

# Survey of pregnant/postpartum women's ease of consultation with pharmacists and self-reporting their pregnant/postpartum status

妊産婦による薬剤師への相談のしやすさと  
妊産婦としての自己申告に関する調査

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**Keywords** ; Pregnant/postpartum woman, Pharmacist, Health products and medicines, Communication, Anxiety

キーワード：妊産婦、薬剤師、健康食品・医薬品、コミュニケーション、不安

**Abstract** ; When pregnant/postpartum women feel anxious about using health products and medicines, the psychological ease of communication (hereafter referred to as “ease of psychological access”) with medical professionals, including pharmacists, is important to alleviate their anxiety. However, the actual situation is unknown. The sharing of information between medical professionals and pregnant/postpartum women is important for their safety; in particular, pregnant/postpartum women need to self-report their pregnancy/postpartum status to medical professionals by presenting their maternal and child health handbook, etc., but the actual situation of self-reporting their pregnant/postpartum status is also unknown. We conducted an online survey of pregnant/postpartum women throughout Japan to understand these actual situations and obtain fundamental knowledge for the support of pharmacy pharmacists for pregnant/postpartum women. The overall trend was that pharmacists provided relatively lower ease of psychological access than other medical professionals regardless of the type of health products and medicines. To improve ease of psychological access to pharmacists, it was considered that it is important for pregnant/postpartum women to realize the professional ability of pharmacists through the professional relationship between hospital and pharmacy and active awareness. Approximately 10% of the women in this study did not intend to self-report their pregnant/postpartum status at all or unless asked for pharmacy pharmacists. In addition to the development of unconventional tools of self-reporting their pregnant/postpartum status, it was considered that it is important for pharmacists to acquire professional ability to listen to pregnant/postpartum women, that is, practical communication skills based on a thorough understanding of women's lifestyles.

要旨：妊産婦が健康食品や医薬品の使用に際して不安を感じた場合、その軽減には薬剤師を含む医療者への心理的なコミュニケーションの取りやすさ（以下、心理的アクセスのしやすさ）が重要となるが、その実態は不明である。また、妊産婦の安全管理のためには医療者と妊産婦との情報共有が重要であり、特に妊産婦側から、母子健康手帳等を提示して自身が妊産婦であることを自己申告する必要性が提言されているがその実態も不明である。本研究は、これらの実態を把握し、薬局薬剤師による妊産婦支援に向けた基礎的知見を得ることを目的として全国の妊産婦にインターネット調査を実施した。医療職の中で薬剤師は、健康食品や医薬品の種別に関わらず全体的な傾向として、妊産婦からの心理的アクセスのしやすさが相対的に低いことが明らかとなった。薬局薬剤師に対する心理的アクセスのしやすさを向上するには、薬業連携や能動的な啓発を通じて妊産婦が薬剤師の職能を実感することが重要と考えられた。また、約1割の妊産婦は、薬局薬剤師に対して、聞かれるまで妊産婦であることを自己申告しない、または、妊産婦であることを自己申告しないことが明らかとなった。母子健康手帳等の従来と異なる自己申告ツールの開発に加えて、薬剤師の聞き取り能力、つまり、女性のライフスタイルを熟知した上での実践的なコミュニケーション能力の習得が重要と考えられた。

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## Introduction

In recent years, the trends of late marriages and declining birth rates in Japan has accelerated due to increasing numbers of women are entering the workforce<sup>1)</sup> and economic circumstances<sup>2)</sup>. In the Vital Statistics Survey of the Ministry of Health, Labor and Welfare in Japan, the mothers who gave birth in 2020 were significantly older than those who gave birth in 1985<sup>3)</sup>. This suggests an increase in the number of pregnant/postpartum women with underlying medical conditions and the opportunities to take medication during pregnancy and lactation. In fact, of the approximately 97,000 healthy pregnant women who participated in the National Survey on Children's Health and the Environment<sup>4)</sup>, many used health products and medicines before and during pregnancy<sup>5)</sup>. In addition, a survey conducted by the Review Meeting of Ideal Health and Medical System for Pregnant/Postpartum Women (hereafter referred to

as the “review meeting”) revealed that many pregnant women are concerned about the use of medicines and health products during pregnancy<sup>6)</sup>. Under these circumstances, medical professionals, including pharmacists are required to improve the psychological ease of communication (hereafter referred to as “ease of psychological access”) with pregnant/postpartum women who are anxious about using health products and medicines. However, the actual situation regarding ease of psychological access is not clear.

