

Original Research Paper

Using prevention guidance of common physiological symptoms in pregnancy: a qualitative study

Fransisca Retno Asih*, Renita Rizky Danti, Nuristy Brillian Ainindyahsari Winarna

Department of Midwifery, STIKES Banyuwangi, Banyuwangi, Indonesia

 fransisca.ra@stikesbanyuwangi.ac.id

Submitted: October 25, 2023

Revised: February 24, 2024

Accepted: June, 21, 2024

Abstract

Information about pregnancy is widely accessed by pregnant women, ranging from electronic media, print media, and even social media. One of them is the guide to the prevention of common physiological symptoms in pregnancy (PGCPSP). This guide quantitatively has a very positive impact on the success of preventing pregnancy complaints. However, independent attitudes related to the experience of using this guide have not been measured. The satisfaction and success of pregnant women in using this media is a benchmark for researchers to develop this educational media. This study aims to explore in depth the experiences of pregnant women in preventing and managing pregnancy complaints using the PGCPSP. This research is a qualitative study with a phenomenological approach. Data was collected through in-depth interviews with six pregnant women and four midwives. Participants were selected by purposive sampling. Interviews were recorded, transcribed, translated, and thematically analyzed using NVivo 12 trial version software. We identified three themes and eight sub-themes related to the experience of using PGCPSP: personal condition before using PGCPSP, experience of using PGCPSP, and recommendations for PGCPSP development. Literacy media such as PGCPSP positively impact pregnant women's experiences in overcoming various complaints. Health service providers must develop strategies using educational media, so that pregnant women have the knowledge and foster self-confidence for a satisfying pregnancy experience. In addition, efforts to develop forms of educational media through digital platforms are needed for the development of digital literacy for pregnant women in the future.

Keywords: common complaints; complaints in pregnancy; prenatal education; qualitative study

1. Introduction

Pregnant women both primigravida and multigravida often experience complaints during pregnancy or common physiological symptoms of pregnancy (CPSP). Pregnancy complaints sometimes can be accepted and handled well. However, there are still many pregnant women who have difficulty overcoming the complaints they feel, especially in primigravida (Ertmann et al., 2020). Common symptoms include nausea and vomiting (65.5%) (Tinti et al., 2023), leg cramps (30-50%) (Liu et al., 2021), back pain (40.5%-68%) (Carvalho et al., 2017; Manyozo et al., 2019; Salari et al., 2023), pruritus (38%) (Rudder et al., 2021), heartburn (20%) (Ali et al., 2022), gingivitis (40%) (Erchick et al., 2019), carpal tunnel syndrome (31-62%-67.4%) (Afshar & Tabrizi, 2021; Balik et al., 2014), insomnia (20.23%-42.4%) (Salari et al., 2021; Silvestri & Aricò, 2019; Smyka et al., 2020), sleep problems (77.9%) (Smyka et al., 2020).

Pregnancy symptoms may cause discomfort in women, reduce the quality of life (Bai et al., 2016; Boutib et al., 2022; Kazemi et al., 2017; Lagadec et al., 2018), and result in higher socioeconomic costs due to being longer sick off (Brekke et al., 2019; Malmqvist et al., 2015; Truong et al., 2017). In addition, hyperemesis gravidarum is associated with higher rates of hospitalisation and adverse outcomes (dehydration, malnutrition, ketonuria, and significant weight loss) (MacGibbon & Mullin, 2015). Insomnia and sleep disturbances are associated with a higher incidence of maternal depression,

preterm delivery, and caesarean sections (Felder et al., 2017; Haney et al., 2014; Li et al., 2017; Sedov et al., 2021).

The ability of each pregnant woman to manage pain and discomfort is different; some can endure the symptoms, some can prevent them, and some do not know and cannot handle these pregnancy complaints. In managing these symptoms, some can express their complaints during ANC contact with health workers like midwives, doctors, nurses, and others. However, many also try to handle it by seeking information on Google, asking parents or relatives, or even believing in myths explained by others (Bogaerts et al., 2017). Sometimes, pregnant women do not consider the validity of the information related to proper and correct ways to handle CPSP, according to the scientific, evidence-based health condition of the pregnant woman.

Many pregnant women access information on preventing CPSP through accurate literacy media. They trust these media as sources or guides that can direct them to get health services, consultation facilities, and information media to increase their knowledge (Vogels-Broeke et al., 2022). The media mentioned include pregnancy guidebooks (World Health Organization, 2016). Maternal and Child Health (MCH) books, leaflets, flashcards, and the latest ones, like the digital media prevention guidance for common physiological symptoms of pregnancy (PGCPSP).

Print media have the advantage of being easily obtained or accessed by pregnant women, but they also have drawbacks such as sometimes forgetting to store, difficulty understanding when read, and no consultation facilities, making them less attractive. However, with the development of technology, a guide has been published in digital media form, namely the prevention guidance for common physiological symptom pregnancy (PGCPSP) in video format, which all pregnant women and health workers can now access on the YouTube channel (Vogels-Broeke et al., 2022) This media was developed to provide knowledge and increase the independence of pregnant women in preventing complaints during pregnancy. The PGCPSP also provides education so that pregnant women learn to anticipate complaints before they occur. When experiencing certain complaints, they can independently increase their self-confidence to overcome them.

Quantitatively, the PGCPSP has a very positive impact on the success of preventing pregnancy complaints (Asih et al., 2023). However, independent attitudes related to the experience of using this guide have not been measured. The level of satisfaction and success through the experience of pregnant women in using this media becomes a benchmark for researchers to develop this educational media. This study aims to explore in depth the experiences of pregnant women in preventing and managing pregnancy complaints using the PGCPSP.

2. Methods Research

This research used qualitative methods with a phenomenological approach. Participant recruitment in this study used purposive sampling, totaling 10 participants (six pregnant women and four midwives). Data about participants were obtained from the Midwifery Independent Center Care Register Book, data from August to September 2023. One midwife was involved to assist in the selection of research participants. Participant selection was based on the following inclusion and exclusion criteria:

2.1. Pregnant Women

The inclusion criteria are: 1) pregnant women in early trimester I, II, or III; 2) pregnant women with CPSP; 3) pregnant women who get CPSP prevention guidance; and 4) pregnant women who are willing to be research subjects. The exclusion criteria are: 1) have a history of disease before pregnancy or substance or drug abuse; 2) experience and have a history of conditions such as stillbirth and/or severe fetal malformations; and 3) have multiple pregnancies.

