

# The fulfillment of pregnancy-related needs of women in refugee camps in Indonesia: A phenomenology study

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## Abstract

**Background:** As Indonesia lies on several tectonic plates, it is often hit by natural disasters such as earthquakes. Women are included in the vulnerable group category during disaster situations, especially pregnant women.

**Purpose:** This study aims to explore the needs of pregnant women in refugee camps after natural disasters.

**Methods:** This is qualitative research with a phenomenological approach. The data were collected in 2019 through in-depth interviews with 9 women who were pregnant when the disaster occurred using purposive and snowball sampling techniques. The participants were refugees who were victims of the earthquake in Kalibening, Banjarnegara, Central Java, in 2018. Interview transcripts were analyzed using thematic analysis.

**Results:** The following three themes were found and discussed: (1) the basic needs of pregnant women during a disaster situation in refugee camps, (2) comprehensive health examinations for pregnant women in disaster situations, and (3) pregnant women's reluctance to stay in refugee camps.

**Conclusion:** This study shows that pregnant women's limited mobility restricts them from meeting their basic and perinatal needs in refugee camps. After natural disasters, many pregnant women experience complications during their pregnancy. Moreover, from a cultural aspect, being together with family was found to be important for pregnant women. Thus, there is a need for coordination between local governments and other stakeholders regarding the needs of pregnant women so that they can receive appropriate assistance accordingly.

**Keywords:** natural disasters; pregnant women; special needs; vulnerable groups

## Introduction

Indonesia is a country that is prone to natural disasters (Priester, 2016). The National Disaster Management Agency (2018) noted that, between 2008 and 2018, there were 10 types of natural disasters that occurred in Indonesia, one of them being earthquakes. As many as 187 earthquakes happened in Indonesia over the 10-year period mentioned above and have caused large impacts, both in terms of victims and economic losses. These losses include around 2000 deaths, almost 1 million people living in refugee camps, and the destruction of thousands of health facilities, places of worship, education facilities, and others (National Disaster Management Agency, 2018). Moreover, Walsh (2007) stated that the occurrence of a natural disaster on an individual level results in the loss of a safe and comfortable place to live, loss of family members, loss of employment, loss of economic resources, and trauma.

In April 2018, an earthquake occurred in the Kalibening District, which lies on the border between Banjarnegara Regency and Pekalongan Regency,

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Central Java. The 4.4 magnitude earthquake was also followed by several aftershocks and was felt by residents around the Banjarnegara Regency and Pekalongan Regency (Nugroho, 2018). Based on the BNPB's data in 2018, it was recorded that two people died and more than 5000 people had to live in refugee camps.

According to Walsh (2007), women are more likely to die than men after large-scale natural disasters. In addition, a study conducted by Oxfam (2006, as cited in Hidayati, 2014) also stated that, in every natural disaster event, most victims (60-70%) are women, children, and the elderly. Likewise, according to the Women's Solidarity Association (2018) report regarding the earthquake and tsunami that occurred in Palu in 2018, most of the victims in the refugee camps were women (1511), including pregnant women (69) and breastfeeding women (10).

The identification of vulnerable groups in disaster situations is important. Women in particular are members of the vulnerable group due to their special needs before, during, and after a disaster (Gokhale, 2008). This is in line with Jahangiri, Izadkhah, and Sadighi (2014) who stated that, in the disasters that have occurred in recent years, a focus on the special needs of women during various disaster cycles, especially during and after disasters, is needed. Furthermore, according to Hidayati (2014), the vulnerability of women in disaster situations can be grouped into two stages, namely, during and after a disaster (recovery period). Hidayati (2014) further explains that, when a disaster occurs, women are at a disadvantage due to their position or role in society. This is because women tend to not only think about how they can survive, but also how they would save their children and family. In addition, women cannot quickly leave their house when a disaster occurs as they would need certainty on whether their children are safe or not, in addition to her having to carry or lead her child to safety. This is also evidenced by the tsunami disaster in Aceh in 2004, where most of the women killed were inseparable from their young children or were found in a position where they were still holding their children (Chineka, Musyoki, Kori, & Chikoore, 2019).

