



Article

Support Needs for Anxiety among Pregnant Women in Japan: A Qualitative Pilot Study

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Abstract: Support needs for pregnancy-related anxiety among low-risk pregnant women remain unclear. This study aimed to clarify the kinds of support for anxiety that women seek during pregnancy in Japan. Data were collected in a semi-structured focus group interview involving five pregnant women who were not in specific risk groups, recruited from three facilities in Tokyo. We generated themes using inductive thematic analysis. This paper adhered to the consolidated criteria for reporting qualitative research. From the data on support needs for anxiety during pregnancy, three themes were derived: (1) seeking tailored professional support; (2) seeking continuous support within informal relationships; and (3) seeking others' success stories in the same situation. These three types of support gave participants a sense of reassurance or raised concern, depending on the situation. We proposed a model comprising the three derived themes using social cognitive theory. We discussed how these three types of support influenced pregnant women's self-efficacy, which is the core concept of the social cognitive theory. Our findings may help to plan theory-based research and effective interventions to provide support for women's anxiety during pregnancy using a population approach. Our results also demonstrated the importance of collaboration with pregnant women in developing further research and interventions.

Keywords: pregnancy; pregnancy-related anxiety; needs assessment; social support; self-efficacy; social cognitive theory; qualitative study; health communication



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1. Introduction

Maternal mental health problems have become a major issue worldwide. Japan is no exception, as 10–20% of mothers become depressed after childbirth [1] and many more experience milder symptoms than depression. Support for maternal mental health should start from the antenatal period because more than one in five pregnant women experience anxiety or depression symptoms during pregnancy [2], which can predict the deterioration of their mental health in the following postpartum period [3]. Support during pregnancy may also be beneficial in terms of the feasibility of seamless care, because pregnant women in Japan can receive about fourteen antenatal checkups at public expense [4] and have opportunities to meet with specialists during pregnancy rather than postpartum.

To consider perinatal maternal mental health, numerous studies have explored psychosocial factors, such as parenting stress and social support. There is evidence that social support, which is considered an environmental factor in social cognitive theory [5], may be a major protective factor against perinatal anxiety and depression [6–11]. This theory has previously been used in the context of perinatal mental health problems [12–14]. In this theory, self-efficacy is the core concept for cognitive factors and interacting with environmental and behavioral factors [5], with one study indicating that self-efficacy for nurturing mediated the association between social support and postnatal depression [14]. However,

we cannot ignore the negative aspects of social support, because support that did not meet needs was associated with an increased likelihood of postnatal depression [15]. Therefore, we should improve our understanding of the needs of pregnant women to ensure the provision of effective support in terms of mental health.

Multiple factors can lead to perinatal mental disorders, and it is difficult to identify high-risk individuals; therefore, a universal approach for preventing the deterioration of maternal mental health that extends beyond identified-risk groups is crucial. Previous qualitative studies have explored and clarified needs in medical situations among pregnant women, leading to one review which indicated that routine antenatal services might help only a small proportion of what matters to pregnant women without identified risks [16]. If routine antenatal services are not enough to help pregnancy-related anxiety, it is important to identify what kind of support pregnant women seek and what level of satisfaction and dissatisfaction they have in their daily lives in terms of their anxiety; however, at the present time, such details remain unclear.

We conducted this pilot study to explore pregnancy-related anxiety and support needs for anxieties among women residing in Japan, regardless of their specific risks. We believe these findings may be useful to conduct further quantitative studies and generate instruments or programs for a universal intervention to support pregnant women in Japan in the future.

2. Results

2.1. Participants' Characteristics

The participants' mean age was 31.8 years (range 27–36 years), and the mean gestational period was 28 weeks (range 23–33 weeks) at the time of the interview. Four of the five women were expecting their first baby. All participants were married and living with their husbands. All participants had completed university education and were working (Table 1).

Table 1. Participants' characteristics.

Participant	Age (Years)	GA (Weeks)	Facility	Number of Deliveries	Number of Abortions	IVF	Job	Education	Economic Comfort	Prenatal Class	Deliver at Same Facility	Risk
A	34	31	Hospital	0	0	Yes	Full-time worker	University	Some	Yes	Yes	NA
B	29	24	University hospital	0	0	No	Full-time worker	University	Not much	No	Yes	Been abused
C	33	33	Clinic	0	2	Yes	Contract worker	University	Not much	Yes	No	Fibroid
D	36	23	Hospital	1	3	No	Full-time worker	University	Not much	No	Yes	NA
E	27	31	Clinic	0	0	No	Full-time worker	University	Not much	Yes	No	NA

GA, gestational age; IVF, in vitro fertilization.

