reconciliation in patients aged over 65

during the health crisis caused by the Covid-19 pandemic.

For the selection of interviews within each group, a snowball sampling method was used [50]. The sample size was determined progressively during the course of the incorporating research informants until reaching the saturation of the information [51], obtaining a total of 21 interviews.

The interview script covered dimensions associated with the location where the primary care professional works, their professional career, type of healthcare activities performed in their regular primary care practice, the particularities of the geographical environment where they work, the tools and practices applied in medication reconciliation before a patient is admitted to hospital, the medication reconciliation procedures that follow admission, the changes caused by the Covid-19 health crisis in their usual healthcare practice, the perceived difficulties in medication reconciliation, and the influence of Covid-19 on medication reconciliation and the functioning of health services.

2.2 Analysis

We analyzed the discourse in line with the phenomenological paradigm inspired by repetitive "decontextualization" and "recontextualization" processes, in order to understand the experiences and perspectives of the interviewees following the coreq criteria regarding qualitative analysis [46]. This model differentiated three different phases in the processing of the data collected. First, the action or discovery phase, which focused mainly on data collection and reiterated reading of the interviews in order to extract the most repeated topics; this enabled us to obtain different categories and develop related theoretical concepts. Once completed, a new reading of the bibliographic content related to the topic used in this study was carried out to develop an interview guide

The next phase was coding. With the different categories and emerging topics in the interviews now identified, we proceeded to separate the various data obtained. According to the categories established, only the most useful data were selected to help us refine the analysis and extract the greatest potential from the interviews.

Finally, the “data relativization” phase, which not only took into account the theoretical data extracted in the interviews, but also variables such as whether or not these interviews were requested, how our presence could affect the conduct of the interview, the characteristics of the environment in which the interviews took place, and the interviewer's (the authors) own assumptions.

We used the Atlas.ti data management program for the coding and recoding process, to identify all the arguments expressed by the interviewees. This program quantifies the citations for each of the codes assigned during the analysis of the interviews.

2.3 Ethical considerations

The study was approved by the ethical health research committee of the province of xxxxxx, which was assigned code xxxxx. Verbal consent was granted by the participants in the interviews and focus group

discussions. Throughout the interview process, the unintended consequences of interviews and focus group discussions were always taken into consideration

3 Results

3.1 Participants´ Characteristics

The data were extracted from the information collected from 21 interviewees (13 nurses, 8 doctors), from different primary care areas, and rural and urban settings. Of the 21 subjects interviewed, 6 nurses worked in a rural setting, 7 nurses in an urban setting, 3 doctors in a rural setting, and 5 doctors in an urban setting (Table 1). The average number of years' experience as health care professionals was 25.76 years, with 15.59 years dedicated to primary care. The health care professional with the shortest time in primary care had 2 years' experience, the longest time served in primary care was 27 years.

Distribution by sex in the study was 83.3% women and 16.7% men; since women represent almost 65% of the total nursing profession. The average age of the participants was 50.57 years, and 24.14 years' experience in primary care. The sample consisted of 61.90% nurses and 38.10% doctors (Table 1).

The coding of the interviewees' arguments generated 41 codes, divided into four groups from which those related to the study objectives were selected: influence of the pandemic (11), difficulties in medication reconciliation (8) and reconciliation strategies used (8) (Figure 1).
The analysis of principal components revealed three lines of argument that conveyed the participants' discourse, coinciding with the objectives of this study (Table 2).
3.2 Influence of the Covid-19 pandemic on the primary care practice performed by nurses and doctors.

The discourse analysis provided 11 codes. The areas altered by the healthcare crisis were access to patients and their medication reconciliation. The analysis also revealed dis-crimination in terms of the healthcare provided and the cases attended, uncertainty due to ignorance of the virus, as well as the changes to the mode of healthcare they were used to dispensing: greater use of telephone communication, changes in the organization of work, time dedicated to attention to the patient and to work with the family in the process. The discourses also revealed a change in the vision of primary care work, with the perception of greater empowerment across the wide range of primary care activities (Table 3).
3.3 Difficulties encountered during the Covid-19 pandemic in medication reconciliation after discharge in patients over 65 years of age.

