Exploring Indonesian mothers' perspective on anemia during pregnancy: A qualitative approach

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Research article

Keywords: Anemia, pregnant women, perception, cultural competence

Posted Date: March 3rd, 2020

DOI: <https://doi.org/10.21203/rs.3.rs-15771/v1>

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Version of Record: A version of this preprint was published at Enfermería Clínica on December 1st, 2020.

See the published version at <https://doi.org/10.1016/j.enfcli.2020.11.002>.

Abstract

Background: Anemia is a major problem experienced during pregnancy in Indonesia due to its effect on mothers and babies. Hence, various interventions have been implemented, but a significant reduction in the prevalence of anemia has not been attained. The present study, therefore, aims to investigate the perceptions of anemia among pregnant women in Aceh to design culturally relevant interventions.

Methods: This qualitative study collected data from 24 pregnant women in Aceh Besar District, Indonesia, through focus group discussions (FGDs). Data were analyzed using the inductive content analysis (ICA) method.

Results: Five themes emerged from the experiences of pregnant women with anemia: (1) anemia during pregnancy is perceived as a woman's destiny, (2) there is a lack of knowledge related to clinical indicators of anemia, (3) there is a traditional taboo related to anemia, (4) the husband and family provide support related to preventing anemia, and (5) there is a need for cultural and religious-based health counseling.

Conclusions: Interventions should be designed to provide health information on anemia in Aceh that considers the local knowledge, beliefs and values, combined with medical elements. This intervention will likely change the perceptions of pregnant women about anemia to ensure that they are able to better maintain their pregnancy. Furthermore, the implementation of programs to support pregnant women with anemia should ensure that health workers are adequately trained in cultural competency and are able to understand the needs of pregnant women.

Background

Anemia in pregnancy is currently a major public health problem worldwide [1]. Globally, Southeast Asia has a high percentage of women who experience anemia during pregnancy, namely, 48.2% [2]. Indonesia ranks fourth of all the countries in Southeast Asia, with a prevalence of 48.9% [3, 4]. One of the areas in Indonesia with a high prevalence of anemia in pregnancy is the Aceh Besar District located in Aceh Province. Based on the data from Aceh Besar District Health Office collected in 2017, this district has a high prevalence of anemia in pregnancy of 37.1% [5]. Numerous efforts and methods have been established by the Indonesian government to overcome this problem, ranging from recommending the consumption of 90 tablets of iron during pregnancy to improving antenatal care measures to address all the needs of pregnant women [6, 7]. However, this step has not been able to significantly relieve the problem of anemia in Indonesia, including in the Aceh Besar district. [6]. Anemia in pregnancy is defined as a hemoglobin level < 11 gr/dl [8, 9]. If the treatment of anemia during pregnancy does not produce a significant effect, this condition will increase the risk of hemorrhage and sepsis during labor. A baby born to an anemic mother may be premature or have low birth weight, weak immune system, developmental disorders; in some cases, the condition can cause death [10].

Although the major causes of anemia are inadequate nutrition, other factors also trigger anemia during pregnancy including: (a) the quality of antenatal care (ANC) services [9, 11, 12], social support [13], and

inadequate knowledge. Based on the findings from a study conducted in Uttar Pradesh, India, the incidence of anemia is higher in women who do not receive antenatal care [14]. Similar results were also reported by a study conducted in Java, Indonesia, showing that antenatal care is effective in increasing the hemoglobin level and frequency of antenatal care visits [15]. Thus, antenatal services that meet the needs of mothers will exert a positive effect on pregnant women themselves, particularly in preventing and managing anemia. During this period, antenatal services are provided at public health centers in Indonesia for a broad range of maternal pregnancy conditions, but are not focused on certain conditions, such as anemia. A study also revealed differences in the understanding of services provided to pregnant women between families and health care providers, including the mistrust of families in the requirement for the pregnant women to consume iron tablets daily, causing mothers to be noncompliant with the consumption of iron tablets [16].

The lack of knowledge [13] and the tendency to use lay views and old perceptions in health-seeking behaviors represent significant contributions to the substantial effects of anemia. A person's perceptions and judgment are often affected by cultural values and beliefs that have been held for many years [17].

