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THE ASSOCIATION BETWEEN KNOWLEDGE AND THE ROLE OF HEALTH WORKERS WITH ADHERENCE TO VITAMIN A CAPSULE CONSUMPTION AMONG POSTPARTUM MOTHERS IN THE WORKING AREA OF PUSKESMAS KOTA TENGAH

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ABSTRACT

The postpartum period begins after the placenta is delivered and ends when the reproductive organs return to their pre-pregnancy state. The postpartum period lasts for six weeks, making midwifery care during this period crucial. Therefore, this study aimed to determine the association between maternal knowledge and the role of healthcare workers with adherence to postpartum vitamin A capsule consumption among postpartum mothers in the working area of Puskesmas Kota Tengah, Gorontalo City. This quantitative study used a cross-sectional method. The population was all 244 postpartum mothers in the Puskesmas Kota Tengah work area. A sample of 70 postpartum mothers was selected using an accidental sampling technique. The research instrument used a questionnaire. The results of the chi-square statistical test showed the association between postpartum mothers' knowledge (p-value = 0.001) and the role of health workers (p-value = 0.002) and compliance with vitamin A capsule consumption among postpartum mothers in the Puskesmas Kota Tengah work area. The knowledge and role of health workers play a crucial role in increasing postpartum mothers' compliance with vitamin A capsule consumption, thus supporting the optimization of the postpartum vitamin A supplementation program to improve maternal and infant health.

Keywords: *Knowledge, role of health workers, compliance, vitamin A capsules, postpartum mothers.*

INTRODUCTION

The postpartum period commences immediately following placental delivery and extends until the reproductive organs have returned to their pre-pregnancy state. This period lasts approximately six weeks and represents a critical stage in maternal healthcare, requiring continuous monitoring to ensure the well-being of both mother and infant. During this period, postpartum women require comprehensive midwifery care, including nutritional support, elimination management, physical mobility, personal hygiene, adequate rest, and family planning services. One of the essential nutritional interventions recommended during the postpartum period is the consumption of high-dose vitamin A capsules (Kemenkes RI, 2022).

The World Health Organization (WHO, 2023), estimates that vitamin A deficiency affects approximately 19 million women of reproductive age globally. This condition increases the risk of visual impairment, weakened immune function, and maternal and child mortality. Furthermore, vitamin A deficiency is a major cause of preventable

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childhood blindness and may increase susceptibility to infectious diseases and anemia among pregnant women, postpartum mothers, and breastfeeding women.

Data from the Indonesia Health Profile indicate that the coverage of postpartum vitamin A supplementation declined to 79.4% in 2022 and increased slightly to 84.7% in 2023 (Kemenkes RI, 2024). A similar trend was observed in Gorontalo Province, where the Provincial Health Office reported a postpartum vitamin A coverage of 89.4% in 2024, slightly higher than the national average. In Gorontalo City, the coverage reached 93.2%, whereas the coverage at Puskesmas Kota Tengah remained only 81%, falling below the national target of 95% (Dinkes Provinsi Gorontalo, 2024). Furthermore, local health reports showed that only 55.2% of postpartum women in Gorontalo City consumed vitamin A capsules in 2025. Specifically, records from Puskesmas Kota Tengah indicated that only 52.1% of postpartum mothers consumed vitamin A capsules according to the recommended schedule, while the remaining women either forgot, lacked time, or declined supplementation because they believed it was unnecessary. These findings suggest that poor adherence remains one of the major barriers to the successful implementation of postpartum vitamin A supplementation programs at the primary healthcare level (Puskesmas Kota Tengah, 2025).

Since 1978, Kemenkes RI has implemented a national postpartum vitamin A supplementation program by providing 200,000 IU high-dose vitamin A capsules to women within 42 days after childbirth. The primary objective of this program is to replenish maternal vitamin A stores and improve the concentration of retinol in breast milk to meet the nutritional requirements of newborn infants. Nevertheless, the effectiveness of this program largely depends on mothers' adherence to vitamin A capsule consumption (Wiradnyani et al., 2025). Although vitamin A capsules are regularly supplied through Puskesmas and Posyandu, adherence among postpartum mothers remains below the nationally established target. The findings of this study indicate that maternal knowledge and healthcare workers' roles are significantly associated with compliance with postpartum vitamin A supplementation. Therefore, improving adherence requires continuous maternal health education, individualized counseling, and strengthened follow-up by health workers, particularly midwives. Providing clear information about the benefits, dosage, timing, and importance of vitamin A supplementation, together with reminders and monitoring during postpartum visits, may increase maternal awareness and motivation and address misconceptions and forgetfulness.