On the other hand, in addition to improving ease of psychological access for pregnant/postpartum women, medical professionals should practice appropriate safety management, including continuous sharing of information about women's lifestyles under the cooperative relationship between medical professionals and pregnant/postpartum women. In other words, it is essential for the medical

professionals to confirm the information not only at the initial interview but also on an ongoing basis, and for pregnant/postpartum women to self-report to the medical professionals their status regarding marriage, their desire to have a baby, and their pregnant/postpartum. However, Sakamoto et al. reported that no women of childbearing potential received confirmation of pregnancy or the possibility of pregnancy from the pharmacist when they received their medication<sup>7)</sup>. They pointed out that the reason for this is that some women suffer from infertility, and it is a difficult issue that requires great consideration for pharmacists to confirm the existence of pregnancy in their daily work<sup>7)</sup>.

The review meeting also revealed that many pregnant/postpartum women felt that it was important for pharmacy pharmacists to explain medications while paying attention to pregnancy and lactation, and to confirm that they were pregnant or lactating<sup>6)</sup>. In addition, a certain number of pregnant/postpartum women felt that the pharmacies did not pay enough attention to their needs. In these circumstances, review meeting recommends the necessity of self-report on the part of pregnant/postpartum women, stating that it is necessary to promote the confirmation by medical professionals that a woman is pregnant/postpartum, (e.g., by having her present the maternal and child health handbook), so that she can use medicines with peace of mind<sup>6)</sup>. However, the actual situation of self-reporting their pregnant/postpartum status remains unclear. Currently, the authors are building

a platform with medical institutions (obstetrics departments, collaborative obstetrics departments, and pharmacy departments) and local pharmacies to verify the usefulness of continuous follow-up according to women's lifestyles, however, basic knowledge about psychological access and their pregnant/postpartum status is lacking.

In this study, we conducted an online survey of pregnant/postpartum women throughout Japan to clarify the ease of psychological access to various information sources, mainly medical professionals, when they are concerned about using health products and medicines, as well as the actual situation of self-reporting their pregnant/postpartum status at pharmacies, and to obtain essential information for the support of pharmacists for pregnant/postpartum women.

## Methods

### *Survey targets and items*

From February 25 to 26, 2020, preliminary online surveys were distributed to 50,000 registered investigation firm randomized monitors (Macromill, Inc., Tokyo, Japan) of women in their teens to those in their forties across Japan. Data provided by 1,030 women who were eight months pregnant to <1 year postpartum (at the time of the survey) were extracted. The monitors of the investigation firm had been publicly recruited, and the total number of monitors as of February 2020 was approximately 1.28 million. To prevent any falsified responses, a trapping survey was conducted once every six months and monitors were

required to update necessary registered information once every year. Table 1 details the items in the survey sent to the women. The women responded about their current or most recent pregnancies.

#### *Analysis methods*

We collected the completed survey responses from Macromill, Inc. and tabulated the data using JMP 14 (SAS Institute, Cary, NC, USA). For Figures 1 and 2, the answer “very easy to consult” was assigned a numerical value of 5; “somewhat easy to consult,” 4; “neither,” 3; “somewhat difficult to consult,” 2; and “very difficult to consult,” 1. The mean and standard deviation for health products, over-the-counter (OTC) medicines (internal and external), and prescription medicines (internal and external) were calculated to create a scatter plot. The lines of an average of the mean score and standard deviation for each response item appear in figures. As shown in the lower-right quadrant of the four quadrants, indicating that the corresponding item has a high degree of ease of psychological access in general.

