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Exploring cervical cancer screening awareness, beliefs, barriers, and practices among Indonesian Muslim women in Japan: a qualitative study

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Abstract

Background The population of migrant women in Japan is increasing, with a corresponding need for access to health services. Cervical cancer screening (CCS) coverage remains very low within this group. This is an increasingly difficult challenge for Muslim migrant women due to their religious values and beliefs. However, research addressing the awareness, beliefs, barriers, and practices of Muslim migrant women in Japan regarding CCS is lacking. This study aims to fill this gap by exploring CCS awareness, beliefs, barriers, and practices among Indonesian Muslim women in Japan.

Methods A qualitative study was conducted in Osaka, Japan, involving in-depth interviews with 12 Indonesian Muslim women. Data were collected between January and April 2023. All participants were between 20 and 50 years old, Muslim, married, had resided in Japan for a minimum of 3 years, and had no cervical cancer diagnosis.

Results The participants demonstrated awareness regarding cervical cancer and CCS. However, in actual practice, they encountered several obstacles that might have prevented them from undergoing CCS, including language barriers, lack of information, pain, and psychological factors. All participants preferred female doctors for CCS procedures.

Conclusions This research provides information regarding factors that influence Indonesian Muslim migrant women seeking CCS. The need for structured and organized efforts is critical to improve the healthcare system and increase Japan's readiness to accept not only Muslim patients but also migrant patients in general.

Trial registration Not applicable.

Keywords Muslim, Migrant women, Cervical cancer, Screening, Awareness, Beliefs, Barriers, Practices

Background

The number of Muslims in Southeast and East Asia is projected to increase by approximately 49.5 million by 2030 [1]. The Muslim migrant community is among the groups whose populations have increased in Japan. Most of Japan's Muslim population originates from Asia. Currently, Indonesians are the largest migrant group in Japan originating from a Muslim-majority country [2]. As of December 2023, Japanese government data recorded 149,101 legal residents with Indonesian citizenship [3].

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According to the Ministry of Justice's Statistics on Foreign Residents Registered (2018), the total number of Indonesians residing in Osaka was 3,164.

Many Muslim women give birth and raise families away from their home country, creating a high demand for women's healthcare globally [4]. The influence of modesty and fatalism on Muslim women's health beliefs and behaviors may be particularly relevant, as services for women's health issues, such as breast and cervical cancer screening (CCS) and reproductive and gynecological care, likely pose greater challenges for Muslim women than for women of other faiths [5]. Among the various healthcare needs of women of reproductive age, CCS is an essential service that should be provided [6, 7].

Cervical cancer affects women aged 20–30 years who are of reproductive age; however, early detection can preserve fertility and save lives [8]. In developed countries, effective prevention programs and early-stage treatment have reduced cervical cancer cases by approximately 80% [9]. By implementing the World Health Organization's new strategy, which targets 90% vaccination in adolescent girls, 70% screening in women of childbearing age, and 90% treatment for women already diagnosed with cervical cancer, new cases of cervical cancer may be reduced by more than 40% and the number of related deaths by approximately 5 million by 2050 [10]. However, the CCS rate among migrant Muslim women is lower than the average in host countries, which may be due to barriers related to beliefs, religious values influencing gender interactions (e.g., preference for female clinicians), and fatalism. A wide spectrum of social, cultural, religious, and political factors leads to lower CCS uptake among migrant Muslim women [11]. Regular CCS is recommended for sexually active women.

In Japan, every woman of reproductive age who has health insurance is provided a free coupon for CCS according to local government policy. City or county offices provide coupons to subsidize annual Pap tests for eligible residents. These coupons can be used at select local clinics, with the procedure then provided for free or for a small fee. Coupons are automatically sent to eligible residents, usually selected by age. If women are not registered, they must contact the city office to confirm their eligibility. Some cities have set up coupon distribution at hospitals; patients must show their ID to receive these benefits. The system varies depending on the city or subdistrict. In total, 2–4 weeks are required to obtain results when using the coupon service [12].