2.2. Midwife

The inclusion criteria are: 1) have a minimum working period of two years; 2) provide ANC services; and 3) are willing to participate in this research. The exclusion criteria are: 1) on work leave; 2) are willing to participate in this research.

A pilot interview was conducted in this study to maintain research trust by giving a trial of the interview guide to pregnant women who have the same characteristics as the research subjects. The results of the pilot interview show that the participants understood the list of questions from the interview guide, and the answers provided are adequate to answer these questions. The STIKes Banyuwangi Health Research Ethics Committee approved this research with No. 115/02/KEPK-STIKESBWI/VII/2023.

Interviews were conducted online and offline at the midwifery independent center, with a previously agreed-upon time contract. Semi-structured interviews were conducted after participants agreed and signed the informed consent form. The interviews were recorded using an audio recorder and conducted for approximately 40-60 minutes. After interviewing 10 participants, the researcher reached data saturation, where no new ideas or themes emerged.

The recorded interviews then transcribed using the verbatim technique, and checked by participants through member checking to maintain the validity of this research. Transcripts were made by creating a clear and transparent description of the research process and presenting participant evidence and quotes. The researcher also used field notes and regularly discussed research progress with external reviewers/peer exams. To maintain the confidentiality of participants identity, we provide code P (for pregnant women) and B (for midwives). Data was analyzed with thematic analysis using the collaizi's framework (Praveena, 2022). The researcher used the NVivo 12 trial version software for data analysis.

3. Result and Discussion

Ten participants (Table 1) participated in in-depth interviews to describe their experiences using the prevention guidance of CPSP. From these interviews, we identified three themes and eight sub-themes related to the experience of using PGCPSP: personal condition before using PGCPSP, experience of using PGCPSP, and recommendations for PGCPSP development.

Table 1. Participant Characteristics

Characteristics	Participant	
	Pregnant Women	Midwife
Age (min-max (Year))	23-37	31-48
Gestational Age		
Early 1 st trimester	1	
Early 2 nd trimester	3	
Early 3 rd trimester	2	
Gravida		
Primigravida	2	
Multigravida	4	
Level of Education		
Elementary School-Junior High School	1	-
Senior High School	4	-
University	1	4

Characteristics	Participant	
	Pregnant Women	Midwife
Job-status		
Work	2	4
Jobless	4	-
Health Service Location		
Primary Clinic		1
Midwifery Independent Practice		1
Public Health Center		2

Source: Primary Data, 2023

3.1.Theme 1: Personal Condition Before Using PGCPSP

The conditions before using PGCPSP describe the knowledge of pregnant women about CPSPs include how to prevent and overcome pregnancy complaints, their ability and self-confidence in overcoming CPSPs, and the source of information sought before accessing CPSP prevention guidance.

Sub-thema 1: The Knowledge of Pregnant Women about CPSPs

Although CPSPs are common and cause discomfort for pregnant women, we found that pregnant women do not have adequate knowledge about CPSPs, including how to prevent and manage them.

“Yeah, I did not know how to handle it before, maybe after watching the video, I’ll know the treatment.” (P3, 24 years old)

“If we're talking about the previous one, dealing with leg cramps. Initially, I didn't know how to handle it.” (P4, 23 years old)

Previous studies have shown that having sufficient knowledge is necessary to develop prevention beliefs, a positive attitude, and the promotion of healthy behaviors in response to illness (Khoramabadi et al., 2016; Zhong et al., 2020). Based on a good knowledge of the individual, the right attitudes and behaviors can be adopted to reduce stress and anxiety during pregnancy (Kiftia et al., 2022). Strategies for health education based on the model of health promotion are more effective in improving pregnant women’s knowledge, understanding, and cognition (Khoramabadi et al., 2016). It can reduce the risks and barriers to healthy lifestyle habits.

Sub-thema 2: Pregnant Women's Ability and Self-Confidence in Overcoming CPSP

Some participants also felt confused, worried, scared, and less confident about their pregnancy complaints.

“Previously, it was really difficult with these complaints. But after watching the video, we learned that there are preventive measures for these complaints. So now, we are less afraid because we know that these are just mild complaints, not serious ones. We believe that we should handle them in a certain way, and now we are not worried anymore.” (P1, 26 years old)

“Initially, I lacked confidence because yesterday there were some experiences that I had never encountered before, such as back pain.So, I decided to practice the techniques shown in the YouTube video. I followed the instructions in the video and realized, "Oh, this is how it's done." (P1, 26 years old)

Discomfort that arises from CPSP, accompanied by feeling confused, worried, scared, and lacking confidence with her pregnancy complaints, can cause anxiety, and it will certainly impact the pregnant woman's well-being. Antenatal anxiety is characterized by intense stresses, worries, and uncertainties over the pregnancy, labor, delivery, and the couple's future roles as parents and caregiving responsibilities (Chauhan & Potdar, 2022). To have a positive pregnancy and delivery experience,

pregnant women must have access to trustworthy information; sufficient information promotes self-esteem and internal control, reduces tension and anxiety, and offers support (Vogels-Broeke et al., 2022).

Sub-Thema 3: The Source of Information Sought before Accessing CPSP Prevention Guidance

Participants still need to be convinced about preventing and managing their pregnancy complaints. The results of the interviews suggest that the need for more confidence is likely due to participants relying on others, especially their parents, and not seeking information from health-care professionals (midwives).

“Yes, what I felt previously was that I only asked my parents and didn't directly consult with a midwife. But after attending the class, I realized that we need to be independent and understand our own feelings. So when we have complaint, we know how to assist it, how to handle it properly. We must remain calm and relaxed.” (P3, 32 years old)

The participants not only sought information or help from their parents, but they also often received information from others, the accuracy of which needed to be improved.

