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Exploring children's condition of adolescent mothers in East Kalimantan Indonesia: an ethnography study

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ABSTRACT

Introduction: Children born to adolescent mothers tend to experience problems in health, growth, and development, also social problems. These problems persist and worsen due to various factors such as a pandemic, deteriorating economic conditions, and people's readiness to become parents. It is associated with the unpreparedness of adolescent mothers to face the dual roles carried out as mothers and adolescents themselves. The study aims to explore and describe children's condition of adolescent mothers during their motherhood in the community.

Methods: This is an ethnography study that involves adolescent mothers in two public health centers in Samarinda, East Kalimantan. Twenty participants aged between 13 to 19 years old, and who had children were gained by purposive sampling. Data were collected using in-depth interviews, observation, and field notes to explore behaviors, beliefs, values, and perceptions of adolescent mothers about children's health status. Data saturation was accomplished and analyzed with content analysis.

Results: The result revealed 3 themes about children's conditions of adolescent mothers in the community which involve: 1) Children's health status, 2) Children's breastfeeding status, and 3) Children's immunization status.

Conclusions: Many of their children have health problems at birth related to health problems during pregnancy. The low coverage of exclusive breastfeeding and basic immunization is caused by low support from families, inconsistent cultural beliefs, incomplete information, and the conditions of the COVID-19 pandemic. Being stigmatized as adolescent mothers caused them to lack regular check-ups on their children.

Keywords: adolescent mothers, basic immunization, breastfeeding, children's health status, qualitative

Introduction

Poor maternal and child health (MNCH) is considered a global public health burden (Sobhy *et al.*, 2019). In 2019, an estimated 5.2 million children under five years died from mostly preventable or treatable causes, while children aged 1 to 11 months accounted for 1.5 million (World Health Organization, 2020). In Indonesia, the estimated number of deaths of children under the age of 5 in 2021 is 22.17 per 1000 live births (UN IGME, 2023). The causes of their death include respiratory infection, diarrheal disease, measles, malaria, malnutrition, and newborn condition (World Health Organization, 2023). In line with prior study, the vital development of a child starts after conception until two years of age (Bradley *et al.*, 2022), while other scholars have stated neurodevelopmental outcomes suggest a slightly broader window extending to three years (Cusick and Georgieff, 2016; Erny, Prasetyo and Soekanto, 2022).

In the middle of 2019, adolescent population was 17.2% and the population of adolescent females was 8.3% (Worldometer, 2019). Indonesia ranked fourth in adolescent birth rate in Southeast Asia region (World Bank, 2020), and 1 in 9 girls married before they were 18 years old (BPS, Bappenas and UNICEF, 2020). This condition occurs in almost all provinces in Indonesia. East Kalimantan is province that is a red zone for adolescent marriage, that means prevalence of child marriage is higher than in the national case, with prevalence of adolescent marriage 31.13% (BPS, 2016). Adolescent mothers are a vulnerable group compared to adult mothers, and become major global health and social problems (Oyeyemi *et al.*, 2019). This is because their physical and mental conditions are not ready to undergo pregnancy, childbirth, and become a mother, increasing the risk for medical, psychological, developmental, and social problems (Pinzon and Jones, 2012). Getting pregnant at an adolescent age is a stigma, making them isolated and not doing antenatal care (Sriyasak, Åkerlind and Akhavan, 2013; Govender, Naidoo and Taylor, 2020). This is the beginning of child health problems because children's health is determined from the prenatal period (Pem, 2015; Schwarzenberg and Georgieff, 2018). Likewise, when children of adolescent mothers experience illness or have to monitor their growth and development, adolescent mothers tend not to bring their children to health facilities because they are often treated impolitely and verbally abused (Sriyasak, Åkerlind and Akhavan, 2013; Govender, Naidoo and Taylor, 2020).

Children's physical and mental health will determine how they become adults in the future. This condition is influenced by the readiness of adolescents to be the parents, included their health during pregnancy. Even though there have been government regulations regarding welfare, education, and health insurance for citizens in Indonesia (Minister of Law and Human Rights, 2008; 2020; Yusriadi, 2019), adolescent mothers and their children are all a problem. According to prior study, they are relatively untouched by the government and come from disadvantaged groups (Gurung *et al.*, 2020). The unregistered marital status (sirri marriage) is also an obstacle for adolescent mothers because they feel insecure, embarrassed, and afraid of meeting new people, thus neglecting their child's health needs (Oyeyemi *et al.*, 2019). In addition, children born from sirri marriages have constraint to access welfare insurance from the government, children do not get their full rights, and there are inheritance problems, and population administrative problems (Ministry of Women's Empowerment and Child Protection, 2015).

Children are born with a readiness to learn anything around them. To be able to learn well, they need good nutrition, even when they are still in the womb (Erny, Prasetyo and Soekanto, 2022; Likhar and Patil, 2022; Nahak, Fouk and Esperanca, 2022). Children who have a good start will become healthier adults which results in better social, economic, physical, and cognition status (Pem, 2015). The effects of failure to provide adequate essential nutrition during the first 1000 days of life can result in increased expenses later in life in the form of medical care, psychiatric and psychological care, remedial education, lost wages, and behavior management (Schwarzenberg and Georgieff, 2018). Fulfillment of adequate nutritional needs makes them live better lives for their families and communities and promotes the country's Gross National Happiness (Pem, 2015). However, mistakes in providing nutrition to children will make children experience digestive disorders, be prone to allergies and experience growth and development disorders. Many pregnant adolescents experience chronic energy deficiency and anemia in Indonesia caused by a lack of energy in the long term, closely related to knowledge of nutritious food, age, employment status, and previous poor nutritional status (Wiyono *et al.*, 2020). At the research site there are still some beliefs and cultures that endanger children's health, which are believed by adolescent mothers and their families, such as giving young coconuts that are still clear to make the baby's digestive system good. They believe that breastfeeding for two years is good for babies, but babies must also be immediately given complementary foods in the form of young coconut, a mixture of bananas and soft rice so that the child's nutritional needs are met and can grow healthy. In line with previous study in rural Indonesia, mothers in Indonesia understand the importance of breastfeeding for their children, but still provide complementary food from the start because they believe that giving food to babies faster is better, and there is the influence of other mothers in their environment who also provide complementary food earlier (Anggraeni *et al.*, 2022).

