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Enhancing communication skills in diabetes care: an observational study regarding the impact of role-playing training for medical staff

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Abstract

Introduction Effective communication is crucial for supporting people with diabetes, yet many medical staff feel unsure about their skills in this area. We evaluated role-playing seminars as a method to improve communication skills among medical staff.

Methods From 2008 to 2024, we conducted 78 seminars with 2,458 participants, including nurses, dietitians, and pharmacists. Participants engaged in realistic simulated scenarios based on common clinical situations of patient-medical staff interactions, taking on roles as patients (patient performers), medical staff (medical staff performers), and observers. Due to the COVID-19 pandemic, some seminars were held online. Participants were asked to answer a questionnaire regarding their background, impressions of playing individual roles, general comments regarding the seminar, changes in their patient interactions, the possibility of conducting this seminar at their facilities, and impressions of online seminars compared with those of in-person seminars.

Results The responses of the participants to these seminars were mostly positive. The representative responses indicated that patient performers understood better patients' feelings and medical staff performers had a chance to recognize their insufficient knowledge. The observers also had the chance to learn new communication skills by observing the conversations of other role-players. Compared with in-person seminars, the positive aspects of online seminars were a reduction in time and travel costs and the removal of geographical obstacles. The negative aspects were mostly technology-related concerns.

Conclusion Training seminars using in-person or online role-playing provided medical staff with opportunities and support to improve their communication skills. Further research on measures to improve the communication skills of medical staff and ways to evaluate their efficacy is warranted.

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Keywords Communication skill, Medical staff, Role-playing, Training seminar

Introduction

In medical care, the relationship between medical staff and patients is important, and effective verbal and non-verbal communication leads to positive outcomes and patient satisfaction [1–7]. Effective communication enables us to develop considerate and proactive relationships with patients. However, unlike gaining knowledge by attending seminars or reading journals or web news, it is difficult to improve our communication skills using only self-study. Due to a lack of time and opportunity, medical staff seldom have the opportunity in medical practice to observe others providing patient education. Therefore, medical staff often feel a lack of preparation and are not confident about their communication skills in clinical settings. This is a crucial concern especially among medical staff who care for patients with diabetes. Because diabetes is a lifestyle-related disease, diabetes self-management education and support for affected patients are important and indispensable for diabetes treatment [8–13]. To encourage self-management and improve glucose control, medical staff should support patients based on their own experiences, knowledge, and communication skills. However, not all members of the medical staff are confident in their skills.

Role-playing, the engagement of learners in a particular role in a real-world scenario, provides an opportunity to refine communication skills, understand others' feelings, and develop problem-solving skills. It has been used by medical staff and students as an effective training method and educational tool [1, 14–29]. Despite the well-known effectiveness of role-playing, it has not been extensively used in training medical staff who are involved in the care of patients with diabetes. To provide them with an opportunity to improve their communication skills, we conducted in-person and online training seminars using role-playing. To evaluate the efficacy of the seminar and investigate the potential of role-playing, we conducted an observational study incorporating a series of questionnaire surveys for seminar participants engaged in diabetes care.

Methods

The seminars have been conducted since 2008, mainly in Tokyo and other locations throughout Japan. These seminars were also held at annual meetings of the Japan Diabetes Society (JDS) in 2010, 2015, 2021, and 2024. Participants were encouraged by a flyer to join, were individually invited, or invited to register via the JDS websites of the annual meetings. Any medical staff who were interested could participate without any restriction. In some seminars, the backgrounds of the participants,