“It's very important because at first, when I was having morning sickness, people told me to do this and that. But I was skeptical because people usually have different opinions, some negative, some otherwise. However, after watching the video, I became more confident in how to cope with it.” (P1, 26 years old)

Pregnant women who obtain health information have greater health knowledge, which improves their capacity to adopt preventative health behaviours, boosts their capacity for self-care, and lessens their anxiety when confronted with stressful situations or new health difficulties (Hamzehei et al., 2018). The information's most crucial component was that it came from a reputable and trustworthy source (Hay et al., 2022). Unfortunately, even though pregnant women had come to the health service to check their pregnancies, but the information related to CPSP was obtained by pregnant women from their parents and not from midwives. They perceive that parents are more experienced, so they use them as a source of information about their pregnancy.

Some participants' statements also indicate that their lack of knowledge and confidence in prevention and pregnancy complaint management is due to other information sources like Google searches, where the accuracy of the information still needs to be determined.

“Oh, it's very important for me. Sometimes when we search on google, the answers can vary. So once i find one answer, that's the only one i use.” (P4, 23 years old)

The previous studies showed that the majority of pregnant women (77.9%-95%) used the internet as a source of information; finding information and reading about others in similar circumstances was their primary motivation (Bjelke et al., 2016; Vogels-Broeke et al., 2022). Younger age, nulliparous, and higher education were characteristics of pregnant women who accessed more pregnancy information via the internet (Narasimhulu et al., 2016). Higher-educated pregnant women were three times more likely to seek pregnancy information than less educated women (below high school) (Sayakhot & Carolan-Olah, 2016). Higher levels of education may be associated with critical thinking skills, higher reasoning, and easier access to information, as possible reasons why this is the case.

During pregnancy and the early stages of parenthood, women and their partners want to have access to accurate, consistent, dependable, and easily accessible information (Hay et al., 2022; Kennedy et al., 2017). Information on the internet can be accessed from anywhere at any time. The pregnant women feel more in charge and confident as a result of the information, but it can also be overwhelming due to the abundance of information available. Another issue is that the quality of information sources varies greatly, while women's capacity to distinguish between trustworthy and reputable sources is

inadequate (Hay et al., 2022), so there is concern that the information is misleading and harmful to the health of pregnant women.

In addition, the majority of women did not talk to their healthcare providers about the information they had found on the internet (Jacobs et al., 2019; Sayakhot & Carolan-Olah, 2016). Pregnant women have the opportunity to access health information using the internet, especially about CPSP, but healthcare providers still have the responsibility to direct mothers to choose sources of information from the internet that are trustworthy and evidence-based (Javanmardi et al., 2020; Sayakhot & Carolan-Olah, 2016). Javanmardi et al., (2019) reported the main obstacles to getting health information during pregnancy: a lot of household responsibilities for women, education and work outside the home, the inability to distinguish between accurate and inaccurate information, inadequate interactions between women and healthcare providers, a lack of access to a variety of information resources, common pregnancy complaints, and stress and anxiety from facing pregnancy-related issues.

3.2. Theme 2: Experience of Using PGCPSP

Sub-theme 1: Benefits of PGCPSP

The participants in this study stated that their knowledge and confidence in the prevention and handling of pregnancy complaints increased, as seen from their various answers to the interview questions. Some participants felt that their knowledge and confidence had increased after accessing the PGCPSP.

"We have more knowledge about how to handle things like that. It is more able to calm myself down; there is no need to be confused; it is already in the video; sometimes the answers from one person to another are different, so it makes me confused." (P4, 23 years old)

Some participants stated that in addition to the increased knowledge, they also practiced the contents of the prevention guidance.

"I experienced back pain; I practiced how to handle it from the video, and I am satisfied with the video." (P1, 26 years old)

Based on participants' experience statements after using the PGCPSP, the increase in knowledge made participants feel more confident to find out the truth about the solution to their previous complaints.

"I think it's important, especially if you're pregnant with your first child. Most people just listen to what other people say. This video can help pregnant women become more informed and confident. If they have complaints about early pregnancy, they know that they don't last long." (P2, 36 years old).

The majority of participants explained the positive impact experienced when using PGCPSP. Increased self-confidence in participants made changes to habit patterns during pregnancy.

"I only experienced a few, thank God. According to the complaints I experienced, usually after sleeping, I have to tilt my body first. I can't get up right away." (P2, 36 years old)

"Yes, God willing, it is true, considering that, like yesterday, I think I have to move a lot and do a lot of activities. So, don't be lazy." (P6, 31 years old)

"Yes, usually now, when I sleep at night. Not like before. ... I also feel that I sleep better. There are positive changes after attending this pregnancy class." (P5, 37 years old)

Previous study by Serçekuş & Başkale (2016) have shown that antenatal education increases mothers' self-efficacy in relation to childbirth and decreases their fear of giving birth. In line with the study, we found that increased knowledge, confidence, satisfaction, and changes in good life patterns

or habits are some of the positive things pregnant women feel after accessing the prevention guidance of CPSP. It is important for a pregnant woman to understand her pregnancy, the new condition, and maternal prenatal care (Shahry et al., 2016). A mother's transition into parenthood is significantly influenced by her level of self-efficacy (Shorey et al., 2015). According to Hashmi et al. (2020) the concept of self-efficacy is complex, dynamic, and situational; it is influenced by a pregnant woman's emotional state, her prior experiences, her knowledge, the existence of family empowerment, and professional support. Pregnant women who have high levels of self-efficacy make better decisions, have realistic objectives, and have strategies in place to get beyond obstacles and hurdles (Hashmi et al., 2020).

Providing antenatal education in the form of animated video prevention guidance from CPSP is considered by pregnant women to be easier to understand because there are animated images, sound, and supporting text, so there is no need to read like when reading an MCH book and only need to see and listen. Research by Pushpaven (2018) revealed a significant increase in knowledge and positive pregnancy outcomes in pregnant women who received antenatal education modules using videos. Participants felt that video education media was more effective than books. They tended to be too lazy to read books due to time constraints.

"It's good for those who like to read, but I don't have time. People must always hold their mobile phones, even though they have little time. I am happy if there is education like yesterday. I no longer need to read and imagine like this." (P3, 32 years old)

"Alhamdulillah, it is useful. I can handle it myself. I don't need to ask. Before class, I asked why I was like this and how to overcome it. It seems like it could be a lot of work. So if I have watched the video and there is education, I know what to do" (P6, 31 years old).