#### *Ethical considerations*

The study was conducted in accordance with the ethical guidelines for human-based medical research and was approved by the Institutional Review Board of Hoshi University (2019-13) and the Institutional Review Board of HANSHIN Dispensing Pharmacy (19009S). The survey response indicated consent to participate in the study.

## **Results**

### *Basic characteristics of the respondents*

Table 2 presents the basic characteristics of the respondents in terms of age, region, visits to medical institutions other than those of the attending obstetrician, health products, OTC medicines, and prescription medicines being regularly taken prior to pregnancy.

### *Ease of psychological access to various sources of information, mainly medical professionals, when pregnant/postpartum women experienced anxiety*

In the scatter plot, the lower right quadrant represents a generally high degree of ease of psychological access (Figure 1 and 2). There are various sources of information, mainly medical professionals, within this quadrant. First, we investigated ease of psychological access regarding the use of health products, OTC medicines, and prescription medicines that they had previously used prior to the pregnancy, including continuation, for the first time since learning that they were pregnant. For health products, ease of psychological access was higher among midwives/nurses ( $4.0811 \pm 0.8318$ ) and attending physicians ( $3.7303 \pm 0.9415$ ), in that order (Figure 1A). For OTC medicines, psychological access was higher among midwives/nurses ( $4.0115 \pm 0.8576$ ), attending obstetricians ( $3.9656 \pm 0.9801$ ), attending physicians ( $3.7419 \pm 0.9769$ ), and pharmacists ( $3.6673 \pm 0.9610$ ), in that order (Figure 1B). For prescription medicines, ease of psychological access was higher among attending obstetricians ( $4.2224 \pm 0.8482$ ), midwives/nurses ( $4.0140 \pm 0.8791$ ), attending physicians ( $4.0060 \pm$

Table 1 Survey items

Question content	Item List	Options List	Corresponding Table/Figure
<p>Please select the ease of consultation from the item list when you experience anxiety regarding the use of health products, over-the-counter medicines, and prescription medicines that you had previously used prior to the pregnancy (including continuation), for the first time since learning that you were pregnant.</p> <p>Question A</p>	<p>A) Health products B) Over-the-counter medicines for internal use C) Over-the-counter medicines for external use D) Prescription medicines for internal use E) Prescription medicines for external use</p> <p>1) Attending obstetricians 2) Attending physicians 3) Other physicians 4) Pharmacists 5) Midwives/nurses 6) Family members/relatives 7) Friends who had given birth/been pregnant 8) Internet 9) Books/magazines</p>	<p>1) Very easy to consult 2) Somewhat easy to consult 3) Neither 4) Somewhat difficult to consult 5) Very difficult to consult</p>	Figure 1
<p>Please select the ease of consultation from the item list when you experience anxiety regarding the use of health products, over-the-counter medicines, and prescription medicines that you had not previously used prior to the pregnancy, for the first time since learning that you were pregnant.</p> <p>Question B</p>	<p>A) Health products B) Over-the-counter medicines for internal use C) Over-the-counter medicines for external use D) Prescription medicines for internal use E) Prescription medicines for external use</p> <p>1) Attending obstetricians 2) Attending physicians 3) Other physicians 4) Pharmacists 5) Midwives/nurses 6) Family members/relatives 7) Friends who had given birth/been pregnant 8) Internet 9) Books/magazines</p>	<p>1) Very easy to consult 2) Somewhat easy to consult 3) Neither 4) Somewhat difficult to consult 5) Very difficult to consult</p>	Figure 2
<p>Please select tools for self-reporting pregnant/postpartum status at medical institutions other than those of the attending obstetrician (multiple answers).</p> <p>Question C</p>	<p>1) Hospital/clinic that I first visited after the pregnancy was confirmed 2) Local hospital/clinic that I visited from prior to the pregnancy 3) Pharmacy that I first visited after the pregnancy was confirmed 4) Local pharmacy that I visited from prior to the pregnancy</p>	<p>1) Questionnaire/initial visit survey 2) Verbal communication 3) Mother and child health handbook 4) Maternity mark keychain 5) Drug history handbook 6) I do not self-report my status as pregnant/postpartum woman unless asked 7) I do not self-report my status as pregnant/postpartum woman</p>	Table 3