Participants expressed various anxieties based on their personal background and by hearing other participants' narratives. Table A1 shows the coded anxieties of this focus group.

2.2. Support Needs

We found three themes that described women's support needs for anxiety during pregnancy.

1. Seeking tailored professional support;
2. Seeking continuous support within informal relationships;
3. Seeking others' success stories in the same situation.

Table 2 shows the three derived themes with supporting quotes. The women's positive affects, derived from having received support that met their needs or was more than they expected, were coded as positive examples. Experiences where support for their needs was

lacking (including negative affects caused by the support they received) were coded as negative examples.

Table 2. Themes and supporting quotes.

Themes	Affect	Supporting Quotes ¹
Seeking tailored professional support	Positive	Well . . . the doctor at the clinic, and also the nurses and the receptionists, I like the way they behave towards myself, and I go to the checkups every time with a good feeling, well, I think I feel this way maybe because there is nothing wrong with my baby now, but I am very thankful that I can go to the checkups with a happy feeling. (Participant C)
	Negative	Well, as it turned out, it was okay, but should I search on Google? I didn't get much guidance on what and how much I should do in detail . . . so I was a bit confused. (Participant B)
Seeking continuous support within informal relationships	Positive	Well, now that I'm on maternity leave, I have more time to spare, so I've been going to see my friends around me . . . well, just going to see friends like who have children or who have recently born babies, well . . . listening their opinions or . . . I wonder . . . just by talking with them, yes, I think I was able to relieve a lot of my worries. (Participant A)
	Negative	Well . . . when I was pregnant with my first child, my husband always said something like that it would be fine if the baby was born healthy and without a physical defect, but that made me feel really anxious, and I thought "Please don't say things like that anymore." (Participant D)
Seeking others' success stories in the same situation	Positive	Let me see . . . I did a lot of research on the Internet in English and so on, to find people who experienced bleeding, and when . . . I read the stories of people who had done well, I was a little relieved . . . (Participant B)
	Negative	There's a lot of information on the Internet that says [your partner] should quit smoking, but if I force him to do so, it might cause discord in my family, that's one of the things that happens . . . so, in that respect, I recently would like to know positive feedback like what measures are taken by those who have husbands who smoke, or how their children grew up well even though they could only get this level of cooperation. (Participant E)

¹ Participants' narratives were translated into English for this publication.

2.2.1. Theme 1: Seeking Tailored Professional Support

In the professional sector, participants did not expect experts to only be involved with them in a manualized way. They wanted experts to see them not as "a pregnant woman" but as "myself". This did not have to involve difficult technology, as participants indicated that simple measures such as a friendly attitude toward "me", talking to "me", or listening to "my" minor physical problems and gaining a sense of the professionals' involvement was helpful.

In fact, it's like . . . when I gave birth, the people around me were . . . well . . . only the midwives and the doctors, so I felt very reassured, and the doctors and midwives who were there and kept calling out to me were of course much more powerful than the stories I had heard. That's right. It was very reassuring. (Participant D)

Participants also expressed concerns about the professional sector, such as unclear explanations by medical professionals, uncertainty, and lack of options that allowed them to focus on their values, even if there was insufficient evidence. Beyond the manual or guideline, they needed guidance on how to bridge the gap between the scientific evidence of "correct answers" and their own real-world situations.

I tried to talk to a nurse or a doctor at the hospital about such things [partner's smoking], but all they said was that I should definitely stop him from smoking . . . (Participant E)

2.2.2. Theme 2: Seeking Continuous Support within Informal Relationships

All participants agreed on the value of the existence of continued support within informal relationships. They especially valued support from people from the same generation who had previously experienced pregnancy or childbirth. Because of their high expectation of such support, one participant expressed concern about the lack of it.

I don't have any friends who are pregnant or have children, so I don't really have anyone to talk to about something . . . like events during pregnancy, I guess I'm a little nervous about it. (Participant B)

Participants could get new information and felt reassured by just talking within such relationships without any specific purpose. Participants indicated they could talk easily and honestly within such relationships about what they hesitated to talk to experts about (e.g., weight gain during pregnancy and fear of childbirth).