"Yes,.... if it's just from the KIA book, we are too lazy to read, but if it's an educational video like that, I want to see it; there's already someone talking in the video. We don't need to read it ourselves. Good for lazy moms, eehhehe" (P3, 32 years old).

Sub-theme 2 Successful Management and Prevention of CPSP

After the use of the prevention guidance of CPSP, pregnant women can overcome various pregnancy complaints experienced such as back pain, gastrointestinal problem (constipation, nausea, and vomiting), insomnia and leg cramps. Back pain is one of the most commonly reported pregnancy complaints. This complaint usually appears in the 3rd trimester of pregnancy. Participants explained that they made various efforts as contained in PGCPSP.

"I experienced back pain; I practiced how to handle it from the video, and I am satisfied with the video." (p1, 26 years old)

"I used to have back pain...Then I saw the video. Thank God, until now it has not happened again because I have applied the recommendations in the video." (p5, 37 years old)

Participants know how to overcome complaints about their digestion, such as constipation, nausea and vomiting

"I have frequent constipation. Finally, I know how to prevent and overcome it, namely to eat more fruits and drinking water, squatting or sitting position but the legs are propped using a chair."(p2, 36 years old)

The use of PGCPSP can prevent the occurrence of insomnia and leg cramps in pregnant women.

"I once got insomnia, so finally, I practiced ways to prevent it. Alhamdulillah the insomnia is reduced, so now I can sleep." (p1, 26 years old)

"Emmm, for almost a week, my legs have been cramping every night. After watching the video, I know what to do to overcome and prevent this. I tried it every day, now it is better, Alhamdulillah" (p4, 23 years old)

Some complaints, such as back pain, nausea and vomiting, constipation, leg cramps, and constipation, can be prevented and overcome. This may occur due to changes in pregnant women's knowledge about preventing CPSP, so they are motivated to practice CPSP prevention measures. The research findings of [Yikar & Nazik \(2019\)](#) state that providing prenatal education about pregnancy complaints can reduce CPSP. The prevention guidance of CPSP is a guideline that contains standardized and evidence-based prevention measures. This can be an effective and reliable educational media for pregnant women. Systematic reviews and meta-analyses suggest that antenatal education can reduce maternal stress, increase self-efficacy, reduce caesarean delivery rates, and decrease the use of epidural anaesthesia; however, there is little evidence of its effect on maternal physical condition. Therefore, antenatal education should be standardized to explain its true impact on mental and physical health ([Hong et al., 2021](#)).

3.3 Theme 3: Recommendations for PGCPSP Development

Sub-theme 1: Addition of PGCPSP Content Material

The material contained in the PGCPSP video can be developed according to needs. As expressed by the midwife participant, she hoped for the addition of material on vaginal discharge for pregnant women. In addition to causing discomfort, vaginal discharge can also pose a health risk to pregnant women.

"...from the existing materials, I have not found material about vaginal discharge in pregnant women. Vaginal discharge is often experienced by pregnant women, which is very disturbing and certainly a risk to the health of pregnant women themselves, so I think it is necessary to add the material." (b2, 43 years old)

In addition to the addition of material, the addition of a more detailed series related to complaints commonly experienced by pregnant women was also explained by midwife participants.

"... like nausea and vomiting, it needs to be more detailed, and low back pain also needs to be discussed in more detail because almost all pregnant women must experience it. So if it is discussed more, automatically pregnant women have many ways to overcome all their complaints, so they are not confused anymore." (b1, 31 years old)

The topic of prevention guidance for CPSP in this study consists of 10 complaints, including nausea and vomiting, heartburn, constipation, insomnia (sleep disturbance), gingivitis, leg cramps, rest leg syndrome, varicose veins and oedema, carpal tunnel syndrome, pruritus, and back pain. Based on the assessment of midwives as caregivers, it is necessary to add material about vaginal discharge for improvement and the development of prevention guidance for CPSP. Vaginal discharge is a complaint that often occurs in women during their reproductive years and especially during pregnancy ([Rao & Mahmood, 2020](#); [von Glehn et al., 2017](#)). In general, women cannot distinguish between normal (physiological) and abnormal (pathological) vaginal discharge ([Ilankoon et al., 2018](#)), so it is necessary to provide education on the steps to prevent pathological discharge in the prevention guidance of CPSP.

Sub-theme 2: PGCPSP media development

Participants in this study said that there is a need to develop educational media to improve pregnant women's experience in preventing pregnancy complaints, one of which is through digital platforms such as TikTok, Instagram, and YouTube. They considered it more flexible.

"Yes, the video can be developed through TikTok or Instagram, which is shorter. The plan is to develop each complaint, so each complaint took fifteen minutes yesterday; there were ten complaints; it has not been explored in more detail, only briefly." (b4, 48 years old).

"Yes, but the video is spliced into many parts, ..., so I usually share it with patients. Now patients want it on TikTok. Then, if it's on YouTube, I just give the link, ma'am. Actually, you can download it too, ma'am, but sometimes it's not possible to share it with patients. It's more flexible on Tik Tok." (b3, 35 years old)

Recent technological and social media advancements have led to a rise in the use of social media by young women of reproductive age (18–25 years old) for health-related information, including lifestyle advice, which was previously only available through direct contact with medical professionals, family, peers, or printed media (McCarthy et al., 2020). We found that media development is needed to broadly reach pregnant women based on their characteristics, such as pregnant women who use social media (TikTok, Instagram or Facebook) more often than YouTube. For pregnant women seeking knowledge and support, social media has emerged as one of the most convenient, time-saving, easy, and easily available resources (Harpel, 2018; Zhu et al., 2019).

Pregnant women can receive extremely effective individualized information and social support through midwife-mediated social media groups. Perceptions of relational continuity can also be strongly impacted by one's ability to access a group. The groups provide a secure environment for the exchange and validation of essential information about maternity. Members relied on their midwife moderators to vouch for the accuracy of the information. For numerous participants, the group has become their go-to resource for information about pregnancy (McCarthy et al., 2020). Research by Zhu et al. (2019) states that in the current era, it cannot be denied that social media has played an important role in supporting pregnancy. The search for information about pregnancy has even increased and experienced a shift regarding safe pregnancy and promoting a more pleasant pregnancy. It emphasizes that the provision of antenatal care in the future must be balanced with information circulating on social media, thus reducing the gap in social media-based services caused by the digital divide (Zhu et al., 2019).

