# UTILIZATION OF ANTENATAL CARE IN WOMEN HAVING UNDER 1 YEAR CHILD IN RURAL AREAS OF MAGWAY REGION, MYANMAR

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**ABSTRACT:** A community based cross-sectional survey was conducted to determine the utilization of antenatal care (ANC) and their related factors among rural women having less than 1 year child in Magway division. Data were collected from 473 women having less than 1 year child using interview questionnaire in January – February 2012. Descriptive, chi-square test and logistic regression statistic were used for analysis. The result showed that most of the respondents were takes antenatal care regularly. By multiple logistic regressions analysis was used to identify the association between the independent factors and the pattern of utilization of antenatal care which were found statistic significant in chi square test. The final model illustrates that four selected factors were found to be significantly associated with utilization ANC service when adjusted with other factors, age at first pregnancy (AOR = 0.673, CI = 0.307 - 0.849), occupation (AOR = 0.423, CI = 0.269 – 0.663) place of ANC taken (AOR = 2.042, CI = 1.087 – 3.837) knowing the advantages of ANC (AOR = 3.370, CI = 1.918 – 12.380) There is a need for motivating among women who age at first pregnancy less than 25, famer occupation, and delivery at home and do not know the advantages of ANC to utilize maternal care services. Efforts towards ensuring the utilization should be targeted towards rural areas, the importance of modern antenatal care should be emphasized even in the religious settings and younger women should be encouraged to utilize antenatal care services. More qualitative research is required to explore the effect of women's satisfaction, autonomy and gender role in the decision-making process. Adequate utilization of antenatal care cannot be achieved merely by establishing health centers; women's overall (family, social, political and economic) status needs to be considered

**Keywords:** Antenatal care, Women, Rural areas, Myanmar

## INTRODUCTION

The current challenge worldwide is to decrease maternal mortality rate. Reproductive health is closely related to maternal mortality. Health status and reproductive status of women belong to intermediate variables determine maternal mortality. Maternal and child health care is one of the elements of primary health care. Antenatal care is essential to reduce morbidity and mortality among pregnant women and newborn babies. Antenatal visits raise awareness and make pregnant women and their families familiar with health facilities that enable them to seek help more efficiently during a crisis [1].

Every day, 1500 women die from pregnancy or childbirth-related complications. In 2005, there were an estimated 536,000 maternal deaths worldwide [2]. Most of these deaths occurred in developing countries, and most were avoidable. At the United Nations, the Millennium Summit in 2000, eight Millennium Development Goals (MDGs) were adopted and improving maternal health is one of these eight goals. According to Millennium Development Goal 5 (MDG5), countries have committed to reduce the maternal mortality ratio by three quarters between 1990 and 2015. To reduce the maternal mortality ratio antenatal care is one of the essential health care services.

In high-income countries, virtually all women have at least four antenatal care visits, are attended by a midwife and/or a doctor for child birth and received post-natal care. In low and middle income countries, above two thirds of women get at least one antenatal care visit, but in some countries less than one third have this or, as in Ethiopia, only 12% [3].

Majority of maternal deaths could be preventable if women know when and where to seek medical care because if the pregnant women do not have appropriate information about pregnancy and child birth they would be unable to make a choice that will contribute to their own well-being. As the

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services of antenatal care comprises of health education providing appropriate information and early detection of risk factors and diseases. It can prevent avoidable maternal deaths. Therefore the utilization of antenatal care needs to be explored for further necessary interventions [4].

In Myanmar, according to the "Nationwide Cause-specific Maternal Mortality Survey", carried out by the Department of Health in 2004-2005, maternal mortality ratio was estimated at 316 per 100,000 live births at the national level and 89% of all maternal deaths were reported from the rural areas [4]. According to the survey, maternal death in rural areas was found 2.5 times higher than that in urban areas. The findings showed that the complications during antenatal and delivery periods were the main causes of maternal mortality and morbidity and 80% of the maternal deaths were mostly at home. The majority of this mortality is found to be preventable. The number of facilities with functioning basic essential obstetric care is 8/500,000 population and that of comprehensive essential obstetric care is 4/500,000 population. About 40% of pregnant mothers delivered with skilled birth attendants mainly midwives, 12.5% with auxiliary midwives (AMWs) and 7.5 % with traditional birth attendants (TBAs). Only 50% of the whole country is covered with safe motherhood activities (162 townships) which points out that emergency obstetric care activities is needed to be implemented in National Health Plan period (2006-2011) [5].

