Jurnal Ners

Volume 18, Issue 3, September, 2023, p. 280-290
http://dx.doi.org/10.20473/jn.v18i3.43669

ORIGINAL ARTICLE OPEN ACCESS

An exploration of the reception and expectations of medical information among hospitalized elderly patients and their primary caregivers in Taiwan: a mixed-methods study

Kai-Li Chen[1],Chia-Ming Chang[2,3], Mei-Chih Huang[4,5], and Ching-Huey Chen[6,7]

[1] Department of Nursing, Chang Jung Christian University,Tainan, Taiwan

[2] Department of Internal Medicine, National Cheng Kung University Hospital, Tainan, Taiwan

[3] Institute of Gerontology, College of Medicine, National Cheng Kung University, Tainan, Taiwan

[4] Department of Nursing, National Tainan Junior College of Nursing, Tainan, Taiwan

[5] Department of Nursing, National Cheng Kung University Hospital, Tainan, Taiwan

[6] Department of Nursing, Institute of Allied Health Sciences,College of Medicine National Cheng Kung University, Tainan, Taiwan

[7] Department of Nursing, Chang Jung Christian University, Tainan, Taiwan

*Correspondence Ching-Huey Chen. Address: Department of Nursing, Institute of Allied Health Sciences,College of Medicine National Cheng Kung University, Tainan, Taiwan and Department of Nursing, Chang Jung Christian University, Tainan, Taiwan. Email: sugar@mail.cjcu.edu.tw

Responsible Editor: Rizki Fitryasari

Received: 25 February 2023 ○ Revised: 23 September 2023 ○ Accepted: 24 September 2023

ABSTRACT

Introduction: Adults older are increasing in Taiwan. The receipt of information and expectations related to informational messages provided to hospitalized elders have not been studied. The study aim is to explore the status of receipt of information and expectations among hospitalized elders and their care providers in Taiwan.

Methods: A descriptive, cross-sectional and mixed-methods study design was used in in a geriatric ward in a medical center. The participants were 60 patients of 65 years and their care providers were obtained by convenience sampling. The data were collected using a semi-structured questionnaire and checklists. Physician messages and the data for each participant were collected in one regular ward round.

Results: Twenty-eight patients (46.7%) could not repeat the messages. The message repetition rate was 21.9% the first hour and was 62.9% after hinting. The total message repetition rate of the main care providers was 36.0% and was 80.3% after hinting. "Desire to know the reasons for discomfort" and "discharge date" were the messages most expected by the patients. "None," "conditions associated with the progress of the illness," "discharge date" and "relevant information of examination results" were the messages most expected by their care providers.

Conclusions: The majority of the hospitalized elderly and their care providers could not repeat medical messages conveyed by the physicians. The informed messages should be sorting, and the reminder should be repeated within a short time. Medical professionals should be aware of the patients' real concerns before providing medical information.

Keywords: receipt of information, expectation, hospitalized elders, care providers, Taiwan

Introduction

Adults older than 65 years have increased rapidly in Taiwan. Taiwan has become an aged society (14%) in 2018 and is predicted to become a super-aged society in 2025 (Ministry of the Interior, 2018). A Taiwan elderly population health survey found that more than half