In this study, we focus on Indonesian Muslim migrants in Japan. According to the law, it is mandatory for all residents in Japan, including migrants, to register for health insurance through employment-based schemes for regular workers or community-based schemes for workers without regular jobs [13]. However, no guidelines have been established for Japanese healthcare providers on how to communicate with migrant Muslim patients. Therefore, Muslim patients in Japan are considered a vulnerable group with limited information and opportunities to meet their healthcare needs in ways that align with their religious beliefs, and they face many barriers that hinder their access to healthcare services, including CCS. To the best of our knowledge, no previous studies have assessed the awareness, beliefs, barriers, or practices regarding CCS among Indonesian Muslim women in Japan. The aim of this study was to investigate and explore the awareness, beliefs, barriers, and practices related to the challenges they face in accessing CCS.

Methods

Design

A qualitative study was conducted in Osaka, Japan, involving in-depth interviews with Indonesian Muslim women. This qualitative study employed purposive sampling to recruit participants. Data were collected between January and April 2023. Eleven interviews, each lasting between 30 and 40 min, were conducted face-to-face with 4 participants in their homes with no other family members present, 7 participants in a restaurant with minimal distraction from other patrons or restaurant staff, and one additional interview conducted via Zoom at the participant's request due to COVID-19 pandemic restrictions in Japan.

Participants

Eligibility was determined based on the following criteria: female, Muslim, married, residence in Japan for a minimum of 3 years, aged between 20 and 50 years, and no diagnosis of cervical cancer. Individuals with mental illness (e.g., postpartum depression) were excluded from participation. Many Muslim migrant women in Japan are vulnerable to postpartum depression [14]. According to a previous study, women with postpartum depression find it difficult to concentrate when communicating, indulge in negative self-talk, are emotionally overwhelmed, and withdraw from society [14, 15]. Therefore, they find it difficult to discuss or answer the researchers' questions. Consequently, before the interview, the researcher explained the interview process by initiating a casual conversation to observe whether the participants could communicate and respond well to the conversation.

The researchers selected women who had resided in Japan for a minimum of 3 years, in accordance with recommendations from the American Cancer Society and the US Preventive Service Task Force. These recommendations indicate that CCS examinations are conducted every 3 years for women of reproductive age [16]. The

rationale for including married female respondents was to accommodate Islamic religious values and beliefs that permit sexual intercourse after marriage. The total number of participants in this study was 12. Data was considered saturated when no new codes/information emerged from the data. The authors (YRA and NK) reached a consensus that no more new concepts would emerge from additional interviews. However, one additional participant was recruited to ensure that data saturation was achieved.

Data collection

We developed and finalized the interview guidelines after a literature review (Appendix 1). Open-ended questions were developed in the interview guide relating to participants' knowledge, beliefs, barriers, and experiences regarding cervical cancer severity, prevention, and screening. The guide was created based on a review about the barriers related to CCS among immigrant Muslim women and the Champion Health Belief Model [11, 17]. The Health Belief Model (HBM) applied in this study focused on evaluating awareness about cervical cancer susceptibility and beliefs about cervical cancer in terms of perceived severity, benefits of taking action, and the barriers hindering action, which ultimately influence an individual's health practices [17]. Two pilot interviews with Muslim women were conducted to identify the weaknesses and limitations of the interview guide [18]. After the purpose of the research was explained and the voluntary nature of participation was made clear, all participants signed a written consent form for audio recording. Following the interview, a short demographic questionnaire was completed assessing age, duration of marriage, length of stay in Japan, birth experience in Japan, CCS experience in Japan, reason for staying in Japan, educational level, Japanese language level, CCS history, and Japanese health insurance (Appendix 2). The data obtained were kept confidential, and the interviews were conducted by the first researcher in a comfortable, quiet, and distraction-free room. Any unclear points were clarified, and non-verbal information was also recorded. All participants were awarded a shopping voucher worth ¥2000 (13 USD).