This line of argument presents 8 codes that correspond to crucial issues in medication reconciliation, such as: change of medication format, specific characteristics of the patient and their pathologies, and difficulties arising from communication with patients and family (Table 4).

The limited specific training that healthcare professionals receive in medication reconciliation issues, workforce stability and the reduction in the time dedicated to each case rep-resent other codes that figure

in the analysis of this study. Finally, nurses and doctors pointed to the difficulties resulting from a lack of common criteria in the control of medication and, therefore, in the choice of medication offered to the patient.

3.4 Strategies applied by healthcare professionals during the pandemic to medication reconciliation.

This dimension generated 9 codes, which encompass the collaboration of home-help assistants and care-givers, emphasis on patient-healthcare professional communication, and use of Infor-mation and Communication Technologies (ICT). This line of argument also refers to the tasks developed to promote trust between healthcare professional, patient and family. Telephone consultations have been a key element in ensuring correct medication recon-ciliation, as well as the use of specific tools, graphic schemes, pillboxes, and face-to-face visits in cases of need (Table 5).

4 Discussion

The results obtained in our study reflect the significant influence of the Covid-19 pandemic, resulting in changes to the healthcare system and, of course, to primary care [34]. A range of actions have been developed, prioritizing the diagnosis and care of patients with Covid-19 over second-line actions previously carried out in-person [52]. In this sense, telemedicine has taken on a great role in all areas of healthcare [53-55], in some ways exacerbating existing barriers between the healthcare system and patients and families; in short, both doctors and nurses have had to confront a new disease and develop a new way of interacting with patients.

As the results show, this situation has generated difficulties in different groups, such as frail elderly people in the telephone follow-up of consultations, due to ignorance of new technologies or linguistic or cognitive barriers [56-58]. In line with these results, Lang [59] reported that patients over 85 years of age of low socioeconomic status may be particularly affected by this digital divide, which has been widened by the pandemic.

Telemedicine has cut the personal contact between healthcare worker and patient, reduced accessibility and affected patient treatment, essential elements in the development of the healthcare worker-patient relationship; it was also indicated as a difficulty in the medication reconciliation process by our participants [60]. However, authors such as Keesara et al. [61] state that telemedicine can be an advantage in the practice of medication reconciliation, as long as patients can connect by camera and can visualize changes in the medication format, and read the labels.

But overall, and following the thread of difficulties encountered by the study participants, it is communication that is fundamental, as it was before, and now in the midst of, the pandemic, not only across all levels of healthcare [22,29] but also between healthcare personnel, their patients and the families. Our results show that communication is an essential nursing skill. Face-to-face communication is vital, enabling nurse and patient to have a full, unimpeded conversation, in which both parties speak and listen in which the healthcare worker can also register body language and the facial expressions that

provide key information to enable them to better understand the meaning of what they hear from their patient [61].

In terms of strategies for medication reconciliation, new findings point to the need for communication [62-64], training for healthcare professionals[65]and close collaboration with family members or home-help assistants to cover the basic needs of the elderly, which include control of their medication [60,66,67].

As already mentioned, medication management is the most complex component in the patient's transition from hospital to home after discharge. One study [68] showed how a good the nurse-patient relationship developed following hospital discharge, enabling good medication reconciliation, and helping the patient to perform their own safe medication administration.

Another aspect of this transition from hospital environment to primary care is improving patient safety by facilitating communication and coordination between professionals through the use of digital tools that enable the transfer of information; this ensures continuity of care for patients, especially in the case of elderly polymedicated, multipathological patients [69]. Finally, the results highlight the need to develop strategies that empower patients and families, and give patients greater confidence to manage their own healthcare and resolve health issues. This involves sharpening patient's healthcare skills and changing daily routines, correct use of pillboxes, and calendars or reminder systems [70].