In contrast to the moment of the disaster, the recovery period after the disaster is closely related to the non-fulfillment of women's rights. The fulfillment of post-disaster needs should address both the needs of women and men. However, many women's needs are ignored because they are not considered urgent. For example, women of reproductive age would need more clean water, underwear, and sanitary products to maintain their reproductive health, especially during menstruation (Women's Solidarity Association, 2018). However, these have not been considered as urgent needs that must be immediately fulfilled in a disaster. In addition, the needs of each woman are very different as it depends on the stage of the woman's life cycle (baby, toddler, teenage, adult women, pregnant

women, breastfeeding women, and older women).

Pregnant women require resources, such as food and clean water, access to healthcare and medicine, and psychological care due to post-disaster trauma to reduce pregnancy-related morbidity (American College of Obstetricians and Gynecologists, 2010). Harville, Xiong, and Buekens (2010) reported that the earthquakes that occurred in several locations, such as China, Taiwan, Northridge, Israel, Japan, and Mexico, a few years ago were associated with many negative conditions that affected pregnant women including birth complications, higher rates of low birth weight, preterm birth, birth defects, lower Apgar scores, higher psychiatric distress, increased preterm delivery, and anxiety that leads to depression. This illustrates that experiencing a disaster during pregnancy will pose a risk to the mother or fetus. Therefore, to prevent maternal and child morbidity and mortality, the needs of pregnant women during and after a disaster should be identified by exploring their experiences. Meanwhile, teenage girls or adult women who are still in their productive age would need to maintain their reproductive health, especially during menstruation. They would need more clean water, underwear, and sanitary products (Women's Solidarity Association, 2018). Due to the lack of fulfillment of women's needs in post-disaster situations, the purpose of this qualitative study was to investigate the experiences of post-disaster pregnant women and their needs fulfillment.

## Materials and Methods

### Design

This is a descriptive qualitative research that used a phenomenological approach. Phenomenological research records and analyzes the beliefs, feelings, and perceptions of the participants that are looking to be studied in relation to the thing being reviewed (Greening, 2019; Rodriguez & Smith, 2018). Using this method is expected to obtain in-depth information of the challenges faced by pregnant women who were victims of natural disasters. A focus was made on how their needs were met while living in refugee camps. Data were collected through in-depth interviews that used semi-structured interview guidelines.

### Participants and Setting

The purposive and snowball sampling techniques were used to select participants. The participants were pregnant women who were displaced by the earthquake in Kalibening District, Banjarnegara Regency, Central Java Province, in April 2018, able to communicate orally in Indonesian, and were willing to participate in this study by signing the consent form. The number of participants in this study was nine because saturation was reached by the ninth participant interviewed.

### Data collection

Data were collected from July to August 2019.

**Table 1. Characteristics of Participants (n = 9)**

Participant code	Age	Education	Occupation
P1	33	ES	Housewife
P2	28	ES	Housewife
P3	30	Bachelor	Teacher
P4	38	ES	Farmer
P5	21	JHS	Housewife
P6	26	JHS	Merchant
P7	23	SHS	Merchant
P8	26	ES	Housewife
P9	20	JHS	Housewife

ES= Elementary School; JHS = Junior High School; SHS = Senior High School

**Table 2. Thematic Analysis of The Needs of Pregnant Women During A Disaster Situation**

Theme	Category
The basic needs of pregnant women in the refugee camp	Nutritional needs of pregnant women Personal hygiene equipment Bedding
Comprehensive health examinations for pregnant women in disaster situations	Examination of maternal and fetal well-being Proactive health worker visits to the evacuation post
Pregnant women's reluctance to live in refugee camps	Families could provide assistance, facilities, a sense of security, and comfort to pregnant women

After obtaining research approval and permission, the researcher contacted the proposed participant, provided research-related information, and asked for her willingness to participate in this study. Then, the informants signed a consent form to indicate that they understood and wanted to participate in this study voluntarily. The interviews were conducted in Indonesian using an interview guide. The interviews lasted for about 60 minutes for each informant and were recorded using an audio recorder.

### Data analysis

Data analysis and collection were conducted continuously and in parallel to each other. All recorded data were transcribed verbatim. Next, qualitative thematic analysis was conducted. Important sentences, keywords, or phrases that described the experiences of pregnant women in meeting their needs while in refugee camps were identified and marked. The general ideas in the manuscript were then sorted and coded according to their differences and similarities so as to create categories and sub-categories. The words and phrases in the categories were then reduced by crossing out repetitions of similar words or phrases to reduce redundancy. After several modifications, three themes were identified (Table 2). All authors participated in this process and discussed the development of themes, categories, and sub-categories. Saturation was achieved at nine participants after using an individual response approach to generate the themes and categories.