When I'm in the hospital, I feel a bit rushed and I don't feel like I can take my time to talk to the doctor, so I tend to ask [another] mother who is ahead of me such things about the pain of childbirth and daily life after childbirth. (Participant C)

Participants also reported encountering unexpected information or messages within informal relationships that they did not want.

My number of gestational weeks is now 33, so I can't run any more tests of a definitive diagnosis at this week, well, like NIPT (noninvasive prenatal genetic testing). I'll tell you what . . . oh, I guess I should have taken it, although I can't take it anymore, when I've heard that my friend who is also pregnant got it, I was a little worried that maybe I should have taken the test, well, I made my own decision, but I think I [will] have anxiety about whether my decision was right all the way until my baby is born. (Participant C)

In particular, they valued support from their friends and relatives rather than cohabiting family, perhaps because they wanted "reasonable" nosiness. Some participants felt worried and anxious about the excessive involvement or indifferent attitudes of partners.

My husband is a smoker, and we've talked about it, but the results haven't been to my satisfaction . . . (Participant E)

2.2.3. Theme 3: Seeking Others' Success Stories in the Same Situation

Most participants sought information about "success stories" of other people in the same situation, especially in their trouble. To seek this support, they often chose sources that did not have limitations in terms of time or access (i.e., the Internet, social networking services, and magazines), because information from people around them was not enough. They wanted to read or hear such stories at their convenience.

Well, I'm not sure if I can really take care of my children properly . . . of course my niece and nephew are cute but . . . yes, this is my first baby so I guess I'm a little nervous about having to raise my baby day in and day out by myself, so . . . although I think the only way to solve it is to have a baby and raise it, I've been looking at pictures of cute babies on the Internet, or been reading blogs, by those things I can think babies are pretty cute, and it's kind of comforting. (Participant E)

Participants with concerns sought answers and solutions, even if they were not medically correct. Information biases, text-based one-way information, and inaccurate information in this type of support could damage participants physically and emotionally.

(By reading information about non-evidence-based treatments on the Internet)
Well, that's the emotional part, the bleeding may not be treatable, but if I receive some kind of treatment, and it might be good for my baby . . . that would make me feel like I'm doing my best, it's better than doing nothing . . . on the contrary,

I was doing nothing and just waiting to see what happens . . . oh, well, I think I was more worried. (Participant B)

2.3. Proposed Model

Based on our findings, we proposed a model of the needs of support for anxiety among pregnant women (Figure 1). Pregnant women in the focus group sought three types of support: tailored professional support; continuous support within informal relationships; available success stories.

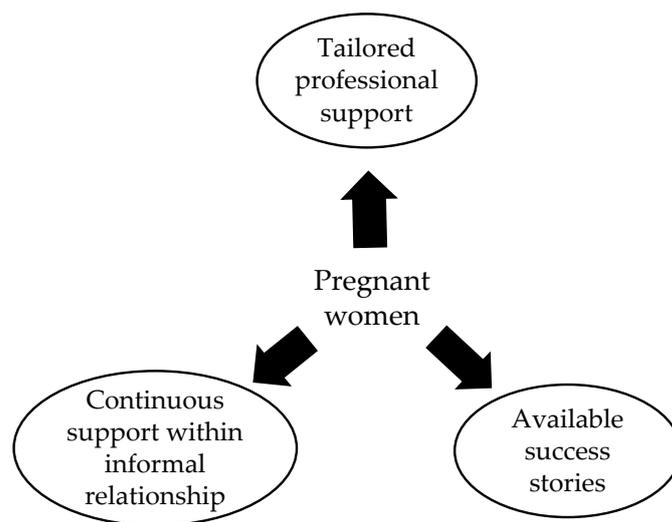


Figure 1. Needs of support for anxiety during pregnancy. White circles: type of support; Black arrows: needs.

In our study, participants sought these three types of support based on their individual preferences and environment. They used different types of support depending on their situation. To paraphrase using the Figure 1, black arrow thickness varies and fluctuates among individuals.

When it comes to normal checkups, I don't really have that much to talk about . . . In other words, I thought that it would be easier to ask someone closer to me. (Participant D)

Some participants relied on online information when they could not solve their own problems by talking to experts or to the people around them.

