

Original Article

(Check for updates

OPEN ACCESS

 Received:
 May 16, 2024

 Revised:
 Sep 19, 2024

 Accepted:
 Oct 30, 2024

 Published online:
 Nov 19, 2024

Correspondence to Muneaki Shimada

Department of Gynecology, Tohoku University Hospital, 1-1 Seiryo-machi, Aoba-ku, Sendai, Miyagi 980-8575, Japan.

Email: muneaki.shimada.b7@tohoku.ac.jp

© 2025. Asian Society of Gynecologic Oncology, Korean Society of Gynecologic Oncology, and Japan Society of Gynecologic Oncology

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (https:// creativecommons.org/licenses/by-nc/4.0/) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ORCID iDs

Masakazu Abe https://orcid.org/0000-0002-8508-3997 Hironobu Hashimoto https://orcid.org/0000-0002-5907-5547 Azusa Soejima https://orcid.org/0009-0009-3266-573X Yumiko Nishimura https://orcid.org/0009-0001-0613-6561 Ami Ike https://orcid.org/0009-0003-2271-7547 Michiko Sugawara https://orcid.org/0009-0001-7734-6611 Muneaki Shimada https://orcid.org/0000-0003-1826-6723

Shared decision-making in patients with gynecological cancer and healthcare professionals: a cross-sectional observational study in Japan

Masakazu Abe (b,1 Hironobu Hashimoto (b,2 Azusa Soejima (b,3 Yumiko Nishimura (b,4 Ami Ike (b,5 Michiko Sugawara (b,5 Muneaki Shimada (b 6.7

¹Department of Obstetrics and Gynecology, Hamamatsu University School of Medicine, Hamamatsu, Japan
 ²Department of Pharmacy, National Cancer Center Hospital, Tokyo, Japan
 ³Department of Pharmacy, Cancer Institute Hospital, Japanese Foundation for Cancer Research, Tokyo, Japan
 ⁴Department of Nursing, The Hospital of Hyogo College of Medicine, Nishinomiya, Japan
 ⁵Eisai Co., Ltd., Tokyo, Japan
 ⁶Department of Gynecology, Tohoku University Hospital, Sendai, Japan
 ⁷Department of Clinical Biobank, Tohoku University Advanced Research Center for Innovations in Next-Generation Medicine, Sendai, Japan

ABSTRACT

Objective: This cross-sectional study aimed to understand the actual situation of shared decision-making (SDM) and identify the challenges of implementing SDM among Japanese gynecologic cancer patients and healthcare professionals (HCPs).

Methods: Adult Japanese women undergoing chemotherapy for endometrial or ovarian/ fallopian tube cancer and HCPs who prescribed/administered treatment were enrolled. Data were collected via a web-based questionnaire. Primary endpoints were the actual and desired status of SDM for patients by preferred role (active, collaborative, passive), and important aspects in drug selection for patients and HCPs. SDM treatment preferences were determined using the Control Preferences Scale.

Results: Respondents comprised 154 patients (77 for endometrial and 77 for ovarian/fallopian tube cancer), 153 physicians, 166 nurses, and 154 pharmacists. Among patients, 53.9% desired an active role in decision-making, and 55.8% participated; 25.3% desired a collaborative role, and 14.3% participated; and 20.8% desired a passive role, and 29.9% participated. Most patients with a collaborative role in decision-making (86.4%) were "very satisfied" or "somewhat satisfied" with their communication with physicians, compared with 60.4% and 73.9% of respondents with active and passive roles in decision-making, respectively. In daily practice, 23.5%, 47.6%, and 19.5% of physicians, nurses, and pharmacists, respectively, confirmed "awareness" of SDM. Regarding treatment expectations, patients ranked "complete elimination of cancer," and HCPs ranked "live longer" as the most important. **Conclusion:** Most patients desire involvement in their treatment decisions. Additionally, treatment expectations differ between patients and HCPs. Increasing SDM awareness, implementing it systematically, and addressing patients' needs for collaborative roles in decision-making is essential.

Keywords: Cross-Sectional Studies; Decision Making; Gynecologic Neoplasms; Endometrial Cancer; Ovarian Cancer



Funding

This research was funded by Eisai Co., Ltd.

Presentation

This research has been presented at the following meetings:

• Oral Session (OS-060) at the 65th Annual Meeting of the Japan Society of Gynecologic Oncology (JSGO), July 16, 2023, in Shimane, Japan. Presenter: Muneaki Shimada.

 Poster (Abstract 379) at the International Gynecologic Cancer Society (IGCS) 2023, November 5, 2023, in Seoul, Korea. Presenter: Masakazu Abe.

 Poster at the Multinational Association of Supportive Care in Cancer (MASCC) 2024, June 27, 2024, Lille, France. Supportive Care Cancer 2024;32:S434, OTHER-018. https://link. springer.com/article/10.1007/s00520-024-08541-z. Presenter: Hironobu Hashimoto.

Conflict of Interest

A.M. received payment or honoraria for lectures, presentations, speaker bureaus, manuscript writing, or educational events from Taiho Pharmaceutical Co., Ltd., Chugai Pharmaceuticals Co., Ltd., AstraZeneca K.K., Takeda Pharmaceutical Co., Ltd., Daiichi Sankyo Co., Ltd., and Eisai Co., Ltd.

H.H. received consulting fees from Eisai Co., Ltd., and Daiichi Sankyo Co., Ltd.

S.A. received payment or honoraria for lectures, presentations, speaker bureaus, manuscript writing, or educational events from Eisai Co., Ltd., Daiichi Sankyo Co., Ltd., and Sandoz K.K.

