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## Acceptance letter

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This is my pleasure to inform you that your paper entitled **Public Health Policies on the Socio-economic Status of the Families with Low Birth Weight Infants: A Qualitative Systematic Review** has been accepted for publication in August (2022) in HIV Nursing (ISSN: 1474-7359)

BestRegards

Editor-in-Chief  
Dr Michelle Croston



# Public Health Policies on the Socio-economic Status of the Families with Low Birth Weight Infants: A Qualitative Systematic Review

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## ABSTRACT

**Background:** Public awareness of the quality of health through the implementation of empowerment programs initiated by the government aims to improve the quality of health for all communities. The role of health professionals is needed to be able to educate the public about how to take care of their health, how to meet nutritional intake, and how to take good care of the baby after the mother gives birth. **Aims:** The purpose of the study is to provide insight into public awareness of the importance of healthy living behaviors, especially for families who have problems with low-weight birth babies ( $\leq 2500$  g). To evaluate the proper way of self-care during pregnancy, and the type of nutrient intake that should be given to newborns to improve their health. **Methods:** The quality of public health is carried out through qualitative study with a systematic review approach, to be able to explain the phenomenon that occurs in families with low socioeconomic status and also experience problems with babies with low birth weight. Sampling data was used in this study using purposive techniques based on inclusion criteria with participants of 89 informants. Secondary data in the study included being grouped by occupation, family income, and how to provide nutrition to babies with low birth weight. The data is then analyzed using software (NVivo version 12). **Results:** The results showed that of the 89 respondents interviewed, 58 (58%) mothers were able to explain nutritional needs during pregnancy. The respondents can explain effectively to be able to care for children with low weight conditions and mothers can also provide a balanced nutritional intake to newborns periodically and can control the health of the baby to the hospital intensively. **Conclusion:** The important role of the government in promoting the ideal marriage age and socialization through a safe birth process. To avoid the occurrence of babies with low birth weight, adequate nutritional intake is needed during pregnancy. Instead, the health care professional workforce should be able to educate during the mother's pregnancy.

**Keywords:** Health policy; economic status, birth weight Infants

## 1. Introduction

Optimization of improving health-related quality in a region can be realized through a health protection approach that is certainly a responsibility of local governments to succeed in health programs for the society. The high public interest in improving the quality of health is a determining factor in the success of health programs implemented by a government. Therefore, the government policies related to health will certainly affect the achievement of sustainable health development goals. In Improve the implementation of health programs for people, especially those living in urban areas, the implementation of health programs is certainly a priority for community development in the region. This is characterized by the implementation of health development in the area with the establishment of community health centers such as polyclinics that can be utilized by all communities living around the rural area so that the goal is that the community remains healthy and can do activities properly can be implemented. The quality of health of the health service is carried out through a health insurance program for pregnant first-time mothers or a health program for newborn babies

with malnutrition conditions or low birth weight. For children who have severe protein-energy malnutrition in early childhood, the role of parenting practices is necessary for caring for the child, especially in monitoring their mental development several years post-treatment. Then, in early childhood who are newborns and have acute protein-energy, the role of parents is necessary can maintaining the child's mental development in the future [1, 2].

The purpose of health implementing health carried out by the government is certainly initiated to reduce maternal and newborn mortality. This happens due to the lack of education of parents about the importance of health during pregnancy and the way to a healthier life [2, 3]. In addition, the role of the government in overcoming health is by helping marginal communities who do not have access to health services to still be able to carry out health treatment in hospitals following good health service standards.

Improving a healthy lifestyle in society needs behavioral changes to increase the body's resistance to infection by consuming nutritious foods that can be obtained from protein. Healthy living behavior is needed by the community to avoid diseases that can be done through several efficient ways such as maintaining environmental