At first, I was very shocked, it is my first pregnancy, and no way, I was told that there was a possibility of a miscarriage. After that, I talked to the doctor about various things, let me see, like how likely it was, I asked a lot of questions about such things, but I was said the doctor didn't know . . . After I went home, I did a Google search and then it said that in my case, almost 100% my baby was going to be miscarried, so my shock got worse. (Participant B)

3. Materials and Methods

We used a narrative research design, whereby researchers study the lives of individuals and ask them to provide stories about their lives [17]. We conducted a semi-structured focus group discussion with pregnant women to explore a specific set of issues [18]. This is considered a useful method to elicit information on patient priorities and needs, with the aim of improving the quality of healthcare by collecting rich and detailed data in an interactional group structure [19,20]. One or two focus groups are said to be sufficient in exploratory studies [20], therefore we planned to conduct one focus group involving 4–12 women to analyze data over time [18]. This study adhered to the consolidated criteria for reporting qualitative research (COREQ) [21].

3.1. Participant Recruitment

This pilot study used convenience sampling to rapidly recruit participants for the following quantitative survey. To ensure that we recruited women from various backgrounds, this study was conducted across three facilities in Tokyo, Japan: a university hospital, a hospital, and a clinic. The university hospital is a regional perinatal center that manages normal and painless deliveries as well as high-risk pregnancies (e.g., maternal complications and fetal diseases). The hospital is also a regional perinatal center and manages various delivery types, including socially high-risk women, but does not deal with painless deliveries. The clinic only conducts pregnancy checkups and does not manage deliveries. Women who were pregnant, living in Japan, and fluent in Japanese were eligible for this study. In October 2020, the first author or research collaborators (obstetricians/midwives) approached eligible women who visited each facility face-to-face (e.g., “Would you like to talk about your anxieties during pregnancy?”) and introduced this study using an information leaflet. The leaflet included a QR code that led to the first author’s email address for further explanation, which was conducted face-to-face or in an online meeting. Of the 11 women who were approached and informed about this study (including the rationale) by the first author, eight women agreed to participate. Three women declined to participate; one did not want to show her home online; one believed that the research was useless and that policies (e.g., improving nursery schools) were the only support she needed; and the reason given by the third woman was unclear. After recruitment, three more women dropped out because of emergency hospitalization, schedule inconvenience, and inability to be contacted; therefore, we conducted a focus group with five women.

All participants provided written informed consent to participate in the study and to the publication of this paper. Each woman received a JPY 2000 (USD 20) gift certificate after the interview as a gesture of appreciation for their time. This study was approved by the Institutional Review Board of The University of Tokyo (approval code: 2020154NI).

3.2. Interview Procedure

Before the interview, we collected the participants’ demographic information using an online questionnaire. This information included marital status, cohabiting family, job, education background, economic comfort (four-point Likert-scale; almost none to pretty much comfortable), and participation in any prenatal education class. Other information was collected from their medical records (age, expected delivery date, number of past deliveries and abortions, infertility treatment, planned delivery facility, and identified risk) by research collaborators at each facility.

The semi-structured focus group interview was held in an online meeting room (Zoom meetings: <https://explore.zoom.us/ja/products/meetings/> (accessed on 2 February 2023)) to prevent infection during the current COVID-19 pandemic. The first author (female, MD, MPH) had conducted in-person medical interviews with pregnant women for seven years as an obstetrician. She felt challenged that the anxieties of pregnant women were unable to be fully addressed in their clinic visits. Therefore, this author facilitated the interview but concealed her occupation. Only the participants and the facilitator were present during the focus group. Following established focus group interview procedures [20], we created the goals of this pilot study: (1) to identify the needs of pregnant women without specific risks regarding the support that can be provided for their anxieties during pregnancy; (2) to get some idea and information from participants which lead to support and initiatives that pregnant women want to participate in. We designed guidelines and semi-structured questions for the interview based on these goals. The interview began with the general question, “Do you have any anxieties about this pregnancy or childbirth?” followed by us showing them a developing scale about pregnancy-related anxiety and discussing it. After clarifying and sharing each participant’s anxieties during pregnancy, the facilitator gave semi-structured questions such as: “How are you dealing with your anxieties?”; “Do you want to share your anxieties with someone else?”; “How much are you satisfied with support during pregnancy?”; and “What are you satisfied or dissatisfied with?”