N.Y. received payment or honoraria for lectures and speaker bureaus from Chugai Pharmaceuticals Co., Ltd., Taiho Pharmaceutical Co., Ltd., and Cardinal Health K.K., as well as payment for expert testimony from Eisai Co., Ltd.

I.A. and S.M.¹ are employed by Eisai Co., Ltd.

S.M.² received payment or honoraria for lectures, presentations, speaker bureaus, manuscript writing, or educational events from Eisai Co., Ltd., AstraZeneca K.K., Chugai Pharmaceuticals Co., Ltd., Takeda Pharmaceutical Co., Ltd., and MSD K.K.

S.M.¹, Michiko Sugawara; S.M.², Muneaki Shimada.

Synopsis

Although almost 1 in 4 patients wished to participate in collaborative decision-making, fewer did so. Patients participating in collaborative decision-making were most satisfied with communication with physicians. Preferences for collaborative and active roles were high perioperatively and in the advanced/recurrent period, respectively.

INTRODUCTION

In recent years, the concept of patient participation in cancer treatment decision-making, or shared decision-making (SDM), has gained importance. The goal of SDM, in which healthcare professionals (HCPs) and patients jointly decide a treatment course based on both the HCP's expertise and the patient's personal preferences, is to increase patient participation in treatment and treatment satisfaction [1-3]. Multiple reports recommend SDM, including in cancer treatment decision-making, because it has been shown to reduce patient anxiety and increase satisfaction in both patients and HCPs [4-9].

The process of SDM can be established by applying the 3-talk model, which consists of 3 steps: 1) Team talk: creating a collaborative relationship and explaining and supporting treatment options; 2) Option talk: providing more detailed information about treatment options and comparing options; and 3) Decision talk: listening to the patient's intentions and making decisions based on those intentions [10]. Furthermore, Whitney et al. [11] classified 4 types of decision-making situations in medicine in which SDM is necessary, according to the level of risk and certainty of treatment on 2 axes. They stated that informed consent is sufficient when there is only one best option, whereas SDM is necessary for multiple options. Barriers to SDM practice include uncertainty in treatment decision-making, concerns about side effects, and inadequate communication with physicians [12]. Cancer patients need not only information and communication from physicians but also relevant information from nurses, pharmacists, and other HCPs, which is important for treatment decision-making. Thus, to effectively implement the 3 steps of SDM, an inter-professional approach to SDM (IP-SDM model) in which a team of HCPs collaborate with the patient has been proposed [13]. Additionally, the potential usefulness of inter-professional collaboration in cancer treatment has been reported in Japan [14].

The SDM process has been reported to be particularly complex in oncology [15,16]. According to reports on the impact of SDM on patients, a disadvantage is that patients may feel remorse and regret when making their own decisions and the treatment fails [16]. Conversely, SDM increases patient and physician engagement in treatment and improves quality of life (QOL) outcomes [4-9,17]. It may also improve adherence to treatment [5]. A review article on the correlation between SDM practices and QOL in cancer treatment found positive correlations or no association between SDM practices and QOL [17]. Thus, incorporating SDM into clinical practice and practicing SDM through inter-professional collaboration is essential to improve the QOL of patients with cancer.

In Japan, the incidence of gynecological cancers, that is, ovarian (one in 62 women), endometrial (one in 48 women), and cervical cancers (one in 76 women), has increased compared with 40 years ago [18,19], as has the morbidity and mortality associated with these cancers [18,19]. Initial treatment options are also expected to increase, especially for



Data Availability

The datasets generated during and/or analyzed during the current study are not publicly available but are available from the corresponding author on reasonable request.

Author Contributions

Conceptualization: A.M., I.A.; Formal analysis: A.M., I.A., S.M.¹; Investigation: A.M., I.A., S.M.¹; Methodology: A.M., I.A.; Writing - review & editing: H.H., S.A., N.Y., I.A., S.M.¹, S.M.²

S.M.¹, Michiko Sugawara; S.M.², Muneaki Shimada.

advanced/recurrent uterine cancer [20,21]; therefore, it is more important than ever to reflect the patient's will in treatment via SDM to improve treatment satisfaction and QOL. Some studies [22,23] have examined SDM in the context of gynecologic cancer chemotherapy, but the evidence is insufficient. Additionally, there are no reports on gynecologic cancer and SDM from Japan. Therefore, it is necessary to clarify the current status of SDM in Japan, specifically in gynecological cancer therapy, as well as to organize and propose steps toward patient-centered medicine.

This web-based survey of patients with endometrial and ovarian cancer and HCPs involved in the treatment of gynecological malignancies, including physicians, nurses, and pharmacists, aimed to understand the implementation status of SDM for drug therapy in patients with gynecological cancer in Japan. Additionally, we evaluated the real-world practice of SDM and factors influencing patient preferences and HCP expectations regarding drug therapy to identify differences and similarities between patient and HCP ideas for implementing optimal SDM.

MATERIALS AND METHODS

1. Study design

This cross-sectional observational study targeted women who had received chemotherapy for endometrial or ovarian/fallopian tube cancer (hereafter referred to as ovarian cancer). Additionally, the study targeted physicians who specialized in obstetrics and gynecology and had prescribed chemotherapy for gynecological cancers and nurses or pharmacists who had been involved in the administration of chemotherapy for gynecological cancers.

Data were collected throughout Japan using a web-based survey. The survey period was between 28 November and 19 December 2022. The participants were requested to respond to the study questionnaire (**Tables S1** and **S2**) via email, managed by Medilead, Inc. (Tokyo, Japan). The survey for gynecological cancer (endometrial and ovarian cancer) patients was conducted using a panel from Research Panel, Inc. (Tokyo, Japan), and that for HCPs (physicians, pharmacists, and nurses) was performed using a panel from Plamed, Inc. (Tokyo, Japan). All the panels were based on commercial platforms. Patients and HCPs who responded to the survey received points equivalent to a gratuity.