Table 2 Basic characteristics of the responders

	N	%
Age (single answer, N=1,030)		
Teens	4	0.4%
Twenties	526	51.1%
Thirties	484	47.0%
Forties	16	1.6%
Region (single answer, N=1,030)		
Hokkaido	38	3.7%
Tohoku	56	5.4%
Kanto	314	30.5%
Chubu	202	19.6%
Kinki	226	21.9%
Chugoku	69	6.7%
Shikoku	27	2.6%
Kyushu	98	9.5%
Visits to medical institutions other than those of the attending obstetrician (multiple answers, N=1,030)		
Hospital/clinic that I first visited after the pregnancy was confirmed	507	49.2%
Local hospital/clinic that I visited from prior to the pregnancy	397	38.5%
Pharmacy that I first visited after the pregnancy was confirmed	249	24.2%
Local pharmacy that I visited from prior to the pregnancy	197	19.1%
I had never visited a medical institution other than my attending obstetrician	181	17.6%
Health products, over-the-counter medicines, and prescription medicines being regularly taken prior to pregnancy (multiple answers, N=1,030)		
Health products	419	40.7%
Over-the-counter medicines for internal use	235	22.8%
Over-the-counter medicines for external use	288	28.0%
Prescription medicines for internal use	285	27.7%
Prescription medicines for external use	214	20.8%

0.9324), and pharmacists ( $3.8537 \pm 0.9718$ ), in that order (Figure 1C).

Next, we also investigated ease of psychological access regarding the use of health products, OTC medicines, and prescription medicines that they had not previously used prior to the pregnancy, for the first time since learning that they were pregnant. For health products, psychological access was higher among attending obstetricians ( $3.9369 \pm 0.9912$ ), midwives/nurses ( $3.9058 \pm 0.9486$ ), attending physicians ( $3.6864 \pm 0.9965$ ), and pharmacists ( $3.6388 \pm 0.9717$ ), in that order (Figure 2A). For OTC medicines, psychological access was higher attending obstetricians ( $3.9078 \pm 1.0062$ ), midwives/nurses ( $3.8083 \pm 0.9859$ ), pharmacists ( $3.7053 \pm 0.9846$ ), and attending physicians ( $3.7000 \pm 1.0033$ ), in that order (Figure 2B). For prescription medicines, psychological access was higher among attending obstetricians ( $4.0922 \pm 0.9346$ ), attending physicians ( $3.9112 \pm 0.9643$ ), midwives/nurses ( $3.8699 \pm 0.9680$ ), and pharmacists ( $3.8432 \pm 0.9782$ ), in that order (Figure 2C). The overall trend revealed that medical professionals had generally more ease of psychological access compared to the other information sources, while pharmacists had relatively less ease of psychological access when focusing on medical professionals.

*Tools for self-reporting pregnant/postpartum status at medical institutions other than those of the attending obstetrician*

The medical institutions where “Questionnaire/Initial visit survey” was used the most as a tool for self-reporting pregnant/postpartum status were