### Ethical consideration

Ethical approval was obtained from the Ethics Committee of the Faculty of Medicine, Jenderal Soedirman University number 2514/KEPK/V/2019. In addition, the research permit required to conduct data collection was received from the relevant local government. Each participant was given an information sheet that explained the purpose and procedure of this research. The participants were aware that their participation in this study was voluntary and that their names were kept confidential. In addition, it was reassured that their withdrawal as participants at any stage would have no impact on their work and/or daily life.

### Trustworthiness

Trustworthiness in a qualitative study consists of four components. They are dependability, dependability, confirmability, and credibility (Schwandt, Lincoln, & Guba, 2007). The researchers should stay on the research site for extended periods of time to ensure credibility. The study's researchers are all Javanese and have lived in the Central Java Province for a considerable amount of time. Informant observation, peer debriefing, member checking, and triangulation were used as research methods. This study employed triangulation techniques, and data were gathered through in-depth interviews and observations (Klein & Olbrecht, 2011). In order to gather information, the researchers also used sources from pregnant mothers, family members,

and medical professionals. The researchers gave a detailed description of the informant's traits to ensure transferability.

## Results

This study was conducted with nine participants, where the majority of the pregnant women were housewives and as many as three were of ages ranging from 21–38 years. Only one participant had obtained a bachelor's degree; the remaining participants' highest levels of education were elementary school (ES) and junior high school (JHS). The majority of participants were Muslim. The characteristics of the participants can be seen in Table 1.

In this study, three themes that represent the needs of pregnant women as survivors from natural disasters were found and are stated in Table 2. The three themes are explained as follows:

### Theme 1: The basic needs of pregnant women in refugee camps

All participants revealed that they need a variety of basic needs.

#### Nutritional needs of pregnant women

Maternal nutrition during pregnancy affects the health of the mother and fetus. The nutritional status of pregnant women is believed to be closely related to the nutritional intake of the food consumed by the mother. The following is an excerpt from a participant's statement regarding their nutritional needs:

*"... we would normally eat rice with eggs, there were no vegetables, so sometimes I would cook vegetables myself to add to my meals.... I asked for milk to be sent and milk for pregnant women was sent ... I want to drink milk as quickly as possible so I can be healthy..."* (P1, 33 years old, housewife) (*"... makan rames nasi telur ga ada sayurnya, jadi kadang masak sendiri sayurnya jadi ditambahi masak sendiri...minta susu terus dikirim ada susu ibu hamil ensiti ibu hamil ...pengennya cepet minum susu biar sehat..."*).

#### Personal hygiene products

During pregnancy, pregnant women reported that they tend to sweat more easily, especially in refugee camps. This condition caused mothers to need personal hygiene products to maintain their personal hygiene. Almost every participant provided the same statement regarding personal hygiene, one of which is the following quote:

*"...yes, we changed clothes a lot, I first bought them at the market to change into, toiletries too... At that time, soap and toiletries were given, panties, bra..."* (P3, 30 years old, teacher) (*"...ya banyak ada kaya baju ganti gitu-gitu, waktu pertama kan saya beli ke pasar untuk ganti, alat mandi juga... waktu itu disitu dikasih sabun sama perlengkapan"*

*mandi celana dalam, BH..."*).

#### Bedding

One of the physical changes during pregnancy is the growing belly of pregnant women with increasing gestational age. This affects their comfort level when going to sleep. However, the overcrowded conditions as well as limited facilities in the refugee camps have caused the mothers' discomfort, especially when going to sleep. The following are excerpts from participants:

*"... We had to sleep in rows, with pregnant people, you know, how are we supposed to do so with our large stomachs... We weren't given a mattress, we had to bring our own floor mattress and blankets..."* (P1, 33 years old, housewife) (*"...tidurnya berjejer-jejer, orang hamil kan gimana ya perutnya... Engga dapet [kasur], kasur lantai bawa sendiri selimut apa bawa [sendiri]..."*).