2. Eligibility

The participants' informed consent was obtained online, and their eligibility was assessed according to their responses to the online questionnaire. Patients were eligible if they met the following criteria: 1) were over 18 years of age; 2) had received chemotherapy for endometrial or ovarian cancer; and 3) were residing in Japan at the time of the study. Patients were excluded if they or any of their close family members were HCPs or worked for pharmaceutical companies or market research/marketing companies, and if they had overlapping cancers other than endometrial and ovarian cancer.

Eligible physicians were those involved in prescribing chemotherapy for treating gynecological cancers who had at least 5 years of experience, including training. Similarly, HCP participants with at least 1 year of nursing or pharmacy experience could enroll if they had been involved in administering chemotherapy for gynecological cancers.



3. Study endpoints

The primary endpoints were to identify patients' desired and actual roles in SDM and differences in the items that patients and HCPs consider important when selecting drug treatment. In the desired and actual conditions of SDM, subgroup analyses were also conducted for 1) perioperative and advanced/recurrent, and 2) uterine and ovarian cancer subgroups. The secondary endpoints were the level of desire of other HCPs to intervene in patient and HCP SDM and the types of HCPs willing to intervene. Additionally, we surveyed the following exploratory endpoints: Subgroup analysis of satisfaction with communication with the physician by the actual role of patients in decision-making, awareness of SDM among HCPs (doctors, nurses, pharmacists), implementation of SDM among HCPs, and the desire and reasons for reluctance to intervene in SDM interventions by nurses and pharmacists.

The affiliations of HCPs were broadly classified into cancer centers, university hospitals, and general hospitals (national hospitals/public hospitals [National Hospital Organization, prefectural/municipal/workers' compensation hospitals], and clinics).

4. Preference scale

Preferences for treatment SDM were indexed using the Control Preferences Scale [24,25]. The top 2 responses were selected from the 5 options (A, most active role: I prefer to make the final selection of which treatment I will receive; B, active role: I prefer to make the final selection of my treatment after seriously considering my doctor's opinion; C, collaborative role: I prefer that my doctor and I share responsibility for deciding which treatment is best for me; D, passive role: I prefer that my doctor makes the final decision about which treatment will be used, but seriously considers my opinion; and E, most passive role: I prefer to leave all decisions regarding my treatment to my doctor) were grouped into the following roles in SDM: Active: AB or BA or BC, Collaborative: CB or CD, and Passive: DC or DE or ED.

5. Statistical analysis

The sample size was based on the number of patients and HCPs enrolled in the web survey panel. The target numbers were 160 patients, 140 physicians, 150 nurses, and 140 pharmacists.

For the primary endpoint, "differences in what patients and HCPs consider important when selecting drug treatment," Fisher's exact probability test was performed on the proportion (%) of the top 3 votes for each survey participant (the number of valid responses in this survey) for the cumulative frequencies of patient—physician, patient—nurse, and patient—pharmacist. Fisher's exact probability test was performed for each cumulative frequency, and p-values were calculated. For other evaluations, the summary statistics and percentage differences were calculated.

6. Ethical approval

All methods were performed in accordance with the principles and guidelines of the Declaration of Helsinki. The research protocol and associated documents were approved by the Institutional Review Board of The Japanese Association for the Promotion of State-of-the-Art in Medicine (JAPSAM) (clinical research protocol number: R7000-M081-004, reference number: 41). The study conduct and reporting adhere to the Consensus-Based Checklist for Reporting of Survey Studies (CROSS) guidelines as appropriate.



RESULTS

1. Participant characteristics

There were 154 patient responses for gynecological cancer, 77 for endometrial cancer, and 77 for ovarian cancer. Patients had a mean (± standard deviation) age of 52.9±9.8 years.

The most common timing for chemotherapy was within 3 years (24.7%), followed by current treatment (19.5%), within 10 years (14.9%), and within 5 years (12.3%). The combined total for current treatment within 1 year was 35.7% (data not shown). Five patients were excluded because of inappropriate responses.

Respondents were 153 physicians, 166 nurses, and 154 pharmacists. Most physicians had 5–10 (30.1%) or 11–20 years of experience in gynecologic oncology (30.7%), followed by 21–30 years of experience (23.5%). Most nurses (84.9%) and pharmacists (65.6%) had 11 or more years of experience in cancer patient care and prescribing cancer chemotherapy (**Table 1**).

Table 1. Participant characteristics				
Characteristics	Patient (n=154)	Physician (n=153)	Nurse (n=166)	Pharmacist (n=154)
Cancer type				
Endometrial cancer	77 (50.0)			
Ovarian/fallopian tube cancer	77 (50.0)			
Age (yr)	52.9±9.8			
History of medical treatment				
<3 mo	15 (9.7)			
≥3 to <6 mo	50 (32.5)			
≥6 to <1 yr	47 (30.5)			
≥1 to <1.5 yr	14 (9.1)			
≥1.5 to <2 yr	11 (7.1)			
≥2 to <3 yr	4 (2.6)			
≥3 yr	13 (8.4)			
Chemotherapy				
Preoperative/postoperative chemotherapy	106 (68.8)			
Combination chemotherapy after recurrence	59 (38.3)			
Single-agent chemotherapy after recurrence	24 (15.6)			
Surgery	100 (64.9)			
Radiotherapy	8 (5.2)			
Male		118 (77.1)	19 (11.4)	126 (81.8)
Hospital department				
Gynecology/Obstetrics & Gynecology		105 (68.6)	-	-
Oncology		36 (23.5)	-	-
Radiology/others		12 (7.9)	-	-
Institution				
University hospital		45 (29.4)	43 (25.9)	35 (22.7)
Cancer center		9 (5.9)	11 (6.6)	8 (5.2)
General hospital		50 (32.7)	60 (36.1)	59 (38.3)
National hospitals/public hospitals*		37 (24.2)	49 (29.5)	52 (33.8)
Clinic		12 (7.8)	3 (1.8)	0 (0)
Years of experience (gynecologic cancers)				
1 to 4 yr		-	2.4	1.3
5 to 10 yr		30.1	11.4	33.1
11 to 20 yr		30.7	55.4	59.8
21 to 30 yr		23.5	28.9	5.8
>30 vr		4.6	0.6	0

Values are presented as number (%), mean \pm standard deviation or percentage.