such as profession, years of experience, qualifications, previous role-play experience, and previous participation in the seminar, were registered at the time of application or on the day of the seminar. During the seminar, the participants were divided into subgroups of three to four per group. Each group has one facilitator, who is selected from the organizing members. They have been trained to facilitate the session smoothly, including assigning a role to each participant, managing the time, and supporting the participants if they encounter any difficulties during role-play. The participants took turns in the role of the “patient,” “medical staff (diabetes educator),” and “observer.” The observer monitored the interaction between participants playing the roles of patients (patient performer) and medical staff (medical staff performer) and provided feedback regarding both positive points and areas for improvement. The three roles were rotated such that every participant could experience each role. More than 80 cases (settings) that a patient performer would play were prepared beforehand. These settings, based on patients in common real-world situations, (especially cases where medical staff often feel difficulty in providing support) were written on a card with basic information on the front and a more detailed background on the back (Table 1). These cards are common challenges faced by medical staff and were selected so that even a beginner can participate. We also used specific cases to adjust to regional or institutional variation. For example, in case the seminar was held in the region famous for fruit production, we added the setting that a patient ate too much fruit. The medical staff performer chose one of these cards and read the front side of the card but was not allowed to see the information on the back side (i.e., the patient's real feelings) because this information was expected to be revealed during the conversation between the patient and medical staff performers. After 7–8 min of role-playing, individual performers and observers gave feedback, including their impressions, realizations, and suggestions about the role-play contents. Finally, the facilitator provided additional short comments or suggestions, if necessary. The feedback session took 8 min. Subsequently, the participants changed their roles and chose a different setting. After the series of role-plays (usually 4 series, sometimes more), the participants discussed their general impressions of the seminar and exchanged opinions about medical care support for patients they encountered in clinical practice for about 10 min. In some seminars, short lectures (15–30 min) regarding communication skills, such as health coaching, motivational interviewing, and empowerment, were provided by one of the organizers between

Table 1 Examples of role-playing cards (setting)

Case	Front side	Back side
1	"I can't eat what I like to eat. Life is not as fun anymore!"	Going out with her friends for lunch is her only pleasure. She has received dietary counseling once before, but refuses to follow the advice.
2	"I'm not keen on vegetables but I should be fine because I drink vegetable juice everyday."	She does not like vegetables and has avoided them since childhood. She attempts to compensate by drinking two packs of vegetable juice sold at a convenience store.
3	A manager of a convenience store: "I can't eat regularly and am very busy. Simply put, I don't have the time for a better diet."	Due to the high turnover rate of staff at his store, he often has to manage his store by himself. His meal time is quite irregular and he can only eat unsold meals hurriedly, when he gets a chance.
4	"I want to lose my weight, but I often have to attend business dinner."	An office worker suffering from diabetes, hypertension, dyslipidemia, and obesity. He can not leave a dish unfinished because others worry "What's wrong? Not to your taste?" Therefore, he eats everything against his will.
5	"Since I was diagnosed with gestational diabetes mellitus (GDM), I felt scared eating carbohydrates and have tried not to eat them."	Ever since she was diagnosed with GDM, she has been worried about glucose elevation and avoids carbohydrates completely. Instead, she has often been eating fruits because she believes them to be healthy food.
6	"My glucose level went down after I started a low-carbohydrate diet; however, it gradually rose again recently."	He tries to avoid carbohydrates. When he feels hungry, he eats snacks containing protein.
7	"I have been very busy. I can't do any exercise"	He understands the necessity of exercise. On weekdays, he comes home late and has no time to do so. On weekends, he is so tired that he does not feel like exercising.
8	"My knees hurt, and I can hardly do exercise. It's hard to even go out."	She has been suffering from knee osteoarthritis. Once she was taught exercise using her upper body, however, she soon quit doing it as she felt it was bothersome.
9	Post coronary bypass surgery: "Because I had major surgery, I can't do any exercise, right? I have been trying to be more sedentary at home"	She understands that exercise is necessary as a diabetes treatment but believes that she is prohibited. She never asked her doctor about the level of exercise she is allowed to do.
10	An office worker whose diabetic complications are already advanced. He is enthusiastic about doing exercises, saying: "From now on, I will try hard and do as much as I can!"	For many years, he has been assessed to have hyperglycemia at every annual health checkup. He was advised to see a doctor, but he did not. Recently, he visited a hospital complaining about vision impairment and was diagnosed with advanced diabetic retinopathy and nephropathy. He attended educational classes for patients with diabetes and suddenly motivated himself to exercise.
11	"Can't I continue to take oral medication?"	Medically, he needs insulin injections. However, he has been insisting "No, I'm very busy, and I can't possibly do injections"
12	"I didn't do insulin injections because my glucose level was low."	She has been treated with rapid-acting insulin just before every meal. Sometimes she chooses to skip injections. As a result, her glucose levels tend to rise later, and she usually injects insulin with a dosage greater than she was advised.
13	Pharmacotherapy with GLP-1 receptor agonist: "I was told that I could lose weight with this medicine, but I did not"	He is in his thirties suffering from diabetes and obesity. He very much expected to lose his weight but now he is disappointed at his unsatisfactory results. In addition, he is worried about the medicine fee.
14	"I was told to do self-monitoring of blood glucose (SMBG). Why do I have to do this? It's really annoying."	He started insulin self-injections and was advised to start SMBG as well. However, he is not convinced and is complaining that SMBG seems painful, troublesome, and costly. He wants to avoid it, if possible.
15	Continuous glucose monitoring (CGM) user: "I feel nervous with CGM results all the time."	She worries about her CGM results, especially at night, and checks frequently. Slight reductions in the CGM results make her worried that she would be hypoglycemic.
16	Daughter: "My father needs insulin injections but he suffers from dementia and can't do it by himself"	The daughter said: "My husband and I work and can't care for him. What can we do?"
17	Daughter: "My mother's doctor told me that her HbA1c level gradually got worse."	The daughter said: "My mother likes sweets and eats a lot of snacks. I told her not to do so, but she became defensive and began to conceal her snacking habits. I don't want to be a nagging daughter, but I'm worried about her diabetes. What can I do for her?"

