Analysis of Pharmacist-Patient Communication using the Roter Method of Interaction Process Analysis System

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Abstract

Background: Effective communication between pharmacists and patients is a crucial factor in ensuring that medications are used properly. However, few studies have been published on the contents of actual on-site communications between pharmacists and patients. In this study, the Roter Method of Interaction Process Analysis System (RIAS) was used to identify the characteristics of and problems with routine communications between pharmacists and patients.

Methods: The conversations between pharmacists and simulated patients (SPs) were recorded and transcribed. Using the RIAS technique, their utterances were classified into 42 categories and further divided these 42 categories into 11 clusters, such as open- and closed-ended questions, and analyzed them. Furthermore, the influence that the different scenarios performed by the pharmacists may have had on the structure of their communication was investigated. All of the transcripts were double coded by two certified coders.

Results: A total of 57 pharmacists took part in the study. The mean ratio of utterances made by SPs and pharmacists were 44% and 56%, respectively. The percentage of pharmacists' questions was more than double that of SPs' for both open- and closed-ended questions. In the influence that the different scenarios, the scenarios for patients with cancer was significantly higher ratio of utterances by the pharmacists.

Conclusions: Pharmacists' communications tended to focus more on information-gathering activities that concentrated on closed-ended questions and frequent counseling or directing utterances about the medication than on considering the patient's background. On the other hand, the pharmacists did communicate in ways that matched each patient's disease. This study identified the structure of pharmacists' on-site communications, and revealed the associated characteristics and problems. This study will help pharmacists develop the skills needed to provide the care that patients seek.

Introduction

Effective communication between pharmacists and patients is a crucial factor in ensuring that medications are used properly. In 2000, The World Health Organization introduced the "Seven Star Pharmacist" concept,[1] which declares that pharmacists play an important role as "communicators." In other words, pharmacists are positioned between physicians and patients, and are expected to play a vital role in providing patients with appropriate health and medical information.

As Japanese society continues to age, pharmacists are interacting with a growing number of patients who require special consideration when receiving care, such as those with dementia or cancer.[2] Pharmacists will thus be expected to acquire more advanced communication skills. Measures to enhance these skills are becoming more actively implemented; for example, books are being published that provide case-by-case explanations and tips on how to deal with various types of patients, and training sessions are being held at universities and medical institutions.

However, few studies have been released globally on the contents of actual on-site communications between pharmacists and patients. The specific characteristics and problems associated with pharmacists' communications with patients have yet to be objectively and quantitatively evaluated. Therefore, many pharmacists occasionally encounter situations where

theory and methodology differ from actual practice.

Against this background, methods of clarifying communications in the medical field have been introduced and various approaches have been taken to quantitatively and qualitatively study such communications. In qualitative studies, a narrative approach has been taken through the concept of “Narrative based medicine”. However, not many researchers have published qualitative studies, and its main fault is that it is difficult to understand. On the other hand, quantitative study is the central method of basic research and it is an effective means of demonstrating actual communications in the medical field. Studies have been conducted in Europe and the United States that quantitatively evaluate conversations between patients and physicians, a number of such reports have also been published in Japan.[3-6] One method that has been widely used to quantitatively analyze conversations between patients and physicians is the Roter Method of Interaction Process Analysis System (RIAS),[7] developed by Professor Debra L. Roter. RIAS has been helpful in clarifying the content and structure of two-way conversations by categorizing the communications between healthcare professionals and patients, and describing them in a quantitative manner.

In this study, the RIAS technique was used to identify the characteristics of and problems with routine communications between pharmacists and patients, and examined the influence that the pharmacist’s gender and the patient’s disease had on the structure of the communication.

The goal of this examination was to promote better communication skills among future pharmacists.