*National Hospital Organization/prefectural/municipal/workers' compensation hospitals.





Which SDM role most closely matches the desired role for treatment decision-making?



Which SDM role most closely matches the actual role of treatment decision-making used?



Fig. 1. Patients' desires for and realities of SDM. Details of the selection of response options are provided in subsection 4 of the Materials and Methods section. SDM, shared decision-making.

2. Desired and actual participation in SDM in patients

When patients' desired and actual participation in SDM were evaluated using the Control Preferences Scale, more than half of the patients desired to and actually participated in an active SDM role (**Fig. 1**). Conversely, 14.3% of respondents were able to make decisions in a collaborative SDM role, approximately 10% less than the desired percentage. The actual participation in SDM in a passive role was 29.9%, which was higher than the desired percentage. Regarding the role in SDM, the desire for a collaborative role in SDM was higher in the perioperative period, and the percentage of patients in an active SDM role was higher in the advanced/recurrent period, both in terms of desire and reality (**Fig. S1**). Although a higher percentages were 15.6% and 13.0% for ovarian and endometrial cancer patients, respectively.

3. Important factors for treatment decisions for patients and HCPs

Patients and HCPs were surveyed on the items they considered important when deciding on drug treatment for gynecological cancer. In order of importance, patients ranked "complete elimination of cancer" first, followed by "live longer" and "fewer side effects affecting activity." In contrast, HCPs ranked "live longer," "complete elimination of cancer," and "cancer shrinkage" as the highest 3, showing a difference in ranking between patients and HCPs (**Fig. 2, Table S3**). By item, "live longer" and "cancer shrinkage" were more important for HCPs than patients. At the same time, "low treatment costs" were more important for patients than for HCPs (**Fig. 2**), and the differences between patients and HCPs were statistically significant.

4. Desires for and reality of intervention of non-physician medical staff in decision-making among patients and HCPs

When patients were asked whether they would like SDM intervention by medical staff other than physicians, 49.0% of patients stated they would like the intervention from nurses, 28.3% from pharmacists, and 11.7% from medical social workers (**Fig. 3**). In reality, 40.3% of interventions were carried out by nurses, 13.6% by pharmacists, and 1.3% by medical social workers, indicating that there was a large discrepancy among the occupations. Additionally, 42.9% of patients reported no intervention by anyone other than a physician (**Fig. 3**). Regarding the interventions in SDM that HCPs considered, nurses generally agreed that



Patient question: What aspects of drug therapy are important for you? (Select the top five.) HCP question: What topics do you believe patients consider important in treatment? (Select the top five.)



Fig. 2. Differences in treatment preferences among patients and HCPs. Differences were calculated by subtracting the percentage of HCPs from the percentage of patients.

*p<0.05, †p<0.01 by Fisher's exact test. Colors in the table indicate frequency of responses: dark pink, most frequent; light pink, second most frequent; lilac, third most frequent.

HCP, healthcare professional.

nurses should intervene in SDM. Most pharmacists agreed that both nurses and pharmacists should intervene. This number was generally consistent with the actual number of pharmacist interventions (**Fig. 3**). However, patients, as well as physicians and pharmacists, wanted medical social workers to intervene more in SDM than they did in reality. Fewer HCPs than patients indicated a desire for intervention by medical social workers, and none of the nurses noted a willingness for intervention by medical social workers.

5. Communication satisfaction by the actual role of patients in decision-making

The group whose SDM role was collaborative was satisfied with their communication with their physicians, with 86.4% of the respondents being "very satisfied" or "somewhat satisfied" (**Fig. 4**). Conversely, 60.4% and 73.9% of those with active and passive roles in SDM, respectively, were satisfied.

When surveyed about the actual content of explanations given by HCPs prior to drug treatment, patients were fully informed by their physicians about test results, by physicians and pharmacists about the efficacy and safety of drugs, and by nurses about what to take care of in their daily lives (**Table S4**). In contrast, patients reported inadequate explanations of costs, available healthcare systems, and psychological support by all HCPs. Patients were less satisfied with their physicians' communication when non-physician staff were not involved in decision-making (**Table S5**). Patients also desired non-physician staff intervention, suggesting that IP-SDM may increase patient satisfaction.



Patient question: Which HCPs, besides physicians, do you believe should participate in patients' decision-making? HCP question: Which HCPs other than physicians participated in SDM?



Fig. 3. Desires for and reality of intervention of non-physician medical staff in decision-making among patients and HCPs. Extract of the single strongest desire or preference.

HCP, healthcare professional; SDM, shared decision-making.



How satisfied are you with communication with your physician on treatment?

Fig. 4. Communication satisfaction by decision-making role. Details of the selection of response options are provided in subsection 4 of the Materials and Methods section.



A Do you know about the concept of SDM?



Very knowledgeable; aware of SDM in daily practice

Very knowledgeable; not aware of SDM in daily practice

- Somewhat knowledgeable
- Have heard of but not very knowledgeable
- Have never heard of SDM

B Have you implemented SDM?