The facilitator took field notes throughout the interview with particular attention to the speaker's tone of voice and to the facial expressions and physical posture of speakers and listeners. The interview was audio- and video-recorded and lasted around one hour. Repeat interviews were not conducted because we intended to hear narratives of pregnant women in real time and all participants were no longer pregnant after data analysis.

3.3. Data Analysis

The unit of analysis was the individual who was pregnant. The first author transcribed the audio recording verbatim immediately after the interview. Participants' facial expressions and physical actions (e.g., nods, laughter, and raising their hands) were captured by the video recording and added to the transcript in words. The transcript was returned to participants for comment, with no corrections necessary. We applied inductive thematic analysis as proposed by Boyatzis [22]. The first author read the transcript carefully and repeatedly, and then coded it manually irrespective of the goals of the interview. The unit of coding was one sentence of the transcript. All derived codes were labeled with definitions and recorded in Microsoft[®] Excel[®] for Microsoft 365 MSO (version 2212 build 16.0.15928.20196) 64 bits as a code book. After coding, all similar codes were identified and grouped. Next, the first author and the second author (who had experience of qualitative studies) discussed the data in order to generate themes focused on the types of support participants wanted or perceived as helpful. Thematic codes were generated with consideration for the conditions proposed by Boyatzis, such as clear definitions, conditions for inclusion/exclusion, and specific positive and negative examples [22]. We classified codes as "positive" or "negative" focusing on the speaker's affects. Finally, the thematic codes were adapted to all derived codes. Codes that were judged to be irrelevant for the goals of the interview (e.g., anxiety about some specific risks) were then removed from the analysis. The first author wrote a report of the overall analysis and discussed the generated codes and themes among authors to reach a consensus. This report was returned to all participants, and no objections or changes were made. Two weeks after the final coding, the first author repeated the coding using non-marked transcripts. Minor inconsistencies were modified through discussion. All coding procedures were recorded in the code book.

4. Discussion

We extracted three types of support needs for anxiety during pregnancy based on the perceptions of the focus group participants: tailored professional support, mainly from the medical field; existence of informal relationships, especially with those in the same situation with adequate influence; and successful examples that could be easily accessed. With these three types of support, participants could have both positive and negative feelings depending on their situation. Even if there was an apparent supply of support, the support was not always appropriate for their needs.

To achieve positive pregnancy experience, the previous review questioned the tendency of routine antenatal care which focused on biomedical tests and treatment [16]. Pregnant women mostly sought healthcare support, such as access to healthcare services and experiences within medical/healthcare settings (i.e., positive interpersonal relationships with providers, skills and competencies of providers, and getting physiological, biomedical, and behavioral information) [16]. While our study also showed that the involvement of professionals can be both a positive and negative emotional experience for pregnant women, it also suggested that what they are looking for may differ depending on the place and person of support supplied. In other words, while they naturally sought biomedical tests and treatments from professionals, the degree to which they sought psychological support from professionals varied from person to person; some women were likely to turn to professional support, while others were more likely to turn to other sources, possibly due to the nature of their concern or because of a previous experience of seeking but not getting support. Our study covered both support in medical situations and their

experiences in daily life to highlight their preferences and conflicts, details which have been difficult to ascertain in previous reviews and quantitative studies.

4.1. Theoretical Implications

Bandura outlined four factors that influenced self-efficacy: (i) previous experiences; (ii) vicarious experiences; (iii) verbal persuasion; and (iv) emotional arousal [23]. From this perspective, self-efficacy is developed by one's own experiences and by seeing successes and failures of other people (vicarious experiences). Verbal persuasion, which encompasses direct encouragement from a trustworthy person, is also effective in building self-efficacy. The three themes extracted in this study corresponded to two of Bandura's four factors (vicarious experiences and verbal persuasion). In other words, pregnant women in this study may have acted or sought support for building their self-efficacy. Therefore, the self-efficacy of pregnant women may be improved by creating a desirable support environment.