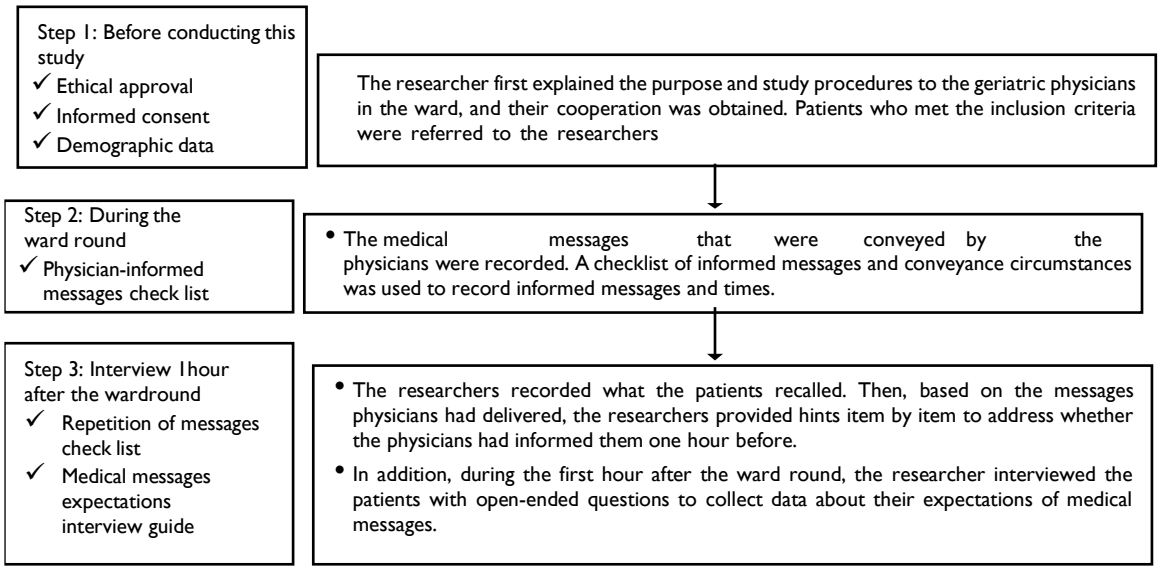

Figure 1: Research design flow chart

(64.88%) of the population 65 years and older experience chronic or serious diseases (Ministry of Health and Welfare, 2018). Furthermore, research has shown that elderly patients have more multiple comorbidities, medication requirements, and psychosocial and emotional distress than the general adult patient population in Taiwan (Tsai, Lu, & Zhang, 2015). The degenerative physical conditions, such as physical (e.g. visual and audio perception), cognition (e.g. memory, judgement, and comprehension), psychological (e.g. low mood) and social (e.g. pleasing receivers) disadvantages of older adults may result in difficulties in communication during hospitalization. Difficulty to understand medical terminology and lacking communication of critical medical information may place elderly patients at a high risk of becoming incapable of making decisions (Lin, Huang, Chiang, & Chen, 2013; Lin, Pang, & Chen, 2013). If the phenomenon in clinical practice cannot be explored deeply it is difficult to improve the effectiveness of communication of elders in communicating or messages delivering process. In addition, the informed consent procedure may not fulfill its purpose of respecting patient autonomy.

The researchers (Evans et al., 2012) explored the attitudes and experiences related to communicating with physicians among elderly patients who were older than 60 years and in the end-of-life stage of progressive cancer in Britain, the Netherlands, and Belgium. The results showed that these elderly patients were unable to express their wishes or to fully understand the content of communications. Furthermore, the study indicated that the conditions of communication preferences were highly individualized. In a qualitative study, 60 elderly residents living at a holistic care center in the United States were interviewed to explore their willingness to discuss their medical conditions. The study concluded that physicians should not guess the preferences of patients, and that they should assess the actual concerns of patients before discussing their disease with them. Patients might not want to know or discuss their disease (Ahalt et al., 2012). However, studies related to the communication barriers and needs among hospitalized elderly patients are still lacking.

A clinical study conducted in Taiwan on the miscommunication rate between surgical ward patients and their physicians showed that the average rate of miscommunication was 66% between patients/families (Chou, Chen, & Lee, 2010). Medical care is highly specialized. The reasoning and judgment behind treatment regimens and strategies that are performed by healthcare professionals are difficult for laypersons to understand, let alone hospitalized elderly patients with poor memory and comprehension abilities. Regarding expectations, qualitative study (Yen, Chen, & Chou, 2002) using a grounded theory method generated six aspects of patient concerns based on the results of the study. The hospitalization experience was depicted as a search for specific aspects of healthcare needs when giving service and their responsibilities, food preparation, environment, and medical expenses including physical condition, promptness and effectiveness of nursing services, health professionals' attitudes related to care (Yen et al., 2002). However, the above discussion and research targeted adult and

cancer patients. More studies are needed to understand the contexts in which patient/families and medical professional communication occur, especially patients' perceptions and expectations of medical information. Therefore, the aim of this study is to explore the current status of the receipt of medical messages and the expectations of hospitalized elderly patients and their care providers in Taiwan.

Materials and Methods

Study design and sample

This was a descriptive study with a cross-sectional, mixed-methods research design. Convenience sampling was applied, and the research was conducted in a geriatric ward in a medical center in southern Taiwan. Using participant observation, the researcher accompanied physicians daily at a regular time in the morning as they visited every participant to observe and to record the informed medical messages delivered from physicians to patients and recommended care providers. A checklist of message conveyance circumstances was used to record the times and the behaviors of the patients and the physicians during communication. On the basis of the information content, the researcher marked a checklist that categorized medical messages into 12 different types. During the first hours after the ward round, the researcher asked the participants to recall the messages that were communicated by the physician in the morning ward round.

Patients who met the following inclusion criteria were recruited: hospitalized elders had to be at least 65 years and older and had to be able to communicate with researchers. The exclusion criteria included difficulty with cognitive expression or a critical health condition. The inclusion criteria for the recommended care provider included a person who was recommended by the hospitalized elder who could stay with the patient during hospitalization. This person could be hired or could be a relative and had to be able to communicate with the researchers. If the patient's primary care provider was unwilling to participate in the study, the patient was still admitted as long as the patient agreed to participate.

Data collection

The researcher first explained the purpose and study procedures to the geriatric physicians in the ward, and their cooperation was obtained. Four geriatric physicians were involved in this study. During the data collection period, patients who met the inclusion criteria were referred to the researchers by these physicians. In addition, the recommended care providers were recommended by the patients and met the inclusion criteria. The person who was recommended by the hospitalized elder was able to stay with the patient during hospitalization. An information sheet was provided to all the participants. The participants provided written consent forms before data collection. Ethical approval was granted by the institutional review board of a medical center in southern Taiwan (Ethical approval number: B-ER-104-086).