Fig. 5. Awareness and implementation of SDM among HCPs. (A) Awareness of SDM among HCPs; (B) Implementation of SDM among HCPs. HCP, healthcare professional; SDM, shared decision-making.

6. HCPs' awareness and implementation of SDM among HCPs

The survey of HCP awareness of SDM revealed that 23.5% of physicians, 47.6% of nurses, and 19.5% of pharmacists responded that they were "aware" of SDM in their daily practice (**Fig. 5A**). In contrast, 45.7% of physicians, 25.9% of nurses, and 39.6% of pharmacists responded that they were not familiar with SDM, indicating that nurses had a higher level of awareness of SDM than did the respondents from other professions (**Fig. 5A**). Of note, in the survey on the frequency of SDM, the total percentages of SDM performed "every time" or "sometimes" were 68.6% for physicians, 77.1% for nurses, and 48.7% for pharmacists (**Fig. 5B**).

In the survey of nurses and pharmacists on their attitudes toward SDM implementation, more than 99% and 95% of nurses and pharmacists, respectively, expressed a desire to intervene (**Fig. S2**). However, despite the desire to do so, both nurses and pharmacists cited "busy with other work" and "no system for intervention (no one in charge)" as the main reasons for not implementing SDM, followed by "intervention not reflected in salary" and "intervention not evaluated" (**Fig. S3**).



DISCUSSION

This study is the first to identify desires regarding SDM and actual conditions of SDM among patients with gynecological cancers and HCPs in Japan. This research is also important because it examined SDM in gynecological cancer patients and simultaneously investigated patients' and HCPs' preferences and values regarding drug therapy options for gynecological cancer. The survey findings showed that many Japanese gynecological cancer patients prefer to have an active role in SDM and make decisions regarding their treatment for themselves.

A systematic review of 22 studies (breast, prostate, colorectal, lung, gynecologic, and other cancers) examined patients' desire for and actual participation in SDM and the degree of concordance across cancer types. Although many patients expressed desire to participate in SDM, the percentage of those who did so was lower [22]. Among those who expressed interest in SDM, 32% of patients with gynecological cancer preferred a shared role, but only 18.9% shared a role in decisions regarding cancer treatment and other issues [22]. In this study, the percentage of patients experiencing collaborative decision-making with HCPs was 14.3%, which was lower than that of patients who desired SDM regardless of the timing of cancer treatment (perioperative or advanced/recurrent stage) or the type of cancer (endometrial or ovarian cancer). This is lower than the 26.0% reported previously among breast cancer patients in Japan [4] and the 43.0% observed among French patients with digestive cancer [26]. There are cultural differences in decision-making styles, particularly between East Asia and North America. Japanese patients seem to have a unique decisionmaking process, which contrasts with the varying preferences for decision-making speed and communication styles across different East Asian countries. Thus, SDM may benefit Japanese people more than those in Europe, the United States, or other East Asian countries because of their perceived negative, indecisive, and indirect communication preferences [27]. An online survey among patients in Hong Kong, the Philippines, Australia, and the United States (n=2,071) showed that, while values such as empathy and SDM are shared among different countries, preferences diverge in terms of how information is shared, and the importance of the doctor-patient relationship [28].

In Japan, the high-cost medical care reimbursement system exempts patients from paying more than a certain amount of medical expenses, including drug costs. Therefore, the actual patient burden is fixed, even for expensive drugs. Even in such an environment, gynecological cancer patients in Japan suffer from financial toxicity (financial burden) [29,30], which can affect their physical and mental health and potentially lead to anxiety about their future. It is also essential to consider that many Japanese patients tend to follow their doctors' recommendations because of the prevalence of paternalism [1,31]. Nevertheless, we expect that patients' concerns will be attended to through SDM and that they will have easier access to support through IP-SDM.

Over 50% of patients in the present study participated in the active SDM role, consistent with figures of 48.8% [4] and 49.1% [26] reported in previous studies. In the Japanese population, patient-preferred roles in SDM have changed from passive and physician-centered to active and patient-centered [32]. In our study, patients who collaboratively made decisions were more satisfied with their communication with HCPs. Similarly, a previous study reported that Japanese breast cancer patients who collaboratively made decisions about their drug therapy setting were more satisfied with their communication with HCPs [4]. This highlights the importance of collaborative decision-making between patients and HCPs. Thus, it is



necessary to address the future demand for collaborative decision-making. Establishing SDM in a collaborative environment may lead to improved satisfaction with pharmacotherapy.

There is a gap in SDM between patients and HCPs, not only in the level of implementation of SDM by HCPs but also in the information provided for decision-making. Differences in perceptions of cancer treatment were evident. Patients prioritized cancer cures, whereas HCPs prioritized prolonging survival. Patients and HCPs (i.e., physicians and nurses) also differed in the importance attributed to specific side effects. Pharmacists seemed to understand patients' concerns about side effects better than other HCPs, suggesting that pharmacists can play an important role in patients' decision-making. Detailed explanations by pharmacists, more information about adverse events, and appropriate monitoring of adverse events by all HCPs can help to alleviate anxiety and minimize adverse events. To address the gap in expertise and knowledge of cancer therapy between patients and HCPs, HCPs should use the IP-SDM.

The survey showed that most patients desired involvement from HCPs other than physicians in their treatment decisions. However, 43% of patients received no input from medical staff other than physicians—only 13.6% of patients received intervention from a pharmacist despite 28.3% desiring it. An organized approach to patient care that leverages pharmacists' expertise may facilitate patient decision-making. It may improve medication compliance and drug treatment satisfaction while reducing patient conflict [33,34]. Patients selected medical social workers as the third most desired HCP for SDM intervention. Medical social workers in Japan support cancer patients and their families. Patients reported that HCPs needed to provide more explanations before starting drug treatment, including regarding treatment costs. Women increasingly contribute to household finances in Japan; therefore, a cancer diagnosis can have financial implications [35]. It is therefore essential to consider the cost of treatment for female cancer patients and provide employment support during treatment. This requires cooperation among medical social workers, physicians, and patients and consideration of appropriate treatment choices according to life stage.