role-plays or at the end of the seminar. The entire program above took approximately 2 h. After the seminar, a descriptive questionnaire was administered to gain insights and details from the participants regarding their impressions of playing the individual roles (see Supplementary file 1 for the questionnaire). In addition, the participants were asked to respond to the following questions regarding the seminar: (1) “Were you satisfied with this seminar?”, (2) “Do you think that today’s role-play will be useful for future support of patients?” and (3) “Would you like to participate in future seminars?” For previous seminar participants, the question “After participating in previous seminars, were there any changes in your patient interactions? If yes, please let us know of any actual changes.” were also asked. Finally, regarding the intention to conduct the seminar at the participant’s facility, the participants were asked to answer the following question: “Do you want to conduct this type of role-play seminar at your facility? If not, please let us know

the reason for your answer.” All questionnaires were collected anonymously to minimize pressure and provide positive responses. Substantially similar answers were grouped and categorized into themes.

Owing to the coronavirus disease (COVID-19) pandemic, online seminars were conducted as an alternative to in-person seminars from the 70th seminar (March 2021) to the 74th seminar (November 2022). Instead of sitting at a table for the role-play, breakout rooms in Zoom were used. To support online setup, explanatory materials were sent to all participants by mail or email in advance. During the sessions, questions and comments were delivered via chat and we had some staff on standby for quick support by phone. At the end of the series of role-plays and discussions in the individual breakout rooms, the organizer (the host) brought all participants back to the main room in Zoom. One participant from each group summarized and reported on their group discussions. The participants of these online seminars were asked to answer a questionnaire regarding their impressions of the online seminar compared with in-person seminars.

Results

Between March 2008 and October 2024, 78 seminars were conducted, and 2,458 members of the medical staff participated in these seminars. The background characteristics of the participants are presented in Table 2. Among those who responded about their profession, more than half were nurses, followed by dietitians and pharmacists. Regarding years of experience, the highest number of respondents was in the range of 20–29 years, followed by 10–19 years. Regarding respondents’ qualifications, “certified diabetes educator in Japan (CDEJ)” was mentioned most among the acquired qualifications (CDEJs are medical staff with highly specialized knowledge and experience in diabetes care who provide clinical support to patients regarding diabetes self-management [30]). Approximately 50% of the respondents had previously experienced role-playing, and 65% had previously participated in this seminar. Representative impressions of patient performers, medical staff performers, and observers are shown in Tables 3 and 4, and 5, respectively. The comments and overall impressions of the seminars are summarized in Table 6. Of the respondents, 96.5% were satisfied with the seminar, and 96.7% evaluated the seminar as useful (Table 7). Regarding their hope to participate in future seminars, 60.7% answered that they wanted to participate either in person or online (Table 7). Among the respondents who had participated in a previous seminar, 88.7% felt that their interactions with patients had changed. Descriptive examples of actual changes are listed in Table 8. Regarding the possibility of conducting this type of role-play seminar at