Methods

1. Participants and training sessions

In this study, training was carried out specifically tailored to pharmacists who work at pharmacies and hospitals with the goal of improving their communication skills. Participants were recruited with the cooperation of the Pharmaceutical Association in Japan. As part of the training, sessions were conducted that approximated scenarios in which a pharmacist provided actual medication counseling to a patient. The scenarios were created with reference to on-site examples and patients' personal stories from sources such as DIPEx-Japan.[a] The scenarios included interactions with patients with breast and prostate cancer, diabetes, gout, overactive bladder, menopausal disorder, asthma, systemic lupus erythematosus, gastritis, and providing information on generic medicines. Based on patient stories, ten scenarios comprising scenes of pharmacist-patient communication were created for both SP and pharmacist use. In the SP-use scenarios, the following variables were specified: the patient's age, gender, family structure, lifestyle background, and their thoughts and feelings (e.g., grief, fear, and hope). The information provided in the pharmacist-use scenarios was limited to that which the pharmacists would actually be able to ascertain at a medical institution. It was ensured that the established scenarios were realistic and revised them as necessary by consulting with SPs, pharmacists, and

doctors. Before beginning the sessions, the Oasis SP Society in Aichi Prefecture, Japan cooperated and implemented specific role-play and feedback training for the SPs. The SPs in this study were volunteers from the community. Each session lasted about 10 minutes, closely approximating situations routinely encountered by pharmacists in practice. The sessions were conducted in a pharmacy and a training room. All sessions were videotaped and the conversations between the pharmacist and the SP were transcribed and analyzed using the RIAS technique.

2. Analysis

The transcripts were compiled and then divided into “utterances,” the minimum unit of language employed in each of the conversations engaged in by the pharmacist and the SP. Using RIAS, their utterances were classified into 42 categories. Coding, a process of placing utterances into various categories, was carried out in accordance with the Japanese-language version of the RIAS manual.[8] For increased reliability, two certified coders who had completed the official RIAS training course implemented the coding process. All of the transcripts were double coded by both coders. Each set of coded data was subject to statistical processing using Excel 2013 and IBM SPSS Statistics 22, IBM Corp, New York.

Based on prior studies,[3,6,9] the 42 RIAS categories further were divided into the following

11 clusters and analyzed them: open-ended questions, closed-ended questions, information giving, counseling or directing (pharmacist), positive talk, negative talk, emotional expression (SP)/responsiveness (pharmacist), facilitation, social talk, requests for services (SP), and orientation (pharmacist) (Table 1). The following three ratios that show the characteristics of interactions between patients and pharmacists also were calculated and investigated, as per previous research: (1) the pharmacist-to-patient talk ratio,[10] (2) the patient centeredness ratio,[11] and (3) the psychosocial to biomedical exchange ratio (Table 2).[11]

The Ethical Review Board of Kinjo Gakuen University approved this study. The written informed consent was obtained from all pharmacists who participated in the study.

Results

1. Characteristics of the study participants

A total of 57 pharmacists (14 males and 43 females) took part in the study. The scenarios used in the sessions comprised 32 interactions with patients with cancer and 25 interactions with patients suffering from diseases other than cancer (Table 3).

2. Results of analysis based on RIAS

2.1. Structure of patient-pharmacist communications

Table 4 shows the mean frequency and percentage of utterances for patient and pharmacist per session of each of the 11 communication clusters in this study. In consideration of the influence of the duration of the sessions, and therefore the percentage ratio of the pharmacist utterances for each category to the total pharmacist utterances was calculated for each of the sessions. Similar calculations were made for SPs. In the cluster of “others”, “back-channel responses” accounted for approximately 30% of all pharmacist and SP utterances.

The mean ratio of utterances made by SPs and pharmacists was 1.36 (SPs: 44%; pharmacists: 56%), which is similar to the 40% ratio of participation by patients in consultations shown in a previous report by Roter et al. (Table 5).[12]

The percentage of pharmacists' questions was more than double that of SPs' for both open-ended and closed-ended questions. For both SPs and pharmacists, positive talk accounted for the largest number of utterances. In terms of information giving, SPs' share of utterances was more than double that of the pharmacists, suggesting a communication structure in which the pharmacists asked numerous questions and the SPs gave information in response (Table 4).

Table 5 shows the indicators that highlight the characteristics of interactions between SPs and pharmacists. The mean patient centeredness ratio was 0.56 and the mean psychosocial to biomedical exchange ratio was 0.26. Compared to the findings of a study conducted in clinical cancer treatment settings in the United Kingdom[11] and a report conducted during the clinical treatment of cancer outpatients in Japan,[3] the patient centeredness ratio in the present study was slightly higher, while the psychosocial to biomedical exchange ratio was similar.