The group with a collaborative role in SDM was satisfied with their communication with physicians (86.4% satisfaction). Patients considered they were fully informed about test results, drug efficacy and safety, and daily care by their HCPs, including physicians, nurses, and pharmacists. However, they reported inadequate explanations of costs, available healthcare systems, and psychological support from HCPs. Patients were often less satisfied with communication with their physicians when there was no non-physician staff intervention in decision-making (**Table S5**). Patients also desired intervention by non-physician staff, suggesting that IP-SDM may be effective in increasing patient satisfaction.

In the survey of SDM awareness among HCPs involved in ovarian and endometrial cancers in Japan, 20% to 24% of physicians and pharmacists and about 50% of nurses responded that they were familiar with SDM and aware of it in their daily practice, with nurses having the highest level of awareness. A recent report concluded that nurses are the preferred decision-making coaches because of their frequent contact with patients [36]. As such, they may have more opportunities to learn and apply SDM through patient care and consultation because they tend to have closer relationships with patients than other HCPs. Of note, in the present analysis, physicians, nurses, and pharmacists were more likely to implement SDM than to be aware of SDM, indicating a gap between the level of awareness and the actual implementation of SDM. It may be that the concept of SDM has not been established among HCPs, and they lack



understanding of it. Raising awareness of the IP-SDM concept and the talk model is important. HCPs should present options during the "option talk" based on their understanding of the individual patient values and preferences obtained through careful and active listening. Despite a low level of awareness, the high level of SDM implementation may result from the willingness of HCPs to contribute to patients' decision-making. The "SHARE" communication training tool is effective for oncology communication, tailored specifically to Japanese communication preferences and attitudes, and is recommended for Japanese HCPs. Additionally, nurses trained as decision coaches have reported improved overall skills in assisting patients [37]. Therefore, training, including online courses, is recommended for HCPs.

These results indicate that increasing HCPs' understanding of SDM may lead to more patient involvement and greater patient treatment satisfaction. Hospitals should also review SDM organizationally to allow collaborations between HCPs. Although nurses and pharmacists expressed a strong desire to participate in SDM, they are often unable to do so because of their workload or the lack of a system that allows such interventions. As these SDM obstacles cannot be addressed individually, they must be addressed at the organizational level.

The level of SDM implementation in this survey is similar to that reported in studies on breast cancer [5]. In the past, informed consent may have been sufficient given the limited treatment options. However, as more treatment options become available, it is crucial to enhance patient satisfaction with SDM. Gynecologic oncology, particularly ovarian cancer, has seen significant progress in recent years, resulting in a broader range of treatment options [38,39]. Additionally, there is an increasing availability of treatment options for uterine cancer, including immune checkpoint inhibitors, with further advances expected after 2024. Similarly, treatment options for advanced/recurrent cancers are anticipated to increase significantly over time. As a result, SDM will be desired more often. It is also likely that recognition of SDM will increase, allowing the implementation of SDM at the hospital or regional level based on patient preferences.

Only a small percentage of HCPs wanted medical social workers to intervene. Thus, it may be helpful to deepen the mutual understanding between different professions and support patient decision-making in a collaborative (IP-SDM) model. This could help address the lack of explanations and enhance treatment satisfaction. A survey study conducted in Japan on decision-making support provided by HCPs and psychiatric social workers involved in cancer care found that cancer patients often struggle to make decisions at the time of diagnosis, while they are dealing with chemotherapy side effects, and at recurrence or metastasis. Medical staff should actively participate in decision-making during these times [40]. Therefore, HCPs need to use their expertise and facilitate communication and collaboration between the medical staff of different professions according to the patient's situation.

This study had some limitations. First, it was a web-based survey conducted in Japan, and gynecological cancer patients were recruited online by a survey company. This study did not include all gynecological cancer patients, with patients with cervical cancer excluded. This was because cervical cancer is frequently treated with radiation therapy, which has a different side effect profile, and because of the younger age of patients with cervical cancer compared with those with uterine and ovarian cancer; these aspects may have increased confounding factors and made interpretation of the results more challenging. As such, the results cannot be generalized to the overall gynecological cancer patient population. Recall bias cannot be ruled out as, for most patients, more than 1 year had elapsed since the last chemotherapy at



the time of the survey. Second, HCPs comprised physicians, nurses, and pharmacists, so the interpretation is limited. Third, it is possible that patients and their treating medical staff were not surveyed; thus, there may be no correspondence to actual clinical practice. Fourth, the full effect of patient satisfaction with respect to SDM was difficult to determine in this study because data were not collected on the extent to which information and other support was provided. Finally, the impact of SDM was not evaluated except for patient satisfaction; QOL, treatment compliance, and treatment efficacy were not verified. For future studies, both patients and the HCPs involved in their treatment should be surveyed, and actual efficacy and safety data should be assessed.

Among Japanese patients with endometrial cancer and ovarian cancer, approximately 80% of patients expressed the desire to be involved in their own treatment decisions. To enhance patient satisfaction with drug treatment in gynecologic oncology, it is necessary to increase SDM awareness, systematically implement SDM, and address the needs of patients who want to be part of collaborative decision-making, especially in gynecologic oncology, where treatment options are increasing. To this end, future studies stratifying gynecologic cancer patients by cancer type and stage are needed. Evaluating trends in SDM and selected treatments by stage would contribute to optimizing SDM and treatment selection. Moreover, HCPs in Japan may overlook the financial burden of drug treatment or changes in appearance/decrease in activities of daily living due to side effects, so it is expected that mutual understanding between interprofessional workers on aspects of social support for patients will improve so that more interprofessional collaboration in SDM could be encouraged.

