Journal of Midwifery and Nursing, 8 (3) (2026) pp. xx-xx

Published by: IOCSCIENCE

Journal of Midwifery and Nursing

Journal homepage: www.iocscience.org/ejournal/index.php/JMN

The culture of betel nut chewing and its relationship to chronic energy deficiency (CED) in pregnant women at the Karang Indah Community Health Center

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ARTICLE INFO

Article history:

Received Jun 15, 2026
Revised Jun 24, 2026
Accepted Jul 2, 2026

Keywords:

Betel Nut Culture;
Chronic Energy Deficiency;
Pregnant Women.

ABSTRACT

Betel nut consumption is closely linked to an increased risk of Chronic Energy Deficiency (CED). The active ingredients in it inhibit the absorption of essential nutrients and can reduce appetite, resulting in inadequate macro and micronutrient intake for mothers. This study aims to determine the relationship between the betel nut culture and the incidence of CED in pregnant women at the Karang Indah Community Health Center. The study design was quantitative and analytical with a cross-sectional approach. A purposive sampling technique was used to select 40 pregnant women from Papua who consume betel nut. Data were collected through a questionnaire to determine the consumption behavior of betel nut and pita lila (lila) to determine whether pregnant women had CED and a lila (lila) <23.5 cm. Data were analyzed using univariate and bivariate methods using the Chi-Square test with an α value of 0.05. The results showed that the majority of respondents had a habit of consuming betel nut (52.5%), those with CED (45.0%), and those without CED (7.5%). Bivariate analysis showed a significant association between the betel nut culture and the incidence of CED in pregnant women (p = 0.010) with strong relationships. These results indicate that CED is more common in pregnant women who consume betel nut compared to those who do not. Therefore, health education for pregnant women is needed to reduce betel nut consumption.

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1. Introduction

Pregnancy is a natural and physiological event that occurs in women which is preceded by an event that forms a zygote and ultimately becomes a fetus which undergoes a process of development and growth in the uterus until the birth process (Azzahara S, 2020). During pregnancy, of course, nutritional intake for pregnant women needs to be given joint attention as a family, pregnant women need additional energy, protein, vitamins and minerals to support fetal growth and the body's metabolic processes (Sulistiawati & Septiani, 2022).

The most common nutritional disorder in pregnant women is Chronic Energy Deficiency (CED). Chronic Energy Deficiency (CED) is a condition in which a person experiences poor nutritional status due to insufficient food intake containing macronutrients, which the body requires in large amounts, and

micronutrients, which the body requires in smaller amounts (Kadmaerubun et al., 2023). Chronic nutritional deficiency syndrome (CED) in pregnant women is a condition in which a mother suffers from chronic malnutrition, resulting in health problems, so that the increased nutritional needs during pregnancy cannot be met. Pregnant women's nutritional needs are higher than usual, so to meet the needs of both mother and fetus, increased food consumption is required, especially foods containing energy (Handayani, 2023). One indicator to detect the risk of CED and nutritional status is by conducting anthropometric measurements, namely measuring the upper arm circumference (MUAC) on the arm that does not often do heavy movement activities. The threshold value used in Indonesia is the MUAC value < 23.5 cm which indicates there is a risk of chronic energy deficiency in the group of women of childbearing age. The problem of malnutrition in pregnant women is still a problem in Indonesia, because this problem is very dangerous, especially for pregnant women who are anemic and pregnant women with Chronic Energy Deficiency (MUAC) (Simbolon et al., 2024).