2.2. Relationship between different scenarios and the structure of communication

The influence that different scenarios faced by the pharmacists may have had on the structure of their communication was investigated. In this study, the patients with cancer as the

type of patients that needed special consideration when providing care were selected. The authors compared the scenarios for these patients with the scenarios for patients with diseases other than cancer and examined the differences in the pharmacists' communication.

It was found that the scenarios for patients with cancer had a significantly higher number of open-ended question items than the scenarios for patients with other diseases. On the other hand, the scenarios for patients without cancer had a significantly higher number of positive talk items (Table 6).

The mean ratio of utterances made by SPs and pharmacists in the scenarios for patients with cancer was 1.47 (SPs: 42.3%; pharmacists: 57.7%). The pharmacist to patient talk ratio, which shows the characteristics of interactions between patients and pharmacists, was significantly higher for the scenarios for patients with cancer than the scenarios for those without cancer. The scenarios for patients with cancer thus showed a high ratio of utterances by the pharmacists (Table 7).

2.3. Relationship between pharmacists' gender and the structure of communication

The differences in the structure of communication according to the pharmacists' gender were compared; however, no significant differences among items or in the three indicators of patient-pharmacist interactions were observed.

2.4. Relationship between the number of utterances by SPs and lifestyle and psychosocial topics.

As the number of utterances by SPs increased, an equilateral correlation increase was observed in lifestyle and psychosocial topics (r=0.54) (Figure 1). For medical condition and therapeutic regimen topics, no correlation was observed.

Discussion

In this study, the RIAS technique, which is widely employed as a method of quantitatively analyzing conversations between physicians and patients, was used to identify the characteristics of actual communications between pharmacists and patients with the goal of promoting more effective communication skills among future pharmacists. The results of our analysis revealed several characteristics specific to pharmacists' communication.

Our result of a 40% patient participation ratio during pharmacist-patient interactions resembled the findings of Roter et al. who pointed out that conversations tend to be led by a medical professional.[12] In past studies, it was reported that patients are less satisfied when physicians talk more than they do.[13] Moreover, the results for the ratio of utterances in the scenarios for patients with cancer showed a strong tendency for the pharmacist to lead the conversation. In particular, the pharmacists provided a great deal of information to the patients in cases of cancer. This may explain the strong tendency for pharmacists to lead the conversations.

Each communication item were examined and differences in the structure between SPs and pharmacists were found. The percentage of pharmacists' questions was more than double that of SPs' for both open-ended and closed-ended questions, which is evidence of the high ratio of questions posed by the pharmacists. Moreover, the ratio of the pharmacists' closed-ended

questions was approximately three times greater than that of their open-ended questions. Open-ended questions are regarded as an important communication skill when gathering patient information. Ishikawa et al. conducted a study on the exchange of information between a patient and a physician, and reported that open-ended questions correlated positively with patient satisfaction levels.[3] The active use of open-ended questions, therefore, can be assumed to be important for pharmacists as well.

In terms of items relating to information giving, SPs provided approximately twice as much information as the pharmacists. In Ishikawa et al.'s report, the patients' ratio of information giving was about the same as that of the physicians, and information giving accounted for the largest share of all utterances.[3] Our findings showed a slightly higher number of counseling or directing utterances than in Ishikawa et al.'s report on physicians. These appear to be characteristic differences in the structure of communication between physicians and pharmacists.[3] However, some reports show that physicians' direction correlates negatively with patient satisfaction,[3,14] showing that pharmacists risk burdening patients by giving one-directional and possibly unsolicited instructions and advice.

A study on the types of questions used in conversations between pharmacists and patients revealed a pattern of communication in which pharmacists tended to acquire information by asking closed-ended questions (Table 4). As for main content of the conversations the results for

the psychosocial to biomedical exchange ratio revealed that 80% of the information exchanged was related to medications and therapeutics (Table 5). Very few topics were related to lifestyle or psychosocial topics. These results confirm the patterns reported by Ishikawa et al.[3] and Ford et al.,[11] who pointed out these trends, especially in conversations with patients receiving cancer treatment. The results of our study showed similar results in the scenarios for diseases other than cancer, revealing that few utterances were related to lifestyle or psychosocial topics, regardless of the patient's disease. In addition, as the number of utterances by the SP increased, an equilateral correlation increase in lifestyle and psychosocial topics was observed, suggesting that promoting the utterances of the patient was the most useful communication skill for gaining a deeper understanding of the patient, such as their background, lifestyle, and feelings.