Indonesia is an archipelagic nation comprising over 17,000 islands. It is also culturally diverse, with some of the most dissimilar ethnicities in Asia [18]. The majority of the Indonesian population is Muslim, and Islamic values are well integrated in cultural beliefs and daily life. One of the provinces in Indonesia was even awarded national autonomy region with the ability to implement Sharia law, namely, Aceh Province. This province is located on the Sumatera Island, which is dubbed "seuramoe makkah", and the people stress the importance of traditional values that have been maintained for many years [19].

Recently, numerous studies have developed antenatal counseling methods, and the counseling interventions only focus on clinical aspects without addressing social factors and cultural beliefs. However, a combination of these factors is required to provide information in the socio-cultural dimension and facilitate acceptance [22]. The integration of social factors and cultural beliefs with counseling interventions by health care providers would increase a patient's ability to seek appropriate prevention and treatment strategies for anemia.

The persistently high incidence of anemia after the implementation of iron tablet administration in antenatal care programs have attracted the interest of researchers investigating the fundamental factors that influence the choice of pregnant women to adopt the advice of providers at the health services in terms of aspects of the beliefs associated with their cultures. Moreover, this study seeks to understand the perceptions of pregnant women and to identify cultural beliefs regarding anemia to inform the design of culturally relevant interventions or clinical counseling.

Methods

Study design and participants

The qualitative method used in this study included data collection during focus group discussions (FGDs) to explore the perceptions of women on the issue of anemia during pregnancy and the cultural beliefs adopted in Aceh Besar District, Aceh Province, Indonesia. Aceh Province, which also has strong cultural beliefs, is located on the Sumatera Island, designated "*seuramoe makkah*", and the people have believe that traditional values held for many years are important [19]. These beliefs are based on Islamic values, which are related to the local knowledge and advice "*Hukom meunyo hana adat tabeue, adat meunyo hana hukom bateue*", meaning that the law without traditional beliefs would not be valuable, and traditional beliefs without the law are void [20]. Moreover, the attributes of the Acehnese traditional beliefs in Aceh Province are strongly influenced by the values of the Islamic religion, encompassing the behavioral mentality and social order [21]. Geographically, the Aceh Besar District is located at 5°3'1,2"-5°45'9,007" north latitude and 95°55'43,6" - 94°59'50,13" east longitude, and the area of the territory is 290.350,73 Ha. Aceh Besar District is broadly located between the mountains and the coast, and the majority of the people work in the agriculture, livestock, forestry and fishery sectors. Twenty-eight public health centers are located in Aceh Besar. After calculations and randomization, 9 public health centers were randomly selected for inclusion in this study.

Data were collected through focus group discussions (FGDs). The FGDs were conducted in 3 group sessions involving 24 pregnant women aged greater than 17 years. The participants were selected based on inclusion criteria through purposive sampling in three working areas of the Aceh Besar Community Health Center. The inclusion criteria included both women with and without anemia, a gestational age of at least 10 weeks, at least one antenatal care (ANC) visit and of the Acehnese ethnicity. The exclusion criteria were women with complications and women who were not willing to participate. The participants were selected with the assistance of the local midwife coordinators who made choices according to the criteria. After the women agreed to participate in the study, an explanation of the study purpose and benefits was provided.

Data Collection and Analysis

All of the FGDs were conducted by the first author, a lecturer at the nursing faculty and a doctoral student in maternity nursing who has participated in various qualitative research project and has sufficient hospital experience to help the women, assist with deliveries and provide post-partum care to mothers. The semi-structured questions used in the group discussions were reviewed by 2 external researchers. An example of the questions used is "What do you think about dietary taboos that initiate a lack of hemoglobin in the blood?" Participants were asked about their knowledge of anemia and its symptoms, their methods to manage symptoms, experience in consuming iron tablets, family support in consuming iron tablets, dietary taboos that initiate a lack of hemoglobin in the blood, Acehnese cultural beliefs about anemia, and parental advice that affects pregnancy and anemia.

A tape recorder and notebook were used to collect all data during FGDs and take notes on observed results, respectively, to obtain a deeper understanding of the problem [23,24]. The FGD guide was written in Indonesian. Some participants answered the questions using Acehnese languages during the process.

Moreover, the focus group discussions were conducted in three different sessions, with each session consisting of 7-9 people and lasting for 60-70 minutes; the results were subsequently completely translated. However, verbal interview results were evaluated, coded and analyzed manually using the inductive content analysis method [25].