Demographic information was obtained from medical records, including age, genders, marital status, educational level, economic status, and occupation. The researcher accompanied the physicians daily at a regular time in the morning as they visited every participant to observe and to record the medical messages delivered by the physicians to the patients and recommended care providers. It was ensured that the medical messages conveyed by the physicians were received and understood by the patients and the recommended care providers, and the messages were recorded. On the basis of the information content, the researcher marked the physician-informed messages checklist (Table 3 and Table 4). This checklist contained 12 items representing different types of medical messages.

For each participant, data were collected in one regular ward round. One hour after the ward round, patients and the recommended care providers who were with the patients during the physicians' ward round were asked to recall the messages communicated by the physician in the ward round. Then, based on the messages delivered by the physicians, the researchers provided item by item hints and asked the recommended care providers to address whether the physicians had informed them an hour before. If they answered "yes," the researcher asked them to repeat the message. The repetition of messages checklist (Table 3) was used to record the correct answers that the number of messages physician gave to patients/ recommended care providers. At the end of the interview, the researcher asked the patients and the recommended care providers open-ended questions "What do you expect from information disclosure of physician?", "Is the disclosed information helpful? important? meaningful?" to collect data about their expectations related to the delivery of medical messages. If the recommended care providers could not stay until the interview time, the data were collected via a telephone interview. The data collection procedure is summarized in Figure 1.

Table 1. Demographic characteristics of patients (N=60)

Characteristics	Participant n=60		
	M (SD)	n	(%)
Age	79.07 (±8.521)		
Gender			
Male		27	45.0
Female		33	55.0
Marital status			
Married		28	46.7
Single		1	1.7
Divorce or widowed		31	51.7
Educational level			
Illiterate		19	31.7
Elementary school		26	43.3
Junior high school		7	11.7
Senior High school		4	6.7
College		1	1.7
University		3	5.0
Economic status			
Independent		20	33.3
Dependent		39	65.0
Low income, health insurance		1	1.7
Occupation			
No		55	91.7
Yes		5	8.3

Table 2. Demographic Characteristics of Recommended Care Providers (N=33)

Characteristics	Participant n=33		
	M (SD)	n	%
Age	58.48 (±12.52)		
Gender			
Male		13	39.4
Female		20	60.6
Marital status			
Married		13	78.8
Single		20	21.2
Educational level			
Illiterate		2	6.1
Elementary school		7	21.2
Junior high school		4	12.1
Senior High school		7	21.2
College		4	12.1
University		8	24.2
Declined to respond		1	3.0
Occupation			
No		17	51.5
Yes		16	48.5
Relationship with the patient			
Spouse		10	30.3
Children		20	60.6
Relatives		3	9.1

The researcher was responsible for data collection, organizing and interviewing to ensure the integrity and correctness of the collected data. The responses of the participants were recorded in the questionnaire immediately. The status of the accompanying caregivers was also documented. Two of the nurses who had assisted in validating the data collection process also participated in validating the content analysis process with advisors to ensure the integrity of the content analysis. One of the nurses was a doctoral student with a psychiatric nursing specialty, and the other was a geriatric nursing specialist working in the ward. Any disagreements between the researcher and these two nurses were discussed until a consensus was reached.

Instruments

The research instruments used in this study were developed by the researcher in the pilot study (Chen, Chang, Chen, & Huang, 2018). The content validity of the questionnaire was determined by 2 geriatric physicians and 2 nursing specialists. The questionnaire included the demographic data which included basic demographic data (Table 1 and Table 2) and physician- informed messages, message conveyance circumstances, and the repetition of messages from patients during the first hours after the ward round. The physician-informed messages checklist (Table 3 and Table 4) comprised diagnosis, symptoms, treatment, therapeutic purposes, prognosis, treatment costs, resources or available services, effects on daily living, the results of the consultation, the results of tests, and the results of special examinations and treatments. Any information that could not be classified according to the preceding items was also recorded. The prognosis conveyed by the physicians comprised the expected results after diagnoses such as complications, recovery rate, discharged day, and mortality. Furthermore, any assistive devices used, the time required to convey the information, the distance, posture, and perspective of the physician on the part of the patient, were recorded as the message conveyance circumstances in the physician-informed messages checklist. The repetition of messages checklist also comprised the 12 items listed in the physician-informed messages checklist. The medical messages expectations interview guide included questions such as “Do you remember that the physician was here 1 hour ago?” “Could you please tell me what the physician said?” “What did you expect from the information disclosure of the physician?” and “Was the disclosed information helpful, important, and meaningful?”