The babies require just breast milk for the first six months of life (Likhar and Patil, 2022), because breast milk contains nutrients, growth factors, and cells important for brain development that formula does not (Schwarzenberg and Georgieff, 2018). Exclusive breastfeeding, adequate complementary feeding, stimulation, a safe environment, and care are necessary to ensure optimal physical, mental, social, and cognitive development and to prevent adverse impacts on short-term survival and long-term health and development (Pem, 2015), and also play a crucial role in

neurodevelopment (Schwarzenberg and Georgieff, 2018). The unpreparedness of adolescents to become mothers affects their response in meeting the nutritional needs of their children (Govender, Naidoo and Taylor, 2020). Lack of knowledge and information about infant and child care, makes them less likely to have the courage to make decisions about their child's health (Sriyasak, Åkerlind and Akhavan, 2013). Adolescent mothers will follow the advice and suggestions of their parents (Erfina *et al.*, 2019). The problem is that not all suggestions from parents are health-wise, but based on experience, culture, and beliefs that have been passed down from their ancestors. One of the beliefs that they carry from their origins is refusing to immunize children, because they believe it will make children sick, and, according to them, this condition has proven that their children are healthy without immunizations, in line with prior study that parents rejected to immunize their child for health consent due to being contrary to belief and religion, and mistrust of the government (Syiroj, Pardosi and Heywood, 2019). The study aimed to explore and describe children's condition of adolescent mothers during their motherhood using an ethnography approach. Although in previous studies there has been research on the condition of children, information about the condition of children of teenage mothers is very limited, so this research needs to be carried out, so that they get specific support from family, government and other related parties.

Materials and Methods

Design

This is qualitative research using postmodern philosophy, that emphasizes there is no absolute truth and knowledge is relative (Dickens and Fontana, 2015) with an ethnographic approach that focuses on the way of life, different factors, and conditions related to the occurrence of each phenomenon which depends on the context of child health condition of adolescent mothers. Following Sardar and Loon (1998), it explored child health's condition among adolescent mothers group, including personal relationship within the group, preconception, and their ethnicity. This approach was considered an appropriate method because the study aims to explore and describe children's condition of adolescent mothers in their life span. After all, culture is a complex whole that includes knowledge, belief, art, morals, law, customs, and other capabilities and habits acquired by man as a member of society (Sardar and Loon, 1998). This research provides valuable information about the health conditions of adolescent mothers' children based on their culture.

Setting

A total of 42 participants attended the four focus groups. The DHB group included the Deputy District Chief, the Chief Executive of Subdistrict Administrative Organization.

Population

The population in this study was adolescent mothers aged between 13 and 19 years old, who had children. The sample was adolescent mothers who had children under 5 years of age as inclusion criteria. Purposive sampling was used to recruit participants from the work area of the Samarinda Municipality Health Office. The researcher was accompanied by cadres to visit the participants, after obtaining permission from the head village, the researcher met the head to of the neighborhood association to inform him if he was going to visit his residents, by showing a research permit from the public health center. Recruitment of participants ceased when the data obtained saturation, that means the researcher began to hear the same answer again and again, resulting in 20 participants.

Data collection

This study used three ways of data collection methods: observation, in-depth interview, and field note. The observation was carried out as a grand tour, which was carried out before the in-depth interviews were conducted, such as when adolescent mothers interact with their children such as feeding, breastfeeding, bathing, playing, and stimulating. Researchers also observed how adolescent mothers and their children interacted with their husband, family, healthcare provider, and people around them. Field notes from observations were written. After observing the environment where the participants live, the researcher conducted in-depth interviews using semi-structured questions formulated by researchers, as the interview guide served only as the stimulating or triggering of questions. Trigger questions have been consulted with the experts (advisors), and proven relevant to the research aims. During the in-depth-interviews, the questions flowed following the conversation between the key informant and the researcher. The questions focused to explore and understand their child health status at birth and nowadays, how they breastfeed, and their child's basic immunization status. The first author conducted all

Table 1 List of questions for participants in in-depth interview

No	List of questions
1	Could you tell me about your child's condition after birth? How was his or her health condition?
2	How is her/his current health condition??
3	Do you give her/him breastmilk? How many months did you give her/him breastfeeding only, without any complementary food?
4	Could you tell me why you gave him/her complementary food earlier?
5	What do you think about the immunization for babies?

interviews, and all were interviewed individually in Bahasa (Indonesian language). The trigger questions are mentioned in Table 1.

The study was conducted from March 2, 2021 to December 2021 and comprised of participant observation (March 15, 2021 to August 31, 2021), and in-depth interviews from 26 April to 15 December, 2021. Eleven of the participants were informed the study aims and the study designs, nine of the 20 participants were aged less than 18 years old (45%), seven of the nine participants lived with their parent from whom the researcher asked permission, and two of the participants lived with the guardians, and researcher telephoned the participant's parent to ask permission.

The in-depth interviews lasted about 45 – 60 minutes for each key informant, and were conducted at places as per the participants' preference, such as their houses or a room at public health center. Types of question used for interview were general question, specific question and other questions which were related to the research questions. In order to obtain an adequate information suiting the research question, sometimes the researcher carried out in-depth-interviews to the same key informant up to 2 to 3 times depending on the needs and the adequacy of information needed until the data reached saturation, first time by face-to-face, the second and the third by using a video call, due to increasing COVID-19 cases. Observations and field notes were used to complete the data from in-depth interviews, and stopped when the data were saturated.