Generally, all researchers involved in joint discussions developed codes, subcategories, categories, and themes, and the transcript results were read several times to obtain a good understanding of the context. Therefore, all documents were combined, read and analyzed after a consensus was achieved, and then classified into themes. Furthermore, the main themes and categories were developed based on research objectives that were capable of answering the research questions [26].

Results

In this study, a majority of the participants were 20-35 years old (Table 1). Some had only achieved a lower level of education and had a multigravida status. Thirteen of the 24 participating pregnant women lived with their parents. Furthermore, a majority of the respondents visited the public health center for a pregnancy checkup and half were in the second trimester of pregnancy when this study was conducted.

Data analysis identified five main themes among the perceptions of the pregnant women about anemia during pregnancy: 1. anemia during pregnancy is perceived as a woman’s destiny, 2. a lack of knowledge related to clinical indicators of anemia, 3. the traditional taboo related to anemia, 4. the husband and family provide support related to anemia prevention, and 5. the need for cultural and religious-based health counseling. Table 2 shows the framework of this study.

Table 1. Sociodemographic characteristics of the participants

Characteristics	Number	Percentage
Age		
<20 years	3	12.50 %
20-35 years	16	66.67 %
> 35 years	5	20.83 %
Education		
Low	11	45.83 %
Middle	7	29.17 %
High	6	25 %
Gravida		
Primi	7	29.17 %
Multi	12	50 %
Grande	5	20.83 %
Living with		
Husband/Child	11	45.83 %
Parents	13	54.17 %
Healthcare service used		
Hospital	0	0 %
Public health center	18	75 %
Doctor/midwife	6	25 %
Gestational age		
1 st Trimester	8	33.33 %
2 nd Trimester	10	41.67 %
3 rd Trimester	6	25 %

Table 2. Data analysis process

Meaning Unit	Code	Subcategory	Category	Theme
<p>Symptoms such as weakness and paleness are normal during pregnancy.</p> <p>Every pregnant woman will experience weakness and shortness of breath, which is perceived as normal.</p> <p>Symptoms will disappear after eating foods.</p>	<p>Weakness, nausea, paleness, and shortness of breath are common during pregnancy</p>	<p>Anemia is considered normal</p>	<p>Anemia during pregnancy is a woman's destiny</p>	<p>Anemia during pregnancy is perceived as a woman's destiny</p>
<p>Symptoms of weakness, nausea and dizziness are in a woman's nature.</p>	<p>Limpness, nausea, dizziness, and shortness of breath are natural conditions for pregnant women</p>	<p>Anemia is considered natural for pregnant women</p>		
<p>Never checked Hb levels during pregnancy.</p> <p>A low Hb level is normal during pregnancy.</p>	<p>Did not understand the importance of Hb examinations</p>	<p>Did not understand the clinical indicators of anemia</p>	<p>Did not understand the importance of hemoglobin as a clinical indicator of anemia</p>	<p>Lack of knowledge related to clinical indicators of anemia</p>
<p>Continue the tradition of food taboos.</p>	<p>The tradition of food taboos during pregnancy</p>	<p>Adherence to the tradition of certain food restrictions during pregnancy</p>	<p>Food taboo tradition</p>	<p>The traditional taboo related to anemia</p>
<p>Husband reminded the wife to eat food.</p> <p>Parents' awareness of the pregnancy.</p>	<p>Husband provides attention</p> <p>Feelings of the grandparents</p>	<p>Husband's role</p> <p>Parents' involvement during pregnancy</p>	<p>Social support from the husband and family</p>	<p>Husband and family provide support related to anemia prevention</p>
<p>Knowledge of needs related to health and culture.</p> <p>Adherence to the advice of cultural leaders and cultural practices.</p> <p>The need for religious-based health counseling.</p>	<p>Counselors' capabilities in health practice and cultural norms</p> <p>Cultural leaders</p> <p>Holy teachings of Islam (Al-Qur'an)</p>	<p>Culturally competent counselors</p> <p>The influence of cultural leaders</p> <p>The role of Islamic teachings</p>	<p>External resources</p>	<p>The need for cultural and religious-based health counseling</p>

Anemia during pregnancy is perceived as a woman's destiny

The pregnant women in this study revealed that they considered anemia a condition that normally occurs during pregnancy and was their nature as a woman. They also stated that the midwife indicated that the symptoms were treatable, and thus they did not worry about it.