Data analysis

IBM SPSS Statistics 17.0 (SPSS/IBM Inc., Chicago, IL, USA) was used for all analyses. Demographic characteristics and questionnaire data, such as percentage, mean, and standard deviation, were summarized using descriptive statistics. Qualitative data were analyzed using a thematic analysis (Guest, MacQueen, & Namey, 2011) to examine the interview responses concerning the expectations of medical information informing during hospitalization. The descriptions of all the participants were read several times to gain an overall perspective, and statements

Table 3. Message Categories and Message Repetitions of Patients (N=237)

Message Categories	Physicians'message		Repetition before hinting		Repetition afterhinting	
	n	%	n	%	n	%
Diagnosis	3	1.3	0	0.0	2	66.7
Symptom	48	20.3	12	50.0	27	56.3
Treatment methods	54	22.8	16	29.6	37	68.5
Treatment purpose	31	13.1	5	16.1	16	51.6
Prognosis	39	16.5	9	23.1	28	71.8
Cost	4	1.7	0	0.0	1	25.0
Resources or services available	1	0.4	0	0.0	1	100.0
Effect of daily living	20	8.4	3	15.0	11	55.0
Consultation results	4	1.7	0	0.0	2	50.0
Examination results	13	5.5	1	7.7	9	69.2
Special examinations and treatment results	7	3.0	1	14.3	4	57.1
Others	13	5.5	5	38.5	11	84.6
Total	237		52	21.9	149	62.9

Note: * % = Number of physician messages (n) / total messages conveyed by the physician

that related directly to their expectations were extracted from each description. As the analysis moved from a concrete level to an abstract level of understanding, meanings were formulated into clusters of similar ideas. Thus, the essence of the expectations began to emerge. The researcher then created a statement that reflected as complete a description as possible of the expectations of medical messages.

Results

Data were collected from April 18, 2017 to March 23, 2018. In total, 68 patients were approached. Seven patients were excluded due to their being in a critical condition and for personal reasons. One patient declined to participate because of a second hospitalization. Ultimately, 60 patients agreed to participate. Fifty-four patient care providers agreed to participate and 33 of them were able to accompany the patients during the delivery of the medical messages. Among the 33 participants, two were interviewed by phone because they could not stay until the interview time.

Characteristics of the patients and primary care providers (Table 1 and Table 2)

Demographic characteristics of patients are shown in Table 1. The age of patients ranged from 65 to 96 years (mean=79.07, SD=8.52). Twenty-seven (45.0%) were male, 33 (55.0%) were female, and 28 (46.7%) were married. Nineteen patients (31.7%) were illiterate; 40 (66.6%) were financially dependent, and 55 (91.7%) were unemployed (Table 1). Moreover, there were seven patient care patterns including: families- full-term (16.7%), families + hired care provider full-term (3.7%), families + friends/relative taking turns (40.7%), families + hired care provider taking turns (1.9%), families + friends/relatives + hired care provider taking turns (7.4%), families by convenience (0.34%) and families by convenience + hired care provider full-term (22.2%). Lengths of hospitalization on the data collection date ranged from 2 to 61 days, with an average of 7.05 days. Patients used 1-20 types of medicines during hospitalization (mean=8.37, SD=3.84), with thirteen (21.7%) patients using ten types of medicine and eight (13.3%) using three or more types. Regarding other physical conditions, eye conditions were the most prevalent, with 54 patients (90.0%) stating that they experienced presbyopia. Eight patients (13.3%) had hearing loss (unilateral or bilateral), and five (8.3%) had hand discomfort or were disabled in terms of writing.

The patients' care providers included spouse (16.7%), daughter-in-law (5.6%), children (42.6%), other relatives (1.9%), friends (1.9%) and hired care providers (31.5%). Demographic characteristics of recommended care providers are shown in Table 2. The age of the 33 primary care providers who were able to accompany patients during the delivery of medical messages ranged from 37 to 90 years (mean=58.48, SD=12.52). Thirteen (39.4%) were male; 20 (60.6%) were female, and 26 (78.8%) were married. Nearly 60% were educated above elementary school, and 17 (51.5%) were employed. Twenty (60.6%) of them were patients' children.

Circumstances of conveying medical information

Regarding the physicians, it was observed that while conveying medical information, all four of the physicians engaged in nonverbal communication techniques such as maintaining an arm's distance and maintaining eye contact with the patients. The communication took between 2 and 20 minutes, for a total of 367 minutes (mean=6.12, SD=3.81, median=5.00, mode =3.00) per patient, to complete the communication of medical

information, and the physicians did not use any assistive devices during this process. Regarding the patients and recommended care providers, while the physician informed the patients of their conditions, none of the patients or recommended care providers wore glasses or used a pen and paper to take notes. In addition, neither patients nor their recommended care providers took the initiative to ask questions.

The number of messages conveyed to patients from physicians during a single ward round ranged from two (n=7, 11.7%) to eight (n=1, 1.7%), with four messages conveyed the most commonly (n=19, 31.7%). The number of messages conveyed to the recommended care providers from physicians during a single ward round ranged from two (n=3, 9%) to eight (n=1.3%), with four messages conveyed the most commonly (n=13, 39.3%).

Message categories and message repetitions of patients (Table 3)

In terms of the message categories, the physicians conveyed medical information in 12 categories with 237 discrete messages. Messages related to treatment method were the largest single category, with 54 participant counts comprising 22.8% of the total messages. The next largest category was explanation of symptoms, with 48 participant counts comprising 20.3% of the total messages. Only one participant was informed of resources or services available. With regard to message repetition, among the 237 messages, the total number of repeated items before hinting one hour after the ward round was 52 (21.9%). The total number of repeated items after hinting one hour after the ward round increased from 52 (21.9%) to 149 (62.9%). No messages related to the diagnosis, treatment purposes, cost, resources or services available, or consultation results could be repeated by the participants (Table 3). One patient made incorrect repetitions, one of whom mentioned information that the physician had not mentioned. During the first hour after the ward round, no single participant could entirely and correctly repeat all of the messages communicated during the informing process.