ACKNOWLEDGEMENTS

The authors wish to thank Keyra Martinez Dunn, MD, of Edanz (www.edanz.com), for providing medical writing support, which was funded by Eisai Co., Ltd., in accordance with Good Publication Practice guidelines (http://www.ismpp.org/gpp-2022). We wish to acknowledge the Authorized NPO Orange Tea and Women's Cancer Patients Association: Parler for their advice on questionnaire wording and responses to questionnaires. We wish to acknowledge Ovarian Cancer Survivors' Group: SMILEY for their responses to questionnaires, as well as Dr. Tetsuhiro Niidome (Eisai Co., Ltd.) for his help as a publication coordinator.

SUPPLEMENTARY MATERIALS

Table S1Patient questionnaire

 Table S2

 Healthcare professional questionnaire

 Table S3

 Ranking of treatment preferences among patients and HCPs

Table S4Explanations given by healthcare professionals prior to drug treatment



Table S5

Involvement of non-physician HCPs and satisfaction with communication with physicians

Fig. S1

Patients' desires and realities of SDM in treatment timing and cancer types.

Fig. S2

Nurses' and pharmacists' motivation for shared decision-making interventions.

Fig. S3

Reasons why it is difficult for nurses and pharmacists to intervene in shared decision-making.

REFERENCES

- 1. Barry MJ, Edgman-Levitan S. Shared decision making--pinnacle of patient-centered care. N Engl J Med 2012;366:780-1. PUBMED | CROSSREF
- Härter M, Moumjid N, Cornuz J, Elwyn G, van der Weijden T. Shared decision making in 2017: international accomplishments in policy, research and implementation. Z Evid Fortbild Qual Gesundhwes 2017;123-124:1-5. PUBMED | CROSSREF
- Joseph-Williams N, Lloyd A, Edwards A, Stobbart L, Tomson D, Macphail S, et al. Implementing shared decision making in the NHS: lessons from the MAGIC programme. BMJ 2017;357:j1744. PUBMED | CROSSREF
- Shimizu C, Sakata Y, Sakai R, Ikezawa H, Uetaki Y, Matsuoka T. Pharmacotherapy decision-making among patients with breast cancer in Japan: results of an online survey. Breast Cancer 2019;26:799-807.
 PUBMED | CROSSREF
- Wilson SR, Strub P, Buist AS, Knowles SB, Lavori PW, Lapidus J, et al. Shared treatment decision making improves adherence and outcomes in poorly controlled asthma. Am J Respir Crit Care Med 2010;181:566-77.
 PUBMED | CROSSREF
- 6. Kehl KL, Landrum MB, Arora NK, Ganz PA, van Ryn M, Mack JW, et al. Keating NL. Association of actual and preferred decision roles with patient-reported quality of care: shared decision making in cancer care. JAMA Oncol 2015;1:50-8. PUBMED | CROSSREF
- Gattellari M, Butow PN, Tattersall MH. Sharing decisions in cancer care. Soc Sci Med 2001;52:1865-78. PUBMED | CROSSREF
- 8. Hibbard JH, Greene J. What the evidence shows about patient activation: better health outcomes and care experiences; fewer data on costs. Health Aff (Millwood) 2013;32:207-14. PUBMED | CROSSREF
- Kiesler DJ, Auerbach SM. Optimal matches of patient preferences for information, decision-making and interpersonal behavior: evidence, models and interventions. Patient Educ Couns 2006;61:319-41.
 PUBMED | CROSSREF
- 10. Elwyn G, Durand MA, Song J, Aarts J, Barr PJ, Berger Z, et al. A three-talk model for shared decision making: multistage consultation process. BMJ 2017;359:j4891. PUBMED | CROSSREF
- 11. Whitney SN, McGuire AL, McCullough LB. A typology of shared decision making, informed consent, and simple consent. Ann Intern Med 2004;140:54-9. PUBMED | CROSSREF
- Covvey JR, Kamal KM, Gorse EE, Mehta Z, Dhumal T, Heidari E, et al. Barriers and facilitators to shared decision-making in oncology: a systematic review of the literature. Support Care Cancer 2019;27:1613-37.
 PUBMED | CROSSREF
- Légaré F, Stacey D, Gagnon S, Dunn S, Pluye P, Frosch D, et al. Validating a conceptual model for an interprofessional approach to shared decision making: a mixed methods study. J Eval Clin Pract 2011;17:554-64.
 PUBMED | CROSSREF
- 14. Zenda S, Ikeda M, Kawaguchi T, Shomura M, Miyazawa Y, Tauchi J, et al. Multidisciplinary management of fatigue in patients receiving lenvatinib. Kanzo 2012;62:601-12. CROSSREF
- 15. Edwards A, Evans R, Elwyn G. Manufactured but not imported: new directions for research in shared decision making support and skills. Patient Educ Couns 2003;50:33-8. **PUBMED | CROSSREF**
- 16. Fallowfield LJ, Hall A, Maguire GP, Baum M. Psychological outcomes of different treatment policies in women with early breast cancer outside a clinical trial. BMJ 1990;301:575-80. PUBMED | CROSSREF