cleanliness in the community and consuming a healthy nutritious diet. Understanding the role of the good life must certainly be balanced by maintaining the health of the body mass index and consuming high-fiber grain foods. Therefore, strengthening health families programs can certainly be an integrated approach to measuring the access to health care services carried out comprehensively by promoting the importance of healthy living and always doing health care when sick in the hospital which indeed with following procedures by health measures recommended by health professionals. The effect of education on health is an effective way to reduce the adverse impact of health services which can certainly be a guarantee for the public to obtain information on how to handle quality health. [Bottorff et al. \[4\]](#), [Bruns et al. \[5\]](#) further explored the good practice in health promotion strategies that may become investment and quality health care markets. Therefore, health care services are needed that can meet people's health needs optimally. To improve a healthy lifestyle for the community, a good education is needed that is done regularly to the community so that the health message that will be conveyed can be a useful lesson for the family and the community [6-8]. The importance of the role of the family in improving the health status of children due to the development of family health can generally be seen in how the role of parents in improving the quality of child health. The family is certainly the first place for children to grow and develop children from birth to adulthood. Then, the economic factors of parents will also affect the fulfillment of healthy food needs needed by the family during the growth period. In addition to health factors, the low level of family education will certainly have an impact on the low understanding of health so that when the community experiences pain, it will be difficult for them to overcome their health problems.

The health problems mostly happen to people living in the countryside due to the distance between the patient's house and the hospital is certainly an obstacle factor in overcoming health for the community. [Grantham-McGregor et al. \[9\]](#) stated that approximately 9% of the newborn were treated with herbal supplement products or various teas (baby antifatulent mixture, chamomile, fennel, aniseed, catnip, and Echinacea teas, herbal common cold remedies) in their first year of life, and use of these products started when they were just one month old. The onset of health problems in pregnant women often occurs at the birth of the first baby, and while pregnancy, the mother does not know how to take care of her baby properly, and less nutritional adequacy intake is needed by the mother during pregnancy. In addition, education about how the importance of health and meeting balanced nutrition is needed by pregnant women so that the fetus they contain is also healthy, then intensive pregnancy examination is needed so that the health of the mother and fetus can be monitored by health care professionals.

Data obtained from the health department of West Nusa Tenggara province, it is shown that 21.42% of health problems happened by pregnant mothers generally occur due to incomprehension of how to maintain health during

pregnancy, and also the mother doesn't know how to care for babies who have diseases with low birth weight. This happens mostly to the pregnant mother due to rarely them checking her pregnancy periodically with an obstetrician and the mother also has no information regarding how to care for herself during pregnancy, as well the pregnant mother lacks the nutritious intake that is needed during pregnancy.

The health impact on pregnant women occurs due to a lack of understanding of how the proper process of caring for the uterus during pregnancy. However, in the case of the birth of a baby, some mothers feel sad when they see their baby born with a low-weight condition. The ideal birthing age range for a mother is over 19 and 34 years, this is because the age of growth of the fetus conceived by the mother is healthier than the age in pregnant women less than  $\leq 18$  years. [Guo et al. \[10\]](#) believe that women aged  $\leq 18$  years old have the highest risk of birth, including premature birth, small age for pregnancy neonatal, and infant mortality, by comparison to women 18-34 years old. At the age of over 18 years, the fertility period of pregnant women and the proportion of organs in the body at the time of reproduction is healthier. Therefore, the good health of pregnant women indeed will affect growth and will keep fetuses healthy.

The health of pregnant women can be seen in how the mother can maintain mental and physical health during pregnancy so that the problem of babies with low weight can be overcome properly. The health of the baby at the time of birth depends on the health condition and nutritional composition of the mother during pregnancy. Nutritional intake for pregnant women must certainly follow the amount of nutritional composition needed by the mother during pregnancy so that fetal growth can be healthy. The normal birth process in babies can be known if the time of delivery is following the predetermined time, while if there is a baby born earlier than the specified time, the health of the baby will certainly affect his endurance. The occurrence of low baby weight at birth generally occurs because the mother during pregnancy does not pay attention to her health, then the mother rarely consumes foods containing nutrients or fibrous foods, and rarely conducts health control with the gynecologist.

Maintaining optimal health during pregnancy is highly recommended by obstetricians and health professionals who understand how to handle health during pregnancy to the delivery process. Then, the need for nutritious food intake and fibrous foods is certainly an effective way to overcome the disease of the occurrence of low body weight infants and the lack of adequate nutritional intake. To overcome the occurrence of malnutrition in children that can cause marasmus, then every family must certainly be able to understand effective ways to improve the health of their families. Based on the amount of nutritional adequacy needed by the baby during the growth period, the baby's health must always be maintained to stay healthy. Thus, the problem of malnutrition that causes the occurrence of newborns with low body weight can be overcome properly.