Data analysis

Interviews were conducted in Indonesian and recorded using an integrated circuit recorder. Subsequently, 12 recordings were transcribed in their entirety. Thematic content analysis was performed to identify emerging and recurring themes using an inductive approach. A six-phase framework guided the analysis, which included the following steps: (1) organizing and preparing the data, (2) reading through all the data, (3) coding the data, (4) identifying themes, (5) representing the data and themes, and (6) interpreting the data [19]. The data were managed using the NVivo V.14 software (QSR International, Burlington, MA, USA). Each interview was transcribed in its entirety by research assistants trained for this specific purpose. A qualitative approach, particularly thematic analysis, was selected to investigate the awareness, beliefs, perceptions, and practices related to CCS among Indonesian Muslim women residing in Japan. Two researchers undertook an independent and continuous review of the transcriptions, employing qualitative content analysis to produce themes and sub-themes. All Indonesian transcriptions were translated into English by professional translators. Additionally, a researcher fluent in both languages compared the Indonesian and English versions sentence by sentence to ensure translation accuracy and correct grammatical errors. After completing the content analysis process, four themes were identified. Several distinctive quotes from participants were selected to support each theme and answer the research questions. Participants' names were replaced with numbers (e.g., P1) to ensure confidentiality.

Accuracy was maintained throughout the study using several strategies such as prolonged engagement with participants and collecting elaborate descriptions and supporting quotes representing all participants, which lent credibility to the information obtained. Although small, the sample exhibited a saturation of views. In addition, the researcher gave participants the opportunity to reconsider their responses during their previous interactions. The researchers conducted repeated checks, peer debriefing, and member checking throughout the study to identify potential biases, strengthen the credibility of the study, gain insights, and consider alternative interpretation [20]. To conduct member checking, we summarized or repeated previously provided information to the participant. We followed up the participants telephonically to obtain their input about the findings and interpretations. The participants were offered the opportunity to add, change, or remove any parts that did not reflect their experience.

Ethical considerations and consent to participate

All respondents were provided with comprehensive information about the study and informed about research confidentiality. Each participant volunteered and provided verbal and written consent. The study was approved by the Institutional Review Board of the Graduate School of Nursing at Nagoya City University (No. 22026–2). All methods were conducted in accordance with the relevant guidelines and regulations (Declaration of Helsinki).

Results

Participant characteristics

Twelve women participated in the study. The mean age of the participants was 32.33 ± 6.18 years, with a mean duration of marriage of 7.66 ± 6.05 years (Table 1). While the majority of participants (91.7%) had experienced CCS at least once, one individual had no prior history of the procedure. Additional demographic characteristics are presented in Table 2. The qualitative content analysis yielded three primary themes, which were extracted and grouped based on their relevance to the research objectives. These themes include cervical cancer awareness, beliefs about

Table 1 Participant characteristics

Characteristic	Min	Max	Mean ± SD
Age (years)	25	49	32.33 ± 6.18
Duration of marriage (years)	2	25	7.66 ± 6.05
Length of stay in Japan (years)	4	15	7.66 ± 3.44
Birth experience in Japan (times)	0	3	1.33 ± 0.77
CCS experience in Japan (times)	0	6	1.50 ± 1.50
		Frequency	**Percentage**
Educational level	[a]Senior high school	1	8.3
	[b]Diploma	5	41.7
	Bachelor	6	50
	Graduate/Postgraduate	0	0
Reason for stay in Japan	Work	5	41.7
	Study	0	0
	Stay with family	7	58.3
Japanese language level	Cannot speak at all	1	8.3
	Speaks a little	3	25
	Can engage in everyday conversations	4	33.3
	Can report and understand conversations using medical terms	2	16.7
	Speak fluently	2	16.7
CCS history	Yes	11	91.7
	No	1	8.3
Japanese health insurance	Yes	12	100
	No	0	0

Abbreviations: *CCS* Cervical cancer screening, *CC* Cervical cancer

[a] Senior high school: The level of education after junior high school, the equivalent of grades 10–12 in other education systems

[b] Diploma: A vocational qualification, which is considered to be below a bachelor's degree level, categorized as "Diploma I," "Diploma II," "Diploma III," or "Diploma IV" depending on the duration of the program, with higher numbers signifying longer programs (based on the Indonesian education system)

Table 2 Themes and Sub-themes

Themes	Sub-Themes
Cervical cancer awareness	Knowledge of cervical cancer
	Knowledge of cervical cancer prevention
	Knowledge of CCS
	Importance of CCS
Beliefs about cervical cancer and CCS	Perceived severity of cervical cancer
	Perceived benefit
	Perceived barriers
Practice towards CCS	CCS experience in Japan
	Government policy
	Muslim-friendly health services

Abbreviations: CCS Cervical cancer screening, *CC* Cervical cancer

CCS, and practices towards CCS. Each theme is elaborated upon below, including illustrative quotations from participants, their identification numbers, and their ages.