Message categories and message repetitions of primary care providers (Table 4)

In terms of the message categories, the physicians conveyed medical information to care providers in 11 categories with 147 discrete messages. Messages related to treatment method were the largest single category, with 31 participant counts comprising 21.1% of the total messages. The next largest category was explanation of symptoms, with 30 participant counts comprising 20.4% of the total messages. With regard to message repetition, among the 147 messages, the total number of repeated items before hinting the first hour after the ward round was 54 (36.7%). The total number of repeated items after hinting the first hour after the ward round increased from 54 (36.3%) to 118 (80.3%).

The most repeated messages was in the "treatment method" category (n=15), and the next was "prognosis" (n=13). Messages classified as "others" were all associated with asking care providers to contact another key person involved in the provision of medical messages. Six care providers received this message, and one care provider (16.7%) could repeat the message before hinting the first hour after the ward round, which represented the highest rate of message repetition. "Treatment method" and "prognosis" comprised 48.4% and 61.9%, respectively. No message related to the diagnosis could be repeated by the care providers.

Number of items repetition of patients

Before hinting, twenty-eight patients (46.7%) could not repeat any of the messages; sixteen (26.7%) could repeat one message, and thirteen could repeat two messages. Two patients could repeat three, and one

Table 4. Message categories and message repetitions of primary care providers (N=147)

Message Categories	Physician'message		Repetition before hinting		Repetition afterhinting	
	n	%*	n	%**	n	%**
Diagnosis	3	2.0	0	0.0	3	100.0
Symptom explanation	30	20.4	11	36.7	25	83.3
Treatment methods	31	21.1	15	48.4	28	90.3
Treatment Purpose	20	13.6	3	15.0	16	80.0
Prognosis	21	14.3	13	61.9	17	81.0
Cost	4	2.7	1	25.0	2	50.0
Resources or services available	0	0.0	0	0.0	0	0.0
Effect of daily living	15	10.2	5	33.3	12	80.0
Consultation results	4	2.7	1	25.0	3	75.0
Examination results	8	5.4	3	37.5	6	75.0
Special examinations and treatment results	5	3.4	1	20.0	4	80.0
Others (ask contacting someone)	6	4.1	1	16.7	5	83.3
Total	147		54	36.7	118	80.3

Note: * % = Number of physician messages (n) / total messages conveyed by the physician (participant counts, 147). ** % = Number of participants who could repeat the item/ number of participants informed of the item by the physician.

patient could repeat four messages, respectively. No patient could repeat five messages or more. However, the patients who were unable to repeat any of the messages decreased to twelve, where two patients (3.3%) could repeat five messages; four patients (6.7%) could repeat six messages; two patients (3.3%) could repeat five messages; four patients (6.7%) could repeat six messages, and one patient (1.7%) could repeat seven messages after hinting. The most repeated messages were in the "treatment method" category (n= 37), and the next was "symptom explanation" (n=28). Messages classified as "others" were all associated with asking patients to contact another key person involved in the provision of medical information. Thirteen patients received this message, and five participants (38.5%) could repeat the message before hinting during the first hour after the ward round, which represented the highest rate of message repetition. "Treatment method" and "Symptom"comprised 29.6% and 50%, respectively.

Numbers of item repetitions of care providers

All care providers could remember the physician visit the first hour after the ward round. Before hinting, four care providers (12.1%) could not repeat any of the messages; thirteen (39.4%) could repeat one message, and eleven could repeat two messages. Three care providers could repeat three messages, and one care provider could repeat four messages, respectively. No care providers could repeat five messages. Only one care provider could repeat six messages. After hinting, the number of patients who could not repeat any of the messages decreased to two, where eleven care providers (33.3%) could repeat four messages; three care providers (9.1%) could repeat five messages; four care providers (6.7%) could repeat six messages, and two care providers (3.3%) could repeat seven messages after hinting.

Expectations regarding messages

Patients reported the importance and necessity of physicians' conveying the medical messages. "Desire to know the reasons for discomfort," and "discharge date," were the messages most expected by the patients. "None", "conditions associate with the progress of the illness", "discharge date" and "examination result relevant information" were the messages most expected by their care providers. All of the patients mentioned that physicians providing medical messages that were necessary and very important. Of patients' expectations of the physician in medical information disclosure, three themes were evident: "none," "desire to know the reasons for discomfort," and "discharge date,". The first theme: none. Thirty-three patients reported that they had no expectation of the physician during regular visiting. Among these thirty-three patients, 26 simply stated no expectation, one stated that they did not know what to expect, and one stated that she would not dare to question the physician. The second theme: desire to know the reasons for discomfort. "Desire to know the reasons for discomfort" was stated by eight patients. Their responses included "want to know the reason for discomfort" (Participant 4: P4, P8), "want to know the source of body discomfort" (P13), and "want to know the reason for cough" (P9, P50). The third theme: discharge date. Six patients were categorized under the theme "discharge date." Their statements were as follows: "want to know when I can go home" (P6, 7, 22) and "want to know when I can leave the hospital" (P44).