## 2. Methods

## Study Site

The study of health-related quality of life aims to explain and analyze pregnant women aged less than 18 years to over 34 years and low birth weight infants, living in the suburbs of Mataram in the West Nusa Tenggara region. The criteria for selecting participants were done randomly and further the data were grouped based on the participant's age criteria, the economic status of the participant's family, and the mother who had given birth to a child for the first time. The next step by analyzing the residence of the pregnant mother as participants near the public health center for medical. To obtain an explanation of the economic status of the family, researchers have also made a list of questions about the work of respondents, the pattern of food intake consumed during pregnancy to the birth process. After data on the location of participants' residences were obtained, the researchers made the next observation about the condition of the newborn child based on preliminary data obtained from the health clinic closest to the respondent's residence. To explain the phenomenon that occurs during field studies, ethnomethodology approaches are carried out to be able to review the results of any interesting findings during field research. This study is also designed to be able to target several factors that want to be known from the results of field research by being guided by open interviews, the acquisition of research data, or coding obtained from various sources of participants to get the results of significant field findings.

## Design

The design used in this study is based on the theoretical perspective of ethnomethodology, to be able to predict and interpret the food consumed during pregnancy and what healthy lifestyle has been done as an effort to improve the quality of life. Hence, when the child has been born with a condition below the average normal child, how do parents handle children with low weight baby conditions, and what steps do parents take in improving the quality of children's health. Gürol et al. [11] define the importance of research with an ethnography method approach, namely to produce research findings that are following the wishes of researchers and to explain how people do the same activities in various places, and in this study also the source of research data obtained is strengthened by various complementary documents and also conducted with interviews about the daily life of these respondents.

## Sampling Procedure

To produce the research expected by researchers, following the rules of ethnomethodology research, participants in this study sample are designed purposively so that the answers to research questions can be accommodated. The purpose is that the sample used can be controlled by researchers, such as the age of the pregnant woman, the pregnant woman who gave birth to her first child, and the group of parents who have a baby with low weight conditions. Data obtained from the hospital was then verified according to the category of research, such as the age and health status of the child.

The findings obtained from the field study were then recorded and in the analysis. A sampling procedure is to identify frequency boundaries of respondents were only for first-time mothers giving birth or maternal problems with low born body weight gain babies. The number of eligible respondents was 89 participants, but only 52 respondents could be in-depth interviewed and participated in this study.

## Data Collection

The data obtained in this study is in the form of secondary data from hospitals where the location is near to the participants living. After the research data is obtained, it is then sorted based on the sample criteria desired by the researcher. The data were then grouped based on criteria such as the mother giving birth to the first child or the child who had a low weight disorder ( $\leq 2500$  grams). Then, data that has been grouped is then analyzed based on the phenomenon that occurs in low weight disorders. By using data triangulation following qualitative research criteria, the data is then verified for analysis so that the validity of the research obtains significant results [8].

The list of questions in this study is based on unstructured open-ended questions with the aim that respondents can clearly explain the child's health problems and also be able to explain the phenomena experienced by mothers during pregnancy until the baby is born and the mother also can describe of how to care for children with low weight conditions. The place taken for the interview is located in the hospital, the respondent's residence, or other among the researcher and participant. To avoid bias in this research, data collection was done through in-depth qualitative interviews and also by using audio voice recording devices, and making notes in the form of finding during the field research, so that the documents collection obtained during the research can be stored properly.

## 3. Data Analysis

After all the data is collected, the next stage of research analyzes the data in the form of transcription into Indonesian so that it is easy to understand. Transcription of sentences obtained from participants during an in-depth interview was then analyzed using software (NVivo version 12). The transcript of the interview that has been analyzed is then identified according to the group list of research questions that have been asked during the interview. The next step is to interpret the text based on the results of the interview that has been done and do data induction based on new ideas that develop during the interview process carried out with participants [8]. The entire data were analyzed using software that indeed supported to be able to analyze citations so that it can make it easier for researchers to sort out significant research results. The word-for-word quotation is then grouped according to the research sub-theme that has been designed by the researcher according to the participant's experience as a source of research data.