Our proposed model (Figure 1) suggests pregnant women can build their own self-efficacy if they can obtain the three types of support that meet their needs. However, the impact of support on self-efficacy may vary by the type of support, because each of Bandura's four factors has a different strength of impact on self-efficacy in various fields [23,24]. In addition, people appear to live in their own unique psychological world [23]. In other words, each person perceives, understands, and remembers events through their own unique "lens" [25]. The types of support to offer and focus on therefore depend on the unique lens of that individual. As seen in our study, pregnant women may choose (and change) the type of support they rely on based on their preferences and experiences. Therefore, to support every pregnant woman, interventions covering all three directions may be needed.

4.2. Practice Implications

The benefits and best methods of education or support programs during pregnancy remain unclear for a few reasons: it is difficult to conduct high quality research (e.g., randomized, controlled trials) in this population because of ethical considerations; and previous studies were conducted for various purposes using different methods [26]. Our findings also indicated that intervention with a single type of support may not be effective, which may explain the inconsistent results previously reported [26].

As in a previous review [16], the present study found examples in which pregnant women's needs were not met in the professional sector. Our results indicated that professional support has different functions from other types of support (e.g., friendship) because pregnant women may hesitate to talk about all of their concerns with experts. Consistent with the review that found that the provision of relevant, appropriate and timely information was a key factor in positive pregnancy experience [16], our study suggested that accurate descriptions, specific measures to resolve troubles, and reliable sources of information should be provided in the professional sector. Pregnant women may also need to share their values with professionals during treatment decisions and lifestyle transformations.

All participants in this study perceived the value of support from other experienced mothers, even if there were some disadvantages in encountering unexpected support. Although the lack of close relatives and friends with whom to talk and share similar problems was reported to predict the deterioration of mental health among pregnant women more than a decade ago [27], the present study revealed that not all pregnant women had such support. Previous interventions of lay-person-offered support only investigated the effect against adverse mental health outcomes (e.g., depression) among high-risk women [28]. However, our study suggested that such support may be theoretically effective for improving self-efficacy among pregnant women, regardless of specific risks. From the perspective of either vicarious experiences or verbal persuasion, further studies and interventions should be planned to connect anxious pregnant women with women who have had similar experiences to share real-life success or failure stories. In terms of informal relationships, it is worth noting that the present study found only negative statements

about support from partners. Participants wanted support from their husbands. However, if their needs were not met, they may have remembered this as a negative experience that conflicted with the perception that they deserved support from their husbands. A systematic review found that marriage or cohabiting with the baby's father had no effect against maternal depressive symptoms after controlling for potential confounders [29], and support from partners that did not meet needs could raise the risk [15]. Education or support programs during pregnancy should therefore include pregnant women's partners.

As most women of reproductive age have smart phones and can easily access the Internet anytime and anywhere in Japan, online information has become a big source of support among pregnant women. Our study supported the previous finding that pregnant women often gained reassurance from other people's experiences online [30]. However, many pregnant women also felt scared by the information they read online [31]. We encountered similar cases in this study where participants were psychologically damaged by online information. Our study also indicated that pregnant women may be confused by information that may not be accurate. To offer effective support to any pregnant women in Japan, it may be valuable for professionals to create or recommend reliable websites from which women can find correct and unbiased information or read about other pregnant women's experiences.

Several limitations of this study should be acknowledged. First, although this study was conducted as a preliminary study to identify meaningful variables in the following large observational study, our findings were based on one focus group and additional focus groups may find other themes or key concepts. Although one or two focus groups are said to be sufficient in exploratory studies [20], we should use these results as a starting point to know what support needs may be needed during pregnancy in today's local Japanese context and should evaluate them in the next quantitative phase in a larger sample. Comparing this study with focus groups in different samples would also bring meaningful insights in the future. Second, by using convenience sampling, we might have failed to capture important perspectives from hard-to-reach women [32]. Although we tried to recruit a heterogeneous group, we found that some of the items we considered were homogeneous (such as parity, educational background, and marital status). A possible explanation for this was that this study was conducted in the urban area. Even though some items appeared to be homogeneous, all participants had different backgrounds that could not be measured. The results of this study would be helpful for considering better support in the urban areas in Japan or for populations with similar backgrounds, such as newly pregnant women. Further studies are needed to explore the other targeted groups that have different characteristics from our study. Third, the information leaflet used in recruiting the participants might have encouraged more anxious women to participate and therefore this study was not representative of the needs among pregnant women in Japan. However, gathering parties who have some opinions can stimulate discussion in focus groups and yield rich data. Despite these limitations, to our knowledge, this was the first report in the last decade of a focus group exploring support needs for anxiety during pregnancy among women without specific risks in an economically prosperous country.