Data analysis

In this study, the researcher followed the analysis data process of ethnography study, according to Gerrish and Lacey (2010) in seven steps: 1) Bringing order to the data and organizing the material with transcripts of data case-by-case from field notes of participant observation, and the recording of in-depth interviews; 2) Reading and re-reading about the data, 3) Coding the data; 4) Summarizing and reducing the codes to larger data; 5) Searching for patterns and regularities in the data, sorting and recognizing themes; 6) Uncovering variations in the data and revealing those cases that do not fit with the rest of the data, and accounting for them; 7) Engaging with, and integrating, the related literature. This all consisted of themes, sub-themes, data supported from participant observation, in-depth interview, and the literature related to those themes and sub-themes

The first researcher conducted initial data analysis, and this was discussed with another researcher (advisor,

Table 2 Descriptive summary of participants and their children

Participant	Age (years)	Number of children	Child's age (month)	Child's sex	Birth weight (gram)	Birth complications	Health status now	Exclusive breast-feeding	Basic immunization (as their age)
1	19	2	4	Girl	1600	LBW, Asphyxia	Malnutrition, allergic	No	Incomplete
			4	Girl	1750	LBW, Asphyxia	Malnutrition	No	Incomplete
2	19	2	32	Boy	2600	None	Stunting	Yes	Complete
			11	Girl	2800	None	Health	Yes	Complete
3	16	1	4	Girl	2250	LBW	Allergic	No	Incomplete
4	19	1	20	Girl	3000	None	Health	No	Complete
5	17	1	15	Boy	2500	Asphyxia	Allergic LW	No	Incomplete
6	19	1	6	Boy	2300	LBW	LW	No	Complete
7	18	1	5	Girl	2650	None	Health	No	Complete
8	17	1	9	Boy	2700	None	Health	No	Complete
9	17	1	6	Girl	2800	None	Health	No	Incomplete
10	16	1	6	Boy	2550	None	Health	Yes	Complete
11	19	1	14	Boy	3200	None	Health	Yes	Complete
12	17	1	16	Girl	2100	LBW, postmature	Malnutrition	No	Incomplete
13	19	1	12	Girl	1900	LBW	Malnutrition	No	Complete
14	18	1	7	Girl	2650	None	Health	No	Complete
15	18	1	22	Girl	2900	None	Allergic	No	Complete
16	17	1	7	Girl	2500	None	Health	No	Incomplete
17	17	1	6	Boy	1900	LBW, Asphyxia	Asthma LW	No	Incomplete
18	17	1	24	Girl	2550	None	Health	No	Incomplete
19	18	1	9	Boy	2700	None	Allergic	No	Incomplete
20	18	1	14	Girl	2650	None	Health	No	Incomplete

who has expertise in qualitative research in mental health and women health), enabling interaction and understanding to allow themes and categories to emerge. All findings were cross-checked to enhance the quality of reporting. To follow up, the categories and themes were resulted after the coding. Data were analyzed used latent content analysis, which connects text with aspect.

Trustworthiness refers to "truth value" of the study findings or how accurately the investigator interpreted the participants' experiences (Jeanfreau and Jack, 2010). According to Guba and Lincoln (2017), there are four criteria to measure trustworthiness of qualitative research: credibility, dependability, transferability, and confirmability. Several ways can be used to achieve credibility; the researcher spend sufficient time in the research field to get information and real data, building trust and a good relationship with participants in the research site, doing persistent observation, and carrying out a triangulation process. Transferability was achieved through detailed descriptions of findings and comparing them with relevant research and concepts surrounding adolescent mothers' child condition. Dependability and confirmability were enhanced by detailed discussions between researchers during analysis to reach agreement.

During data collection, the participants could choose to withdraw without further prejudice. The researcher ensured that all participants remained anonymous. In addition, the researcher verified that the participants' privacy and confidentiality were protected. The researcher did not use a specific name and relied on a code instead. The researcher also kept all documents from informants securely.

Results

There were 22 children from 20 adolescent mothers in this study. The mean age of the children was 11 months, ranging from 4 to 32 months. Two of them were twins, another two were siblings, and 18 children were single. Eight out of 22 children from adolescent mothers had health problems at birth, namely LBW and respiratory syndrome such as asphyxia; no child had a congenital defect. Twenty-one children were born at 37 weeks of gestational age, and one child was born at 42 weeks of gestational age. The descriptive summary of adolescent mothers and their children is shown at Table 2. To determine the themes, latent content analysis was carried out as shown in Table 2.

The result revealed three themes about children's conditions of adolescent mothers in the community which involve: 1) Children's health status, 2) Children's breastfeeding status, and 3) Children's immunization status as shown in Figure 1.

Theme 1. Child health condition

The theme child health condition summarizes the result of how the condition of the child is related with health problems at birth and child health problems now. The health condition of the baby at birth is influenced by the condition of the adolescent mother's pregnancy. Most adolescent mothers get pregnant before marriage. They don't go to health facilities for antenatal care because they tried to hide their pregnancy from parents and community member. They did pregnancy checks after they had complications, or after the cadre knew and reported it to the healthcare provider, and then an examination was carried out if both parents allowed it.

There are several cultures and beliefs associated with the health condition of children in general. Particularly for adolescent mothers, the stigma of being pregnant is synonymous with the moral problem that they got pregnant before marriage, making them reluctant to have an examination. Apart from that, their disobedience in consuming iron tablets, because of the belief that iron tablets will make the baby bigger, makes pregnant women the target of "kuyang" ghosts, and consuming iron tablets is a prayer so that pregnant women become sick, due to taking medicine.