The impact of chronic energy deficiency (CED) can be risky for pregnant women, causing several problems for both the mother and the fetus. CED in pregnant women also causes risks and complications for the mother, including: anemia, bleeding, maternal weight gain is not normal, and exposure to infectious diseases. Meanwhile, the effect of CED on the labor process can result in difficult and prolonged labor, premature labor, postpartum bleeding, and a tendency to increase caesarean delivery. CED in pregnant women can affect the process of fetal growth and can cause miscarriage, abortion, stillbirth, neonatal death, anemia in infants, intrapartum asphyxia (death in the womb), and birth with low birth weight (LBW) (Korniati et al., 2022). According to the World Health Organization (WHO) in 2018, the prevalence of chronic energy deficiency (CED) in pregnant women was 30.1% in 2016. Globally, the prevalence of CED in pregnant women ranges from 35% to 75%, with Bangladesh having the highest rate at 47%, while Indonesia ranks fourth in the world for the highest prevalence of CED (Suhartini et al., 2025). Based on 2018 Basic Health Research (Riskesdas) data, the prevalence of CED among pregnant women in Indonesia was recorded at 17.3%. In 2023, this figure decreased to 16.9% according to the Indonesian Health Survey. However, this figure still falls short of the target set by the Indonesian Ministry of Health in its 2024 strategic plan, which aims to reduce the prevalence of CED among pregnant women to 10% by 2024 (Restu Tempali Sri, 2023).

Meanwhile, in South Papua, data from the national nutrition program monitoring (Integrated Nutrition 2024–2025) indicates that there are 29–30 pregnant women at risk of developing or experiencing CED. This means that out of 100 pregnant women in South Papua, approximately 29–30 are at risk of CED, or approximately 29.5% of pregnant women are at risk (Dinas Kesehatan Merauke, 2022) SEZ itself can be caused by several factors, including internal and external factors. Internal factors that can cause SEZ include dietary intake, maternal age, consumption patterns, and infectious diseases. External factors include socioeconomic factors, knowledge, education, income, and culture (Amalia et al., 2023). The cultural characteristics of betel chewing in the Karang Indah region that distinguish it from other regions are the traditional customs of Papua. This research is expected to reduce the habit of betel chewing during pregnancy by continuously providing education on the effects of betel chewing.

Culture or tradition is a way of life that develops and is shared by a group of people and passed down from generation to generation. This can be a contributing factor to the occurrence of SEZs. One such culture or tradition is the Betel and Pinang Culture (Siamtuti et al., 2023). The betel nut culture is a tradition of chewing a mixture of betel, areca nut, lime, and sometimes gambier. The betel nut culture has negative impacts on pregnant women, namely it can cause anemia and the occurrence of KEK in pregnant women. Areca nuts contain 0.3% - 0.6% alkaloid compounds such as arecolidine, arecaine, guvakoline, guvasine, isoguvasine, red tannin, starch, saponin, gallic acid, gum, flavonoids and resin. The tannin contained in areca nuts (14%), has astringent properties (creating a bitter taste) and can inhibit the absorption of nutrients, including iron and protein (Suminar, 2021). The research gap related to the relationship between the culture of consuming betel nut and the incidence of KEK in pregnant women is that many pregnant women chew betel quid by adding tobacco (menurur) and betel quid is a very strong cultural identity, the medical advice to "stop chewing betel quid completely" often fails.

This hampered nutrient absorption can provide a temporary satiety effect and reduce feelings of hunger. Apart from that, Arekolidine is the main alkaloid in areca nut which acts as a nervous system stimulant. This stimulation can increase noradrenaline and acetylcholine levels, leading to subjective effects such as increased well-being, alertness, and stamina. This effect can also reduce hunger and the desire to eat. So if consumed continuously, especially for pregnant women, the tannins contained in betel nuts can inhibit the absorption of nutrients and arekolidine which makes pregnant women continue to have stamina so that pregnant women will rarely eat due to lack of hunger. This is what could possibly cause pregnant women to experience CED (Pandie & Froulina, 2023).