"Yes, as pregnant women, if we feel weak and dizzy, we must accept it because it is our nature as women." (P8)

"No problem, in my opinion, if I feel weak and pale, it is a common and natural condition for pregnant women. Moreover, the midwife reported this as a trait - hence, it doesn't matter." (P6)

The majority of the participants experienced anemia, based on their symptoms. They experienced symptoms such as weakness, nausea, paleness, and shortness of breath, and perceived that these symptoms were unnecessary concerns.

"This is my 4th pregnancy, I always feel the symptoms every time I get pregnant. Sometimes, I feel limp and breathless, but the child in my womb is just fine, I feel okay too. And I think it's normal, right? Every pregnant woman must be feel that." (P14)

In addition, a number of pregnant women who also experienced the symptoms related to not feeling well during pregnancy indicated that they were not a sign of anemia, but were due to the pregnancy itself. Pregnant women stated that these symptoms disappeared after they consume a number of foods.

"Actually during pregnancy, if we are not feeling well, it is natural because we are pregnant, right? Not because of lack of blood or anything. Later, if we eat lot of foods, we will become healthier." (P11)

Lack of knowledge related to clinical indicators of anemia

The majority of participants did not know about hemoglobin levels, which is the baseline clinical indicator for a diagnostic test of anemia. Some also revealed that their hemoglobin levels had never been measured during pregnancy.

"I know that Hb is hemoglobin, right? Hmm, I think it will cause lack of blood. But, so far I have never (checked) it either." (P5)

Some pregnant women mentioned that their Hb levels had been measured during the current pregnancy. They also understand that anemia is caused by a lower than normal Hb level, but they did not know the normal Hb level. Moreover, they had experienced lower than normal hemoglobin levels, but did not take any action and believed that the pregnancy was normal.

"They (midwife) said that it (anemia) is caused by a lower level of Hb, right? I have experienced an Hb level of 7 (mg/dl), but it's okay for my pregnancy anyway." (P1)

The traditional taboo related to anemia

Pregnant women involved in this study shared the beliefs in Acehese culture in the community around them, including all existing food taboos. They also limited all types of foods that their parents suggested should not be consumed. However, they ultimately realized that the symptoms of anemia they experienced during pregnancy were indirectly influenced by their dietary restrictions.

"I have many food restrictions during this pregnancy. I mean, every food that is forbidden by my parents, I will definitely not consume it... If I have less blood (anemia), it may happen because I abstain from many foods." (P13)

The majority of participants revealed generational beliefs regarding several dietary restrictions, such as abstinence from pineapple and papaya.

"Pineapple and papaya... My parents said that I should avoid these foods before 3 months, but consume them in the 5th or 6th month of pregnancy." (P7)

Perceptions and beliefs formed in Indonesian society, particularly in Aceh, in relation to pregnancy include restrictions on consuming satay because it is a half-cooked food that is capable of causing a disability in children. However, this prohibition is believed only restricted to pregnancies with a gestational age greater than 7 months.

"Well, I also hear that meat satay should be avoided, especially at the beginning of pregnancy because it can cause defects in the child." (P1)

"Some people say eating meat is allowed, especially before and after 7 months." (P7)

The husband and family provide support related to anemia prevention

The majority of participants revealed that their families, particularly their husbands, provided the most support in preventing anemia. Some stated that their husbands always reminded them to consume nutritious food and iron tablets.

"For me, that's my husband (who supported me). He always asked if have taken the tablet yet? Have you eaten? If my husband goes to work outside the city, he always calls me. If I'm lazy or forget to eat, my husband always reminds me." (P2)

Furthermore, some participants also revealed an important role for family members in providing support, particularly their parents. Some participants mentioned that their parents provided emotional support when the women were sick. They were afraid something bad would happen to their future grandchild.