5 Limitations

As limitations, the difficulties encountered in the bibliographic search for studies on medication reconciliation in the elderly in the context of the pandemic were obviously due to the novelty of the phenomenon. However, we have been able to contrast our results with studies that highlight the importance of medication reconciliation and communication between all levels of the healthcare system, and with patients and families, among others. Our search also found studies that emphasize the role of new information and communication technologies (ICT) in the socio-sanitary setting that have developed rapidly during the pandemic.

Such limitations should encourage more research to complement our findings, and to enable us to establish future care strategies to guarantee safe medication reconciliation for elderly patients discharged from hospital.

Another limitation was the fact that the interviews were conducted during the Covid-19 pandemic, so they were virtual, preventing face-to-face interaction and the creation of a climate of trust.

5.1 Recommendations for practice

Health professionals should pay special attention the transition from the hospital environment to primary care to improve patient safety.It is necessary to facilitate communication and coordination between professionals through the use of digital tools that allow the transfer of information.

This ensures continuity of care for patients, especially in the case of polymedicated and multipathological elderly patients.

6 Conclusions

According to the perception of primary care professionals, the medication reconciliation in the elderly following hospital discharge has been disrupted by the health crisis caused by Covid-19, mainly in terms of traditional patient access and as a result of remote modes of care generated by telemedicine.

Regarding the difficulties encountered in the medication reconciliation process, the change in the medication format, the specific characteristics of the patient, the problems involved in communication with patients and the family, as well as those between different levels of healthcare stand out.

The strategies applied to these new contexts have been a priority for healthcare personnel, with greater understanding of the need for collaboration between home-help assistants and caregivers, greater emphasis on patient-healthcare professional communication, and improved use of ICT. The results of our study also show the importance of promoting trust between healthcare professional, patient and family.

Finally, for these actions to be performed successfully requires coordination between healthcare professionals, such as medical and nursing staff, in both hospital and primary care settings, and it will be fundamental to maintain these collaborative working practices into the future. For this to happen, it is necessary to improve communication between the different levels of healthcare practice and among healthcare professionals, in order to inform quickly and efficiently on any failure in therapeutic adherence or problem related to the elderly patient's medication reconciliation.

Declarations

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The study was conducted in accordance with the guidelines of the Declaration of Helsinki, and was approved by the Ethics Committee of the Comunidad Autonoma de Andalucia. Junta de Andalucia. España, protocol code PPPCM and 22/12/20.

Informed consent was obtained from all subjects involved in the study.

CONSENT FOR PUBLICATION

Not applicable

DATA AVAILABILITY STATEMENT: Not applicable**.**

The datasets generated and/or analyzed during the current study are not publicly available due to the privacy of the informants, but are available from the corresponding author upon reasonable request.

CONFLICTS OF INTEREST

The authors declare no conflict of interest

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AUTHORS' CONTRIBUTIONS

All the manuscript authors have contributed intellectually to the work, in fulfillment with the conditions of authorship; Conceptualization: M.J. Rojas Ocaña; Methodology: E.B. Garcia Navarro. Software: M. Araujo Hernández ; Validation: S. García Navarro and M.E. Macias Colorado; Formal analysis: S.M. Baz Montero; Research: M.J. Rojas Ocaña and M. Araujo Hernández; Resources: S. Garcia Navarro and M.E. Macías Colorado; Writing (preparation of the original draft): M.J. Rojas Ocaña; M. Araujo Hernández and E.B. García Navarro; Writing (proofreading and editing): M. Araujo Hernández and M.J. Rojas Ocaña, Visualization: S.M. Baz Montero and M.E. Macías Colorado; Supervision: E.B.G.N and M.J. Rojas Ocaña, and they accept responsibility for the data validity.

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Tables

Tables 1 to 5 are available in the Supplementary Files section.