Vitamin A plays a crucial physiological role in maintaining epithelial integrity, supporting immune function, regulating cellular differentiation, and enhancing the nutritional quality of breast milk. During the postpartum period, maternal vitamin A requirements increase substantially to facilitate tissue repair following childbirth and to improve retinol concentrations in breast milk, which are essential for infant growth and development. Rahmannia et al. (2025) reported that postpartum women who received vitamin A supplementation exhibited 30–50% higher breast milk retinol concentrations than those who did not receive supplementation.

Adherence to postpartum vitamin A supplementation is influenced by multiple interrelated factors, including predisposing, enabling, and reinforcing factors. According to the PRECEDE–PROCEED Model proposed by Lawrence Green, health-related behaviors are determined by three major components: predisposing factors, enabling factors, and reinforcing factors (Green et al., 2022). Predisposing factors include knowledge, attitudes, beliefs, values, and individual perceptions regarding health behaviors. Enabling factors encompass the availability of health services, healthcare accessibility, health policies, and the role of healthcare providers. Reinforcing factors include support from family members, spouses, and community leaders.

Several previous studies have identified factors associated with postpartum vitamin A supplementation adherence. Indasari et al. (2025) reported that maternal knowledge, support from healthcare workers, and adequate vitamin A capsule availability significantly contributed to the success of postpartum supplementation programs at Betung Public Health Center, South Sumatra. Similarly, Sari et al. (2025) found that educational level, access to health information, and the active involvement of community health workers significantly influenced mothers' decisions to consume postpartum vitamin A capsules.

Furthermore, November Y (2023) demonstrated that individualized health education delivered through home visits by healthcare professionals increased maternal adherence to vitamin A supplementation by 73%, highlighting the effectiveness of interpersonal communication compared with conventional group-based education. Likewise, Abidah & Sumarmi (2024) emphasized that direct interaction between healthcare providers and postpartum mothers significantly improves adherence to micronutrient supplementation. Mothers who maintained intensive communication with healthcare providers were considerably more likely to comply with recommendations regarding vitamin A capsule consumption than those who received limited professional support.

A preliminary assessment of the Puskesmas Kota Tengah service area recorded a total of 510 postpartum mothers who constituted the target population for 2025. An initial assessment involving 10 postpartum women revealed that adherence to vitamin A capsule consumption remained relatively low. Only three respondents (30%) had fully complied by consuming both recommended vitamin A capsules within 42 days after delivery. Four respondents (40%) consumed only one capsule or took the supplementation later than recommended, while the remaining three respondents (30%) were completely non-adherent due to forgetfulness, insufficient motivation, or failure to visit the health center to obtain the capsules. These preliminary findings indicate that adherence to postpartum vitamin A supplementation remains suboptimal and underscore the need to investigate factors associated with maternal compliance in the study area. In contrast to earlier research, which has largely focused on maternal knowledge or vitamin A supplementation coverage independently, the present study investigates the relationship of both maternal knowledge and healthcare workers' roles with adherence to postpartum vitamin A capsule intake. By examining these factors concurrently, this research offers evidence specific to

the local context concerning maternal characteristics and healthcare-related aspects associated with adherence in the service area of Puskesmas Kota Tengah, Gorontalo City. Accordingly, this study sought to assess the associations of maternal knowledge and healthcare workers' roles with adherence to postpartum vitamin A capsule consumption among mothers receiving services at Puskesmas Kota Tengah, Gorontalo City, Indonesia.

RESEARCH METHOD

This research adopted a quantitative analytical design with a cross-sectional framework to investigate the associations between maternal knowledge, healthcare workers' roles, and adherence to postpartum vitamin A capsule consumption. Fieldwork took place from 11 to 19 April 2026 in the service area of Puskesmas Kota Tengah, Gorontalo City, Indonesia. The study population comprised 244 postpartum mothers documented between July and December 2025. Using the Slovin formula, the required sample was calculated to be 70 respondents. Participants were eligible if they met the established inclusion criteria, were available during data collection, and provided informed consent to participate. Mothers who submitted incomplete questionnaires or failed to provide the necessary information were excluded. Respondents were recruited through accidental sampling, whereby eligible mothers who were accessible during the study period were selected to participate. This technique was selected to facilitate recruitment within the limited study period and available access to postpartum mothers; however, its use may introduce selection bias because respondents who were readily accessible may differ from postpartum mothers who were not available during data collection.