Table 2 Background characteristics of the participants

Profession	(N=1,488)
Nurse	814 (54.7)
Dietician	262 (17.6)
Pharmacist	148 (9.9)
Doctor	104 (7.0)
Clinical laboratory technician	98 (6.6)
Physiotherapist	30 (2.0)
Public health nurse	24 (1.6)
Clinical psychologist	3 (0.2)
Other	1 (0.1)
No answer	4 (0.3)
Years of experience	(N=1,358)
0–4	176 (13.0)
5–9	206 (15.2)
10–19	334 (24.6)
20–29	361 (26.6)
30–39	148 (10.9)
≥40	25 (1.8)
No answer	108 (8.0)
Qualification (multiple answers allowed)	(N=1,458)
Certified Diabetes Educator in Japan (CDEJ)	773 (53.0)
Local Certified Diabetes Educator (LCDE)	336 (23.0)
Certified Nurse in Diabetes Nursing	119 (8.2)
Other	27 (1.9)
None	377 (25.9)
Previous role-playing experience	(N=1,347)
No experience	669 (49.7)
Have experience	647 (48.0)
No answer	27 (2.0)
Previous participation in this seminar	(N=626)
Yes	407 (65.0)
No	213 (34.0)
No answer	6 (1.0)

Variables are expressed as the number of respondents (percentage)

Table 3 Representative comments from those who played the role of a patient**Empathy and understanding for the patient's feelings**

"I think I can now understand how patients feel when we talk. Patients are more sensitive to the facial expression, word choice, and tone of voice of medical staff than I had expected."

"I realized that it's not easy for patients to speak their minds."

"I realized that it's difficult for patients to make medical staff understand their concerns, their routine, and struggle with diabetes."

"I realize that if medical staff listen to me attentively and with empathy, I can speak openly."

"I felt nervous, worrying about what she (who played the role of medical staff) would ask me. I found myself making excuses without intending to."

"I realized that patients may have questions they can't ask."

Getting inspiration for improving communication skills with patients

"When I am asked a question, I realize that depending on the way the medical staff asked me, my feelings change and make it easier or harder to answer. I felt that the medical staff establishing a relationship of mutual trust and creating a good atmosphere is important."

"I understand that the patient's feelings are influenced by the attitude and framing of the medical staff."

"I felt if medical staff could listen to patients without damaging their self-esteem, we may have a better relationship with patients."

Gaining new perspectives

"I wanted to be heard more, especially regarding how I feel and what I worry about. Next time I talk to a patient, I think that I should listen to their concerns attentively."

"Words are important. When I played the role of a patient, I could experience and understand what kind of words make them feel encouraged."

"I thought about whether I always show concern for my patients' feelings while talking to them."

Table 4 Representative comments from those who played the role of medical staff**Recognizing own challenges**

"I could not answer properly when patients asked me questions. I fully realized my knowledge is insufficient and I have to learn more."

"I realized that I assumed my interactions were appropriate and unconsciously persuaded patients to do things I believed were correct."

"I realized that I was still immature and lacked experience."

Identifying areas to improve

"I got so flustered thinking about what I should ask and tell them that I totally forgot to listen and ended up giving them a lecture. I should have set up a more comfortable atmosphere for the patient so that I could get more input from her and listen."

"It's hard to draw out a patient's true feelings. I should have encouraged her to speak her mind"

"I should have praised the patients more actively for trying hard, but could not do so."

"It was difficult to share appropriate information without sounding too critical."