Table 3 Example of content analysis to explore child's conditions of adolescent mothers

Meaning unit	Condense meaning unit	Code	Sub-categories	Categories	Theme
I've read about the importance of exclusive breastfeeding for my baby, the midwife also explained the importance of exclusive breast-feeding for my child's immunity, but the traditional birth attendance (dukun bayi) who care for me and my baby said that the first breast milk had to be thrown away because it was stale, and young coconut was good for helping the baby poop the first time. My mother-in law told me to obey the traditional birth attendants, as she has a lot of experience in caring for newborn. She used to take care of me when I was born 19 years ago according to our culture and our beliefs.	She is confused about whether to exclusively breastfeed her baby or follow the advice of mother-in-law and traditional birth attendants who have experience caring for postpartum mothers and their babies for decades according to their culture	Lack support in exclusive breastfeed from family's culture and community members	Culture that is not supportive for exclusive breastfeeding	Failure in breastfeeding	Breastfeeding history

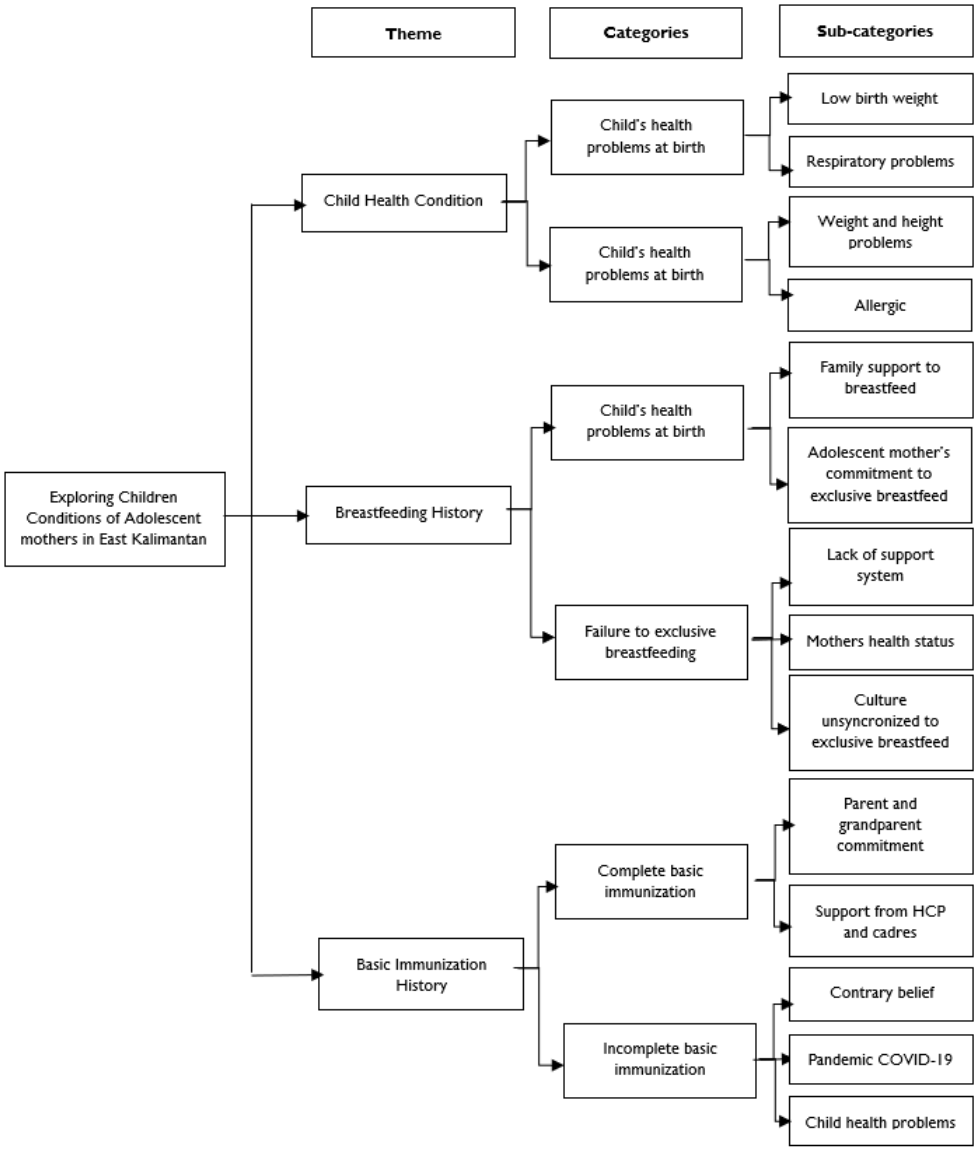

Figure 1 Themes, categories, and subcategories of the descriptive results

Categories 1: child health problem at birth

Eight out of 22 babies experienced health problems during delivery. Six babies were born with low birth weight, even though they were of sufficient gestational age. In addition to low birth weight, twins also experienced asphyxia. Fourteen babies were born in good health, having a birth weight of more than 2500 grams. The child health problems were occurred because of the child and mother's condition. Culture and beliefs also influence this problem, such as an adolescent mother is stigmatized, unmarried pregnancy is a stigma that inhibits them to getting antenatal care. Changes in their health during pregnancy which endangered themselves and their babies were not detected early.

Some adolescent mothers revealed their babies were born small compared with others babies. One adolescent mother reported why her babies were born with small weight, as follows:

"When I was pregnant my mother forbade me to eat a lot because my stomach is very big, and I have never done a pregnancy check because I am ashamed, I am not married." (P1, 19 years old)

Another participant expressed why her baby's weight low at birth as:

"My son was small when born, only 1.9 kg, even though the gestational age was appropriate, the HCP said I had severe blood deficiency, because I don't want to take red pills (iron tablets) for fear of big babies and too young to get pregnant." (P17, 17 years old)

There is a belief in the culture of East Kalimantan that the participants believe that iron tablets that smell fishy will make them the target of the "kuyang" ghost (a ghost

who is believed to suck the mother's blood before giving birth).