Data were collected using structured questionnaires adopted from previous studies. The maternal knowledge questionnaire consisted of 20 items covering the definition, purpose, benefits, timing, dosage, and consequences of vitamin A deficiency and supplementation. Each item was assessed using a true/false response, with a score of 1 for a correct answer and 0 for an incorrect answer. The total score was converted into a percentage and categorized as good (76–100%) and poor (<76%). The healthcare workers' role questionnaire consisted of 16 items assessing the roles of healthcare workers as educators, motivators, facilitators, and advocates in providing vitamin A supplementation. Responses were measured using a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree), with negatively worded items scored reversely. The role of healthcare workers was categorized as good (≥75% of the maximum score) and poor (<75% of the maximum score). Adherence to postpartum vitamin A supplementation was assessed using a five-item questionnaire with yes/no responses based on whether the mother received and consumed the recommended vitamin A capsules according to the specified timing. Adherence was categorized as adherent or non-adherent according to the operational definition of the study. The questionnaires were adopted from previous studies, namely Ramadhania (2021) for the knowledge questionnaire and Harahap (2021) for the adherence questionnaire, while the healthcare worker role questionnaire was based on the indicators presented in previous studies.

Respondents' characteristics and the study variables were summarized using descriptive statistics. The associations between maternal knowledge, the role of healthcare workers, and adherence to postpartum vitamin A capsule consumption were examined using the Chi-square test. A p-value of less than 0.05 was considered statistically significant.

RESULTS AND DISCUSSION

Result

Respondents' Characteristics

Table 1 presents the demographic characteristics of the 70 postpartum mothers who participated in this study, including age, educational level, and employment status. The distribution of respondents across these characteristics is summarized using frequencies and percentages.

Table 1. Distribution of Respondents' Characteristics

Characteristics	Frequency	Percentage
Age		
< 20 years	2	2.9
20–35 years	58	82.9
> 35 years	10	14.2
Educational Level		
Low	1	1.4
Middle	13	18.6
High	56	80.0
Employment Status		
Employed	27	38.6
Unemployed	43	61.4
Total	70	100.0

Sumber: Primary Data (2026)

Based on Table 1, the distribution of respondents by age showed that the majority of postpartum mothers were aged 20–35 years, accounting for 58 respondents (82.9%). This finding indicates that most participants were within the healthy reproductive age group. In maternal health research, age is commonly categorized into three groups (<20 years, 20–35 years, and >35 years) to classify reproductive risk. Women younger than 20 years are considered to have a higher reproductive risk because their reproductive organs and psychological maturity may not yet be fully developed, making them more susceptible to pregnancy and childbirth complications. In contrast, women aged 20–35 years are regarded as being in the optimal reproductive age because their physical condition, psychological readiness, and reproductive function are generally at their peak, resulting in a lower risk of maternal complications. Meanwhile, women older than 35 years are classified as a high-risk group due to the gradual decline in reproductive function and the increased likelihood of comorbidities, such as hypertension, diabetes mellitus, and obstetric complications. Therefore, this age classification is widely used to

assess the influence of maternal age on health behaviors and postpartum health outcomes (Kemenkes RI, 2022; Prawirohardjo, 2022; WHO, 2022).

An analysis of respondents' educational backgrounds revealed that most postpartum mothers had completed senior high school or attained a university level education, accounting for 56 respondents (80.0%). Educational attainment plays a significant role in shaping an individual's capacity to access, comprehend, and appropriately utilize health information (Notoatmodjo, 2022). People with higher levels of education tend to demonstrate better health literacy, which may help them make more informed decisions about healthcare services and adopt healthier practices. This finding is in line with the results reported by Rita & Amsa (2023), who found that senior high school or vocational high school graduates represented the largest group of respondents (58.6%), while university graduates accounted for 29.3%.