- Kashaf MS, McGill E. Does shared decision making in cancer treatment improve quality of life? A systematic literature review. Med Decis Making 2015;35:1037-48. PUBMED | CROSSREF
- Yamagami W, Nagase S, Takahashi F, Ino K, Hachisuga T, Aoki D, et al. Clinical statistics of gynecologic cancers in Japan. J Gynecol Oncol 2017;28:e32. PUBMED | CROSSREF
- 19. Nakai H, Higashi T, Kakuwa T, Matsumura N. Trends in gynecologic cancer in Japan: incidence from 1980 to 2019 and mortality from 1981 to 2021. Int J Clin Oncol 2024;29:363-71. PUBMED | CROSSREF
- 20. Gheorghe AS, Dumitrescu EA, Komporaly IA, Mihăilă RI, Lungulescu CV, Stănculeanu DL. New targeted therapies and combinations of treatments for cervical, endometrial, and ovarian cancers: a year in review. Curr Oncol 2022;29:2835-47. PUBMED | CROSSREF
- Tronconi F, Nero C, Giudice E, Salutari V, Musacchio L, Ricci C, et al. Advanced and recurrent endometrial cancer: state of the art and future perspectives. Crit Rev Oncol Hematol 2022;180:103851.
 PUBMED | CROSSREF
- 22. Tariman JD, Berry DL, Cochrane B, Doorenbos A, Schepp K. Preferred and actual participation roles during health care decision making in persons with cancer: a systematic review. Ann Oncol 2010;21:1145-51. PUBMED | CROSSREF
- Luketina H, Fotopoulou C, Luketina RR, Pilger A, Sehouli J. Treatment decision-making processes in the systemic treatment of ovarian cancer: review of the scientific evidence. Anticancer Res 2012;32:4085-90.
 PUBMED
- 24. Degner LF, Sloan JA, Venkatesh P. The Control Preferences Scale. Can J Nurs Res 1997;29:21-43. PUBMED
- Azuma K, Kawaguchi T, Yamaguchi T, Motegi S, Yamada K, Onda K, et al. Development of Japanese versions of the Control Preferences Scale and Information Needs Questionnaire: role of decision-making and information needs for Japanese breast cancer. Patient Prefer Adherence 2021;15:1017-26. PUBMED | CROSSREF
- Nizet P, Grivel C, Rabeau P, Pecout S, Evin A, Labarthe SP, et al. Patients' preferences in therapeutic decision-making in digestive oncology: a single centre cross-sectional observational study. Sci Rep 2023;13:8534. PUBMED | CROSSREF
- 27. Yates JF, de Oliveira S. Culture and decision making. Organ Behav Hum Decis Process 2016;136:106-18. PUBMED | CROSSREF
- 28. Sheeran N, Jones L, Pines R, Jin B, Pamoso A, Eigeland J, et al. How culture influences patient preferences for patient-centered care with their doctors. J Commun Healthc 2023;16:186-96. PUBMED | CROSSREF
- Kajimoto Y, Shibutani T, Nagao S, Yamaguchi S, Suzuki S, Mori M, et al. Validity of the COmprehensive Score for financial Toxicity (COST) in patients with gynecologic cancer. Int J Gynecol Cancer 2022;32:1189-95. PUBMED | CROSSREF
- Kajimoto Y, Honda K, Suzuki S, Mori M, Tsubouchi H, Nakao K, et al. Association between financial toxicity and health-related quality of life of patients with gynecologic cancer. Int J Clin Oncol 2023;28:454-67. PUBMED | CROSSREF
- 31. Leflar RB. The cautious acceptance of informed consent in Japan. Med Law 1997;16:705-20. PUBMED
- 32. Watanabe Y, Takahashi M, Kai I. Japanese cancer patient participation in and satisfaction with treatmentrelated decision-making: a qualitative study. BMC Public Health 2008;8:77. PUBMED | CROSSREF
- 33. Lam MS, Cheung N. Impact of oncology pharmacist-managed oral anticancer therapy in patients with chronic myelogenous leukemia. J Oncol Pharm Pract 2016;22:741-8. PUBMED | CROSSREF
- 34. Kawaguchi T, Azuma K, Yamaguchi T, Soeda H, Sekine Y, Koinuma M, et al. Development and validation of the Japanese version of the Decisional Conflict Scale to investigate the value of pharmacists' information: a before and after study. BMC Med Inform Decis Mak 2013;13:50. PUBMED | CROSSREF
- Gender Equality Bureau Cabinet Office. Basic data regarding marriage and family [Internet]. Tokyo: Gender Equality Bureau Cabinet Office; 2020 [cited 2024 Feb 27]. Available from: https://www.gender. go.jp/kaigi/kento/Marriage-Family/8th/pdf/1.pdf.
- Olling K, Steffensen K, Berry L, Stacey D. The invisible roles of oncology nurses in shared decision making. Cancer Care Res Online 2021;1:e0007. CROSSREF
- 37. Fujimori M, Shirai Y, Asai M, Akizuki N, Katsumata N, Kubota K, et al. Development and preliminary evaluation of communication skills training program for oncologists based on patient preferences for communicating bad news. Palliat Support Care 2014;12:379-86. PUBMED | CROSSREF
- Park JY, Lee JY, Lee YY, Shim SH, Suh DH, Kim JW. Major clinical research advances in gynecologic cancer in 2021. J Gynecol Oncol 2022;33:e43. PUBMED | CROSSREF
- Veneziani AC, Gonzalez-Ochoa E, Alqaisi H, Madariaga A, Bhat G, Rouzbahman M, et al. Heterogeneity and treatment landscape of ovarian carcinoma. Nat Rev Clin Oncol 2023;20:820-42. PUBMED | CROSSREF
- 40. Kawasaki Y, Hirai K, Nii M, Kizawa Y, Uchinuno A. Actual situation of decision-making support from medical staff when cancer patients make treatment choices. Future Oncol 2023;19:2263-72. PUBMED | CROSSREF