Regarding the respiratory problems experienced by babies at birth, a participant expressed as follows:

"The HCP said that my gestational age was too old, so I had to try to be labor by induced, it was very painful and the baby didn't cry right away when he was born and he needs to care in neonate intensive care unit." (P12, 17 years old)

Categories 2: current child health condition

Eleven out of 22 children were aged under 1 year, and the rest aged between 1 to under 3 years. Half of the number of children experienced health problems such as malnutrition, susceptibility to allergies, asthma, and stunting. Lack of knowledge about good nutrition for child development, poor parents' economic conditions, history of illness during pregnancy, and the conditions of the COVID-19 pandemic contribute to problems in children's health. This condition is also influenced by the parents of adolescent mothers.

Apart from that, there are beliefs and cultures that prevail in society such as restrictions on high protein foods such as fish and eggs as causes of ulcers, nutritious food is prioritized for husbands as the main breadwinner, while children and wives only get leftovers from their food. Grandparents believe that small babies don't matter as long as they stay active, so that adolescent mothers don't feel worried about their child's condition.

Several participants mentioned the current health condition of their children, who are less healthy and get sick more easily than their peers. One reported that her child was diagnosed with stunting, and that made her feel sad and guilty, for not being able to properly care for her child:

"*The cadre said that my son was stunted, malnourished... maybe because I was pregnant again when he was only 1 year old, and I was very drunk (hyperemesis gravidarum) until I was treated for lack of fluids, and he was not well cared for."* (P2, 19 years old)

In this study, among the babies who had low birth weight, currently all children have problems with underweight or malnutrition. Feeding too early does not make children well, but they have digestive problems, such as being prone to diarrhea and allergies. Three children of adolescent mothers experienced malnutrition, but the children were quite healthy, and had no other complaints. They have provided food like adult food for their children, but not chili so it is not spicy. For the babies, they provided porridge made from mashed bananas with rice, or biscuits for babies with formula milk, as one expressed: The midwife said that my child was malnourished, I thought it was normal, she never sick, active. She was born with low weigh, and my mother had given her porridge and formula milk since her aged 2 days. (P13, 19 years old)

Two other children suffered from malnutrition and allergies. They suspect the cause is their baby was born with a low birth weight, so they get sick easily, as one expressed:

"My child has diarrhea easily, I think the milk is not suitable, but when I change the milk, he is still diarrhea, is it because the water is not good for him, I don't know." (P19, 18 years old)

Theme 2. History of breastfeeding

Breast milk is the best food for babies because it contains nutrients and IgG immune substances needed for the baby's growth and development. In Islam, perfecting breastfeeding is explained in the Koran, Surah Al Baqarah verse 233, which recommends breastfeeding for two years. Exclusive breastfeeding is a struggle for parents, especially for mothers. Exclusive breastfeeding is very possible for babies, with strong support from partners, families, health workers and cadres. However, there are some cultural and wrong beliefs about breast milk and breastfeeding. The culture of throwing away colostrum is still practiced by some participants because it is considered stale breast milk which makes babies have stomachache. In addition, there is a belief that if the shape of the nipple is split, then the mother may not breastfeed, because the breast milk will mix with blood, and this will make the child disobedient to the mother, or make them die.

Categories 1: exclusive breastfeeding

There were three teenage mothers who exclusively breastfed their babies. One mother had two children, both of whom were exclusively breastfed. The reason for exclusive breastfeeding is because of the strong support from their parents, while their husbands just follow the advice of their parents-in-law or their parents, and as form of adolescent mother's commitment to provide the best life for her child, because she feels the sadness of being separated from her mother because she is pregnant without being married.

The success of breastfeeding in teenage mothers is influenced by family support, commitment from the adolescent mother, and the adolescent mother's knowledge about exclusive breastfeeding. Religious knowledge and good general knowledge of parents

about breastfeeding are strong reasons for teenage mothers to exclusively breastfeed their children. The reason of exclusive breastfeed was as follows:

"*I breastfeed exclusively for my children; my father explained that breastfeeding is regulated in the Koran, meaning it is very important and good, even though I sometimes feel tired and feel that breast milk is not enough, but my mother always supports me and prepares good food for breastfeeding mothers*." (P2, 19 years old)

One single adolescent mother revealed that the reason for exclusive breastfeeding was because she wanted to prove to her parents that she was trying hard to provide the best food for her baby:

"*I promise myself to give the best for my child, including exclusive breastfeeding, because I have failed to be a good child, I don't want to fail as a mother*." (P10, 16 years old)

Another participant committed to give her son exclusive breastfeeding because she is a midwifery academy student, who understands the benefits of breastfeeding for her child's health, and because of the support from family members, because he is the first grandchild for their extended family: "I learned about the benefits of breastfeeding for mothers and babies at University, and want to implement it for my son, as well as support from the family, because my son is the first grandson in our extended family." (P11, 19 years old)

Categories 2: failure of exclusive breastfeeding

Participants and their families agreed on the importance of breastfeeding for babies. But in their culture, newborn must clean their tongue, mouth and digestive system by being fed with young coconuts. They also believe that colostrum is stale breast milk, and should not be given. The cause of the failure in exclusive breastfeeding is due to several factors such as the physical health status of the mother, the condition of the mother's breasts such as sinking or cracked nipples, maternal mental health, incorrect information about breastfeeding in adolescent mothers, and also impact of knowledge about COVID-19. One participant expressed her health condition after birth as:

"I didn't breastfeed from the start because I was treated in the ICU because of a seizure before giving birth." (P1, 19 years old)

Several participants stated that the condition of their breasts was the reason for not breastfeeding their babies perfectly, as follows:

"My nipples are inverted, and my daughter can't suck the nipple and keeps crying. Finally, my mother gave formula milk to my baby according to my mother-in-law's advice." (P3, 16 years old)

Other participants explained the reasons why they stopped breastfeeding their babies:

"I used to breastfeed, but my nipples were blistered and bleeding, and painful, and my baby kept crying because she was hungry, my mother finally gave formula milk to calm him down." (P18, 17 years old)

Another cause of babies not getting exclusive breastfeeding is the existence of cultures and beliefs that are not in accordance with the knowledge that is believed by the family. The assumption that when breast milk comes out for the first time (colostrum) it is considered stale milk, which must be thrown away to avoid stomach pain for the baby, is expressed as follows:

"*My mother and my aunty said that the first breast milk was stale, the yellowish color and the fishy smell indicate that the first breast milk is stale so it had to be thrown away because it could cause the baby to be bloated and have stomach pains, and give my baby honey*." (P8, 17 years old)

Erroneous beliefs about the shape of the nipples are also the reason why babies are given formula milk early on, as follows:

"*My mother forbade me to breastfeed because my nipples were split, and bleeding when sucked. She said, it is not good, because breast milk is mixed with blood causing stomachache, and cause infant death, like our neighbor's children."* (P6, 18 years old, married)

Postpartum maternal mental health conditions are also the cause of exclusive breastfeeding, as expressed by one of the participants:

"*My child was born prematurely, and when he was born, I was stressed and didn't want to touch him, don't want to breastfeed… I used to hate him. I feel angry because of him I was scolded by my parents and was expelled from school. My parents don't want to talk to me, they hate me for his presence.*" (P17, 17 years old)

The COVID-19 outbreak which increased sharply, and the unclear management at that time, made all kinds of complaints related to coughing and fever associated with COVID-19 disease. This condition forces mothers who are still breastfeeding their babies to self-isolate. This causes the breastfeeding process to be forced to stop for fear of infecting the baby:

"My baby was 4 months old. I had a cough, fever, and lost my sense of smell. My mother-in-law and husband told me to stop breastfeeding, afraid that if I caught COVID-19 it would pass it on to my baby. I ended up living in the back room, and my son was in the care of in-laws and given bottled milk." (P19, 18 years old)

Theme 3. Basic immunization history

Basic immunization in infants is important to maintain their health against various diseases caused by bacteria and viruses. In Indonesia, basic immunization is provided free of charge to all Indonesian children, either through services at the hospital, private practice of a medical doctor or midwife, community health center, or at the integrated service unit (posyandu). The completeness of immunization is that a child's immunization schedule is maintained according to the child's age, and it validated with a child's health card record.

The success of parents in getting complete basic immunization is influenced by several factors. Parents' knowledge about the benefits of immunization, family support, healthcare provider support, and support from cadres also determines children get basic immunizations. In this study, children who received incomplete basic immunizations were caused by their grandfathers refusing to vaccinate their grandchildren, because they believed that the vaccine would cause problems for their grandchildren, rising cases of COVID-19, health workers who were infected with COVID-19, empty vaccines due to delays in delivery from the center, parents who are sick, or children who are sick, making immunizations impossible to give, and preventing children from getting complete basic immunizations.

Categories 1: complete basic immunization

Completeness of basic immunization in infants was influenced by knowledge, attitudes, and family support. The support of the grandfathers to bring their grandchild to get immunized was due to their good knowledge and education, as well as their belief about their grandsons as the successors of their ancestor's name, as one stated:

"*My father-in-law provides the best facilities for my child, including immunization at a pediatrician, because he is the first grandson, from the first son, who is predicted to carry on the great name of their ancestors*." (P11, 19 years old)

During the COVID-19 pandemic, many health workers are infected with COVID-19, they had to isolate, so the public health center was closed. Some parents had to take their child to a pediatrician, to get immunization because immunization is important for their child, as stated:

"I took my child for immunization to a private pediatrician practice because the public health center was closed, many health workers were infected with COVID-19, even though we had to pay, we were fine, my husband said immunization was important for our child. So, it must be immunized when the time comes." (P7, 18 years old)

Categories 2: incomplete basic immunization

All mothers who have babies and monitor the growth and development of children at posyandu or community health centers, explained the importance of immunization for a child's immunity. However, there are some parents who don't carry out immunizations because they don't comply with their beliefs, sick children, effect of immunization, empty vaccines, and health workers infected with COVID-19 causing health facilities to close. One participant explained why she did not take her children to be immunized:

"*My father forbade me to carry out immunizations for my children, according to him, in our tribe it is useless, and will actually make children sick, because children are given diseases*." (P1, 19 years old)

Another participant did not bring their child for immunization because at the time of the immunization schedule their child was sick, as disclosed as follows:

"*My daughter lacked two immunizations because at the time of immunization, she was sick, and it was recommended by the midwife to postpone it until he recovered first, but at the appointed time, he had diarrhea, until the time was up, and had to be immunized with another type*." (P19, 18 years old)

Several immunizations have an impact on babies such as fever and children becoming fussy and having difficulties sleeping, such as the BCG and DPT vaccines. This causes concern for parents to take their children to be immunized:

"*There was one immunization that my child didn't get, because I was afraid, she would have a fever and be cranky, she had just recovered from an illness*." (P16, 17 years old)

The COVID-19 pandemic has also become a problem in vaccine distribution from the central government to the regions. To prevent the spread of the virus, the government was making efforts to impose restrictions

on community activities. This has had an impact on the distribution of goods to regions including vaccines, resulting in empty vaccine stocks at health facilities. This condition was expressed by a participant as follows:

"*I want my child to be fully immunized, but according to cadre information, immunizations have been suspended for an indefinite period because vaccine stocks were empty*." (P15, 18 years old)