Regarding employment status, Table 1 shows that the majority of respondents were unemployed or identified themselves as housewives, accounting for 43 respondents (61.4%), whereas 27 respondents (38.6%) were employed. This distribution indicates that most postpartum mothers devoted their time primarily to household responsibilities and infant care during the postpartum period. The findings are in agreement with those reported by Martilova & Saragih (2024), who found that the majority of postpartum mothers were not employed, representing 79 respondents (79.8%).

Univariate Analysis

Table 2 presents the distribution of maternal knowledge, the perceived role of healthcare workers, and adherence to postpartum vitamin A capsule consumption among 70 respondents. The results show the frequency and percentage of respondents in each category for the three study variables.

Table 2. Distribution of Maternal Knowledge, the Role of Health Workers and Adherence to Vitamin A Capsule Consumption

Variable	Frequency	Percentage
Adherence		
Adherent	35	50.0
Non-adherent	35	50.0
Knowledge Level		
Good	36	51.4
Poor	34	48.6
Role of Health Workers		
Good	39	55.7
Poor	31	44.3
Total	70	100.0

Sumber: Primary Data (2026)

Based on Table 2, the distribution of adherence to vitamin A capsule consumption among postpartum mothers showed that an equal number of respondents were classified as adherent and non-adherent, with 35 respondents (50.0%) in each group. These findings indicate that adherence to postpartum vitamin A capsule consumption in the working area

of Puskesmas Kota Tengah remains suboptimal, as the proportions of adherent and non-adherent mothers were identical. This suggests that although vitamin A supplementation is routinely provided through maternal health services, many postpartum women still do not consume the capsules according to the recommended guidelines. The findings are consistent with those reported by Cahyani et al. (2024), in which respondents receiving postpartum vitamin A supplementation were similarly categorized into case and control groups for evaluating factors associated with supplementation adherence.

As presented in Table 2, 36 postpartum mothers (51.4%) demonstrated a good level of knowledge about vitamin A, whereas the remaining 34 respondents (48.6%) had limited knowledge. This distribution suggests that slightly more than half of the participants understood the significance of vitamin A supplementation during the postpartum period. Knowledge serves as an important foundation for health-related behavior, as it shapes how individuals interpret health information and determine appropriate actions concerning their well-being. Health practices grounded in adequate understanding are generally more likely to be maintained over time than those undertaken without sufficient knowledge (Notoatmodjo, 2022). A similar pattern was documented by Martilova & Saragih (2024), who reported that 52 postpartum mothers (52.5%) had good knowledge of vitamin A supplementation, representing the largest proportion of respondents in their study. This similarity suggests that maternal knowledge about postpartum vitamin A supplementation has generally improved, although a considerable proportion of mothers still possess insufficient knowledge. Therefore, continuous health education and counseling remain essential to further improve maternal understanding and promote appropriate health behaviors during the postpartum period.

As shown in Table 2, 39 postpartum mothers (55.7%) rated the role of healthcare workers positively, whereas 31 respondents (44.3%) considered their role to be inadequate. These results indicate that more than half of the participants perceived healthcare workers' involvement in postpartum care favorably. These findings indicate that most respondents considered health workers to have provided adequate support, education, counseling, and guidance regarding postpartum vitamin A supplementation. The active involvement of health workers plays an important role in improving maternal awareness and encouraging the appropriate use of vitamin A capsules during the postpartum period. The findings of this study are consistent with those of Rita & Amsa (2023), who reported that the majority of respondents perceived health workers as playing an active role in promoting vitamin A supplementation, with 31 respondents (53.4%) acknowledging adequate support from healthcare providers. This consistency suggests that health workers remain key contributors to the successful implementation of postpartum vitamin A supplementation programs through effective communication, health education, counseling, and follow-up services.

Bivariate Analysis

Table 3 presents the bivariate analysis of the associations between maternal knowledge, the role of healthcare workers, and adherence to postpartum vitamin A

capsule consumption among 70 respondents. The associations were examined using the Chi-square test, with a significance level of $p < 0.05$.