hospitals/clinics (77.3%: 392/507 subjects) and pharmacies (78.3%: 195/249 subjects) that they visited for the first time after their pregnancy was confirmed. The medical institutions where “verbal communication” was used the most were the local hospital/clinic (61.7%: 245/397 subjects) and the local pharmacy (62.9%: 124/197 subjects) that they had visited prior to their pregnancy. On the other hand, in the pharmacies that they visited for the first time after their pregnancy was confirmed, “I do not self-report my status as pregnant/postpartum woman unless asked (4.8%: 12/249 subjects)” and “I do not self-report my status as pregnant/postpartum woman (2.0%: 5/249 subjects)” were found, indicating that a total of 6.8% of the pregnant/postpartum women did not intend to self-reporting their status as pregnant/postpartum women to pharmacists. Furthermore, in local pharmacy that they visited from prior to the pregnancy, “I do not self-report my status as pregnant/postpartum woman unless asked (6.1%: 12/197 subjects)” and “I do not self-report my status as pregnant/postpartum woman (6.1%: 12/197 subjects)” were found, indicating that a total of 12.2% of the pregnant/postpartum women did not intend to self-report their pregnant/postpartum status to pharmacists. In particular, compared to other medical institutions, pregnant/postpartum women were less likely to self-reporting their pregnant/postpartum status to local pharmacies that they visited from prior to the pregnancy.