Discussions

The results of the study show how adolescent mothers live their lives in caring for their children. Most of them tend to be quiet, and make their parents the main support, including in caring for their children. Their husbands also rely on their parents as teachers in caring for their children. Half of the total children experienced health problems at birth such as low birth weight and asphyxia. Similar with previous studies, the children of adolescent mothers were born with low body weight, respiratory problems, and lower Apgar scores compared to adult mothers (Gurung *et al.*, 2020; Jae´n-Sa´nchez *et al.*, 2020; World Health Organization, 2020). This condition shows that being a mother in their teens affects the health of their children, so we must support the maturity to become parents to reduce the risk of health problems in children. Some adolescent mothers and their parents said that it was normal for their babies to be small because they had small offspring, and it was not because they were pregnant in their teens. Lack of knowledge about the effects of adolescent pregnancy, not only on adolescent mothers, but also on their parents must be stopped, so that cases of adolescent pregnancy can be reduced.

Eleven out of 22 children of adolescent mother experienced health problems, most of them suffered from malnutrition, underweight, prone to allergies, asthma, and stunting, as in previous studies (Salmon *et al.*, 2018). Two of these children were born under normal conditions, without health problems, but due to parental limitations of knowledge and no experience in child care, it made them experience obstacles in caring for children, in line with previous studies (David, Dyk and Ashipala, 2017; Mangeli *et al.*, 2018). Information about child's health that is not comprehensive makes them confused to act, in line with prior study, and fulfill basic physical needs related with stunting (Surani and Susilowati, 2020). Health problems in children in the first 1000 days of life are a big problem, because this is a critical period. Fulfillment of adequate nutritional is needed to encourage normal brain development (Cusick and Georgieff, 2016). This obstacle was caused by their process of becoming mothers, mostly due to getting pregnant before marriage, which is considered as a mistake in social institutions (Govender, Naidoo and Taylor, 2020). Chronic energy deficiency commonly found in pregnant women in Indonesia has an effect on the growth and development of the fetus in the womb (Wiyono *et al.*, 2020). This condition is related to unhealthy eating habits in school-age children and adolescents, such as eliminating breakfast, and eating not according to the body's needs for fear of becoming fat. And when they get pregnant, it will have an impact on themselves and their baby, because their bodies are not yet ready for pregnancy.

The child health's condition of adolescent mothers is influenced by adolescent mother's health status during pregnancy (Schwarzenberg and Georgieff, 2018; Nahak, Fouk and Esperanca, 2022). Health problems during pregnancy affect the health of the fetus at birth, and also the current condition of the child. For the children born with these health problems, their mothers experience complications during pregnancy such as hypertension, pre-eclampsia, anemia, and chronic energy deficiency. The anemia experienced by pregnant adolescent mothers is often ignored, due to a lack of knowledge about the benefits of iron tablet supplements for their pregnancy (Klankhajhon *et al.*, 2021). This is in line with previous study that there is a wrong belief that taking iron tablets during pregnancy will make the baby bigger (Wahyuni and Setyowati, 2010),. This is in accordance with research conducted by Pinho-Pompeu *et al.* (2017) who confirmed anemia iron deficiency as a predisposing factor for preterm birth. The results of this study are in line with previous research, where adolescent mothers are at high risk of experiencing health problems such as gestational hypertension, mild to severe preeclampsia, intrauterine infection, post-term pregnancy, and eclampsia (Riyana *et al.*, 2015).

In Indonesia, anemia is common in school-age children and adolescents. This is due to the selection of foods that are low in good nutrition, and anemia is not considered an important problem, because they feel that the effect is not severe. This bad habit is also passed down in giving food to their children, the important thing is that their children want to eat it; it doesn't matter about the nutritional content. Chronic energy deficiency in pregnant women in Indonesia caused by a lack of energy in the long term is closely related to knowledge of nutritious food, age, employment status, and previous poor nutritional status (Wiyono *et al.*, 2020). The principle of "what is important to eat" by ignoring nutritional content is still a problem in the community where this research was carried out.

Society's stigma towards adolescents, and unfriendly treatment of health workers, makes them isolated themselves from society, and causes them not to do enough antenatal care (Sriyasak, Åkerlind and Akhavan, 2013; Govender, Naidoo and Taylor, 2020). Their appearance in society as pregnant before marriage, and having children at a young age is considered a disgrace to the family and society, and makes society ostracize them (Smithbattle, 2013; Kumar *et al.*, 2018) In line with study in Texas, adolescent mothers experiencing stigmatization leads to negative outcome including depression, social isolation, lowered self-esteem and poorer academic performance (Wiemann *et al.*, 2005). Even though adolescent pregnancy before marriage is a violation of social norms, nevertheless, we have to support them, so that they can go through difficult conditions and be able to raise their children well. Supporting them does not mean justifying their wrongdoing, but saving the next generation.

Exclusive breastfeeding was a challenge for mothers, including for adolescent mothers. In this study, only 3 out of 20 adolescent mothers gave exclusive breastfeeding. In line with previous studies, most of mothers do not provide exclusive breastfeeding to their babies, because they believe that giving complementary food to the babies earlier is better (Lailatussu'da *et al.*, 2018; Anggraeni *et al.*, 2022). The failure of exclusive breastfeeding is due to the belief that breastfeeding for four months does not cause problems for the baby (Nahak, Fouk and Esperanca, 2022). The belief that colostrum is considered as stale milk is a cause of failure of exclusive breastfeeding. In addition, the culture of giving young coconut to newborns as an effort to cleanse the baby's digestive system is a challenge in itself to be stopped by health workers as an effort to support the success of exclusive breastfeeding and reduce infant mortality rate. The hereditary belief and culture of providing complementary food to babies from an early age is a sign of respect by mothers for their parents, even though some of them already know about exclusive breastfeeding (Anggraeni *et al.*, 2022). The success of exclusive breastfeeding is influenced by many factors, such as the support of spouses, families, health workers, and cadres. Family support is the biggest factor in the success of exclusive breastfeeding, compared to husband support in Bantul, Jogjakarta, Indonesia (Lailatussu'da *et al.*, 2018).