Table 3. Association Between Maternal Knowledge and the Role of Health Workers with Adherence to Vitamin A Capsule Consumption

Variable	Adherence				Total		*p-value*
	Adherent		Non-adherent				
	n	%	n	%	n	%	
Knowledge Level							
Good	25	35.7	11	15.7	36	51.4	0,001
Poor	10	14.3	24	34.3	34	48.6	
Role of Health Workers							
Good	26	37.1	13	18.6	39	55.7	0,002
Poor	9	12.9	22	31.4	31	44.3	
Total	35	50,0	35	50,0	70	100,0	

Sumber: Primary Data (2026)

Based on Table 3, most respondents who were adherent to vitamin A capsule consumption had good knowledge of vitamin A, totaling 25 respondents (35.7%). In contrast, the smallest proportion consisted of respondents who were adherent to vitamin A capsule consumption but had poor knowledge of vitamin A, totaling 10 respondents (14.3%). A statistically significant association was found between maternal knowledge and adherence to postpartum vitamin A capsule consumption ($\chi^2 = 11.209$, df = 1, p = 0.001). The strength of the association, measured using Cramer's V, was 0.400, indicating a moderate association between maternal knowledge and adherence to postpartum vitamin A capsule consumption. The Chi-square test assumptions were satisfied, as all cells had expected frequencies of at least 5, with the lowest expected count being 17.00. The odds ratio (OR) was 5.455, with a 95% confidence interval (CI) ranging from 1.960 to 15.176. This result indicates that postpartum mothers with good knowledge had 5.455 times the odds of adhering to vitamin A capsule consumption compared with those whose knowledge was poor.

As presented in Table 3, the largest proportion of respondents comprised postpartum mothers who adhered to vitamin A capsule consumption and rated the role of healthcare workers positively, totaling 26 respondents (37.1%). Conversely, the smallest group consisted of mothers who maintained adherence despite perceiving healthcare workers' involvement as inadequate, accounting for 9 respondents (12.9%). Statistical analysis demonstrated a significant association between the perceived role of healthcare workers and adherence to postpartum vitamin A capsule consumption ($\chi^2 = 9.785$, df = 1, p = 0.002). Cramér's V was 0.374, suggesting a moderate relationship between these variables. The Chi-square test requirements were also fulfilled, with no expected cell frequency falling below 5; the minimum expected frequency was 15.50. Furthermore, the odds ratio (OR) was 4.889 (95% CI: 1.759–13.586), indicating that mothers who evaluated healthcare workers' roles favorably had 4.889 times the odds of adhering to vitamin A capsule consumption compared with those who reported an unfavorable

assessment.

Discussion

Association Between Maternal Knowledge and Adherence to Vitamin A Capsule Consumption Among Postpartum Mothers

Of the 70 participants included in the study, 36 (51.4%) demonstrated a good level of knowledge about vitamin A, whereas the remaining 34 (48.6%) had inadequate knowledge. This distribution suggests that a slight majority of postpartum mothers in the service area of Puskesmas Kota Tengah understood the importance of consuming vitamin A capsules during the postpartum period.

The respondents' good level of knowledge may be associated with their educational characteristics. In this study, 56 respondents (80.0%) had a high level of education, ranging from senior high school to higher education. Higher educational attainment may be associated with a greater ability to access, understand, and process health information. According to health literacy theory, individuals with higher levels of education may be better equipped to understand health messages and apply this information in daily life, including during pregnancy and the postpartum period (Nutbeam & Lloyd, 2021). This could account for the relatively large proportion of participants who demonstrated adequate knowledge of vitamin A supplementation during the postpartum period in this study.

A comparable result was documented by Martilova & Saragih (2024), whose study found that 52.5% of postpartum mothers demonstrated good knowledge of vitamin A. Similarly, Amna & Rakhmyna (2021) found that, among postpartum mothers in the working area of Indrapuri Public Health Center, those with good knowledge were more prevalent (86.8%) than those with poor knowledge (13.2%). Another study by Martina & Zuhkrina (2023) reported that most respondents had good knowledge, with 64 respondents (85.3%) classified in this category.

The researcher suggests that the relatively high level of maternal knowledge may be associated with ongoing health education initiatives at Puskesmas Kota Tengah, counseling provided during postpartum visits, and broader access to health information through digital platforms. However, the proportion of mothers with limited knowledge indicates that these educational efforts may not have reached all groups equally, particularly mothers with lower educational attainment, those who are employed, and those who attend postpartum healthcare visits infrequently. Therefore, more intensive and continuous health education is needed to ensure that all postpartum mothers have adequate knowledge regarding the importance of vitamin A capsules.

The findings further showed that, among the 70 respondents, most postpartum mothers who adhered to vitamin A capsule consumption had good knowledge, accounting for 25 respondents (35.7%). In contrast, among non-adherent mothers, most had poor knowledge, accounting for 24 respondents (34.3%). The Chi-square analysis demonstrated a significant relationship between maternal knowledge and adherence to vitamin A capsule consumption, with a p-value of 0.001, below the 0.05 significance

threshold.