All of the recommended care providers mentioned that physicians providing medical messages that were necessary and very important. Of recommended care providers' expectations of the physician in medical messages disclosure, four themes were evident: "none", "conditions associated with the progress of the illness", "discharge date" and "examination result relevant information." Twenty-four recommended care providers reported that they had no expectation of the physician during regular visiting. Among these, 20 simply stated no expectation, four stated that they did not know what to expect, and one stated that she would not dare to question the physician. "Desire to know the reasons for discomfort" was stated by 12 recommended care providers. Their responses included "want to know the reason for discomfort (P6, P8)," "want to know the source of body discomfort (P15)," and "want to know the reason for pain (P22). "Two recommended care providers were categorized under the theme "discharge date." Their statements were as follows: "want to know when I can leave the hospital" (P36, P9)." The last theme was "examination result relevant information" stated by four recommended care providers. Their statements were: "How are bacteria produced?", "(after confirming a tumor biopsy)…want to ask (patient's) long-term survival rate due to caregiving considerations" (P18), ("after confirming a kidney examination)…Can one drink more water with kidney stones?" (P14). In addition, either patients or recommended care providers did not ask questions even when they had exceptions on medical messages informing after the ward round.

Discussions

The medical message repetition rates of elderly patients

This research, an innovative study in Taiwan, examined the medical message repetition rates of elderly patients after a ward round and obtained the expectations of these patients concerning medical information disclosure. The three geriatricians who participated in this study had received training in geriatric care and communication and showed proper communication skills when delivering medical messages. Nonetheless, no single patient could repeat all of the messages after the ward round even though most of the participants had been given a small number (two to three) of messages. Over half of the patients (n = 60, 46.7%) could not repeat any of the messages they had been given during the first hour after receipt. In addition, the patients' message repetition number was low (21.9%). This result was consistent with the finding of a low message repetition number (17.8%) in Chen et al.'s (2018) study. Previous literature in both the gerontological and psychological fields indicates that the aging process may degrade memory capacity (Carter & Frith, 2011; Tsai et al., 2015; Wei, Peng, Zou, & Yang, 1997), and the unfamiliarity of the hospital environment may further exacerbate the memory problems of elderly patients.

It was also found in this study that "symptom explanation," "treatment methods," and "prognosis" were the most repeated items, for which there were a total of two repeated messages for each participant. This result was consistent with the findings in Chen et al.'s (2018) study. Past research in effective communication has focused primarily on the importance of communication skills training and has largely ignored the fact that elderly people may have memory deficits or may be unwilling or even may not be able to understand the messages provided to them about their medical conditions. However, after hinting, the repetition rate of patients increased from 21.94% to 62.86%, and the repetition rate of care providers increased from 36.73 to 80.27%. The findings suggest that, in the case of important medical messages, if healthcare professionals could remind patients and care providers within a short period of time, this would potentially aid in their ability to remember the messages.

In this study, most of the patients had presbyopia (93.3%), and half were illiterate. However, none of the participants wore glasses or used a pen and paper to take notes while the physicians conveyed medical messages. This result is similar to that in a previous pilot study (Chen et al., 2018). Based on the literature (Tsai et al., 2015) patients of advanced age, with their limited sensory ability and listening comprehension, may be incapable of receiving medical information. This may hinder their motivation in participating in such communication. Compared with the patients, the care providers were much younger and had higher education levels. However, they exhibited the degree of passivity as the patients. None of them took notes during the message informing process. Although the message repetition rate for the care providers was higher than that of the patients, it was still low (36.73%). Care providers may assume that they can remember the messages, or they may be just like the elderly patients and may not understand the messages. Further research is needed to explore the real meaning of this passive attitude during the message informing process.

Interestingly, all of the participants recalled that a physician had visited them, and all responded that physicians' medical messages were necessary and important although most could not repeat any of the information that was communicated to them. As suggested in Lin, Kan, and Chen's study (2012) on the experience of making a surgical decision among elective surgery patients in Taiwan, the concern of participants in this study was not about whether the information provided by the medical professionals was comprehensive but whether they perceived the care and attention of medical professionals at all. However, most of patients indicated that their sons or daughters could help them understand medical messages. This may decrease the number of message repetitions.

The medical message repetition rates of primary care providers

Most of the participants (83.3%) had different care providers by their side at the time of the ward round and during the first hour after the ward round. The number of message repetitions of recommended care providers was low (36.7%). The number of repeated messages for each care provider was two items, which was same as that of the patients. In this study, the majority of care providers (91%) were given more than two messages by physicians. Nearly 40% of the care providers received four messages from the physicians. To avoid deviations in the content of received medical messages, written information may be required.