The incidence of KEK in pregnant women in Merauke Regency in 2023 was 1,643 out of 5,393 pregnant women (30.4%), while in 2024 there was an increase of 1,799 out of 5,715 pregnant women (31.4%). Based on data from the Merauke Regency Health Office in 2024, the Karang Indah Community Health Center was ranked 10th for the highest incidence of CED in pregnant women out of 25 Community Health Centers in Merauke Regency. And it was ranked 4th among Community Health Centers in urban areas of Merauke Regency, namely 100 out of 261 pregnant women (38.3%) (Dinas Kesehatan Merauke, 2022). And from the results of a preliminary study at the Regional Technical Implementation Unit of Karang Indah Health Center, data was obtained in 2023, the number of pregnant women experiencing CED was 64 people out of 283 pregnant women (22.61%) and in 2024 it increased by 100 people out of 261 pregnant women (38.3%) (Registry of Pregnant Women Karang Indah Health Center). From the results of interviews with 10 respondents, there were 7 pregnant women experiencing CED. Of the 7 pregnant women who experienced CED, they said they had consumed betel nut since they were teenagers more than 5 times per day. Based on these data, the researcher is interested in conducting research on the relationship between the culture of betel nut and the incidence of chronic energy deficiency in pregnant women at the Karang Indah Community Health Center.

2. Method

This study uses a quantitative research design with a cross-sectional approach, namely research in which the independent and dependent variables are measured simultaneously and carried out briefly or once with a purposive sampling technique, a sample of 40 respondents was obtained, the independent variable of betel nut culture using a questionnaire and the dependent variable of CED incidents with Upper arm circumference measurements were taken from the mother's medical records. Betel Nut Consumption Indicator is measured by how long the betel nut has been consumed, categorized as chewing betel nut frequency reaching ≥ 2 times a day (or consuming betel nut more than twice a day) and the habit has been going on for more than 5 years. Low/Occasional Risk: Chewing betel nut sporadically (less than 2 times a day and not a habit that lasts for years) does not always cause KEK. The Chi-Square statistical test was used to determine the relationship between the two variables. Analysis using the Chi-Square statistical test obtained the result of p = 0.010 <0.05, so H0 was rejected and H1 was accepted, which means there is a relationship between betel nut culture and CED incidents in pregnant women at the Karang Indah Health Center.

3. Results and Discussion

Results

Table 1.
Distribusi Karakeristik Responden dan Variabel

Research	Frequency (f)	Percent (%)
Age		
<20	5	12.5
20-35	33	82.5
>35	2	5.0
Education		
Elementary School	10	25.0
Junior High Scool	9	22.5
High School	19	47.5

Research	Frequency (f)	Percent (%)
Diploma/Strata	2	5.0
Occupation		
Housewife	35	87.5
College Student	3	7.5
Honorary Woker	2	5.0
Betel Nut Culture		
Always Consume	21	52.5
Does Not Consume	19	47.5
CED Occurrence		
CED (MUAC < 23,5)	27	67.5
No. CED (MUAC > 23,5)	13	32.5
Total	40	100

Table 2.
Cross Tabulation Between Variables

			CED Occurrence		Total
			CED	No. CED	
Betel Nut Culture	Always Consumse	Frekuensi	18	3	21
		%	45.0%	7.5%	52.5%
	Does Not Comsumse	Frekuensi	9	10	19
		%	22.5%	25.0%	47.5%
Total		Frekuensi	27	13	40
		%	67.5%	32.5%	100.0%

Table 2 above shows that the majority of respondents have a habit of regularly consuming betel nut, namely 21 people (52.5%). Of these, 18 people (45.0%) experienced CED and 3 people (7.5%) did not experience CED. Meanwhile, 19 respondents (47.5%) did not consume betel nut, of which 9 people (22.5%) experienced CED and 10 people (25.0%) did not experience CED.