Some children easily get diarrhea and are allergic to food or snacks. In line with prior study, children born to adolescent mothers had lower z-scores for height-for-age, weight-for-age, and higher prevalence of stunting, than children born to adult mothers, the strongest link being through women's weight, education, socioeconomic status and complementary feeding practices (Nguyen *et al.*, 2020). It also increased the risk for infant mortality (Yurdakul, 2018), respiratory distress, and low Apgar Score (Jae´n-Sa´nchez *et al.*, 2020). Allergies in children are associated with immunity, where in infants immunity can be obtained from exclusive breastfeeding, immunization and adequate nutrition. In this study, children often experience diarrhea and allergies, do not get exclusive breastfeeding, and immunizations are incomplete. In line with prior study, in infants who were non-exclusively breastfed, the odds of having an illness with fever in the last two weeks among infants who were exclusively breastfed decreased by 66%, and exclusively breastfed infants had lower odds of having an illness with a cough and having diarrhea compared to non-exclusively breastfed infants (Mulatu *et al.*, 2021). Misunderstandings about the benefits of colostrum and inappropriate breastfeeding practices must be corrected through the interaction of religious leaders and health workers to avoid repeated misunderstandings. For teenage mothers and their families who are Muslim, it is necessary to understand the meaning of Surah Al Baqarah verse 233 concerning improving breastfeeding. Community members have a tendency to follow the advice of ustad or priests because they are considered as pious scholars.

Basic immunization in infants is important to maintain their health against various diseases caused by bacteria and viruses. Immunization has been proven in the past two centuries to help reduce the incidence of diseases such as polio, smallpox and measles in children worldwide (UNICEF, 2020). Providing incomplete basic immunization to children was influenced by the beliefs and culture of their parents or grandparents (Syiroj, Pardosi and Heywood, 2019). There are several immunizations that have an impact on infants such as fever and the child becomes fussy and has difficulty sleeping, such as the BCG and DPT vaccines. This causes concern for parents to take their children to be immunized. In this study, 10 babies of adolescent mothers did not receive complete immunizations, for various reasons such as worries that babies would get sick when immunized, wrong information about immunizations, not having means of transportation, and the COVID-19 pandemic which caused health workers to become infected with the virus, and the temporary elimination of immunizations from the health office at the PHC. Similar study showed the factors of parents refused vaccines related to religious belief (Anderson, 2017), personal beliefs, safety concern, and lack of

information from healthcare providers (McKee and Bohannon, 2018; Syiroj, Pardosi and Heywood, 2019). In order for babies to get complete basic immunization, it is necessary to increase knowledge among teenage mothers, as well as their parents, as the closest support system. In addition, trained cadres, as an extension of the health workers, can explain to them in their language that is easy to understand, so that babies get their right to get complete immunization for their body's immunity.

The COVID-19 pandemic has also caused a decrease in basic immunization coverage in Indonesia. This is due to several factors, such as the closing of the posyandu or PHC because health workers are infected with COVID-19, limited personal protective equipment for health workers, and parents' fear of taking their children to public facilities for fear of contracting COVID-19 (Ministry of Health of Indonesia and UNICEF, 2020). Adolescent mothers worried about the effects of immunization. Their lack of knowledge is detrimental to their children because basic immunizations which are important for the child's immune system are missed. Erroneous beliefs about the benefits of immunization need to be straightened out through the intensive participation of health workers and community leaders, through activities that incorporate local cultural wisdom, so that they can change without feeling forced.

Limitations

There are limitations in this current study that need to be stated. Firstly, the study was undertaken at a single location. However, this area had the highest number of adolescent mothers; secondly, there is a higher case of stunting in the province, and so may not represent the children's health problems of adolescent mothers in Indonesia generally. Secondly, care provided may differ across settings so there may be other experiences elsewhere. With a qualitative design, new insights are provided into adolescent mothers' experiences of parenting and thereby contribute to understanding the problems they face and their needs for support.

Implications

As an archipelagic country, Indonesia has thousands of different tribes and cultures, has a different culture in caring for pregnancy, childbirth, and raising children. This study found some cultures and myths against the health system. A special approach is needed for them to optimize care for adolescent pregnant women, adolescent mothers, and their children.

Nurses in Indonesia have an opportunity to improve public health by using a family-centered maternity care model to support adolescent mothers achieve their motherhood. In Indonesian culture, the family is the health center for family members. In addition, there is a wider need to influence society's more accepting views of adolescent mothers. The development of interventional care for adolescent mothers must include the involvement of the extended family. Further studies are needed to explore the maternal role of adolescent mothers from different cultures globally, and also investigate the effectiveness of nursing interventions to enhance the development of adolescent mothers' roles.

Conclusion

The growth and development of children in early life is influenced by the health conditions of the mother during pregnancy, including nutrition and antenatal care during pregnancy, childbirth, and care during early life. Exclusive breastfeeding and appropriate complementary food after exclusive breastfeeding, complete basic immunization, good growth and development stimulation, child-friendly environment, and caring for children in a harmonious family with good economic status will promote children's health status from adolescent mothers. Some cultures and beliefs that are not in harmony with the health of mothers and babies, but can be harmonized by involving community leaders and religious leaders as their role models.

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Conflict of interest

The authors declared they have no conflicting interest.

Ethical statement

This research obtained approved from The International Review Boards of Khon Kaen University with ID HE642011 date 1 March 2021. All participants were provided informed consent and anonymity. For participants below 18 years old, authors sought approval from the parents and guardians.

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