### Theme 2: Comprehensive health examinations for pregnant women in disaster situations

#### Examination of maternal and fetal well-being

Some participants were worried about the condition of the fetus they were carrying after the earthquake they experienced. Some pregnant women have even experienced increased blood pressure to the point of having to lose the fetus they are carrying. The following are excerpts from participants:

*"...yes, I have high blood pressure... normally my blood pressure would be 100, but now it's 140...I also experienced spotting, like bleeding...because I'm tired and keep thinking too...the bleeding is a lot..."* (P2, 28 years old, housewife) (*"...iya tinggi [tekanan darah]...kan 100 normalnya pas ditensi jadi 140...ngeflelele gitu kaya perdarahan...karena kecapean terus pikiran juga...perdarahannya banyak banget..."*).

Moreover, because they could not check the condition of the fetus through ultrasound examination, pregnant women had to seek other independent means. This statement was made by one of the participants:

*"...I was afraid of my 4 months pregnancy, so I went to Banjar for an ultrasound...I just wanted to check because yesterday there was an earthquake, but the doctors and midwives laughed because I was worried about my pregnancy..."* (P1, 33 years old, housewife) (*"...takut di dalam [kandungan] 4 bulan gimana-gimana jadi dibawa ke banjar buat di USG...mau periksa aja soalnya kemarin abis ada gempa terus sama dokter susternya malah diketawain soalnya saya takut kenapa-kenapa..."*).

#### Proactive health worker visits to evacuation posts

The survivors preferred to be visited by health workers in refugee camps due to reasons such as access



or time constraints and physical weakness. Most of the participants hoped that the health workers would not only stay at the health posts, but that they would also visit the refugee camps. This has been done by several health workers who directly visited pregnant women in some refugee camps. However, some health workers still required pregnant women to go to health posts that are outside the refugee camps. The following two pregnant women expressed an important point in this matter:

*"... there is a midwife called Mrs. Teguh who always does control check-ups of the condition of pregnant women at the refugee camp..."* (P6, 26 years old, merchant) (*"... ada bu bidan teguh yang selalu mengontrol kondisi ibu hamil di posko pengungsian..."*).

*"... they need to visit the refugee camps more often... they would normally just inform us that we need to go to the health posts, they don't check us one-by-one..."* (P2, 28 years old, housewife) (*"...didatengin ke posko [pengungsian] satu-satu, lebih sering-sering lah...kan Cuma diumumkan suruh datang ke posko kesehatan ga didatengin satu-satu..."*).

### Theme 3: Pregnant women's reluctance to live in refugee camps

Families provide assistance, facilities, a sense of security, and comfort to pregnant women. However, families were separated into a separate section of the refugee camp, that is, for pregnant women. Due to overcrowded tents and separation from their families, most pregnant women felt less safe and uncomfortable when living in refugee camps. The presence of family members and being physically close to their family is one form of support that families can provide for pregnant women. The following is a statement sourced from a participant that supports this theme:

*"...we were told to evacuate to a safe place but then we were not gathered together, if something goes wrong, it's always better if we're together as one family...it's better if you and your husband are together so if there's anything wrong you can get help right away...I said I didn't want to go to the refugee camp without my family close... I want to stay here so I can be close to my family, it's right near my grandparent's house, there is a toilet, there is a stove..."* (P1, 33 years old, housewife) (*"...suruh ngungsi ditempat aman tapi gak pada ngumpul pada tetep jadi satu kalo ada apa-apa kan satu keluarga gitu...mending sama suami kumpul kalo ada apa-apa bisa langsung ditolong...saya bilang engga mau biar disini aja sama keluarga biar dekat...kan dekat rumahnya mbah disitu ya ada toilet ada apa... ada kompor..."*).

## Discussion

Women need special attention in natural disaster management, especially during and after disasters because they have higher morbidity and mortality rates than men due to social, cultural, and biological gender roles (Jahangiri et al., 2014). According to Sato et al. (2016), pregnant women are particularly vulnerable to natural disasters as they may suffer from an increased risk of pregnancy-related problems. Pregnant women faced challenges with evacuation, a lack of basic survival necessities, and attending to their own health concerns. Pregnant women were also concerned about their families' needs and health issues, especially if they had small children.