Discovering own strengths

"Getting positive feedback about the way I usually do things helped me feel confident."

Objective advice

"It's good to have others listen and observe me talking with a patient, and I appreciate the feedback I received."

"By feedback from the observer and the facilitator, I could recognize my way of speaking and the atmosphere I created."

Table 5 Representative comments from those who played the role of an observer**Objective view**

"I rarely have a chance to see other medical staff educating patients, so that was a valuable experience for me."

"During the role-play, I was so concentrated on playing the role of medical staff that I could not catch the key words that the patient said to me. However, as an observer, I could better pick up on their signals. It made me think that paying attention to key words is necessary."

"While I was observing other's role-play, I tried to imagine what I would ask or answer if I were in their situation. It was a great training, and I learned a lot."

Effective skills

"The strategies and knowledge that I learned today can be immediately applied to my clinical practice."

"I learned what kind of questions we should ask to make it easier for the patients to answer."

"I learned a lot of things from observing other participants' communications or interactions."

"I felt that all the things we use to communicate such as way of speaking, speed, tone of voice, eye contact, nonverbal communication, and gestures are key elements."

Multi-professional perspectives

"I seldom have a chance to see and observe interactions between patients and other medical professionals. So, it was a precious experience for me."

Table 6 Representative comments regarding the role-play seminar**Learning experiences**

"It was a great learning experience where I realized that there is a gap between my feelings and the patient's feelings."

"I learned how important it is to keep in mind such issues as to understand the patient's feelings and convey my feelings."

"Playing the role of a patient, I came to a realization that a real patient might unconsciously tell us what they think we want to hear, and we medical staff also might unintentionally force a treatment plan onto a patient that he will not comply with."

"It was great that I could get practical advice."

"That was my first time role-playing, because of which I got nervous but could learn a lot."

"Because of the feedback I received, I have a better understanding of my habits and mannerisms."

"I was not confident about my patient interactions and I have been concerned about how I could improve my patient communication skills. The suggestions from others helped me a lot."

Multi-facilities and multi-professionals perspectives

"I was able to get to know medical staff from other medical facilities. It was fun, and I enjoyed sharing the various pieces of useful information with others."

"I was encouraged to know that other medical staff also have similar worries that I have and to see them do their best."

Enjoyable experience

"Role-playing was challenging but enjoyable. It was a fun way to practice."

"If I could have the patient case scenarios beforehand, I could prepare and role-play better. However, it's alright, because ad-libbing on the spot was also fun."

Holding the seminar at own facility

"To improve the communication skills of our staff, I want to conduct this kind of seminar at my facility."

Negative comments

"Doing role-plays can be exhausting because it requires a lot of energy."

"This is nothing more than a role-play performed by medical staff. It has no practical value."

"I got nervous when others stared at me during the role-plays."

Table 7 Answers to the questionnaire administered after the seminar

Were you satisfied with this seminar?	(N = 1,026)
Very satisfied	739 (72.0)
Satisfied	251 (24.5)
Neutral	6 (0.6)
Dissatisfied	0 (0.0)
Very dissatisfied	0 (0.0)
No answer	30 (2.9)
Do you think that today's role-playing will be useful for future support of patients?	(N = 829)
Very useful	584 (70.4)
Useful	218 (26.3)
Neutral	3 (0.4)
Not so useful	0 (0.0)
Completely useless	0 (0.0)
No answer	24 (2.9)
Would you like to participate in future seminars?	(N = 229)
(multiple answers allowed)	
Yes, in-person or online	139 (60.7)
Yes, online only	36 (15.7)
Yes, in-person only	15 (6.6)
Yes, if I have time	61 (26.6)
Not sure	9 (3.9)
Yes, online only-as a guest (not as a role-play participant)	5 (2.2)

Variables are expressed as the number of respondents (percentage)

the participants' facilities, 59.7% of the respondents answered "Yes," 3.9% answered "No," and 31.4% answered "Not sure." Representative obstacles to conducting seminars at the participants' facilities are shown in Table 9. Among 2,458 participants, 199 participated in online seminars conducted during the COVID-19 pandemic. Similar to the in-person seminar, nurses had the highest participant percentage at 56.3%, followed by dietitians (17.3%) and pharmacists (11.0%). Regarding impressions of online seminars, both positive and negative opinions are summarized in Table 10. The positive aspects mainly include time and travel cost savings, whereas the negative aspects are mostly technology-related concerns.