Sub-theme 3: PGCPSP animation video

Participants revealed that the existing PGCPSP video media was sufficient, but the development of evidence-based educational media using animated videos would make the video more interesting.

"No, I think it is very detailed, so it is not too boring or too long. The pictures on the slides are in line with what is discussed, easy to understand, and can be practiced too." (p1, 26 years old).

"There are no shortcomings eehehehhh, in my opinion, it's quite short and clear and easy to understand. However, if it was only in written form, maybe I would protest. This video covers everything—the practices and procedures, not just the writing, so we don't have to imagine it ourselves." (p3, 32 years old)

"Yes, if we only read the text, we will get bored quickly; if there is animation, it will be more interesting." (p4, 23 years old)

"It looks good and interesting, ma'am. The colours are also good. The sound quality is good. The sound is clear and easy to hear." (b2, 43 years old)

Midwives, as health workers providing pregnancy care services, must provide relevant and timely information following WHO recommendations for a positive pregnancy experience (World Health Organization, 2016). In this study, midwives and pregnant women strongly support the prevention guidance of CPSP in animated videos. Pregnant women stated that animated videos are the most suitable media for the prevention guidance of CPSP. The animated video on the prevention guidance of CPSP is interesting, not boring, and easy to understand because it is explained in detail in one step, one slide. Previous research has shown that animated educational videos can convey complex information in a

simple way, expand patients' knowledge, and increase satisfaction levels (Feeley et al., 2023; Moe-Byrne et al., 2022; Nintao et al., 2023). Turkdogan et al., (2022) conducted research on the effect of educational animated videos on preoperative patients and found that patients who received education in the form of animated videos felt satisfied, had a positive experience and wanted to share the animated video with colleagues and relatives with the same case.

Midwives in this study also stated that the prevention guidance animation video had good and interesting quality of content, sound, images, and text, and even the prevention steps discussed many complementary therapies.

"For me, there are no shortcomings because it is more complementary too. So everything is in accordance with the existing ingredients and then added with the latest complementary, so patients who, for example, start vomiting not only use this food, but some also use ginger and peppermint; this is the latest too. So I think everything is enough." (b1, 31 years old)

The use of complementary and alternative medicine during pregnancy is popular in many countries. Based on qualitative research by Bowman et al. (2018), there are three motivations for pregnant women to use complementary therapies: fighting for their destiny, the desire to give birth safely and naturally, and agreeing with and holding to the principles of the philosophical foundation of complementary therapies. H. G. Hall et al. (2015) stated that many pregnant women do not convey to midwives during antenatal care regarding the use of complementary therapies. It is very concerning if women continue to use complementary therapies without the knowledge or input of midwives. Lack of communication about using complementary therapies with health professionals is problematic, as it can increase risk and weaken the therapeutic relationship (H. R. Hall & Jolly, 2014). Therefore, complementary therapies in the prevention guidance of CPSP can indirectly solve this imbalance. Thus, midwives do not need to worry about whether pregnant women use complementary therapies. In addition, pregnant women do not need to doubt the complementary therapy to be practiced because it is available in the prevention guidance of CPSP.

This study has the strength that the prevention guidance of CPSP is based on WHO recommendations on positive pregnancy experiences, namely providing information and education in a relevant and timely manner that has not been initiated before. Thus, this qualitative research on exploring the experience of using the prevention guidance of CPSP is the first of its kind. Although it has advantages, this study also has limitations. The interview technique is only an in-depth interview, which may have different results if the interview technique is carried out with several methods, namely in-depth interviews and focus group discussions. In addition, this study was conducted in one of the midwifery independent care centers with the highest number of patient visits in Banyuwangi; therefore, the generalizability of the results may be limited.

4. Conclusion

In this study, before using the prevention guidance of CPSP, pregnant women do not have adequate knowledge about CPSPs, including how to prevent and manage them. Pregnant women feel worried and not confident in overcoming pregnancy complaints. Increased knowledge, confidence, satisfaction, and changes in good life patterns or habits are some of the positive things that pregnant women feel after accessing the prevention guidance of CPSP. The successful management and prevention of CPSP includes back pain, gastrointestinal complaints, insomnia, and leg cramps. Development recommendations include content, media development and PGCPSP animation videos. Healthcare providers have a major challenge in developing strategies to improve antenatal care through educational media so that pregnant women have the knowledge and confidence to have a satisfying pregnancy experience. One of them is through the use of social media platforms as a means to distribute evidence-

based antenatal health advice, support, and education in the context of health promotion and preventive care for pregnant women.

Acknowledgement

We want to thank DRTPM Kemendikbudristek for funding this research (project number 183/E5/PG.02.00.PL/2023). We would also like to thank midwife Susiani, the owner of the research site who has permitted this research, and pregnant women and midwives who have been willing to participate in this study.