During post-disaster, women are vulnerable to various health risks, such as: physical, mental, and emotional stress, reproduction and sexual health issues, as well as difficulty in obtaining adequate aid, water, food, medicine, and access to health facilities, being susceptible to social and economic risks, like the loss of a husband or family breadwinner, livelihoods, and rights to land and property (Septanaya & Fortuna, 2023). Indonesia has guidelines for handling reproductive health problems in disaster situations through the implementation of the Minimum Initial Service Package (PPAM) (Indonesian Health Ministry, 2017). One component of PPAM implementation is preventing increased maternal and neonatal morbidity and mortality. Prevention is carried out by: (1) Feeling that there are special places for giving birth in several places such as health posts, in evacuation sites or in other appropriate places; (2) Costs for providing services (competent personnel and standardized tools and materials) for normal delivery and emergency maternal and neonatal care at basic and referral healthcare facilities; (3) Building a referral system to facilitate transportation and communication from the community to the puskesmas and puskesmas to the hospital; (4) Availability of birthing kits for pregnant women who will give birth in the near future; (5) Community care to find out about the existence of maternal and neonatal birth assistance and emergency services; (6) Adequate availability of contraceptives.

In this study, pregnant women have expressed their needs while in refugee camps. Three themes have been found, namely, (1) the basic needs of pregnant women during disaster situations in refugee centers, (2) comprehensive health examinations for pregnant women in disaster situations, and (3) pregnant women's reluctance to live in refugee camps. Based on the themes obtained, it can be seen that basically there is no difference in the needs of pregnant women in disaster conditions or not in disaster conditions. However, the difference lies in their affordability in meeting their needs in a more difficult disaster situation.

Basic needs such as food and nutrition are felt to be essential for pregnant women. Unfortunately, during the initial period in refugee camps, these needs could not be met immediately. Some pregnant women who still have savings or other sources of income chose to fulfill it independently, but those who do not have a source of income while they are evacuated would have to wait for help to arrive.

The nutritional needs of pregnant women are described in detail by the [UNHCR, UNICEF, WFP, and WHO \(2004\)](#). During pregnancy, a woman's nutritional needs for macronutrients (carbohydrates, protein, and fat) increase significantly as pregnant women need an additional 285 kcal per day. Micronutrients are also essential, such as iron, folic acid, vitamin A, and iodine, which are important for the health of mothers and babies. Maternal nutrition is a major contributor to the health and survival of newborns ([Gee, Vargas, & Foster, 2018](#)). [Callaghan et al. \(2007\)](#) stated that the unavailability of adequate food in refugee camps will increase health problems for pregnant women. In addition, the impact of poor nutritional status and intake on mothers during pregnancy can have a negative impact on their infant's birth weight and early development ([UNHCR et al., 2004](#)). One participant in this study stated that the baby she gave birth to had a small birth weight, which was less than 2500 grams (normal birth weight), so her child had to receive treatment in the NICU (neonatal intensive care unit). This shows that impact disasters can increase the morbidity rate in neonatal which leads to an increase in neonatal mortality. As also stated by [El-Shal, Mohieldin, and Moustafa \(2022\)](#), in low- and middle-income countries, health disasters increase maternal, under-5, and neonatal mortality by 0.3%, 0.3%, and 0.2% respectively and by 35%, 80%, and 26% after one year, respectively.

Maintaining personal hygiene is also another basic need for pregnant women in refugee camps. This statement is in line with the [Women's Refugee Commission \(2002\)](#) who stated that not only food but sanitation facilities for personal hygiene such as clean water, toiletries, and change of clothes are also serious problems found among refugees living in refugee camps. Personal hygiene is also synonymous with the availability of toilet facilities. Even though all refugees already have these, what needs to be considered is the ratio of the availability of toilets to the number of refugees ([Buleleng Regency Social Service, 2017](#)).

The need for adequate personal hygiene is important for pregnant women because, during pregnancy, women sweat more and produce more vaginal discharge than non-pregnant women (due to hormonal changes). Therefore, they may be more susceptible to infection by bacteria in the environment ([Widhi, Damayanthi, & Khomsan, 2021](#)). Keeping the body clean helps prevent infection. If possible, a pregnant woman should wash her body every day with clean water, especially in the genital area. In addition, dental hygiene is

also essential during pregnancy because increased levels of estrogen can cause swelling and increased sensitivity of the gum tissue ([Shiferaw, Mengistie, Gobena, Dheresa, & Seme, 2021](#)).