Table 3.
Analysis of Research Statistical Test Results

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	6.686[a]	1	.010		
Continuity Correction[b]	5.052	1	.025		
Likelihood Ratio	6.935	1	.008		
Fisher's Exact Test				.017	.012
Linear-by-Linear Association	6.519	1	.011		
N of Valid Cases	40				

Based on the Table 3 Analisis of Resecrch results of the Chi-Square test, the Pearson Chi-Square value is known = 6.686 with df = 1 and Asymp. Sig. (2-sided) = 0.010, so p <0.05 which means there is a significant relationship between Betel Nut Culture and Chronic Energy Incidence (CED) in pregnant women at the UPTD Karang Indah Health Center in respondents (N = 40). Continuity Correction (for 2x2 table), p-value = 0.025. This value is also <0.05, so the results still show a significant relationship. Likelihood Ratio p-value = 0.008, This result is also significant because it is <0.05. Fisher's Exact Test Exact Sig. (2-sided) = 0.017 and Exact Sig. (1-sided) = 0.012. Because all values <0.05, these results further strengthen that there is a statistically significant relationship. Linear-by-Linear Association p-value = 0.011 which means still < 0.05, indicating a tendency for a linear relationship between the two variables.

Discussion

Identify Respondent Characteristics with Variable Characteristics

Based on Table 2 Cross-tabulation of Respondent Characteristics based on Age with Betel Nut Culture in Pregnant Women at the Karang Indah Health Center, it shows that almost all respondents are in the 20-35 year age group, namely 33 people (82.5%), where there are 15 people (37.5%) who always consume betel nut and 18 people (45.0%) who do not consume betel nut. And Table 2 Cross-tabulation of Respondent Characteristics based on Age with CED Incidence in Pregnant Women at Karang Indah Health Center shows that out of 40 respondents, it is known that 27 respondents (67.5%) experienced CED, while 13 respondents (32.5%) did not experience CED. The results above show that almost all respondents who always consume betel nut and who experienced CED incidents were mostly found in the 20–35 year age group, which is the active reproductive age group in pregnant women.

The results of this study are in line with previous research conducted by Pandie P (2023), which showed that 65.4% of pregnant women in this study experienced anemia and chewing betel nut was closely related to maternal anemia (Pandie, P, 2023). Likewise, the research results of Sawiah et al (2025) The research results show that the highest consumption occurs in individuals aged 16-29 years, followed by the 30-45 year age group, which shows that habit formation begins early and persists into adulthood (Sawiah et al., 2024).

The 20–35 age group is the reproductive age group most commonly found among pregnant women. In this age group, the habit of chewing betel nut is still influenced by cultural factors and inherited customs. The tradition of chewing betel has long been a part of social life in several regions in Indonesia, so the habit continues even during pregnancy (PATA'DUNGAN & ZATIVA, 2024). Furthermore, the habit of chewing betel nut is often associated with various effects experienced by users, such as a warming sensation, increased alertness, and reduced fatigue. Habits, social environment, and family culture can also influence whether someone maintains this habit (Rima dan Pariama, 2020).

However, the habit of consuming betel nut among pregnant women requires attention, as several studies have shown that betel nut consumption can impact health and the incidence of CED, including possibly affecting the nutritional status of pregnant women. Therefore, health education is needed for the public, especially pregnant women, regarding the impact of betel nut consumption on maternal and fetal health (Suminar, 2021).

Although the age group of 20–35 is considered the safest for pregnancy, the high incidence of CED in this age group can be influenced by various factors, such as inadequate nutritional intake, socioeconomic conditions, dietary patterns, and cultural habits that are still practiced by the community. One habit that is still common is chewing betel nut, which several studies have shown can affect appetite and nutrient absorption in the body (Ngadilah et al., 2023).

Thus, the results of this study indicate that the incidence of CED remains quite high among pregnant women in the study area. Therefore, efforts are needed to improve health education, particularly regarding meeting nutritional needs during pregnancy and controlling habits that can affect nutritional status, thereby reducing the risk of CED in pregnant women.

Identification of Betel Nut Culture in Pregnant Women at the Karang Indah Community Health Center

Based on Table 3 Characteristics of Respondents According to Betel Nut Culture in Pregnant Women at Karang Indah Health Center, namely 40 respondents at Karang Indah Health Center, it was found that the majority of pregnant women had the habit of consuming betel nut, namely 21 people (52.5%), while 19 people (47.5%) did not consume betel nut. This indicates that the betel nut culture is still quite dominant in the study area.