References

- Afshar, A., & Tabrizi, A. (2021). Pregnancy-related hand and wrist problems. *PubMed*, 9(3), 345–349. <https://doi.org/10.22038/abjs.2020.50995.2531>
- Ali, R. A. R., Hassan, J., & Egan, L. J. (2022). Review of recent evidence on the management of heartburn in pregnant and breastfeeding women. *BMC Gastroenterology*, 22(1), 219. <https://doi.org/10.1186/s12876-022-02287-w>
- Asih, F. R., Danti, R. R., & Winarna, N. B. A. (2023). A Non-Randomized Controlled Trial of Prevention Guidance of Common Physiological Symptoms in Pregnancy for Self-Efficacy in Pregnant Women. *Jurnal Aisyah: Jurnal Ilmu Kesehatan*, 8(4). <https://doi.org/10.30604/jika.v8i4.2516>
- Bai, G., Korfage, I. J., Groen, E. H., Jaddoe, V. W. V., Mautner, E., & Raat, H. (2016). Associations between Nausea, Vomiting, Fatigue and Health-Related Quality of Life of Women in Early Pregnancy: The Generation R Study. *PLOS ONE*, 11(11), e0166133. <https://doi.org/10.1371/journal.pone.0166133>
- Balık, G., Sabri Balık, M., Ustüner, I., Kağıtçı, M., Sahin, F. K., & Güven, E. S. G. (2014). Hand and wrist complaints in pregnancy. *Archives of Gynecology and Obstetrics*, 290(3), 479–483. <https://doi.org/10.1007/s00404-014-3244-2>
- Bjelke, M., Martinsson, A.-K., Lendahls, L., & Oscarsson, M. (2016). Using the Internet as a source of information during pregnancy—A descriptive cross-sectional study in Sweden. *Midwifery*, 40, 187–191. <https://doi.org/10.1016/j.midw.2016.06.020>
- Bogaerts, A., Ameye, L., Bijlholt, M., Amuli, K., Heynickx, D., & Devlieger, R. (2017). INTER-ACT: Prevention of pregnancy complications through an e-health driven interpregnancy lifestyle intervention – study protocol of a multicentre randomised controlled trial. *BMC Pregnancy and Childbirth*, 17(1), 154. <https://doi.org/10.1186/s12884-017-1336-2>
- Boutib, A., Chergaoui, S., Marfak, A., Hilali, A., & Youlyouz-Marfak, I. (2022). Quality of Life During Pregnancy from 2011 to 2021: Systematic Review. *International Journal of Women's Health*, 14, 975–1005. <https://doi.org/10.2147/IJWH.S361643>
- Bowman, R. L., Davis, D. L., Ferguson, S., & Taylor, J. (2018). Women's motivation, perception and experience of complementary and alternative medicine in pregnancy: A meta-synthesis. *Midwifery*, 59, 81–87. <https://doi.org/10.1016/j.midw.2017.11.007>
- Brekke, I., Richardsen, K. R., & Jennum, A. K. (2019). Sickness absence in pregnancy and sedentary behavior: A population-based cohort study from Norway. *BMC Public Health*, 19(1), 71. <https://doi.org/10.1186/s12889-018-6379-4>
- Carvalho, M. E. C. C., Lima, L. C., de Lira Terceiro, C. A., Pinto, D. R. L., Silva, M. N., Cozer, G. A., & Couceiro, T. C. de M. (2017). Low back pain during pregnancy. *Brazilian Journal of Anesthesiology*, 67(3), 266–270. <https://doi.org/10.1016/j.bjan.2016.03.002>

- Chauhan, A., & Potdar, J. (2022). Maternal Mental Health During Pregnancy: A Critical Review. *Cureus*, 14(10), e30656. <https://doi.org/10.7759/cureus.30656>
- Erchick, D. J., Rai, B., Agrawal, N. K., Khatry, S. K., Katz, J., LeClerq, S. C., Reynolds, M. A., & Mullany, L. C. (2019). Oral hygiene, prevalence of gingivitis, and associated risk factors among pregnant women in Sarlahi District, Nepal. *BMC Oral Health*, 19(1), 2. <https://doi.org/10.1186/s12903-018-0681-5>
- Ertmann, R. K., Nicolaisdottir, D. R., Kragstrup, J., Siersma, V., & Lutterodt, M. C. (2020). Sleep complaints in early pregnancy. A cross-sectional study among women attending prenatal care in general practice. *BMC Pregnancy and Childbirth*, 20(1), 123. <https://doi.org/10.1186/s12884-020-2813-6>
- Feeley, T. H., Keller, M., & Kayler, L. (2023). Using Animated Videos to Increase Patient Knowledge: A Meta-Analytic Review. *Health Education & Behavior: The Official Publication of the Society for Public Health Education*, 50(2), 240–249. <https://doi.org/10.1177/10901981221116791>
- Felder, J. N., Baer, R. J., Rand, L., Jelliffe-Pawlowski, L. L., & Prather, A. A. (2017). Sleep Disorder Diagnosis During Pregnancy and Risk of Preterm Birth. *Obstetrics & Gynecology*, 130(3), 573. <https://doi.org/10.1097/AOG.0000000000002132>
- Hall, H. G., Griffiths, D., & McKenna, L. G. (2015). Complementary and alternative medicine: Interaction and communication between midwives and women. *Women and Birth: Journal of the Australian College of Midwives*, 28(2), 137–142. <https://doi.org/10.1016/j.wombi.2014.12.003>
- Hall, H. R., & Jolly, K. (2014). Women's use of complementary and alternative medicines during pregnancy: A cross-sectional study. *Midwifery*, 30(5), 499–505. <https://doi.org/10.1016/j.midw.2013.06.001>
- Hamzehei, R., Kazerani, M., Shekofteh, M., & Karami, M. (2018). Online Health Information Seeking Behavior among Iranian Pregnant Women: A Case Study.
- Haney, A., Buysse, D. J., Rosario, B. L., Chen, Y.-F., & Okun, M. L. (2014). Sleep disturbance and cardiometabolic risk factors in early pregnancy: A preliminary study. *Sleep Medicine*, 15(4), 444–450. <https://doi.org/10.1016/j.sleep.2014.01.003>
- Harpel, T. (2018). Pregnant Women Sharing Pregnancy-Related Information on Facebook: Web-Based Survey Study. *Journal of Medical Internet Research*, 20(3), e115. <https://doi.org/10.2196/jmir.7753>
- Hashmi, N., Ullah, I., El Hayek, S., & Shakoor, N. (2020). The impact of the COVID-19 pandemic on mental health and service delivery during pregnancy: Role of telepsychiatry. *Asian Journal of Psychiatry*, 54, 102461. <https://doi.org/10.1016/j.ajp.2020.102461>
- Hay, S. J., McLachlan, H. L., Newton, M., Forster, D. A., & Shafiei, T. (2022). Sources of information during pregnancy and the early parenting period: Exploring the views of women and their partners. *Midwifery*, 105, 103236. <https://doi.org/10.1016/j.midw.2021.103236>
- Hong, K., Hwang, H., Han, H., Chae, J., Choi, J., Jeong, Y., Lee, J., & Lee, K. J. (2021). Perspectives on antenatal education associated with pregnancy outcomes: Systematic review and meta-analysis. *Women and Birth: Journal of the Australian College of Midwives*, 34(3), 219–230. <https://doi.org/10.1016/j.wombi.2020.04.002>
- Ilanakoon, P., Goonewardena, C., Fernandopulle, R., & Perera, P. P. R. (2018). Women's understanding and cultural practices related to vaginal discharge: A qualitative study. *Nursing and Midwifery Studies*, 7, 74. https://doi.org/10.4103/nms.nms_60_17
- Jacobs, E. J. A., van Steijn, M. E., & van Pampus, M. G. (2019). Internet usage of women attempting pregnancy and pregnant women in the Netherlands. *Sexual & Reproductive Healthcare*, 21, 9–14. <https://doi.org/10.1016/j.srhc.2019.04.005>