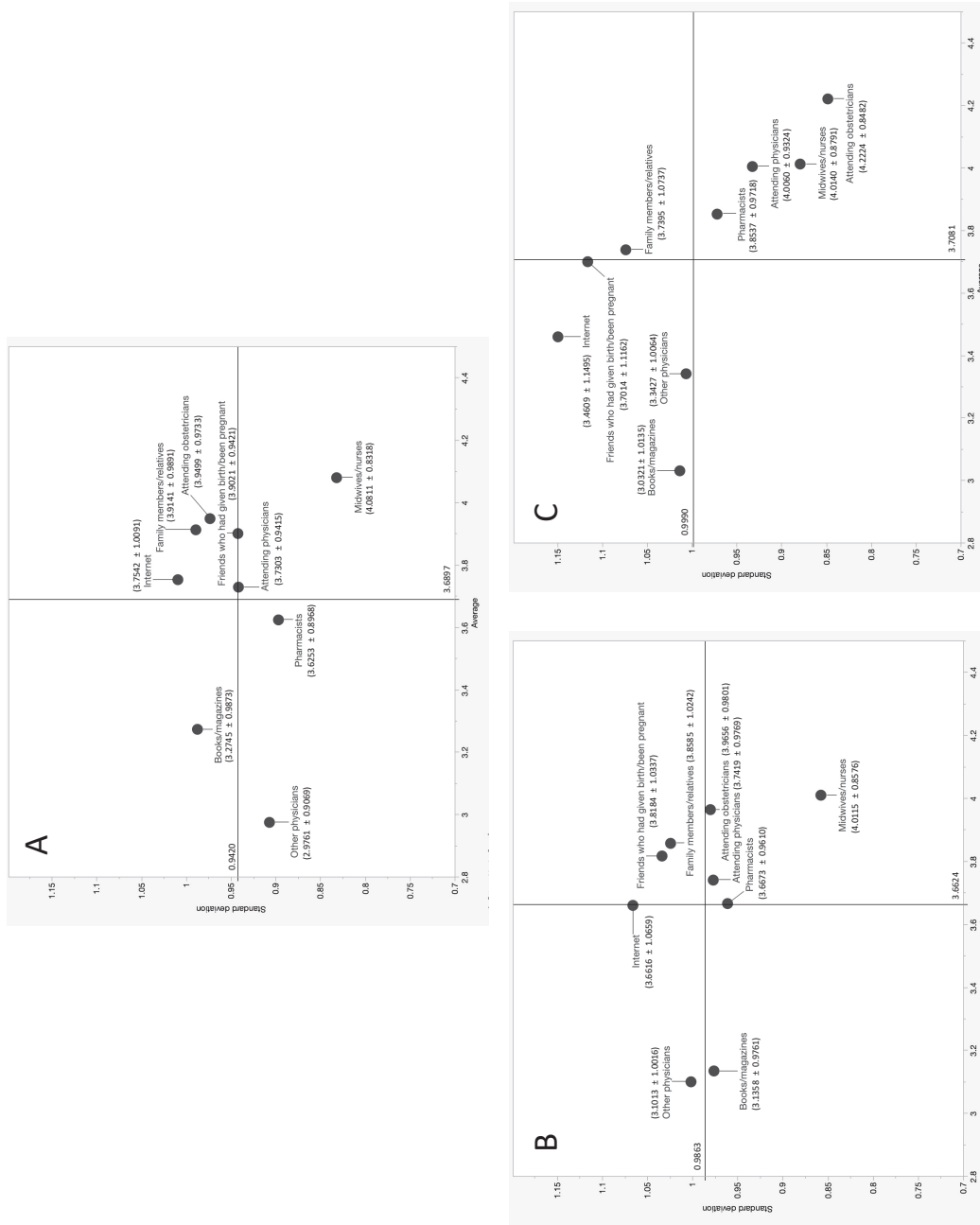


Figure 1 Ease of psychological access regarding the use of health products (A), OTC medicines (B), and prescription medicines (C) that they had previously used prior to the pregnancy