Discussion

To provide an opportunity to the medical staff, who seldom have the chance to improve their communication skills, we conducted seminars using role-playing, and the questionnaire survey regarding the seminars revealed mostly favorable responses. Regarding the background of the participants, the largest group who answered this question had 20–29 years of experience, followed by the group with 10–19 years of experience. These results were somewhat unexpected because we initially predicted that relatively young medical staff, who have insufficient experience in patient education, feel the necessity for training and participating in the seminar. The actual survey results might indicate that experienced staff, possibly because of their experience, regard the lack of communication skills

Table 8 (for previous seminar participants) after participating in previous seminars, were there any changes in your patient interactions?

	(N = 151)
Yes	134 (88.7)
No	7 (4.6)
Not sure	10 (6.6)

If, yes, please let us know of any actual changes

"I now find that I listen to the patient's words more attentively."

"I have become more considerate in the words I choose when I talk to the patient."

"In the case, a patient's glycemic control has gotten worse, now I am able to discuss causes and ways to improve the situation, avoiding any blame."

"I now find I am able to keep in mind patient-centered care and not be so self-focused."

"Trying to praise the patient's effort and good outcomes even if these are small things."

"At the seminar, I learned about the pace of talking and useful phrasing from the other participants. I have now incorporated them into my patient talk."

"I have started to be more interested in individual patients and put myself in their position."

"I find that I now bear in mind that I should not be judgmental but try to think what is the patient's point of view."

Variables are expressed as the number of respondents (percentage)

Table 9 Possibility to conduct such a role-play seminar in their facility

Do you want to conduct this type of role-play seminar at your facility?	(N = 586)
Yes	350 (59.7)
No	23 (3.9)
Not sure	184 (31.4)
I have already conducted	14 (2.4)
No answer	15 (2.6)

Reasons for "No" and "Not sure"

"It's hard to secure the space, time, and staff."

"Role-playing is not my thing. It makes me nervous."

"It's hard to conduct a seminar by myself. I need help from more experienced people."

"I think that the success of a seminar greatly depends on the ability of a facilitator. I'm afraid we don't have a suitable person for this role."

"Only a few of the staff have enough knowledge of diabetes and patient care to be able to conduct the seminar."

"There is a big gap in the degree of enthusiasm for patient education between medical staff who are qualified and those who are not. Therefore, it's difficult to promote participation to multiple levels of staff."

Variables are expressed as the number of respondents (percentage)

Table 10 Impressions of the online seminar

Positive aspects
"I can save time and travel costs."
"I can communicate with other participants from all over the country."
"I can check my facial expression and gestures on a screen."
"No influences from other's voices or sounds in a hall. I can concentrate on the role-play."
"I can observe the tones or gestures of others better than during in-person seminars."
Negative aspects
"Anxiety or concerns about using the technology such as no sound or frozen screens."
"During break time of the seminar, I can't communicate freely with other participants."
"Hard to talk or chime in freely."
"I got more nervous than when I attended a seminar in-person."
"Hard to secure a private environment at home (family interrupts me)."
General impression
"Although it's not the same as in-person, I was able to understand the tone of voice and facial expressions, and it went better than I expected."
"Since I couldn't see detailed gestures and felt it difficult to make eye contact, I just concentrated on the conversation, but it was still enjoyable."
"There were no major disadvantages compared to in-person, and I felt that online consultation and support could be done in an actual clinical setting."

as serious, urging them to participate in the seminar. Among the respondents, 53.0% were qualified as CDEJs. Nurses, registered dietitians, pharmacists, clinical laboratory technician, and physiotherapists are qualified to take the examination of CDEJ. As of June 2024, 17,310 individuals have acquired this qualification [30]. Although a CDEJ should be an expert in diabetes self-management education and support, opportunities to gain experience and develop skills have been insufficient [31], which can partially explain the high participation in the seminar.