- Javanmardi, M., Noroozi, M., Mostafavi, F., & Ashrafi-rizi, H. (2019). Challenges to access health information during pregnancy in Iran: A qualitative study from the perspective of pregnant women, midwives and obstetricians. *Reproductive Health*, 16(1), 128. <https://doi.org/10.1186/s12978-019-0789-3>
- Javanmardi, M., Noroozi, M., Mostafavi, F., & Ashrafi-Rizi, H. (2020). Exploring Women's Health Information Needs During Pregnancy: A Qualitative Study. *Journal of Family & Reproductive Health*, 14(4), 252–258. <https://doi.org/10.18502/jfrh.v14i4.5209>
- Kazemi, F., Nahidi, F., & Kariman, N. (2017). Disorders Affecting Quality of Life During Pregnancy: A Qualitative Study. *Journal of Clinical and Diagnostic Research : JCDR*, 11(4), QC06-QC10. <https://doi.org/10.7860/JCDR/2017/23703.9560>
- Kennedy, R. A. K., Mullaney, L., Reynolds, C. M. E., Cawley, S., McCartney, D. M. A., & Turner, M. J. (2017). Preferences of women for web-based nutritional information in pregnancy. *Public Health*, 143, 71–77. <https://doi.org/10.1016/j.puhe.2016.10.028>
- Khoramabadi, M., Dolatian, M., Hajian, S., Zamanian, M., Taheripanah, R., Sheikhan, Z., Mahmoodi, Z., & Seyedi-Moghadam, A. (2016). Effects of Education Based on Health Belief Model on Dietary Behaviors of Iranian Pregnant Women. *Global Journal of Health Science*, 8(2), 230–239. <https://doi.org/10.5539/gjhs.v8n2p230>
- Kiftia, M., Rizkia, M., Ardhia, D., & Darmawati. (2022). The correlation among pregnant woman's education level with knowledge and behaviour on readiness toward COVID-19 pandemic. *Enfermeria Clinica*, 32, S35–S38. <https://doi.org/10.1016/j.enfcli.2022.03.014>
- Lagadec, N., Steinecker, M., Kapassi, A., Magnier, A. M., Chastang, J., Robert, S., Gaouaou, N., & Ibanez, G. (2018). Factors influencing the quality of life of pregnant women: A systematic review. *BMC Pregnancy and Childbirth*, 18(1), 455. <https://doi.org/10.1186/s12884-018-2087-4>
- Li, R., Zhang, J., Zhou, R., Liu, J., Dai, Z., Liu, D., Wang, Y., Zhang, H., Li, Y., & Zeng, G. (2017). Sleep disturbances during pregnancy are associated with cesarean delivery and preterm birth. *The Journal of Maternal-Fetal & Neonatal Medicine*, 30(6), 733–738. <https://doi.org/10.1080/14767058.2016.1183637>
- Liu, J., Song, G., Zhao, G., & Meng, T. (2021). Effect of oral magnesium supplementation for relieving leg cramps during pregnancy: A meta-analysis of randomized controlled trials. *Taiwanese Journal of Obstetrics & Gynecology*, 60(4), 609–614. <https://doi.org/10.1016/j.tjog.2021.05.006>
- MacGibbon, K., & Mullin, P. (2015). Mortality Secondary to Hyperemesis Gravidarum: A Case Report. *Women's Health & Gynecology*, 1(2).
- Malmqvist, S., Kjaermann, I., Andersen, K., Økland, I., Larsen, J. P., & Brønnick, K. (2015). The association between pelvic girdle pain and sick leave during pregnancy; a retrospective study of a Norwegian population. *BMC Pregnancy and Childbirth*, 15(1), 237. <https://doi.org/10.1186/s12884-015-0667-0>
- Manyozo, S. D., Nesto, T., Bonongwe, P., & Muula, A. S. (2019). Low back pain during pregnancy: Prevalence, risk factors and association with daily activities among pregnant women in urban Blantyre, Malawi. *Malawi Medical Journal*, 31(1), 71–76. <https://doi.org/10.4314/mmj.v31i1.12>
- McCarthy, R., Byrne, G., Brettle, A., Choucri, L., Ormandy, P., & Chatwin, J. (2020). Midwife-moderated social media groups as a validated information source for women during pregnancy. *Midwifery*, 88, 102710. <https://doi.org/10.1016/j.midw.2020.102710>
- Moe-Byrne, T., Evans, E., Benhebil, N., & Knapp, P. (2022). The effectiveness of video animations as information tools for patients and the general public: A systematic review. *Frontiers in Digital Health*, 4, 1010779. <https://doi.org/10.3389/fgth.2022.1010779>