"For my parents, maybe it's because this is their first grandchild, yes they always pay attention for me, so they don't want me to look weak. If I'm already weak, my parents will feel bad and sad." (P20)

The need for cultural and religious-based health counseling

The majority of participants want and expect counseling consistent with their cultural values to support the choices made and identify cultural beliefs that are consistent with or contrary to health aspects. However, this practice is expected to calm them to a certain extent when providers respect the prevailing cultural customs without ignoring nutritional needs and good behavior during pregnancy, as a participant stated:

"If the counseling is combined with the culture, then the midwife/nurse explains the rationality of the myths to be trusted or not. Hence, it can be adjusted later because they understand both ethnicity and health." (P18)

In addition, pregnant women also mentioned that they believed in all the proverbs and suggestions conveyed by cultural leaders and Acehnese cultural practices related to pregnancy. Their beliefs on their lifestyle were based on the experience of the cultural leaders.

"If it is good according to the cultural leaders, yes I will follow. They are more experienced and know more about our (Acehnese) culture." (P17)

The majority of pregnant women also mentioned that the combination of antenatal counseling with cultural values that originated from the Qur'an would be very beneficial for them to ensure that their pregnancy is consistent with the Islamic and Acehnese cultural values, calming the women.

"This counseling is very good because basically everything in life is sourced from the Holy Qur'an. Everything about our body is also explained in the Qur'an, especially if it is supported by cultural leaders' advice. It will be beneficial because when we get pregnant, we are not only prepare our physical health and finances but also our psychological health, which can be obtained from carrying a pregnancy according to Islamic and cultural values." (P22)

Discussion

Based on the results, the majority of pregnant women had experienced symptoms such as weakness, dizziness, shortness of breath and nausea that were attributed to anemia, but they were unaware of the clinical term or etiology of anemia. Furthermore, pregnant women perceived that anemia is a normal condition that often occurs during pregnancy and believed that this condition is their destiny as women. These findings are supported by a previous study conducted in Nigeria, where pregnant women perceive that anemia is a normal condition occurring during pregnancy [17]. Women analyzed in another study also perceived anemia as a normal condition during pregnancy because their body must share nutrition with the fetus [27]. This perception of pregnant women is one of the factors impeding the success of interventions provided by health workers in antenatal care. The pregnant women are not sufficiently motivated to overcome the anemia symptoms [28].

Pregnant women had inadequate knowledge of anemia and the importance of hemoglobin measurements as a clinical indicator in anemia. Basically, the pregnant mother's knowledge of anemia is important because it likely contribute to increasing her motivation to take actions to prevent the condition, such as taking iron supplements and consuming nutritional foods that contain iron [29]. According to a study conducted in India, a low level of awareness increases the risk of anemia up to 5-fold, and poor practice has been shown to increase this risk up to 6-fold [30].

In addition to this term, cultural beliefs also affect pregnant women suffering from anemia, as participants revealed that the pregnancy process in Acehnese women is substantially influenced by traditions that have been trusted for generations. Furthermore, many foods, including meat, pineapple, papaya, crabs and shrimp, are not consumed by a majority of pregnant women in Aceh because they believe that the foods will endanger their pregnancy. Beliefs in food taboos during pregnancy are also observed in several cultures in other areas. In the Ethiopian culture, pregnant women believe that they should limit their consumption of green leafy vegetables, yogurt, cheese, and sugar cane and refrain from eating these foods during pregnancy; people in West Bengal, India believe that pregnant women should limit the consumption of fruits, vegetables, meat, fish, and eggs during pregnancy [31, 32]. If the taboos are violated, the women believe that the baby will be affected. Moreover, this factor contributes to the incidence of anemia in many countries [33, 34]. Traditional beliefs and practices must be linked with services provided by modern health care facilities because they play an important role in determining food choices, activities, and treatment options [35]. Cultural thoughts and beliefs regarding dietary restrictions must be rationalized against the need to consume highly nutritious foods, particularly iron-rich varieties.

The husband and family played important roles in supporting pregnant women in adhering to measures designed to prevent anemia. The same finding was also reported in other studies [36–38]. The husband is an individual who has an important role as a determinant of the behavior of pregnant women in preventing anemia and helps the mother by reminding her to consume nutritious foods and iron tablets [39]. Many pregnant women tend to stop consuming iron in the middle to the end of the third trimester, and thus they need a key person who provides motivation or support to continue this type of care, particularly from those individuals closest to them, to ensure compliance with iron tablet consumption [40].