Theme 1: cervical cancer and CCS awareness

Awareness of cervical cancer and CCS was the key theme identified (Table 2). Other sub-themes linked to this key theme included knowledge of cervical cancer, cervical cancer prevention, CCS, and the importance of CCS. Participants' responses, when asked about the importance of CCS, indicated an increasing level of knowledge about CCS.

Sub-theme 1.1: knowledge of cervical cancer

Participants were able to explain their understanding of cervical cancer when asked.

> *"Cancer attacks the mouth of the cervix, then… er… one of the dangerous diseases that affects women in the world, then… there are many stages, then… if you get cervical cancer, usually, you die." (P2, 25 years old).*

> *"As far as I know, cancer is in the cervix, and there are many causes. One of them is, free sex, changing partners, yes… from lifestyle too, various causes, just like that, then what else?" (P3, 37 years old)*

Sub-theme 1.2: knowledge of cervical cancer prevention

Eleven participants said that a healthy lifestyle is an important point for preventing cervical cancer, and six participants believed that receiving the HPV vaccine and not changing sexual partners can prevent cervical cancer.

> *"Healthy lifestyle, right? You have to exercise, eat vegetables and fruits, a healthy lifestyle, Insha Allah later to the body too, right, from inside there is the virus." (P9, 29 years old)*

> *"The prevention, well, I've heard it said that […] if the women are still young, it can be prevented by […] what's it called? Like vaccines, HPV vaccine for cervical cancer. Well… and genital hygiene, maybe not changing partners, living a healthy life." (P2, 25 years old).*

Eight participants mentioned Pap smears as a preventive measure for cervical cancer, others seemed to know the procedure but did not know what the procedure was called.

> *"In my opinion? Yes, it can be prevented because most of the factors are more external. Yes, as far as I know, people who have experienced cervical screening. From what I have seen and read, it seems like… er… most of the causes are external factors, so we can prevent it by, if the woman does a Pap smear, so, yes." (P12, 34 years old).*

> *Maybe I just do not know what kind of examination it is, but maybe there is. Vaginal examination, right…To see if there is cancer in the uterus…or not. That is what I know, anyway; like a transvaginal ultrasound, I think a tool is inserted." (P8, 28 years old).*

Sub-theme 1.3: knowledge of CCS

Seven participants were able to explain the CCS procedure based on their experiences during previous examinations.

> *"[…] we were told to go to bed, so we were told to lie down, we were told to open it, uh, put our feet up, right, open our legs, that is it, we were told to do that, then, they put a tool in like that, right? That is it, it hurts, after that it hurts, that's all I know" (P7, 31 years old).*

> *"Oh, the screening, I do not see it in detail, because it is in that position, yes, it is just that it is taken, er… swabbed, I opened it, then put something that was swabbed, then it will be examined, whether there are normal cells or not, that is what, what is the name for the cervical cancer examination that I have done, it is a Pap smear, the procedure is like that." (P12, 34 years old).*

Sub-theme 1.4: importance of CCS

All 12 participants acknowledged the importance of CCS.

> *"Important, because we can know earlier if there is something different in our body or there is an abnormality like that, so we can prevent it." (P1, 33 years old)*

> *"Because if we realize that we are healthy, yes, but we do not know our partner…that is how it is, right? let alone a partner who is far away, working late that is it. Especially for those who are more promiscuous." (P5, 31 years old).*

Even though all participants said that CCS was important, only two participants routinely carried out CCS checks every 3 or 5 years. Nine participants underwent CCS only during pregnancy, as the procedure is included by default with pregnancy checks in Japan. Meanwhile, one person said she had never been checked for cervical cancer.

> *"Oh, I see. When I first learned, I did not under-*

stand what a Pap smear was, so it was only when I was here, meaning only when I was pregnant, yes, pregnant, right, maybe because it happened here, in Japan." (P3, 37 years old).

"I think it was my first experience for cervical cancer screening; yes, when I was pregnant, the examination went with the pregnancy examination, so it might be a package." (P1, 33 years old).