Expectations regarding the provision of medical messages

Research on the expectations of hospitalized elderly patients and their care providers related to medical message communication is scarce. Three themes of patients' expectations regarding the receipt of medical message included: 1) "none," 2) "desire to know the reasons for discomfort" and 3)"discharge date." These results were consistent with the findings in Chen et al.'s (2018) study. These patients and recommended care providers included some who were illiterate and some whose education ended at the university level. This suggested that both the patients and their recommended care providers were a "passive message receiving" mode and "non-equivalence status" mode. Based on the communication theory, both of these modes influence recalling.

Lin et al. (2013) studied patient perceptions of the meaning of family involvement in elective surgery decision-making in Taiwan, and suggested that patients and families may be too afraid of appearing to question the authority of physicians to ask questions of them directly. However, other studies (Chen & Chen, 2014) have suggested that the encouragement of medical professionals may enhance the active participation of elderly patients in their care. Another possible reason for a passive attitude toward healthcare among hospitalized patients in Taiwan, as indicated by Lin et al. (2012), is that patients may choose their physicians or hospital carefully before admission. Once admitted, patients may rely on the physician or family members to make decisions on their behalf. Liang, Wang, Hwang, Lin, and Pan (2013) suggest that the physician-patient relationship may also discourage patients from actively participating in their own healthcare.

Among those patients who voiced their expectations, eight participants (13.3%) stated that they expected to know the reason for their discomfort, and six (10%) expected to be informed of their date of discharge. Among the recommended care providers who voiced their expectations, 12 participants (22.2%) stated that they expected to know the conditions associated with the progress of the illness; four (7.4%) stated that they expected to obtain relevant information related to the examination results, and two (3.7%) expected to be informed of the date of discharge. It is possible that elderly patients may either rely totally on medical professionals for care or simply expect the physicians to ease their discomfort and to get them home as soon as possible. Items on which patients are legally obliged (by the Physicians Act of 2012 and the Medical Care Act of 2014) to be informed, such as the disease diagnosis, treatment principles, treatment, medication, prognosis, and possible unfavorable reactions, were not mentioned by the participants. As healthcare professionals, we may have responsibilities regulated by law, but it is also our mission to provide quality of care that patients need.

The literature indicates that communication involves information exchange between message senders and receivers. It is two-way communication. Moreover, it is a process through which two or more people use verbal or nonverbal messages to provide, deliver, and exchange information and opinions. Based on these research findings, the medical message informing process is prone to being a one-way, passive form of receiving communication. Without proper medical knowledge, patients and care providers may not perceive themselves to be on an equivalent status by which to engage in two-way communication. This research presents the current physicians-patient communication situation in a hospital. Patients and care providers need a bridge to achieve two-way communication in hospitals (Lin et al., 2012).

It is also noted in this study that expectations of message content are different for patients and care providers. For those who reported expectations, patients and care providers' both indicated that they expect physicians to provide messages related to "conditions associated with the progress of the illness" and "discharge date." However, care providers were more focused on understanding the conditions associated with the progress of the illness; they reported "relevant information related to examination results" as their expectation. This result pinpoints the different concerns that exist among patients and care providers.

Number of message repetitions and expectations

Based on our findings, expectation may not have influenced the memory. In this sample, only one patient's expectation affected the number of repetitions. Even among the care providers, only three persons' expectations affected the number of repeated messages. Because of limited sample size of this study, no conclusions could be drawn on the relationship between message repetition and expectations. However, our findings did indicate an issue that deserves attention. Over 60% of the patients and care providers reported no expectations at all. It seems that the majority of participants do not know what to expect during the medical message informing process. Medicine is a highly specialized profession, where patients and care providers may rely on the authority and knowledge of healthcare professionals to help them understand the meaning of medical messages. Liao et al.

(2000a) showed that nearly half of the studied psychiatric patients reported had medium-to-marked difficulties in understanding diagnosis, treatment, and physician-patient communication. Without proper medical knowledge, patients and care providers become passive participants during the medical informing process. Currently, among the team of clinical healthcare professionals in Taiwan, nurse practitioners may be considered the appropriate person to bridge the communication among physicians, patients, and their care providers. Although in our study, limited participants reported their expectations, healthcare professionals should still recognize individual needs in the medical informing process (Ahalt et al., 2012). As to the consistency between participant expectations and physician messages, our finding showed that regardless of whether participants could repeat the messages, the physicians' messages covered more than half of the participants' expectations. Healthcare professionals may need more education to recognize the needs of patients and care providers during the provision of medical messages.

Status of care providers and care patterns of patients

The physical, psychological, and social disadvantages of older adults may result in difficulties in communication during hospitalization (Tsai et al., 2015). They may rely on their care providers to be advocators who preserve their rights and interests when communicating with physicians in order to receive the best treatment options (Lin et al., 2012, 2013). However, the results of this study showed that the status of care providers varied and that the care patterns were also diversified. Most of the patients had different people supporting them at the time of the ward round. This result was consistent with the findings of a previous pilot study (Chen et al., 2018) indicating that 86.6% of primary caregivers may not always stay with the patient during message informing. Message transmission may thus become complicated and difficult among care providers. Without a clear understanding of how medical information is being delivered to these elderly patients and to their primary care providers, medical professionals may not be able to provide quality healthcare. More studies are needed to explore the contexts in which medical messages are transmitted, especially from the perspectives of the patients and primary care providers. Studies examining the effects of message transmission on quality of care during hospitalization and after discharged are also needed.