## Reliability and Validity

Findings in field research are then selected based on clarified criteria and then made in a coding system that



can be communicated with other researchers based on field data that are various sources or if the data obtained is still unstructured. Based on the verified interview findings, and also the bias in this study can be overcome by triangulation of data, interviews using voice recordings, and creating code transcripts. Finally, validation of data accuracy can be confirmed using the software so that the results obtained during the research can be accurate.

### 4. Discussions

Data analysis reveals sub-themes that describe the way parents care for their babies who are low weight. The education carried out by parents is related to knowledge, of how to care for low-weight babies and the availability of support from families and health professionals in hospitals. Knowledge of maternal health during pregnancy and the importance of pregnant women can recognize the symptoms of abnormalities during the pregnancy process which is certainly an effective way for pregnant women to get the right medical care.

Lack of medical care during pregnancy or low nutritious food intake will certainly have an impact on the decline of the mother's health condition. The health impacts that often occur in pregnant women, among others, often experience headaches accompanied by a stiff body, and if the pregnant woman ignores her health for a long time, it will affect the health of the fetus in pregnant women.

Based on public health data obtained from the provincial health office, the number of pregnant women living in the suburbs of the Mataram region is stated that pregnant mothers ( $\geq 19$  years old) there are 89 mothers. Meanwhile, the age of pregnant women who are less than 18 years old there are 9 mothers and over the age of  $\geq 34$  years old, there are 17 mothers. The data shows that the high age rate of pregnant women with adolescents giving birth is certainly an obstacle for the health department to improve the quality of health for the community. Distribution data of pregnant women's ages ( $\leq 20$  years old) and the age of productive mothers can be seen in the table below.

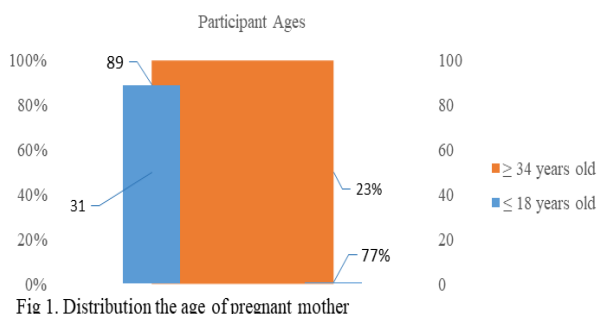


Fig 1. Distribution the age of pregnant mother

As can be seen, the ideal age for mothers to give birth to a normal baby should be at the age of over 18 years because at that age the condition of the fetus in pregnant women is healthier. In addition, due to a lack of understanding of reproductive health for pregnant women and also rarely mothers come to the hospital to consult health during pregnancy, of course, it will also have an impact on babies who will be born normally.

Therefore, the importance of consultation on food intake for mothers during pregnancy can certainly make the mother will be healthier and the mother's womb will certainly be healthy too so that the problem of babies with low weight can be earlier diagnosed.

A large number of pregnant women under the age of  $\leq 18$  years (23%) is still found in rural areas of Mataram city is certainly a serious problem for local governments to be able to anticipate the occurrence of health problems, especially low birth weight babies. Socio-economic inequalities are one of the causes of babies born with low weight, this occurs due to a lack of nutritious food nutrients that are needed by the mother during pregnancy. Nutritional imbalances needed by mothers during pregnancy will certainly also affect the baby's weight at birth [12]. To overcome the causes of the occurrence of babies with low weight, it is necessary to take early prevention by providing education about the need to anticipate the age of the mother during pregnancy because it can be at risk for babies to be born such as low weight babies or babies with nutritional problems.