Theme 2: beliefs about cervical cancer and CCS

This theme illustrated women's beliefs about cervical cancer and CCS. The sub-themes that fell under this main theme were: (i) perceived severity of cervical cancer, (ii) perceived benefits of CCS, and (iii) perceived barriers to CCS.

Sub-theme 2.1: perceived severity of cervical cancer

All respondents acknowledged the severity of cervical cancer. One respondent said the level of severity that would be experienced depended on the stage of the cancer. Meanwhile, other participants mentioned the fatal effects of cervical cancer.

"If the stages are still 1 or 2, maybe they can still be prevented; for the 2nd stage, maybe the treatment isn't too severe, right? […]. But if it is 3 or already stage 4, the cancer can spread everywhere; it could be the cervix. You have to remove it; if not, it might spread to others like glands including lymph nodes, that means it is already endangering our lives." (P1, 33 years old).

"[…] that is, I think it is really dangerous because if a person who has cervical cancer, yes, the assumption is that they will die soon, just like that, I think" (P2, 25 years old)

Sub-theme 2.2: perceived benefits

Seven participants said that CCS was very beneficial for their peace of mind if the results obtained were negative. Moreover, three participants said that peace of mind is not only felt by women but also by their husbands.

"Relax, relieved, when you are told the results, there is no virus, no bacteria, that's it, right? Insha Allah the couple also feel the same, right? Hahaha…" (P5, 31 years old)

"There is a lot, really […] Actually, if it's accounted for, it is because, at that time, the results were negative, so, yeah, we can feel a bit calm. So, in the future, be more careful, maintain sleep patterns, cleanliness, the environment, is it?" (P6, 31 years old)

Only one participant said that CCS was not beneficial for her because it would make her mind uneasy, anxious, and afraid of the results, so she decided to opt out of the procedure.

"If you look at other types of cancer, maybe the prevention benefits are good. But for me, no. Because, right, my mum also has cancer, she was detected early. I saw […] how she vomited in chemotherapy, but for me, if I have to prevent first, until now, there is no thought like that. Not interested, […]" (P4, 49 years old).

Sub-theme 2.3: perceived barriers

Language was one of the barriers most frequently mentioned by participants in CCS, along with pain, embarrassment, and discomfort. Half of the participants mentioned that their husbands acted as translators, which created new problems, as not all information conveyed by the doctor was translated accurately to the women. Thus, some important information was missed.

"It seems like the doctor has said everything, but my husband did not tell me everything, I do not know… let us just get straight to the point." (P5, 31 years old)

"Just because he told me more to the point, that is what I really need to know, that is all. So, the information that I do not know, well, I do not know either, […] I think it is better with a translator […] all full information, that is all." (P7, 31 years old).

All participants said that they were actually embarrassed when the doctor performed CCS on them, due to having to show their intimate parts during the examination procedure, while eight participants said that they felt pain and discomfort.

"[…] wherever it's called, we have to open our sensitive part, embarrassed for sure, inevitably, anyway. It's embarrassment, right, and also too painful," (P4, 49 years old)

"This is a speculum, if we nervous and tense, yes, the first time, it hurts. But it hurts more when the sample is taken, the pain like when you have a hip pain. He-em, er… dysmenorrhea, more or less like dysmenorrhea." (P5, 31 years old).

Theme 3: practice towards CCS

Sub-theme 3.1: CCS experience in Japan

Eleven participants received CCS during their first pregnancy check-up, but eight of them did not know that they had undergone CCS, because the doctor or midwife did

not explain it. They only realized this after receiving the examination results.

> *"Oh, here (Japan), Pap smears are included in one (pregnancy check-up) package, right? Then I did not realize it either, hahaha… Because the doctor did not say anything beforehand, just said all the test results were normal." (P8, 28 years old).*

> *"So at first, I did not know that there was a Pap smear examination; when I was pregnant for the first time in 2015, the first time I came to Japan, I immediately became pregnant, then at the beginning of the first trimester there were a lot of examinations, it turns out I only found out after I did the first individual Pap smear, then the doctor said, when you're pregnant there is usually an examination she said Pap smear, the doctor said it was like that for my first pregnancy." (P12, 34 years old).*

Half of the participants said that they received a recommendation from the doctor for further CCS examination, while two participants said they were unaware of this information because their husbands, who acted as their translators, did not convey it. The two participants also stated that they would have been willing to undergo CCS if they knew that there was a recommendation.