The results indicate that maternal knowledge may play an important role in shaping adherence to postpartum vitamin A supplementation. Mothers who are well informed about the benefits of vitamin A, the recommended timing and dosage, and the potential effects of deficiency may be more aware of the importance of taking the capsules as recommended. In contrast, insufficient knowledge may limit mothers' understanding of the benefits of vitamin A supplementation for both maternal and infant health, potentially reducing their likelihood of consuming the capsules.

The relatively high level of knowledge among respondents may also be influenced by educational attainment. Mothers with higher levels of education are generally more likely to receive health information and understand the importance of preventing nutritional problems during the postpartum period. In addition, counseling provided by midwives during antenatal care, childbirth, and postpartum visits may improve maternal knowledge. The revised Bloom's Taxonomy suggests that individuals with higher educational attainment may achieve cognitive levels ranging from understanding and applying to analyzing, enabling them not only to understand the benefits of vitamin A but also to recognize its clinical implications and appropriate actions (Nutbeam & Lloyd, 2021).

According to Notoatmodjo (2022), knowledge is the result of an individual's awareness after perceiving an object through the senses and serves as the basis for the development of actions. A higher level of knowledge may increase the likelihood that individuals will engage in beneficial health practices. Consistent with this perspective, postpartum mothers who demonstrated good knowledge in the present study were more likely to adhere to vitamin A capsule consumption. Lawrence Green's behavioral theory further classifies knowledge as a predisposing factor that supports the adoption of health-related practices. Accordingly, vitamin A consumption may be shaped by several individual factors, including knowledge, attitudes, beliefs, and values (Green et al., 2022). Therefore, better maternal knowledge may increase the likelihood of adherence to the vitamin A supplementation program.

The significant association between maternal knowledge and adherence to postpartum vitamin A capsule consumption may be explained by the role of knowledge in increasing mothers' understanding and awareness of the benefits and importance of vitamin A supplementation. Mothers with better knowledge may be more motivated to follow recommended supplementation practices, whereas limited knowledge may be associated with lower adherence. Recent evidence supports the role of maternal nutritional knowledge, education, and counseling in promoting appropriate supplementation practices and adherence (Matsiko et al., 2026; Mayisso et al., 2026; Suprapti et al., 2026). Thus, greater knowledge may facilitate awareness and motivation to adhere to postpartum vitamin A supplementation.

In the present study, maternal knowledge was significantly associated with adherence to postpartum vitamin A capsule consumption ($\chi^2 = 11.209$, df = 1, $p = 0.001$), with a moderate association based on Cramer's V (0.400). Furthermore, mothers with

good knowledge had higher odds of adherence than those with poor knowledge (OR = 5.455; 95% CI: 1.960–15.176). This finding indicates that respondents with good knowledge had approximately 5.5 times higher odds of being adherent to postpartum vitamin A capsule consumption than respondents with poor knowledge. Nevertheless, because this study employed a cross-sectional design, the findings should be interpreted as an association rather than a causal effect. Knowledge may be an important factor associated with adherence, but adherence may also be influenced by other factors, such as access to health services, healthcare-worker support, attitudes, perceptions, and individual circumstances.

Association Between the Role of Health Workers and Adherence to Vitamin A Capsule Consumption Among Postpartum Mothers

Of the 70 participants, 39 (55.7%) gave a favorable assessment of the support provided by healthcare workers, whereas the remaining 31 (44.3%) considered their involvement inadequate. These findings indicate that most postpartum mothers perceived that they had received adequate healthcare services, education, motivation, and assistance from health workers regarding vitamin A capsule consumption during the postpartum period.

The high proportion of respondents who perceived the role of health workers as good may be attributed to several factors, including the availability of health workers who actively provide postpartum care, home visits or postnatal services, effective communication between health workers and patients, and the availability of maternal and child health programs at the community health center. In addition, the work experience of health workers, interpersonal communication skills, and adherence to service standards may also influence postpartum mothers' perceptions of the role of health workers. According to the Kemenkes RI (2021), health workers play an important role in postpartum care through promotive, preventive, curative, and rehabilitative activities. During the postpartum period, health workers are responsible for monitoring maternal conditions, providing health education, detecting complications early, offering lactation counseling, and ensuring that mothers receive comprehensive postnatal care. The better the quality of services provided, the more positive mothers' perceptions of the role of health workers are likely to be.