In addition to eating well and maintaining good hygiene, pregnant women need to get enough sleep and rest every day. Good rest will also help pregnant women to stay strong and give the fetus a better chance of being born healthy ([Shiferaw et al., 2021](#)). However, pregnant women in refugee camps are living in crowded and cramped conditions with limited blankets and pillows. Thus, they would not be fulfilling their need for rest optimally. Similarly, in the tsunami disaster that occurred in Banten, West Java, Indonesia, in 2007, one of the volunteers said that the items most needed by refugees were bedding and blankets ([Adji & Zuraya, 2018](#)).

Moreover, the discomfort pregnant women refugees experience when going to sleep is not only due to the limited facilities for sleeping equipment. As [Sukorini \(2017\)](#) stated, when close to delivery, pregnant women will find it difficult to adjust their sleeping position as their diaphragm will be pressed up and interfere with their breathing. Furthermore, Emilia (2010 as cited in [Sukorini, 2017](#)) said that poor breathing in pregnant women will cause reduced supply of oxygen to the brain and affect the quality of sleep. Sleep disturbances are common in pregnant women and are physiological in nature but become more severe due to overcrowded evacuation conditions and limited supporting equipment for sleeping ([Lowdermilk, Perry, Cashion, & Alden, 2016](#)).

In this study, it was found that an earthquake shock caused pregnant women to worry about the condition of their fetus such that they felt the need to check the condition of their pregnancy. The concerns felt by pregnant women refugees are very well-founded, as has been shown by several research results. [Liu, Liu, and Tseng \(2015\)](#) found that 4.4% of pregnant women who felt earthquake shocks in early pregnancy had miscarriages. In addition, the results of [Torche's \(2011\)](#) study conducted with pregnant women who were victims of the Chile earthquake in 2005 found that fetuses exposed to earthquake shocks also had poorer pregnancy outcomes such as low birth weight and premature birth.

The negative impact is partly due to the result of maternal stress ([Torche, 2011](#)). The results of a literature review conducted by [Hawkins, Gullam, and Belluscio, \(2019\)](#) explained that the stress mechanism in humans is initiated by a physiological response characterized by the release of corticotrophin-releasing hormone (CRH) by the hypothalamus, thereby stimulating the release of adrenocorticotrophic hormone (ACTH) by the pituitary gland. This is followed by the release of cortisol from the adrenal glands. In addition to the physiological response of the stress mechanism, in pregnant women, CRH is also produced by the placenta and the amniotic membrane; therefore,

the levels of CRH and cortisol in pregnant women who experience stress also increase (Hawkins et al., 2019). This causes a decrease in the hormone progesterone which functions to maintain pregnancy and stimulates the release of the hormone prostaglandin, which triggers contractions and increases the intensity of contractions, thereby causing an increased risk of premature birth (Jesica & Friadi, 2019).

Fetal loss, premature birth, and low birth weight were also experienced by some of the participants in this study. Comprehensive health examinations of pregnant women during a disaster situation are a necessity that must be met to prevent these issues from happening. Other supporting examinations related to maternal and fetal welfare as recommended by the WHO should also be provided to improve health services for pregnant women refugees (Essén, Puthooppambil, Mosselmans, & Salzmann, 2018). In addition, the arrival of health workers who visit the refugee camps one-by-one to conduct health examinations on each refugee was a hope that was expressed by most participants. Therefore, having more health workers visit the refugee camps might also relieve some pregnant women's concerns (Winn, Hetherington, & Tough, 2018).

One of the policies for pregnant women during the earthquake disaster situation in Banjarnegara was to separate pregnant women from other refugees in the camp. This was so that they could be cared for in safe locations and monitored by health workers. Meanwhile, husbands or other family members who were not included in the vulnerable group would remain in the general refugee camp. However, this did not obtain a positive response from some pregnant women refugees. They refused to be moved to the separate camp for pregnant women and chose to remain close to their families, even though the assistance they received would be the same as the other refugees in the general refugee camp.