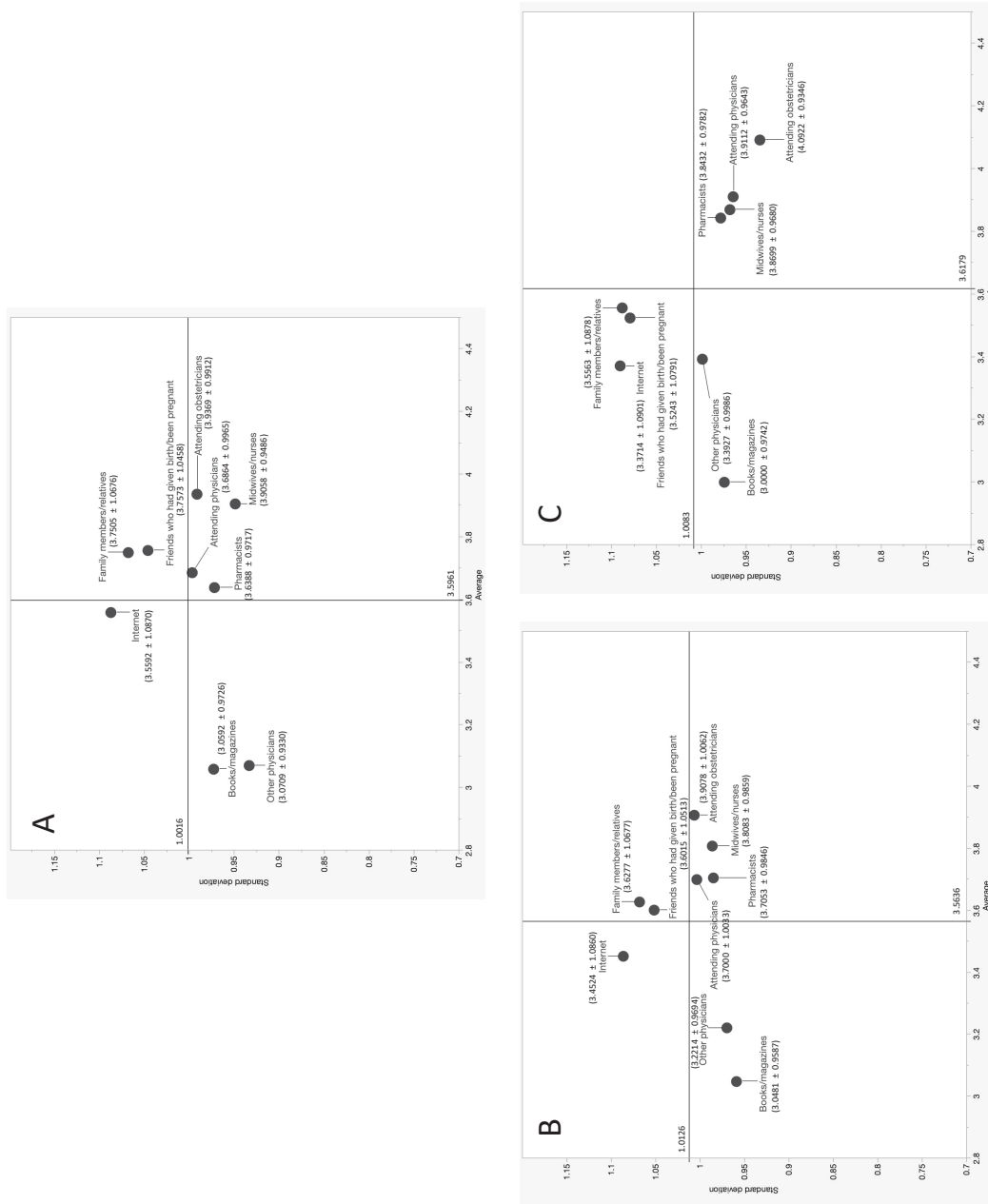


Figure 2 Ease of psychosocial access regarding the use of health products (A), OTC medicines (B), and prescription medicines (C) that they had not previously used prior to the pregnancy

Table 3 Tools for self-reporting pregnant/postpartum status at medical institutions other than those of the attending obstetrician

		Questionnaire / initial visit survey	Verbal communication	Mother and child health handbook	Maternity mark keychain	Drug history handbook	I do not self- report my status as pregnant/ postpartum woman unless asked	I do not self- report my status as pregnant/ postpartum woman
Hospital/clinic that I first visited after the pregnancy was confirmed	N=507	392	224	233	116	72	14	14
	%	77.3%	44.2%	46.0%	22.9%	14.2%	2.8%	2.8%
Local hospital/clinic that I visited from prior to the pregnancy	N=397	223	245	122	72	64	8	15
	%	56.2%	61.7%	30.7%	18.1%	16.1%	2.0%	3.8%
Pharmacy that I first visited after the pregnancy was confirmed	N=249	195	105	66	42	70	12	5
	%	78.3%	42.2%	26.5%	16.9%	28.1%	4.8%	2.0%
Local pharmacy that I visited from prior to the pregnancy	N=197	74	124	30	38	51	12	12
	%	37.6%	62.9%	15.2%	19.3%	25.9%	6.1%	6.1%

## Discussion

This study investigated the ease of psychological access to various information sources, mainly medical professionals when pregnant/postpartum women were concerned about using health products and medicines.

First, ease of psychological access regarding the use of health products, OTC medicines that they had previously used prior to the pregnancy was found to be higher among midwives/nurses. One possible reason for this was that pregnant/postpartum women who do not have underlying medical conditions and are not taking medication have good physical access to midwives/nurses because they visit mainly outpatient clinics for prenatal checkups. Midwives/nurses act as supporters after the checkup and as liaisons and coordinators with physicians. Approximately 40% of women in one study consulted with midwives about self-medication<sup>8)</sup>. However, in the same report, approximately 90% of midwives regarding the combination of medications and foods, and approximately 50% of midwives regarding the main effects and side effects of medicines said “I can answer about half of the questions”, and “I do not know or forgot most of them<sup>8)</sup>”. In addition, Tanida et al. considered that nurses could serve as coordinators to deliver appropriate information about self-medication to the target population through collaboration with pharmacists and physicians<sup>8)</sup>. Therefore, we considered that it is important for pharmacy pharmacists to make efforts to improve understanding of their professional ability, especially for

midwives/nurses in medical institutions that do not have pharmacists on-site or in outpatient clinics, and to promote visible collaboration between pharmacy pharmacists and midwives/nurses, which may improve ease of psychological access to pharmacists for pregnant/postpartum women. In addition, psychological access when pregnant/postpartum women experienced anxiety regarding the use of prescription medicines that they had previously used prior to the pregnancy was found to be higher among attending obstetricians. Many pregnant/postpartum women reportedly consulted with their physicians about their concerns about medication with adequate resolution of their concerns<sup>9)</sup>, which was thought to be partly due to the fact that prescription medicines are different from self-medication.