> *"I do not think so because my husband didn't talk about that (recommendation), if there is that recommendation for screening, I would like to go." (P2, 25 years old)*

> *"My husband did not say to have a Pap smear; the doctor just made sure I did not give birth again soon; the normal interval is one year, that is all." (P7, 31 years old)*

Sub-theme 3.2: government policy (coupon, suggestion)

In Japan, the government provides free coupons for CCS; however, nine participants were unaware of this and said they had never received the coupon, while two of them said that they may have received a coupon, but they did not realize it because of the abundance of letters coming in.

> *"At first last year I wanted to check, what is wrong, right? In fact, I was surprised because I did not get the coupon; this cannot be covered!" (P3, 37 years old)*

> *"No, never…or maybe I just wasn't paying attention because a lot of letters came into my mailbox, so…" (P1, 33 years old)*

One participant said she received a CCS coupon once 2 years before getting married but did not undergo CCS.

> *"Once, but it has been a long, long time… just in… 2017 if I am not mistaken. In Okayama; I was still single. So, I did not go, because I was not yet married." (P6, 31 years old)*

Sub-theme 3.3: Muslim-friendly health services

As Muslim women, all participants preferred female doctors to perform CCS procedures on them. However, if no female doctors were available, male doctors were acceptable. Their husbands were understanding when conditions were not as they expected. This was related to their comfort during the examination procedure.

> *"Uh-huh, yes, most privacy issues are because we are women, right…I want the one who handles it, a female doctor too, like that. But, if the female doctor is not around, there is no problem with the male doctor. For my husband, the important thing is health." (P8, 28 years old).*

> *"Actually, the problem is that it's uncomfortable. It is getting more and more uncomfortable because of the process because, as a Muslim, I am looking for a doctor for the first time; I do not know why ob-gyn doctors are mostly men… but thank God, the last time I got a female doctor when I was pregnant, the first one I got was a male doctor. I felt that even with the female doctor, I felt uncomfortable, basically because the position was wide open…" (P12, 34 years old).*

All participants stated that they had no problems receiving health services in Japan. However, they mentioned several preferences when visiting health services as Muslim women, including a more private examination area, fewer health workers passing through the room, and a place of worship that they can use when they are queuing in the waiting room, because sometimes the waiting time coincides with prayer time.

> *"If the examination, anyway, is satisfactory. But, what, maybe, anyway, when the results came out, in that room, right, there were also other nurses, well maybe the nurse heard or something, maybe it did not feel good there. Even though the results are good, … Maybe the results are bad, right, and they do not want to be heard by others, right?" (P2, 28 years old).*

> *"The first hope is actually when we are in the process of waiting at the hospital, right? I have to pray during that time. I feel like it's difficult to find a prayer room in the hospital. I don't expect to have a prayer*

room, just a small and clean room enough for me. Last time it happened, when I wanted to pray, but they didn't provide a place, so they advised me to look for it near the emergency stairs, so we really hope that in the future, they have a special place at the hospital." (P12, 34 years old).

Discussion

This study aimed to explore CCS awareness, beliefs, barriers, and practices experienced by Indonesian women in Osaka, Japan. The findings could be divided into four main themes: cervical cancer and CCS awareness, beliefs about CCS, practices towards CCS, and Muslim-friendly services.

The initial theme, cervical cancer and CCS awareness, revealed that most participants underwent CCS only during pregnancy. Most participants were aware that CCS was part of the standard pregnancy check-up package in Japan. According to the Japanese guideline published in 2017, CCS using cytology examination is strongly recommended for women in early pregnancy. Furthermore, as of April 2016, Pap smears have been included in pregnancy check-up coupons. Conversely, the data indicated that only a few participants underwent CCS before pregnancy and after childbirth.