There is a Javanese cultural saying that states "*mangan ora mangan sing penting kumpul*" which translates to "whether we could eat or not, the important thing is that we are always together." This saying is interpreted by the Javanese as a preference to stay together with their relatives even though they are miserable, rather than be separated or far apart no matter what the conditions are (Widodo, Akbar, & Sujito, 2017). This preference is seen from the responses obtained in this study. In addition, according to Lewis, Lee, and Simkhada (2015), the presence of husbands has an important role in the safe delivery and maternal health of the pregnant women, even though their role is secondary. The husband's roles include responding to complications, seeking medical assistance, paying for transportation, and allocating household resources (Furuta & Salway, 2006; Mullany, Becker, & Hindin, 2007). Although some roles will be resolved more quickly if they are close to the presence of

health workers, Stapleton et al. (2012) proved that pregnant women who feel stronger social support from their partners will have lower emotional stress after childbirth.

The concept of maternity nursing care emphasizes the importance of providing care that involves the family through Family Centered Maternity Care (FCMC), a family-centered care concept that provides care for women during pregnancy, childbirth, postpartum, and emergency infant care by involving the family (husband) (Enkin, 1973). Katz (2015) stated that FCMC can be conducted in any place, such as a home, maternity center, hospital, or even in an emergency situation. This statement supports the application of the FCMC concept in providing care to pregnant women in disaster situations while in refugee camps. The results of the research conducted by Mayasari, Suhita, and Indasah (2018) proved that FCMC can increase independence in meeting care needs during the postpartum period. This does not rule out the possibility that it will also have a positive impact if applied to pregnant women. Therefore, the FCMC approach can be an effective strategy that could be implemented by the government to meet the needs of pregnant women in disaster situations while in refugee camps. In accordance with the regulation of the Indonesian Minister of Health number 75 of 2019 concerning health crisis management, in determining the need for Health Rehabilitation and Reconstruction in the health sector, all relevant stakeholders and the community should be involved, taking into account all aspects, including local wisdom, social, technological and community culture.

As already mentioned, the earthquake victims in Kalibening, Banjarnegara, experienced a little difficulty in meeting their needs, due to reasons such as access or time constraints and physical weakness; the survivors preferred to have health workers visit the evacuation sites. But not without reason, this policy might be due to restrictions on the number of health workers or maybe other things. This can also happen due to unpreparedness of related parties in disaster management. Prastowo and Wahyuningsih (2020) stated that in regard to the percentage of implementing disaster mitigation based on Minister of Home Affairs Regulation No. 33 of 2006 in Banjarnegara Regency as a whole, as many as 29 criteria were met and there was only one criterion that was not met, namely the indicator of cooperation procedures. There are five related agencies in Banjarnegara Regency that play a role in implementing disaster mitigation in terms of policies and commitments, one of which is the Health Service. The achievement of the implementation of disaster mitigation by the Health Service has only reached 53%, of which 16 indicators have been achieved out of 30 new indicators. Even so, the Health Service in this case has made optimal efforts in handling disasters, one of which is by forming a rapid reaction team (TRC).

This study has some possible limitations that can impact the result. One limitation would be because the disaster studied occurred locally, the victims were also local residents, and the population sampled lacked cultural diversity. Therefore, the cultural perspective obtained from this study is also narrow, as it only focused on the culture in Javanese society. Thus, it is also necessary to identify the needs of disaster victims at disaster locations with different or more diverse cultural backgrounds. Another limitation is that the participants in this study were only victims of natural disasters living in refugee camps. The health workers who were involved in handling were not informants in this study, so the information obtained regarding the limited fulfillment of the needs of refugees was not validated from the health worker's point of view.

## Conclusion

This study showed that there are still limitations on the fulfillment of the basic and perinatal needs of pregnant women in refugee camps. Based on the themes obtained, it can be seen that basically there is no difference in the needs of pregnant women in disaster conditions or not in disaster conditions. However, the difference lies in their affordability in meeting their needs in a more difficult disaster situation. Many of them have experienced complications during their pregnancy. It was found that, from a cultural aspect, togetherness with family was found to be important for pregnant women. Pregnant women were concerned not only about their needs, but also about their families. Therefore, family-centered care would allow pregnant women to feel safe and comfort, both physically and emotionally. Thus, there is a need for coordination between local governments and other stakeholders regarding the needs of pregnant women as vulnerable people, so that these survivors will receive appropriate assistance according to their needs.

## Declaration of interest

There is no conflict of interest.

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## Data Availability

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

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