In the circumstances where the review meeting and the Ministry of Health, Labor, and Welfare recommended reducing obstetricians' burdens<sup>6, 10)</sup>, hospital pharmacists have been promoting team medicine and the creation of pharmaceutical outpatient clinics staffed with certified and specialized pharmacists. The Aichi Pharmaceutical Association trains pharmacy pharmacists to provide consultation and appropriate advice to pregnant/postpartum women as “pregnancy and lactation support pharmacist”, and provides various consultation services and multidisciplinary cooperation<sup>11)</sup>. We believe that further expansion of these efforts to train pharmacists and the realization by women, especially pregnant/postpartum women, of

the concrete benefits of cooperation between hospital pharmacists and pharmacy pharmacists will improve the ease of psychological access, especially pharmacy pharmacists.

For health products and medicines that they had not previously used prior to the pregnancy, the ease of psychological access was approximately the same with attending obstetricians, attending physicians, pharmacists, and midwives/nurses. Therefore, it is necessary to actively raise awareness of the professional ability of pharmacists for pregnant/postpartum women through the use of stickers, posters, and awareness cards, as in the efforts of the Aichi Pharmaceutical Association<sup>11)</sup> in these health products and medicines. In addition, to promote an environment where all women, including pregnant/postpartum women, can easily consult pharmacy pharmacists about their health issues, Kagoshima Prefecture has designated pharmacies that respond to the various health issues faced by women with expertise as “women-friendly pharmacies” and is promoting support by pharmacy pharmacists<sup>12)</sup>. We believe that expanding such initiatives and raising awareness will increase the understanding of pharmacists’ services among pregnant/postpartum women, which will improve ease of psychological access, especially to pharmacy pharmacists.

Next, we found that 87.8% of pregnant/postpartum women self-reported their pregnant/postpartum status to pharmacy pharmacists, but 12.2% of the pregnant/postpartum women would not self-report their pregnant/postpartum status at all or

unless asked. The review meeting recommended that pregnant/postpartum status should be self-reported so that they can use medicines with peace of mind<sup>6)</sup>. Based on the results of this study, we considered that the ability of pharmacists to talk and listen to pregnant/postpartum women—that is, practical communication skills based on a thorough understanding of women’s lifestyles—is important for promoting self-reporting of pregnant/postpartum status. In recent years, training for pharmacists in the handling of emergency contraceptives associated with online medical treatment has been promoted, and pharmacy pharmacists are required to improve ease of psychological access to women and communication skills more than ever before<sup>13)</sup>. In addition, we also considered that it is necessary to examine methodologies that enable both pregnant/postpartum women and pharmacists to easily and reliably share information at pharmacies using tools other than the traditional self-reporting tools such as the maternal and child health handbook and the drug history handbook.

One of the limitations of this study is that we were not able to ascertain the details of the reasons for not self-reporting their status as pregnant/postpartum women due to the response burden of the subjects. This issue must be examined further in view of women’s social situations. In addition, since the main purpose of this study was to understand the trend for Japan as a whole according to population distribution, it was not possible to conduct a detailed study of regions and ages. Although the data collected in this study

includes basic characteristics information on the regions and ages of the respondents, the fact that the sample sizes for regions and ages varied due to the above main purpose, and that detailed causal relationships cannot be clarified, is considered a limitation of this study. Since there are some regions that are making advanced efforts, such as the cases of Aichi<sup>11)</sup> and Kagoshima<sup>12)</sup> prefectures, we would like to make this an issue for future study. However, it is very significant that we conducted an online survey of pregnant/postpartum women throughout Japan to clarify the ease of psychological access, the actual situation of self-reporting their pregnant/postpartum status, and to obtain essential information for the support of pharmacists for pregnant/postpartum women. In addition, if a particular region or population is targeted, its social and cultural characteristics may be reflected. Therefore, we thought an online survey would help represent women's views more accurately because it enabled us to reach respondents across the nation quickly.

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