5. Conclusions

Using a focus group among pregnant women without specific risks, we found three types of support needs for anxiety during pregnancy: (1) seeking tailored professional support; (2) seeking continuous support within informal relationships; and (3) seeking others' success stories in the same situation. We proposed a model of needs of support for pregnancy-related anxiety backed up by social cognitive theory. Because an individual's needs for each type of support may be influenced by their preferences and circumstances, professionals should be aware of all three types of support when considering effective universal support for pregnant women's mental health. Further research and interventions should also consider the narratives and collaborate with pregnant women, because a unilateral supply of support may cause negative feelings in pregnant women.

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Institutional Review Board Statement: This study was conducted according to the guidelines of the Declaration of Helsinki and approved by the Institutional Review Board of The University of Tokyo (approval code: 2020154NI, date of approval: 22 July 2020).

Informed Consent Statement: Informed consent was obtained from all participants involved in this study. Written informed consent was obtained from participants to publish this paper.

Data Availability Statement: The data presented in this study are available on request from the corresponding author. The data are not publicly available, for ethical reasons.

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Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

Table A1. Coded anxieties and supporting quotes.

Anxiety Codes	Supporting Quotes ¹
Anxiety from Pregnancy Itself	
From confirmation of pregnancy to feeling fetal movement	Before I felt . . . the fetal movement, I was very anxious if my baby would be okay after I lost my morning sickness and entered the stable period, conversely. (Participant D)
Prenatal testing	I made my own decision (not to take prenatal testing), but I think I [will] have anxiety about whether my decision was right all the way until my baby is born. (Participant C)
Childbirth	As for my next concern, it is the first time I have given birth, so I am starting to feel a little scared about . . . childbirth. (Participant A)
Lack of preparation for childbirth and postpartum	The new anxiety that emerged was, as (Ms. G.) said, about what preparations I should make, whether there is anything I am missing or not, what and what timing I should prepare for the birth . . . I was starting to feel anxious about the birth? . . . little by little . . . (Participant C)
Postpartum attachment formation	Well, I’m not sure if I can really take care of my children properly . . . of course my niece and nephew are cute but . . . yes, this is my first baby so I guess I’m a little nervous about having to raise my baby day in and day out by myself . . . (Participant E)
Personal characteristics	
After miscarriage experience	My first child is four years old now, well, I’m four years away (before this pregnancy) and I had three miscarriages during that time . . . well . . . I was not anxious at all when I had my first child, but now that I experienced those miscarriages . . . I am always wondering . . . if my baby will be really okay. (Participant D)
Whether the pregnancy after infertility treatment can continue	(Like Ms. A.) I too had gone through infertility treatment, and since I had already gone through the full course of treatment, I was finally able to conceive on my third IVF cycle, so to be honest, I was more worried about whether this pregnancy would actually be successful than I was worried about the corona (COVID-19) disaster . . . (Participant C)
Complications during pregnancy	At first, well, I was in great shock . . . it was my first pregnancy, and I was told that I might have a miscarriage, which I didn’t expect . . . (Participant B)

Table A1. Cont.

Anxiety Codes	Supporting Quotes ¹
Environment surrounding individuals	
Facilities and medical staffs	I was a little young when I had my first miscarriage, and I felt like a tragic heroine when I had a miscarriage . . . the doctor's response was not very good, and I blamed it on the doctor and became displeased with the clinic . . . I had such experience of being tossed around by the hospital . . . so I am wondering what kind of criteria people use to choose a clinic, not just the proximity to their homes. (Participant C)
Home environment	If I impose it (the smoking cessation) [on my husband], it will make my family unhappy, and so on . . . (Participant E)
Workplace	Well, I couldn't tell people at work (about my pregnancy) because of that (anxiety about miscarriage), and I finally reported it . . . recently. (Participant D)
Outbreak of COVID-19	Of course, the world is getting so bad right now with corona (COVID-19) infections and things like that, so I was afraid of that . . . (Participant B)

IVF, in vitro fertilization; COVID-19, coronavirus disease 2019. ¹ Participants' narratives were translated into English for this publication.

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