The present findings are in line with those reported by Rita & Amsa (2023) at Lampisang Public Health Center in Aceh Besar, where 53.4% of postpartum mothers indicated that healthcare workers contributed to promoting vitamin A consumption. Likewise, Martina & Zuhkrina (2023) found that 61.3% of participants rated the role of healthcare workers positively. Despite differences in healthcare settings and study populations, these results are comparable to the current study, in which 55.7% of postpartum mothers evaluated the role of healthcare workers favorably. The consistency of these findings suggests that healthcare-worker support, particularly through education, counseling, motivation, and monitoring, is an important component of postpartum vitamin A supplementation services. Variations in the proportion of respondents who

rated healthcare workers' roles positively may reflect differences in participant characteristics, healthcare delivery environments, and research methods. In the current study, healthcare workers' roles were significantly associated with adherence ($\chi^2 = 9.785$, df = 1, p = 0.002). The strength of this relationship was moderate, as indicated by Cramér's V of 0.374, while the odds ratio was 4.889 (95% CI: 1.759–13.586). This indicates that the strength of the association observed in the present study was moderate, although direct comparison with previous studies is limited when effect-size measures were not reported in the previous studies.

According to the researchers' assumptions, the majority of respondents perceived the role of health workers as good because health workers at Puskesmas Kota Tengah had provided postpartum care in accordance with established standards, delivered sufficiently clear health education, and were easily accessible to the community. However, the presence of respondents who perceived the role of health workers as inadequate may be due to differences in their experiences of receiving healthcare services, limited consultation time, or insufficiently intensive interaction between health workers and postpartum mothers. Therefore, continuous efforts are needed to improve the quality of communication, individual counseling, and the equitable provision of postpartum care services.

The results further showed that, among the 70 respondents, the majority of postpartum mothers who adhered to vitamin A capsule consumption received a good level of support from health workers, accounting for 26 respondents (37.1%). In contrast, among non-adherent mothers, the majority received an inadequate level of support from health workers, accounting for 22 respondents (31.4%). The Chi-square analysis identified a significant relationship between healthcare workers' roles and adherence to vitamin A capsule consumption among postpartum mothers (p = 0.002), as the p-value was below the 0.05 significance threshold.

The findings highlight the contribution of healthcare workers in promoting healthy practices among postpartum mothers. Their responsibilities encompass explaining the benefits of vitamin A supplementation, informing mothers about the recommended timing and dosage, encouraging consistent capsule consumption according to established recommendations, providing follow-up care throughout the postpartum period, and maintaining an adequate supply of vitamin A capsules at healthcare facilities. Effective support from healthcare workers may therefore increase the likelihood that postpartum mothers will follow the recommended vitamin A supplementation practices. The important influence of health workers may be explained by the fact that postpartum mothers require considerable guidance and health information following childbirth. Mothers who receive direct counseling from midwives or other health professionals may be more confident, feel more supported, and better understand the importance of consuming vitamin A capsules. Furthermore, friendly communication, prompt services, postpartum visits, and the availability of vitamin A capsules at community health centers may also support maternal adherence.

According to the Kemenkes RI (2021), health workers are responsible for providing

comprehensive postpartum care, including nutrition education, supplementation, maternal health monitoring, and early detection of complications. During the postpartum period, health workers serve as educators, motivators, facilitators, and advocates for mothers and their families. Lawrence Green's theory identifies health workers as reinforcing factors that can encourage individuals to adopt positive health behaviors. Support, guidance, and reinforcement from healthcare providers may therefore increase the likelihood that mothers will follow health recommendations, including adherence to postpartum vitamin A capsule consumption (Green et al., 2022).

However, the findings also showed that although the role of health workers was perceived as good, 13 postpartum mothers remained non-adherent to vitamin A capsule consumption. This finding suggests that adherence is not determined solely by the role of health workers but may also be influenced by factors related to the mother and her surrounding environment. Although good healthcare support, such as education, motivation, and the distribution of vitamin A capsules, is important, it may not necessarily guarantee that all postpartum mothers will adhere to the recommended supplementation.