In Uganda study, 769 women participated in the study, 94.4% of the women attended antenatal clinic. Nearly 58% visited initially during the second trimester, 33.5% during the third trimester and 37.1% reported four or more antenatal visits. Women with low education level were more likely not to have attended our or more antenatal visits. Only 59.2% of studied women gave birth with a skilled attendants and other delivered either by themselves or with the help of relatives, or TBAs [6].

Population-based cross-sectional survey among women who had recently delivered was carried out to assess provision and use of antenatal services and delivery care among women in rural Kenya to determine women were receiving appropriate care. Majority of participants 90% visited antenatal clinic at least once during their last pregnancy. About 64% of women first visited the antenatal care in the third trimester; a perceived lack of quality in the antenatal care was related with a late first antenatal visit. Women who did not visit antenatal clinic were more likely to have less than 8 years of education and low socio-economic status. Only 8% of women delivered outside a health facility; among these traditional birth attendants assisted 42%, laypersons assisted 36% and 22% received no assistance. Age $\geq$ 30 years, parity $\geq$ 5, low socio-economic status, < 8 years education and more than one hour walking distance from the health facility were significantly associated with giving birth outside a health facility [7].

The study conducted by Filippi et al. [8] was to investigate the factors associated with the use of antenatal care content to inform policy makers of the pertinent factors that need to be influenced by policy as Uganda recorded an inadequate utilization of antenatal care program. Data for the study was taken from a nationally representative Uganda demographic and health survey 2006. The study found that only 16% of women used the full content of antenatal care. The utilization of antenatal care was significantly related with education of the mother and her partner, wealth status, location disparities, timing and frequency of antenatal visits, nature of facility visited, access to media, family planning and utilization of professional care. The researcher concluded that efforts were needed to educate girls beyond secondary level, to establish village outreach clinics with qualified staff to attract the hard to reach women in the rural areas, and to facilitate antenatal care utilization irrespective of the ability to pay.

Several studies found that women's education was the best predictor of ANC visits. Women with better education were more likely to receive the recommended number of ANC visits. The study among 1320 women in rural Tamil Nadu, South India, 1995, women who had attended school for less than 5 years were 550 in number (64%) in 0-4 visits and women who had attended school for more than 5 years were 307 in number (36%) in 5+ visits. Therefore, women with better education were more likely to have had the recommended number of visits of antenatal care compared with women who were less educated [9].

Compared to urban women, rural women have less education, low socio-economic status, less accessibility to health care services, they are vulnerable than that of their urban counterparts. Therefore the study emphasized on rural women of reproductive age. Access to antenatal care remains very limited in rural areas. The chance that a women will die due to pregnancy related causes is 1 in 110 in Myanmar [9]. Therefore, the factors influencing utilization of antenatal care are necessary to be explored to improve utilization.

This study aimed to examine the association

between the utilization of antenatal care and their related factors among rural women having less than 1 year child in Magway division.

## METHODOLOGY

This is the community based cross sectional descriptive survey and conducted during January to February 2012. Magway division is one of the divisions of Myanmar and covers the area of 44301 sq km and the population is over 4.4 million. Compared to urban women, rural women have less education, low socio economic status, less accessibility to health care services, they are vulnerable than that of their urban counterparts. Therefore, the survey emphasized on rural women of reproductive age, residing in Magway division. The villages consisted in Magway division were listed to get a sampling frame. Ten villages were selected randomly. Secondly the women having less than one year infant and residing in each village will be listed and study subjects were chosen by probability proportionate to size of population to attain 400 subjects.

The participants were interviewed using semi-structured questionnaires and face to Face interviewed methods. The questionnaires were administered in the local language to each participant after obtaining informed consent. The questionnaires collected information about (a) socio-demographic variables including age, education level, occupation, religion, family income per month etc. (b) antenatal care services utilization such as taking antenatal care or not, number of antenatal care visits, and (c) factors related to antenatal care utilization including distance from health center, decision maker for taking antenatal care, presence or absence of medical diseases, presence or absence of danger signs of pregnancy etc. For a data collection, a structured questionnaire was designed first in the English language. The questionnaires and manual of instruction were translated into Myanmar languages and then back translated to English to identify any change in meaning or phrasing.