Role-playing enables learners to refine their communication skills, recognize emotions, enhance problem-solving abilities, foster collaboration, and make decisions in real-world scenarios [18, 24]. The benefits of role-playing are extensive and allow participants to build confidence and consolidate their skills through repetition [15]. In addition, role-playing provides flexibility and safety nets for participants to perform both common and specific types of clinical tasks without feeling any clinical pressure, which gives them exposure and experience in real-life cases [15]. In some training programs using role-playing, professionally trained actors, actual patients, instructors, or even virtual patients (avatars) play the role of patients [15, 32–34]. In our seminars, medical staff played the role of patients. This provides greater insights into how patients truly feel and respond to medical staff, which cannot be attained through training programs that employ professional actors. In our study, most responses to the seminars were favorable. The perceptions after playing individual roles varied, but overall, the experience was considered as a valuable learning opportunity.

Compared with other educational training approaches, role-playing has many advantages such as low cost and no need for elaborate equipment. The participants can determine the pace and focus on aspects they deem significant to their learning objectives. Because no actual patient is involved, the participants are not afraid of making mistakes in a safe clinical setting that resembles real-world conditions [15, 16, 22]. In addition, role-playing is reported to be an effective strategy to improve critical thinking skills [19, 24]. In our seminar, during the feedback session, we encouraged the participants to not only praise but also offer critique. For example, if the medical staff performer forcibly tried to persuade a patient who was reluctant to accept insulin therapy, observers might suggest to the medical staff performer that she should have asked the patient's reason for not starting insulin therapy and discussed it with the patient instead of trying to persuade him or her. This type of feedback can be an advantage of role-playing.

Role-playing also receives some criticism, such as being artificial, unrealistic, useless, or making players uncomfortable, especially those who feel embarrassed by role-playing [15]. Similarly, we received some negative

responses; however, every training method has certain limitations, and we believe that the benefits of role-playing outweigh these drawbacks. Furthermore, a significant proportion of participants reported that the seminar was enjoyable, which is an important factor in promoting active and repeated participation.

Despite the importance of good communication skills in the medical field, medical staff often face difficulties in communicating effectively with patients, and in an attempt to resolve this problem, many medical training institutions have facilitated various communication training programs and workshops [32, 35–38]. In these training programs, various behavioral and communication strategies such as “health coaching” [39, 40], “motivational interviewing” [41–46], and “empowerment” [47, 48] are often introduced. During some of the seminars that we conducted, we provided lectures on conversation strategies, including how to effectively use open-ended questions, empathic or reflective statements, summarizing statements, and facilitative nonverbal communication (e.g., head nodding) to help participants consciously utilize them during role-plays and in real-life clinical settings. Whether the lectures contributed to participant's learning enhancement and improvement of communication skill was not assessed in our survey. However, we definitely recognize this as an important issue to address in the future.

Since the COVID-19 pandemic, many conferences and activities have switched from in-person to online systems, and the adoption of technologies has been promoted [49–54]. The positive aspects of going online are the removal of geographical obstacles, reduction in travel costs, and convenience, in that anyone with an internet connection can benefit [52, 53, 55]. Although not perfect, we successfully established an interactive online role-playing seminar, and despite an unusual situation which might force the online seminar participants to feel nervous, their responses were mostly favorable and similar to that of in-person seminars. Therefore, we may consider online seminars as a valid alternative to the in-person seminar.

However, the risks of online seminars should be considered. Among the disadvantages of online seminars listed by the study participants, technology-related issues were the most concerning, especially for inexperienced users. According to our experiences, to minimize unexpected technology-related problems, organizers and staff members should be proficient in using cloud-based video communication tools such as Zoom. In addition, they should be prepared to address any problem on the day the seminar is held so that anyone experiencing technical difficulties can be assisted. Ideally, the participants would be familiar with using these online tools, and if not, they would practice using them beforehand. To help

participants imagine the actual procedure of role-playing and relieve anxiety, we uploaded a video clip of a role-playing demonstration to the website and sent instructions via email in advance.