According to Lawrence Green's theory, health behavior is influenced by three major factors: predisposing factors, including knowledge, attitudes, beliefs, and values; enabling factors, such as access to healthcare services and the availability of facilities; and reinforcing factors, including support from health workers, family members, and the community. Therefore, even when the reinforcing factor represented by the role of health workers is good, adherence may remain low if postpartum mothers have inadequate knowledge, negative attitudes, concerns about side effects, forget to take the capsules, or receive insufficient family support (Green et al., 2022). Consistent with this explanation, among the 13 mothers who received a good level of support from health workers but demonstrated poor adherence, 54% had inadequate knowledge.

The results align with those of Martina & Zuhkrina (2023), who identified a relationship between the quality of healthcare services and adherence to postpartum vitamin A supplementation. In a related study, Suprapti et al. (2026) demonstrated that brief counseling provided by pharmacists significantly enhanced pregnant women's knowledge of and adherence to iron supplementation ($p < 0.001$). Taken together, these findings indicate that accessible information and systematic counseling from healthcare professionals may help encourage adherence to recommended supplementation practices. Atok et al. (2026) further demonstrated that mobile health (mHealth) interventions combining daily reminders, educational messages, and monitoring increased iron tablet adherence among pregnant women from 45% to 85% over eight weeks. These findings suggest that healthcare workers can support supplementation adherence through effective communication, counseling, and continuous follow-up. In the present study, the role of health workers was significantly associated with adherence to postpartum vitamin A capsule consumption ($p = 0.002$).

The researchers suggest that the significant relationship between healthcare workers' roles and adherence to vitamin A capsule consumption may be attributable to the importance of healthcare workers as a primary source of information for postpartum

mothers. Mothers who receive clear explanations, motivation, and good-quality healthcare services may feel more confident and motivated to consume vitamin A capsules. Conversely, when health workers are less active in providing education or follow-up, postpartum mothers may have a limited understanding of the importance of vitamin A and may be less likely to adhere to supplementation recommendations.

This study offers a context-specific contribution by investigating the relationship between healthcare workers' roles and adherence to postpartum vitamin A capsule supplementation among mothers receiving care in the service area of Puskesmas Kota Tengah, Gorontalo City. Previous studies by Rita & Amsa (2023) and Martina & Zuhkrina (2023) have highlighted the importance of healthcare worker support in promoting vitamin A consumption among postpartum mothers. Building on previous evidence, this study identifies a statistically significant relationship between mothers' perceptions of healthcare workers' roles and their adherence to postpartum vitamin A capsule supplementation within a local primary healthcare context ($p = 0.002$; Cramér's $V = 0.374$). These findings emphasize the potential importance of healthcare worker communication, education, motivation, and follow-up in supporting supplementation adherence. Thus, this study provides local evidence that may inform improvements in postpartum vitamin A counseling and services at Puskesmas Kota Tengah.

The findings may have implications for postpartum vitamin A supplementation programs in primary healthcare settings with similar maternal and child health service structures. Healthcare workers may support adherence by providing clear information, individualized counseling, motivation, and follow-up during postpartum visits. Supporting evidence from Suprapti et al. (2026) and Atok et al. (2026), which examined interventions to improve adherence to iron supplementation, suggests that counseling, educational messages, reminders, and monitoring may be useful approaches to supporting supplementation practices. However, these findings should be interpreted cautiously because the studies involved different populations and supplements. The applicability of the present findings to other settings may also depend on healthcare access, staff availability, maternal characteristics, and local program implementation. Further research involving larger and more diverse populations is needed to examine whether similar associations occur in other settings. Improving postpartum counseling services and ensuring consistent follow-up could serve as practical strategies for promoting adherence to vitamin A capsule supplementation. However, given the cross-sectional nature of the study, the findings cannot establish a causal link between these factors.

CONCLUSION

The findings revealed statistically significant relationships between maternal knowledge, the involvement of healthcare workers, and adherence to postpartum vitamin A capsule supplementation among mothers in the service area of Puskesmas Kota Tengah ($p = 0.001$ and $p = 0.002$, respectively). Postpartum mothers who possessed a better understanding of vitamin A supplementation and received appropriate information, counseling, and assistance from healthcare workers were more likely to follow the

recommended supplementation regimen. These findings emphasize that improving maternal health education and strengthening the quality of healthcare services are essential to enhancing adherence to vitamin A supplementation programs.

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