The results of this study are in line with previous research conducted by Irene Rambu Rima et al (2023), which showed that respondents who had a habit of consuming betel nut experienced a decrease in hemoglobin levels below the normal limit of <12 g / dl as many as 24 people (48%). WUS who have a habit of consuming betel nut are at risk of anemia which can also cause KEK pregnant women. Betel nut is still maintained in the Sumba community because it plays a role as a cultural material, part of the traditions and lifestyle of the local community. Likewise with the results of Siti Sawiah's research, (2023),

Research Results from 25 respondents found that most respondents consumed betel nut as many as 20 respondents (80%), of the 20 respondents who consumed betel nut all consumed betel nut ≥ 2 times a day and ≥ 2 pieces a day (100%). And it was found that most of the 20 respondents who consumed betel nut experienced moderate anemia as many as 17 people (85%). This shows that the culture of eating betel nut is still dominant in the local context and is closely related to socio-cultural aspects.

The higher the frequency and duration of betel quid chewing, the more severe the risk of CED and nutritional deficiencies. Based on clinical research on the effects of betel quid consumption: High Risk: A person is considered at high risk of CED and severe anemia if the betel quid chewing frequency reaches ≥ 2 times daily (or consumes more than two betel nuts per day) and the habit has persisted for more than 5 years. Low/Occasional Risk: Sporadic betel quid chewing (less than 2 times daily and not a habit that has persisted for many years) does not necessarily cause CED, but it will still affect the efficiency of the body's daily iron absorption.

The high percentage of pregnant women who still consume betel nut illustrates that this habit has become a deeply rooted tradition in society. Betel nut chewing is generally viewed not only as a personal habit but also as a symbol of social and cultural identity, and is therefore maintained even during pregnancy. Chewing betel nut can decrease appetite, contributing to the development of CED (Yang et al., 2023). Therefore, the betel nut culture can be a contributing factor to maternal nutritional status. Pregnant women require adequate energy and nutrient intake to support fetal growth. If the habit of consuming betel nut results in a decreased appetite or changes in eating patterns, the risk of developing CED may increase (Ome-Kaius, 2017).

Besides cultural factors, other factors may also contribute, such as education level, nutritional knowledge, economic status, and access to health services. Therefore, the betel nut culture cannot be seen as the sole factor, but rather as one determinant interacting with other factors. (Rima dan Pariama, 2020). These distribution results demonstrate the importance of promotive and preventive approaches that consider local cultural aspects. Health education should not directly eliminate existing cultural practices, but rather provide an understanding of their health impacts and encourage healthier behavior changes during pregnancy (Restu Tempali Sri, 2023).

Identification of Chronic Energy Deficiency Incidents in Pregnant Women at the Karang Indah Community Health Center

Based on Table 3 regarding the characteristics of respondents based on the incidence of Chronic Energy Deficiency (CED) in pregnant women at the Karang Indah Health Center, it is known that of the 40 pregnant women respondents at the Karang Indah Health Center, the majority experienced Chronic Energy Deficiency (CED), namely 27 people (67.5%), while respondents who did not experience CED were 13 people (32.5%). These results indicate that the incidence of CED in pregnant women in the study area is still relatively high and is a health problem that requires serious attention.

The results of this study are in line with research conducted by Hendro Stenly Kadmaerubun1, et al (2023) which showed that of the 27 respondents with sufficient nutritional intake, all did not experience CED and among the 8 respondents with insufficient nutritional intake, there were 7 (87.5%) respondents who experienced CED and 1 (12.5%) who did not experience CED. Lack of energy and nutrient intake during pregnancy can cause CED and have an impact on fetal growth disorders. Likewise with the research of Putri Dewi Anggraini, et al (2025), the results of statistical tests found that the majority of pregnant women's nutritional intake was insufficient, as many as 13 respondents (81.3%), experiencing CED as many as 16 respondents (100%).