In the present study, pregnant women were very hopeful about antenatal counseling combined with cultural components. According to previous studies, the provision of information through counseling increases knowledge and promotes changes in the behavior of pregnant women [41, 42]. This result is particularly important for health workers in developing areas, where interventions must be adapted to specific cultural and political contexts [43].

Based on a study conducted in Nepal examining the integration of cultural believe in health care interventions, antenatal care services that aim to increase maternal and infant life expectancy must be able to adjust to local beliefs and cultures. This practice will increase the likelihood that pregnant women

will use the antenatal care services and mothers will feel safe and experience a benefit in terms of culture and spirituality [22].

As shown in a study conducted by Alio et al. (2019), religious beliefs have a substantial influence on health-seeking behaviors. Religious leaders not only provide insights into the meaning of religion but also in the context of the condition, reducing the fear of sufferers and the stigma towards them in the community. In addition, religious leaders also act as mediators between patients, their families and communities [44]. Similar to the current study conducted with pregnant women, cultural leaders are also mediators who facilitate pregnant women in seeking health assistance. Thus, the cultural views that are held dear by pregnant women must be integrated in antenatal services and it may strengthen the desire of pregnant women to comply with the recommendations of healthcare providers.

Strengths And Limitations

This study presents important information on the perceptions of pregnant women about anemia combined with the cultural beliefs observed to date. Furthermore, other important information obtained includes the support provided by husbands and extended families within the Aceh region, which was the strongest factor encompassing support throughout pregnancy. Furthermore, the results are also used as input in implementing communally acceptable interventions based on local knowledge, beliefs and values. However, the present study has several limitations, including the examination of cultural views only in Aceh. Hence, the counseling interventions would be difficult to implement in other cultures. Moreover, data were not collected from other family members who are capable of providing support during decision making. Thus, further studies should explore this issue.

Conclusions

Pregnant women in Aceh perceive that anemia is a common problem that does not need to be taken seriously. Based on the results of this study, we conclude that pregnant women need a counseling intervention that is combined with local cultural wisdom because the belief in cultural values is important to the Acehnese people. We hope that this intervention will change the perceptions of pregnant women about anemia during pregnancy, which should be a particularly serious concern to them. If a counseling intervention is conducted that accommodates pregnant women's cultural values, counselors will be able to more easily attract the interest of pregnant women and they will be more likely to follow their recommendations. The inclusion of the family, particularly the husband, in pregnancy counseling will also promote compliance with the recommendations because the husband is the main source of support during pregnancy.

Abbreviations

ANC: Antenatal care, FGD: focus group discussion, ICA: inductive content analysis, Hb: hemoglobin

Declarations

Ethical approval and consent to participate

This study was approved by the Ethics Committee of the Nursing Faculty, Universitas Syiah Kuala, Aceh, with code No. 1130041111218. All participants provided written informed consent for the interview. Participants were assured that the information they provided will be used for academic purposes and their privacy and confidentiality will be guaranteed because their names and identities will not be included in the publication describing the results.

Consent to publish

Not applicable.

Availability of data and materials

The datasets used and/or analyzed in the current study will be made available from the corresponding authors upon a reasonable request.

Competing interest

The authors have no competing interests to declare.

Funding

Financial support was obtained from Universitas Syiah Kuala. The funders did not have any role in the study design, data collection, analysis, data interpretation, or in writing the manuscript.

Authors' contribution

The main author (DD) is the person who conducted the research and wrote the first draft of the manuscript. NT, KH, and TT corrected each transcript of the focus group discussions, directed the design of the study, supervised the research conducted and revised the manuscript. DD and TT led the analysis and provided verification of the analysis. Furthermore, all the authors have also read and approved the manuscript.

Acknowledgements

The researchers thank the women who have taken the time between the conditions of their pregnancies to participate in the study. The assistance of Aida Fitri, Martina and Nova Fajri facilitated this study. Furthermore, the authors also appreciate the collaboration with the Head of the health office in Aceh Besar District, who provided permission to conduct research activities in an unlimited field. The author was also assisted by Widyawati, Suryane Sulistiana, Elly Wardani, and Syarifah Rauzatul Jannah as colleagues who provided support in question design, as well as the contributions from Masyithah Audina, Khiyurul, Desi Ariska, Nia Saumania and Sri Hartati.

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