The nutrient imbalance needed by the mother during pregnancy will certainly have an impact on the child to be born. When a child is born with a condition of lack of nutrients, the growth of the baby will be slower so it becomes the cause of the occurrence of babies with low body weight. Therefore, if the mother has experienced the birth of a child with a low weight condition, this will also have an impact on the next biological child or the mother has difficulty in getting pregnant [13]. The impact of health education on nutrition knowledge during pregnancy is certainly an important thing that must be known by the mother. The health safety knowledge of pregnant women during pregnancy is highly recommended by health workers as an effort to improve the quality of health of the mother and fetus conceived. The monitoring of the nutrition from the baby's health status, the data shows that 89 babies are categorized as low weight, and there are 37 (42%) of them have nutritional deficiencies. This happens because some mothers who are pregnant rarely check or consult the health of the fetus with an obstetrician or relevant health professional workers. Data on aging pregnant women who are productive and understand how to overcome health to keep the baby healthy, there are 52 (58%) pregnant women. The ability of respondents in anticipating the baby to stay healthy can be seen in the data of interviews with participants who stated that most pregnant women periodically check their pregnancy and mothers often also consult problems that often occur during pregnancy.

Data on the mother's ability to cope with the health of her fetus during pregnancy can be seen in the distribution of data as follows.

		Instrument	Participant	%
Pregnant Mother		Health records (Awareness of mother's health)	89	100
	Infant	$\geq 2500$ g	52	

	Birth Weight	≤ 2500 g	37	
Status (Infant)	Normal		52	58.4 %
	Low weight Infant		37	41.6 %

In addition to the above analyses given in table 2, the 89 pregnant women who participated in this study, in general, can maintain their quality of self-health so that babies who are still in the mother's womb remain healthy. The results showed that 52 pregnant women understood the nutrition needs for a healthy pregnancy. However, the family economy is certainly one of the causes of the problem of nutritional deficiencies that are needed by mothers during the pregnancy period. The impact of lack of nutrients and health supplements during pregnancy will affect the health of the fetus as well. According [De Seymour et al. \[7\]](#) further explained that to overcome some of the nutrients that are needed during pregnancy, additional nutrients such as supplements are needed to maintain the health of pregnant women and become the recommendation by nutritionists as calcium, iron, and vitamin D.

Regarding the importance of nutrition for the fetus during pregnancy, the pregnant woman must certainly have the right health knowledge to maintain the fetus during pregnancy and choose healthy food and also nutritional adequacy needs during pregnancy. The lack of nutritional intake obtained by indigenous mothers living in the countryside will have an impact on maternal health and fetal health [12, 14]. The high prevalence of the number of babies born with low body weight in the suburbs of Mataram is certainly a serious problem for the government, especially in the health sector in improving the quality of health. This happens due to the lack of nutritional intake needed by the mother during pregnancy and of course, will also have an impact on the low weight of the baby to be born.

The data showed that of the 89 total parents who participated in the study, 37 of the total maternal participants had low-weight babies. Further, one of the causes of low weight babies is due to lack of education about fetal health when the mother is pregnant and the mother has no experience regarding nutritional intake patterns for fetal health, and unbalanced supplements or vitamins that are nutritional supplements that are indispensable nutritional additions by mothers during pregnancy. [Knight-Agarwal et al. \[13\]](#) stated that each parent who has a newborn baby must provide balanced nutrition to their child in anticipation of malnutrition and also avoid the occurrence of low-born bodyweight babies. The transcript details regarding the exposure to low birth weight infants or babies with malnutrition problems explained by participants during the interview, as follows:

***The knowledge of Low birth weight infant***

Mothers already know information about the presence of children with low weight whose baby size when born is smaller than normal

*"Do you understand about mothers who give birth for the first time with cases of low birth conditions?"*

I got information about a small newborn infant when I did my fetal health consultation with a health care professional.

[MFC-1, Mother with a first child]

The interview performance described (MFC-1) above explains that the mother already understands how to maintain one's health during pregnancy. This is due to mother has obtained a lot of information to overcome the problem of babies with low weight, and also the mother understands how to overcome problems when the child's condition at birth is smaller than that of a normal birth child.

Different cases were an interview with mothers (MFC-2) who have children with birth conditions with low weight. When the mother asked about the child's condition, the mother explains the state of the family's economic condition and the mother rarely controls her health condition. The explanation can be seen from the transcript of the interview, as follows.