The high proportion of CED in pregnant women can be caused by several factors, particularly related to meeting nutritional needs during pregnancy. During pregnancy, the need for energy, protein, and micronutrients increases to support fetal growth and development and the mother's physiological changes. If these needs are not met over a prolonged period, a chronic energy deficit will occur, characterized by a mid-upper arm circumference (MUAC) of less than 23.5 cm (Zaki & Sari, 2023).

Nutritional and energy intake is a key factor in the development of CED in pregnant women. Energy and other nutrient needs increase during pregnancy due to the mother's metabolism, changes in body composition, fetal growth and development, and preparation for breastfeeding. Therefore,

deficiencies in certain nutrients needed during pregnancy can lead to CED, which can lead to fetal health problems or impaired fetal growth (Fauziyah et al., 2021).

The impact of chronic energy deficiency (CED) on pregnant women is significant, both for the mother and the fetus. Pregnant women with CED are at higher risk of anemia, premature delivery, bleeding, and other pregnancy complications. For the fetus, CED can cause low birth weight (LBW), stunted fetal growth, and even increase the risk of neonatal death (Lestari, 2023). The high incidence of CED in this study demonstrates the need for preventative measures through increased nutrition education, routine monitoring of the nutritional status of pregnant women, and supplementary feeding for at-risk pregnant women. Furthermore, a culture-based health approach is also needed to change behaviors that could potentially impact the nutritional status of pregnant women (Mamuroh et al., 2023). Thus, the results of this study confirm that CED in pregnant women remains a public health problem influenced by various factors, such as nutritional intake, maternal age, consumption patterns, and cultural habits. Therefore, comprehensive and sustainable interventions are needed to reduce the incidence of CED in pregnant women.

Analysis of the Relationship between the Betel Nut Culture and the Incident of Chronic Energy (CED) in Pregnant Women at the Karang Indah Community Health Center

Based on table 3 Cross-tabulation of Betel Nut Culture with Chronic Energy Incidence (CED) in pregnant women at UPTD Karang Indah Health Center, it is known that of the 21 respondents who always consume betel nut, most of them experienced CED, namely 18 people (45.0%), while only 3 people (7.5%) did not experience CED. Meanwhile, of the 19 respondents who did not consume betel nut, there were 9 people (22.5%) who experienced CED and 10 people (25.0%) who did not experience CED and Based on the results of the Chi-Square test, the Pearson Chi-Square value was found to be 6.686 with df = 1 and Asymp. Sig. (2-sided) = 0.010, so that p <0.05 which means there is a significant relationship between Betel Nut Culture with Chronic Energy Incidence (CED) in pregnant women at UPTD Karang Indah Health Center in respondents (N = 40).

These results indicate a higher incidence of CED in pregnant women who consume betel nut compared to those who do not. This indicates that the betel nut culture has the potential to be a factor associated with CED in pregnant women in the study area.

Continuous betel quid chewing triggers Chronic Energy Deficiency through three main mechanisms affecting the digestive and metabolic systems. One side effect of this stimulant is hunger suppression. A person will feel "full" or lose their appetite after betel quid chewing, leading them to skip meals that should be packed with nutrient-dense nutrients. The severity of CED caused by betel quid chewing is most dangerous in pregnant women. Pregnant women with a history of frequent betel quid chewing have a very difficult time achieving normal weight gain during pregnancy (indicated by a mid-upper arm circumference (MUAC) that remains below 23.5 cm). Maternal CED, exacerbated by betel quid chewing, has been clinically proven to increase the risk of labor complications, premature birth, and low birth weight (LBW).