- Narasimhulu, D. M., Karakash, S., Weedon, J., & Minkoff, H. (2016). Patterns of Internet Use by Pregnant Women, and Reliability of Pregnancy-Related Searches. *Maternal and Child Health Journal*, 20(12), 2502–2509. <https://doi.org/10.1007/s10995-016-2075-0>
- Nintao, N., Manonai, J., Wattanayingcharoenchai, R., Bumrunghuet, S., Hansahiranwadee, W., Dulyaphat, W., Somchit, W., Wattanasirichaigoon, D., Prakobpanich, M., & Tangshewinsirikul, C. (2023). Effects of an animated educational video on knowledge of cell-free DNA screening among Thai pregnant women: A randomized control trial. *BMC Pregnancy and Childbirth*, 23(1), 853. <https://doi.org/10.1186/s12884-023-06170-8>
- Praveena. (2022). Application of Colaizzi’s Method of Data Analysis in Phenomenological Research. *Medico Legal Update*, 21. <https://doi.org/10.37506/mlu.v21i2.2800>
- Pushpaven. (2018). Effectiveness of video Assisted Instructional Module on Antenatal Care on the Pregnancy outcome of pregnant women attending Maternity Hospitals, Bangalore. *Asian Journal of Nursing Education and Research*, 8(4). <https://doi.org/10.5958/2349-2996.2018.00103.9>
- Rao, V. L., & Mahmood, T. (2020). Vaginal discharge. *Obstetrics, Gynaecology and Reproductive Medicine*, 30(1), 11–18. <https://doi.org/10.1016/j.ogrm.2019.10.004>
- Rudder, M., Lefkowitz, E. G., Ruhama, T., & Firoz, E. (2021). A review of pruritus in pregnancy. *Obstetric Medicine*, 14(4), 204–210. <https://doi.org/10.1177/1753495X20985366>
- Salari, N., Darvishi, N., Khaledi-Paveh, B., Vaisi-Raygani, A., Jalali, R., Daneshkhah, A., Bartina, Y., & Mohammadi, M. (2021). A systematic review and meta-analysis of prevalence of insomnia in the third trimester of pregnancy. *BMC Pregnancy and Childbirth*, 21(1), 284. <https://doi.org/10.1186/s12884-021-03755-z>
- Salari, N., Mohammadi, A., Hemmati, M., Hasheminezhad, R., Kani, S., Shohaimi, S., & Mohammadi, M. (2023). The global prevalence of low back pain in pregnancy: A comprehensive systematic review and meta-analysis. *BMC Pregnancy and Childbirth*, 23(1), 830. <https://doi.org/10.1186/s12884-023-06151-x>
- Sayakhot, P., & Carolan-Olah, M. (2016). Internet use by pregnant women seeking pregnancy-related information: A systematic review. *BMC Pregnancy and Childbirth*, 16(1), 65. <https://doi.org/10.1186/s12884-016-0856-5>
- Sedov, I. D., Anderson, N. J., Dhillon, A. K., & Tomfohr-Madsen, L. M. (2021). Insomnia symptoms during pregnancy: A meta-analysis. *Journal of Sleep Research*, 30(1), e13207. <https://doi.org/10.1111/jsr.13207>
- Serçekuş, P., & Başkale, H. (2016). Effects of antenatal education on fear of childbirth, maternal self-efficacy and parental attachment. *Midwifery*, 34, 166–172. <https://doi.org/10.1016/j.midw.2015.11.016>
- Shahry, P., Kalhori, S. R. N., Esfandiyari, A., & Zamani-Alavijeh, F. (2016). A Comparative Study of Perceived Social Support and Self-Efficacy among Women with Wanted and Unwanted Pregnancy. *International Journal of Community Based Nursing and Midwifery*, 4(2), 176–185.
- Silvestri, R., & Aricò, I. (2019). Sleep disorders in pregnancy. *Sleep Science*, 12(3), 232–239. <https://doi.org/10.5935/1984-0063.20190098>
- Smyka, M., Kosińska-Kaczyńska, K., Sochacki-Wójcicka, N., Zgliczyńska, M., & Wielgoś, M. (2020). Sleep Problems in Pregnancy—A Cross-Sectional Study in over 7000 Pregnant Women in Poland. *International Journal of Environmental Research and Public Health*, 17(15), 5306. <https://doi.org/10.3390/ijerph17155306>
- Tinti, S., Praticò, F., Bonaldo, V., Rovetto, M. Y., Barattini, D. F., Casolati, E., Piccolo, E., Piazza, R., Liberati, M., Locci, M., & Cetin, I. (2023). Prevalence and burden of nausea and vomiting in pregnant women: Interim analysis of the PURITY survey. *European Journal of Obstetrics &*

- Gynecology and Reproductive Biology*, 290, 135–142.
<https://doi.org/10.1016/j.ejogrb.2023.09.016>
- Truong, B. T., Lupattelli, A., Kristensen, P., & Nordeng, H. (2017). Sick leave and medication use in pregnancy: A European web-based study. *BMJ Open*, 7(8), e014934.
<https://doi.org/10.1136/bmjopen-2016-014934>
- Turkdogan, S., Roy, C. F., Chartier, G., Payne, R., Mlynarek, A., Forest, V.-I., & Hier, M. (2022). Effect of Perioperative Patient Education via Animated Videos in Patients Undergoing Head and Neck Surgery: A Randomized Clinical Trial. *JAMA Otolaryngology–Head & Neck Surgery*, 148(2), 173–179. <https://doi.org/10.1001/jamaoto.2021.3765>
- Vogels-Broeke, M., Daemers, D., Budé, L., de Vries, R., & Nieuwenhuijze, M. (2022). Sources of information used by women during pregnancy and the perceived quality. *BMC Pregnancy and Childbirth*, 22(1), 109. <https://doi.org/10.1186/s12884-022-04422-7>
- von Glehn, M. de P., Sidon, L. U., & Machado, E. R. (2017). Gynecological complaints and their associated factors among women in a family health-care clinic. *Journal of Family Medicine and Primary Care*, 6(1), 88. <https://doi.org/10.4103/2249-4863.214982>
- World Health Organization. (2016). WHO recommendations on antenatal care for a positive pregnancy experience. World Health Organization. <https://iris.who.int/handle/10665/250796>
- Yikar, S. K., & Nazik, E. (2019). Effects of prenatal education on complaints during pregnancy and on quality of life. *Patient Education and Counseling*, 102(1), 119–125.
<https://doi.org/10.1016/j.pec.2018.08.023>
- Zhong, B.-L., Luo, W., Li, H.-M., Zhang, Q.-Q., Liu, X.-G., Li, W.-T., & Li, Y. (2020). Knowledge, attitudes, and practices towards COVID-19 among Chinese residents during the rapid rise period of the COVID-19 outbreak: A quick online cross-sectional survey. *International Journal of Biological Sciences*, 16(10), 1745–1752. <https://doi.org/10.7150/ijbs.45221>
- Zhu, C., Zeng, R., Zhang, W., Evans, R., & He, R. (2019). Pregnancy-Related Information Seeking and Sharing in the Social Media Era Among Expectant Mothers: Qualitative Study. *Journal of Medical Internet Research*, 21(12), e13694. <https://doi.org/10.2196/13694>