This research involved a limited number of participants, and data were collected in one regular ward round for each participant. Therefore, the inferences of the findings of this study should be taken with caution. Expanding of the research samples and regions is recommended. The researcher did not separate patients and their care providers while recording the messages, which may have resulted in overestimation of the care providers' number of message repetitions. With these limitations in mind, the findings of this study should not be overlooked. However, this is an initial study providing research evidence on message repetition among patients and care providers.

Conclusions

The majority of the hospitalized elderly and their care providers could not repeat medical messages conveyed from their physicians. The informed messages should be sorted and the reminder should be repeated within a short time. Written materials and the involvement of principal care givers in the medical informing process may be necessary. Both the patients' and the recommended care providers' expressed concern about "conditions associated with the progress of the illness" and "discharge date." In addition, the recommended care providers were also concerned about "examination results relevant information." Before providing medical information, medical professionals should determine their patients' real concerns.

Acknowledgments

The authors thank Elizabeth Siren, for proofreading this article.

References

Ahalt, C. *et al.* (2012) "Knowing is better": preferences of diverse older adults for discussing prognosis', *Journal of General Internal Medicine, 27*(5), 568-575. doi: 10.1007/s11606-011-1933-0

Carter, R., & Frith, C. (2011) 'Mapping the mind revised (L. Hung, Trans.)', *Taipei, Taiwan, ROC: Yuan-Liou. (Original work published in Chinese)*.

Chen, K.-L. *et al.* (2018) 'Information Reception and Expectations Among Hospitalized Elderly Patients in Taiwan: A Pilot Study', *Journal of Nursing Research, 26*(3), 199-206. doi: 10.1097/jnr.0000000000000228

Chen, K.-L., & Chen, C.-H. (2014) 'The medical autonomy of elderly in Taiwan', *Hu Li Za Zhi, 61*(5), 26. doi: 10.6224/JN.61.5.26.

Chou, Y. L., Chen, Y. J., & Lee, C. Y. (2010) 'A reduction in the rate of miscommunication between patient and doctor during hospitalization', *Chung Shan Medical Journal, 21*(4), 435-446.

Evans, N. *et al.* (2012) 'Older patients' attitudes towards and experiences of patient-physician end-of-life communication: a secondary analysis of interviews from British, Dutch and Belgian patients', *BMC Palliative Care, 11*(1), 24. doi :10.1186/1472-684X-11-24

Guest, G., MacQueen, K. M., & Namey, E. E. (2011) 'Applied thematic analysis',*Sage Publications*.

Liang, C.-Y. *et al.* (2013) 'Factors affecting the physician–patient relationship of older veterans with inadequate health literacy: an observational study', *Br J Gen Pract, 63*(610), e354-e360. doi: 10.3399/bjgp13X667222

Lin, M. L. *et al.* (2013) 'Exploring ethical aspects of elective surgery patients' decision-making experiences', *Nursing Ethics, 20*(6), 672-683. doi: 10.1177/0969733012448967

Lin, M. L., Kan, W. M., & Chen, C. H. (2012) 'Patients' perceptions and expectations of family participation in the informed consent process of elective surgery in Taiwan', *Asian Nursing Research, 6*(2), 55-59. doi: 10.1016/j.anr.2012.05.001.

Lin, M. L., Pang, S. M. C., & Chen, C. H. (2013) 'Family as a whole: elective surgery patients' perception of the meaning of family involvement in decision making', *Journal of Clinical Nursing, 22*(1-2), 271-278. doi: 10.1111/j.1365-2702.2012.04194.x.

Ministry of the Interior. (2018) 'The internal affairs of statistics bulletin', Retrieved from https://www.moi.gov.tw/files/news_file/week10638.pdf

Ministry of Health and Welfare. (2018). Report of the Senior Citizen Condition Survey 2017. Retrieved from https://dep.mohw.gov.tw/DOS/lp-5095-113.html

Tsai, M. H., Lu, F. H., & Zhang, J. M. (2015) 'The introduction of gerontology', Taipei, Taiwan, ROC: Wu Nan.

Wei, Z. *et al.* (1997) 'Aging effects in a Cu-12Al-5Ni-2Mn-1Ti shape memory alloy', *Metallurgical and Materials Transactions A, 28*(4), 955-967. https://doi.org/10.1007/s11661-997-0226-z

Yen, M., Chen, C.-H., & Chou, S.-M. (2002) 'Concerns of hospitalized care from patients perspectives', *The Journal of Nursing Research: JNR, 10*(2), 121-128. https://doi.org/10.1097/01.jnr.0000347591.43768.9d

How to cite this article: Chen, K. L., Chang, C. M., Huang, M. C., and Chen, C.H. (2023) 'An exploration of the reception and expectations of medical information among hospitalized elderly patients and their primary caregivers in Taiwan: a mixed-methods study', *Jurnal Ners*, 18(3), pp. 280-290 doi: http://dx.doi.org/10.20473/jn.v18i3.43669