In the communication clusters in the present study, positive talk was the most frequently observed classification, except "others", and positive talk of the SP was nearly twice that of the pharmacist. In Ishikawa et al.'s report, the ratio of positive talk to the total utterances of the patient was nearly twice that of the doctor.[3] This may be because a patient can express their thanks, respect for, understanding of, and agreement with a medical care professional through positive talk. However, in the present study, positive talk accounted for only about 10% of all communications in the scenarios for patients with cancer, which was significantly lower than that for the scenarios for patients with diseases other than cancer. Positive talk tended to account

for a significantly small share of utterances made to patients with cancer. The reason for this appears to be the inevitable reduction in jokes and laughter, which comprise positive talk, with a life-threatening disease such as cancer. In the scenarios for patients with cancer, open-ended and closed-ended questions accounted for a high ratio of overall utterances, revealing a situation in which pharmacists were actively gathering information from patients. Therefore, a difference was seen in the structure of communication according to the targeted disease, suggesting that the mode of pharmacists' communication is influenced by the patient's disease.

Gender is also a factor that influences communication between healthcare professionals and patients. Although the results of our study did not reveal any statistically significant differences attributable to gender, women tended to speak more than men. This pattern is similar to the results of a comparison between male and female communication at the time of pharmacists' selection of over-the-counter drugs in Japan.[6] The influence of gender on communication has been studied in Japan and overseas. Roter revealed that female physicians made a greater number of utterances pertaining to emotional expression.[15] A study targeting medical students by Noro et al. found that female students made a much larger number of utterances pertaining to empathy and asked open-ended questions more frequently than their male counterparts.[5] Likewise, in pharmacists' communication, the influence of gender is likely

to be an important factor. There is a need to examine the influence of gender difference on pharmacists' communication using a larger number of cases.

Conclusions

This study identified the structure of pharmacists' on-site communications, including the content and characteristics of conversations, as well as the associated problems. An area that was identified as needing improvement is pharmacist-led communications that rely on closed-ended questions to gather information. It was found that pharmacists tend to focus more on providing information on medications than on obtaining information about the patient's background. The main challenge identified in our findings was that in interacting with patients, especially those with cancer, pharmacists were most likely to be engaged in one-way information gathering in spite of the fact the patients were suffering from a disease that imposes a heavy psychological burden. Pharmacists used a large number of information-gathering activities that concentrated on closed-ended questions and frequent counseling or directing utterances. On the other hand, the fact that pharmacists communicated in ways that matched the patient's disease and that the patient centeredness ratio was higher than previous reports on the treatment of Japanese outpatients with cancer[3] shows that pharmacists take an active stance regarding the patient as an individual and ascertain whether or not the medications offered are optimal.

Patient-centered care is an important part of current medical treatment. Since patient-centered care is increasingly coming into the spotlight, pharmacist-led communication, the details of which were made clearer in our study, will face numerous challenges that must be overcome before communication is optimal for patients. There will be an ongoing need to build a database of further studies on the structure of pharmacists' communication, including studies using patient outcomes and evaluations of situations in which a pharmacist provided actual medication counseling to real patients such as the patients' degree of satisfaction. This study will help pharmacists develop the skills needed to provide the care that patients seek.

List of abbreviations

・RIAS: the Roter Method of Interaction Process Analysis System

・SP: the simulated patient

・WHO: The World Health Organization

・Ph: Pharmacist

・Pt: Patient

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Conflict of interest

Conflicts of interest: none.

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Endnote

[a] DIPEx-Japan (Database of Individual Patient Experience-Japan) (http://www.dipex-j.org/, accessed April 30, 2015) was developed using Oxford University's "healthtalk.org" (http://www.healthtalk.org/, accessed April 30, 2015) as a model. DIPEx-Japan delivers information on a range of illnesses and other health-related issues by sharing real life experiences from patients. The database carries video clips from interviews on experiences of illnesses such as breast cancer and prostate cancer and is open to public for free access.

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