The participants demonstrated a high level of knowledge regarding cervical cancer and CCS. However, they encountered several obstacles that could prevent them from undergoing CCS, including language barriers, insufficient information, pain, and psychological factors. This finding aligns with previous studies conducted in countries outside Japan, which identified similar obstacles for migrant and immigrant Muslim women seeking to undergo CCS [21–24].

One of the primary reasons migrants refrain from seeking health services is the presence of language barriers. Prior research indicates that foreign nationals residing in Japan encounter similar difficulties in accessing healthcare services, largely because a considerable proportion of Japanese healthcare professionals are not proficient in English [25, 26]. Some participants expressed dissatisfaction with the insufficient information provided by their husbands acting as language translators. Although some immigrants speak Japanese, a significant proportion cannot comprehend medical terminology, which hinders their ability to engage in meaningful dialogue with doctors regarding their health concerns. The workload of doctors in Japan is approximately three and a half times higher than that of doctors in other Organization for Economic Co-operation and Development countries. This has raised concerns about the quality of care provided, particularly given the limited time allotted for patient consultations, which often last only 3 min and are preceded by 3 h of waiting [27]. Furthermore, according to our data, crucial data from healthcare providers were overlooked due to the husband's assumption that the information was not significant enough to be conveyed and deliberated with their wives. Consequently, employing the services of a professional language translator or interpreter who is proficient in the requisite language is imperative, as recommended in the relevant guidelines [28]. Language barriers faced by migrant women have been highlighted in previous studies across several countries [11, 22, 29–33]. In the field of medical services, effective communication with patients is of paramount importance. In obstetrics and gynecology clinical settings, the necessity of utilizing interpreters other than family members as much as possible should be recognized. This is because family members may not always accurately convey information as desired by the patients.

Most participants mentioned a lack of information based on their first experience of receiving CCS during a pregnancy check-up. Some doctors did not explain the procedure to be performed to the patient. These women only knew that they were undergoing a series of pregnancy tests without understanding the details of the examination they received. The doctor did not provide any information regarding the results of the examination if they were normal. In contrast, cervical cancer examinations for pregnant women in Indonesia are performed upon the patient's request rather than as a mandatory examination for every pregnant woman [34]. Therefore, many Indonesian migrant women were unaware of CCS examinations during their pregnancies in Japan. Moreover, psychological factors also emerged as major barriers to CCS for women, such as pain, discomfort, and embarrassment. Previous research consistently reports fear of the potentially uncomfortable sampling process and positive past outcomes as psychological barriers to CCS [22, 30, 35, 36].

Most participants said that preventing cervical cancer involves adopting a healthy lifestyle through exercise and eating healthy food. Some of them said that women should maintain proper hygiene of the female reproductive area, avoid changing sexual partners frequently, and opt for early CCS. In Islam, the Prophet taught about several aspects of disease prevention, including personal hygiene (body hygiene, including reproductive organs, teeth, and food), prevention of infectious diseases (quarantine, isolation), lifestyle behaviors (nutrition, physical exercise, and avoiding obesity), and mental health (stress and anger). Furthermore, Islam also teaches about healthy sexual relations by not changing partners and bathing (ghusl) after sexual intercourse [37, 38].

Recommendations from health professionals are important in improving CCS rates. Our study findings

showed that the number of participants who received such recommendations was low, and that some information was not conveyed accurately due to poor interpretation by the husband. This is consistent with several studies that demonstrated that recommendations from doctors or healthcare workers have a significant effect on women's decisions to undergo CCS in the USA, Iran, Dubai, and Canada [39–42]. Recommendations and explanations regarding CCS from doctors or other healthcare workers, such as midwives and nurses, have a significant effect on migrant women as they are generally unaware of relevant information in Japan, such as where to access information and when to go for CCS, whether it requires out-of-pocket payment or is covered by insurance, and which clinics perform CCS. Detailed information should be provided because of the differences in the CCS implementation systems in Japan and Indonesia.

The use of CCS coupons among migrant Muslim women remains low. Almost all participants said they were unaware of the existence of these coupons. The lack of information regarding this coupon has resulted in migrant women's lack of attention to the posted letters; therefore, many remained unaware of this benefit. Some participants stated that the coupon may have been wasted as they did not understand its importance. Local governments should pay attention to this issue to ensure further expansion of outreach regarding these coupons. To make the contents of the coupon easier to understand, English, as an international language, could be included. Additionally, the recipient's name and a stamp on the envelope might help attract their attention so that it can be read immediately. Reminders about these coupons are a prime factor for CCS promotion [43, 44].