Figures

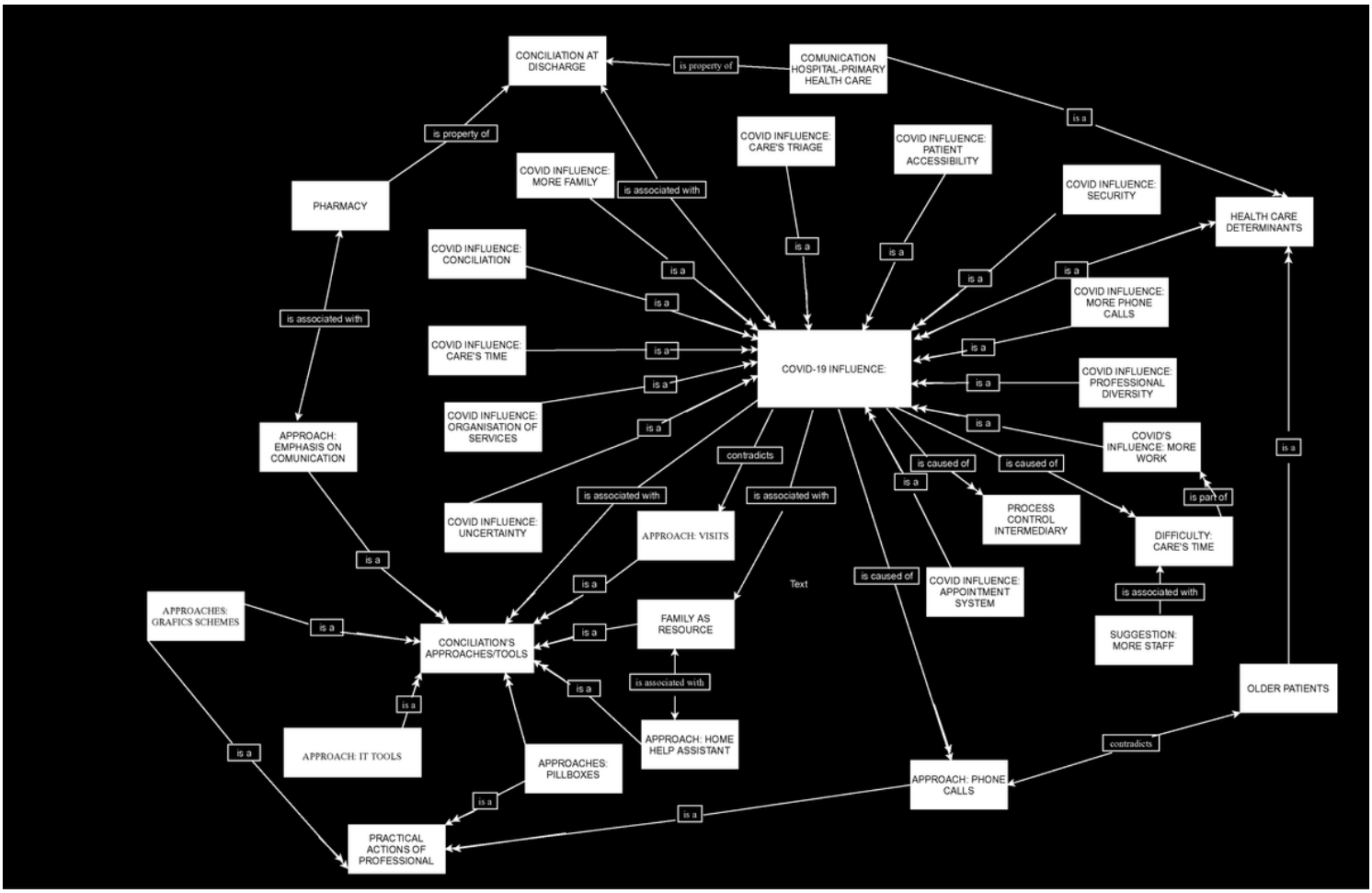

Figure 1

Codes relating to Covid-19 influence on medication reconciliation.

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- TABLE1Characteristicsofparticipants.pdf
- TABLE2Descriptionofthecategories.pdf
- TABLE3DescriptionoftheinfluenceofCovid.pdf
- TABLE4Descriptionofthedifficultiesinvolvedinmedicationreconciliation.pdf
- TABLE5StrategiesusedfordrugreconciliationintheCovid.pdf