In recent years, research, development, and application of digital technology have been remarkable. The application of artificial intelligence (AI) is expanding and is being used in various areas of diabetes management, such as prediction, prevention, screening, clinical diagnosis, and treatment [56–62]. AI apps are also used in diabetes education and can be an effective tool for patient self-management [58, 59]. Compared with conventional methods, AI-based education offers certain advantages such as low costs, easy implementation, broad coverage, reduction in patients' hospital visits, and decreased workload of medical staff [59, 63]. However, some patients prefer face-to-face medical support [64], and older patients may have difficulty using such apps. In the future, the use of AI in medical support is expected to expand, however, judging by current technological limitations, it will probably be difficult for AI to fully provide the “patient-oriented support” that medical staff strive to provide. Therefore, it is necessary for medical staff to continue the diligent self-improvement of communication skills in diabetes care.

Our study has some limitations. First, the data collection results from the questionnaire might include certain biases, as the study participants might have been more enthusiastic and motivated about diabetes care and more attuned to role-playing than nonattenders. Second, the study employed a self-reported style, and the responses to the questionnaire were not evaluated quantitatively but descriptively (qualitatively). This has the potential to yield results that might be deemed biased and vague, as well as difficult to analyze concisely. The choice and wording of the questions has the potential to influence the responses. In addition, the reliance on the self-report method may introduce biases because respondents may give socially desirable responses. Moreover, there was the potential that the authors subconsciously chose favorable responses. Therefore, in order to lessen this risk, we made sure to include the negative responses in our findings and reached a collaborative consensus with an elaborate discussion. Third, the findings may not holistically represent a wide range of medical professionals, as more than half of the participants were nurses, whereas the sample size of clinical laboratory technicians and physiotherapists was small. Fourth, because questionnaire survey was not carried out every time the seminar was conducted, response numbers were relatively small. Finally, although the long-term effects of role-playing on patient outcome should be clarified in terms of clinical significance, it is difficult to precisely evaluate the positive outcomes of patients with diabetes who interact with medical staff that participated in the seminars versus those who did

not. This is due to the fact that diabetes is a multifactorial disease requiring intervention by various medical professionals. Consequently, it is not possible to conclude a causation or correlation between the seminars' competence and positive patient outcomes. Further studies which implement pre-post test assessments to objectively evaluate improvements in communication skills resulting from the seminars, are necessary to verify the effectiveness of role-playing.

Conclusion

In conclusion, to provide medical staff who care for patients with diabetes with an opportunity to enhance their communication skills, we conducted training seminars using role-playing methods with both in person and online formats. According to the questionnaire survey administered to the participants, 96.5% of the respondents expressed satisfaction with the seminar, and 96.7% evaluated it as beneficial. Furthermore, 88.7% of the respondents who had attended a previous seminar reported modifications in their patient interactions. However, due to the absence of control groups or a pre-post study design, a precise demonstration of the actual effect of our seminar on the participants' communication skills and clinical practice remains limited. Further research is necessary to investigate strategies for improving the communication skills of medical staff and to develop objective methods for evaluating their effectiveness.

Supplementary Information

The online version contains supplementary material available at <https://doi.org/10.1186/s12909-025-06821-8>.

Supplementary Material 1

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Author contributions

All authors contributed to the conception and design of this study. The first draft of the manuscript was written by Miyako Kishimoto, and all authors commented on previous versions of the manuscript. All authors have read and approved the final version of the manuscript.

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Data availability

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate

Owing to the lack of direct patient interaction and the anonymous nature of the study, the ethics committee, the Medical Ethics Review Board of Sanno

Hospital, waived approval; however, oral informed consent was obtained from all participants. The intended purpose of the survey was provided on the questionnaire or online. Consent to participate in the survey was obtained by responding to the questionnaire. This study was performed in accordance with the Declaration of Helsinki of 1964 and its subsequent amendments.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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