The results of this study are in line with previous research conducted by Rima et al (2024) who found that WUS who have a habit of consuming betel nut are at risk of anemia which can also cause KEK pregnant women. (Rima dan Pariama, 2020) The results of research conducted by Pandie (2013) stated that the habit of chewing betel nut can reduce appetite, thus contributing to the occurrence of KEK. (Pandie & Froulina, 2023). Likewise, the results of the research by Siti Sawiah, et al. (2023), obtained a correlation coefficient of 0.403. This means that the level of strength of the relationship (correlation) between the independent variable and the dependent variable is 0.403 or the strength of the Sig. (2-tailed) value of 0.046> less than 0.05 or 0.01, which means that there is a significant relationship between betel nut consumption and the incidence of anemia (Sawiah et al., 2024).

A significant relationship between the betel nut culture and the incidence of CED in pregnant women at the Karang Indah Community Health Center has a unidirectional (positive) relationship, meaning that the higher the level of betel nut culture, the incidence of CED in pregnant women tends to increase. This is because the habit of chewing betel nut can affect the diet of pregnant women. Tannins contained in betel nut have astringent properties (creating a bitter taste) and can inhibit the absorption

of nutrients, including iron and protein. This inhibited nutrient absorption can provide a temporary feeling of fullness and reduce hunger. Therefore, if consumed continuously, especially by pregnant women, the tannins contained in betel nut can inhibit the absorption of nutrients and arecolidine which makes pregnant women continue to have stamina so that pregnant women will rarely eat due to lack of hunger. Therefore, this can cause a chronic energy deficit characterized by an upper arm circumference (MUAC) of less than 23.5 cm, which can lead to pregnant women experiencing CED (Mate et al., 2025).

However, cases of CED were still found in the group of mothers who did not consume betel nut. This indicates that CED is a multifactorial problem influenced not only by culture but also by other factors such as dietary intake, nutritional knowledge, socioeconomic conditions, and daily consumption patterns. Thus, the results of this study indicate a trend toward a relationship between betel nut consumption and the incidence of CED in pregnant women, with mothers who consume betel nut having a higher incidence of CED than those who do not. Therefore, culturally sensitive health education efforts are needed to mitigate the impact of this habit on the nutritional status of pregnant women. However, because this study is observational (possibly cross-sectional), the relationship found cannot be directly interpreted as a cause-and-effect relationship, but only indicates an association. Interventions to reduce the habit of betel chewing in pregnant women must be carried out with an approach that respects cultural values, because this practice often has strong ties to tradition, social identity, and is considered to have health benefits (such as relieving nausea or as a relaxant).

4. Conclusion

Most pregnant women at Karang Indah Community Health Center are included in the category of always consuming betel nut, namely 21 pregnant women (52.5%) and those experiencing Chronic Energy Deficiency (CED) are 27 pregnant women (67.5%). There is a Relationship between Betel Nut Culture and Chronic Energy Deficiency (CED) in pregnant women at Karang Indah Community Health Center with an Asymp. Sig. (2-sided) value = 0.010 which means $p < 0.05$. To prove the causal relationship between the habit of chewing betel (consumption of betel, areca nut, and lime) and Chronic Energy Deficiency (CED), further research will be carried out on long-term observations of how betel and areca nut cause CED at the cellular and systemic levels in the body. Interventions to reduce the habit of betel chewing in pregnant women must be carried out with an approach that respects cultural values.

Acknwledgements

Thanks are given to Yoseph Sujono, S.Kep.Ns as Head of the Karang Indah Community Health Center Merauke Regency, all pregnant women who were respondents in this research, Mr. Drs. Romanus Mbaraka, MT as Regent of Merauke, Mr. Salfianus Laiyaan as Head of the Merauke Civil Service Agency and Staff, Dr. Nevile Muskita as Head of the Merauke Health Service, Mrs. Christina Katom,.SKeb as Chair of the Merauke Regency Midwives Association, Dr. Sentot Imam Suprapto, MM as Chancellor of IIK Strada and Staff, and to all parties involved has helped in the preparation of this research

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