*"I know that my son was born with a low weight ..., This happened due I do not very often control my health during pregnancy due to located is far away from my house."*

[MFC-2 mother with LBWI]

From the explanation of the mother above, of course, we can understand that family economic factors greatly affect how to meet nutritional needs during pregnancy. On the other hand, the distance of the hospital where health care for pregnant women is far away is certainly an obstacle for families to be able to periodically check their health during pregnancy with health professionals. Therefore, government policies in the health sector can always make it easier for people, especially low-income families to be able to check their health easily. To explain the understanding of the level of knowledge related to disease prevention among mothers during pregnancy, health information is needed that can explain how important quality health is for all communities. [Kuipers et al. \[15\]](#) stated that the information about knowledge of birth includes the well-nourished of infants or its risks, especially to the mother of first birth.

In improving the quality of life of self-health both physically and mentally, it is necessary to continue to get special attention from the government so that health development in the community can be controlled properly. However, economic problems are certainly an obstacle for parents with low incomes who want to improve the quality of life for their children in the future. [Lane et al. \[16\]](#), believe that government programs are expected to help low-income communities such as providing medical personnel or immunization programs to improve health for all communities.

**Limitation**

This study aims to improve the quality of health for people with low incomes who live in the suburbs of Mataram. The limitation of this study included the pregnant women ages less than 18 years old and first-time mothers' experiences of birth and child baby preterm with low body weight conditions. The economic condition of low-income parents and difficulties in accessing medical care during caring for babies with low weight conditions due to the lack of nutritious food intake needed by the baby during

the new birth period.

Knowledge of reproductive health for adolescents and poor mental health or living in low economic conditions will certainly have the impacts lack of nutrition needed by the body during pregnancy certainly will impact the child born [17]. The difficulties obtaining data samples during the study was carried out because participants had a place to live far from the community health center, so pregnant women rarely checked their health during pregnancy. In contrast, parents who have children with low birth weight conditions, always take care of their child at home and rarely take their child to the hospital for health control. To distinguish between mothers during pregnancy and children with low body weight conditions, a coding system is needed both deductively and inductively to be able to obtain the expected research results. Some data can be reported based on the results of field research, but there are some data potential biases or errors. This happened because the understanding of health problems asked by researchers could not be explained properly by the informant. Nasirin et al. [18] believe that qualitative studies mostly use data source triangulation procedures so that an expanding analysis scope produces better research.

## 5. Conclusions

In improving the quality of health for the community, the strategic role of the government is to build healthier societies by reducing low birth weight in infants and ways of understanding the nutrition knowledge during pregnancy and as an effort to improve the quality of life among people living in suburban areas.

The study's purpose is to increase knowledge and understanding of maternal perceptions of caring for an infant with low-weight conditions from young adolescent mothers who give birth when their age is under 18 years. Similarly, the children born to young mothers ( $\leq 18$  years old) are at risk of being malnourished or have a small body size at birth compared to normal birth healthy babies.

Research arrangements were conducted on mothers who had given birth to low-weight babies ( $\leq 2500$  g) with low family economic status and lack of nutritional intake consumed by mothers during pregnancy. The results showed that after the mother gained knowledge about the normal age in pregnant women and understood the need for balanced nutrition needed during pregnancy.

The importance of counseling about nutrition during pregnancy carried out by the mother based on her awareness to maintain her health, the studies show that after several times mother counseling's with a health professional about nutrition, most the mother has better knowledge of how to health care utilization in pregnant woman and care of the newborn baby at birth.

The results of the study also showed that the socioeconomic status of the family can affect low birth weight. Data analysis explains that most participants can understand how to care for good reproductive health by still consuming nutritious foods combined with dietary supplements and must be balanced with a healthy lifestyle during pregnancy. Further, this study is also expected to overcome the problem of low-weight babies.

In the future, researchers are expected to explain what government policies can anticipate nutritional fulfillment for pregnant women with low socioeconomic conditions.

## Competing Interest

All the authors have no conflict of interest to declare

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## Author contribution statement

### Chairun Nasirin

Conceptualization analysis, data curation, writing original draft, writing a review, and editing.

### Andries Lionardo

Writing draft, review and editing, formal analysis.

## Ethical approval and consent to participation

Approval for publication is obtained from researchers and participants and it is done verbally based on the consent form of being a respondent.

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