All participants in this study stated that they had no issues with being treated by a male doctor, and their husbands did not object. They stated that male doctors did not pose an obstacle to them in accessing CCS. The results of this study do not align with those of several previous studies, which stated that many Muslim migrant women avoid CCS if they encounter difficulties accessing a female doctor in Canada [32, 41], Oslo [33], and New York City [31]. This could be due to differences in the support system, permission from the husband, and the woman's belief in the importance of her health, as well as her religious values. Some Muslims strictly follow the rules stated in the Quran, regardless of the circumstances; however, several Muslim scholars and leaders have reviewed these rules and adapted them to contemporary situations. Islam requires that women only remove the hijab among family or with their husbands, as mentioned in surah Al-Ahzab verses 53 and 59 [45]. However, in emergency situations, such as medical cases, Muslim women are allowed to be treated by male doctors [46]. For translation services, female translators are preferred because they accompany women during all medical examinations, including in the examination room.

Another challenge faced by Muslim women when seeking health services in Japan is the lack of space to pray. Sometimes, long waiting times coincide with prayer times, and they have difficulty finding a place to pray. One of the obstacles faced by Muslim women during health checks is when the entire time required from queuing to the examination and to undergo a series of tests coincides with prayer time. They prefer to prioritize prayer times which may not support their examination schedule. Previous papers also report the same difficulty for Muslims to fulfill their prayer obligations in health facilities in Japan [47]. As Muslim patients believe that they can change their fate regarding their illness by praying continually, prayer is an essential part of fulfilling their religious beliefs when receiving health services. Healthcare providers in Japan generally do not understand that Muslims need to pray many times a day, because there was no request for such information when treating Japanese patients.

This study has provided important insights into CCS perspectives among Muslim migrant women in Japan. However, these insights are limited to Indonesian Muslim women. Involving Muslim women from other countries will further expand CCS perspectives based on different cultural backgrounds because they may have different health service-seeking behavior patterns in Japan. Nevertheless, we believe that the results of this study can be applied to similar populations to some extent.

In summary, this study revealed that culturally sensitive, Muslim-friendly health services in Japan are important, a fact that many healthcare providers may not recognize, potentially due to the small size of the Muslim population in Japan. This may result in their requests not being fully accommodated by Japanese healthcare providers, leading to a lack of or delays in providing health services to Muslim patients.

Conclusions

This study identified several factors influencing Indonesian Muslim migrant women seeking CCS. Muslim migrant women in Japan faced several challenges in obtaining health services due to communication barriers and a lack of information from local governments. Deficiencies were evident in terms of the understanding and support for Muslim patients with cultural and religious backgrounds that differed from those of local Japanese patients. Structured and organized efforts are needed to address cultural and systemic barriers, such as adding medical staff who can at least speak English. This is crucial for improving the healthcare system and increasing the country's readiness to

accept not only Muslim patients but also migrant patients from various backgrounds.

Abbreviations

CCS	Cervical Cancer Screening
HBM	Health Belief Model
USD	United States Dollar
ob-gyn	Obstetrician-Gynecologist

Supplementary Information

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Additional file 1.

Additional file 2.

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Authors' contributions
YRA conducted the interviews and transcribed and translated the collected data. YRA and NK independently coded the transcripts and agreed on an initial codebook. YRA coded the rest of the transcriptions and developed a final codebook. NK independently coded transcripts for validation. YRA performed qualitative data analysis, summarized sociodemographic characteristics, and prepared tables with a summary of themes and sub-themes and a breakdown of participation. YRA wrote the first version of the manuscript, which was revised by NK. All authors read and approved the final manuscript.

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Data availability
The datasets used during the current study are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate
This study was approved by the Institutional Review Board of the Graduate School of Nursing at Nagoya City University, Japan (No. 22026–2). All methods were conducted in accordance with the relevant guidelines and regulations (Declaration of Helsinki). All participants provided both verbal and written informed consent.

Consent for publication
Not applicable.

Competing interests
The authors declare no competing interests.

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