Frequency distribution was done and checked missing or errors. The collected data will be categorized, coded, tabulated and analyzed by using Epi info. Chi-square test was used to demonstrate the association between level of awareness and age, parity, education, occupation, previous experience with obstetrics complications etc. Data collection period was carried out from 16$^{th}$ January to 26$^{th}$ January 2012.

Training of interviewers, five female interviewers and one field supervisors from university of community health were hired. They were trained for two days focusing on skills of conducting the interviews, importance of informed consent and how to introduce themselves to respondents.

## RESULTS

Table 1, there were 473 married rural women who were having infant participated. Two hundred thirty eight of were in the age group of 15 to 30 years and 225 were in the age group of 31 to 45 years. Only 2.1% were 46 years and above. The youngest was 17 years and the oldest was 49 years old. The mean age was 31 years (SD=6.88). Most of respondents attained medium education level which was up to 8$^{th}$ standard. Only 6.3% of the respondents were working as government servants. Majority of the respondents were working in the farms showing 49.3% and dependents were 20.1%. Others included people who sell vegetables and food, odd jobs, auxiliary midwife, fisher. Most of the respondents had low family income per month and only 6.3% of the families earned ≥300,000 Kyats per month. Only 11.2% had family income of 100,001 to 300,000 Kyats per month. Majority of the respondents married between the age of 14 to 24 years and 22.2% of them married at the age of 25 years and above. The youngest age at marriage was 14 years and the oldest age at marriage was 41 years. The mean age at marriage was 21 years (SD=4.3). The youngest of women at her first pregnancy was 15 years, oldest 42 years (SD=4.7).

Table 2, among 494 respondents, 460 had taken antenatal care during their last pregnancy (97.3%). Only 2.7% of respondents had not taken antenatal care during their last pregnancy. About 75.7% of respondents had taken antenatal care regularly. Majority of the respondents (60.9%) took antenatal care at health centers such as rural health center and sub-rural health centers. Nearly 17.6% got antenatal care at home because the auxiliary midwife gave antenatal care during her home visits. Among the respondents who had taken antenatal care most of them took antenatal care during first trimester (52.4%). A haft of the respondents (68.7%) was provided antenatal care by midwife. None of them received antenatal care from male doctor. Only 3.3% got antenatal care from female doctor. Only 4.6% of respondents took antenatal care from obstetrics and gynecology specialist. Husband was the key person who advised to take antenatal care and the respondents decided themselves to take antenatal care. Mother was in third position in advising to have antenatal care. Most of respondents (88.3%) were residing within one mile distance of health center from their home. Only

**Table 1** Distribution of women having under 1 year child by socio-demographic characteristics (n=473)

| Socio-demographic characteristics | Frequency | % |
|---|---|---|
| Age of the women (in years) | | |
| 15-30 | 238 | 50.3 |
| 31-45 | 225 | 47.6 |
| 46 and above | 10 | 2.1 |
| Mean= 31 SD= 6.88 Min=17,Max= 49 | | |
| Education of women | | |
| Low (Illiterate, Read and write, Primary school) | 58 | 12.3 |
| Medium (Middle school, High school) | 344 | 72.7 |
| High (University, Graduate, Post-graduate) | 71 | 15.0 |
| Occupation of women | | |
| Government servant | 30 | 6.3 |
| Farmer | 233 | 49.3 |
| Dependent | 95 | 20.1 |
| Others | 115 | 24.3 |
| Education of husband | | |
| Low (Illiterate, Read and write, Primary school) | 263 | 55.6 |
| Medium (Middle school, High school) | 175 | 37.0 |
| High (University, Graduate, Post-graduate) | 35 | 7.4 |
| Income of the household (in Kyats) | | |
| ≤ 100,000 (low) | 390 | 82.5 |
| 100,000-300,000 (medium) | 53 | 11.2 |
| ≥ 300,000 (high) | 30 | 6.3 |
| Median = 50,000 Min=10,000,Max=500,000 | | |
| Age of the women at marriage (completed years) | | |
| 14 – 24 years | 368 | 77.8 |
| ≥ 25 years | 105 | 22.2 |
| Mean= 21 SD= 4.3 Min=14,Max= 41 | | |
| Age of women at her first pregnancy (completed years) | | |
| ≤ 18 years | 67 | 14.2 |
| 19 – 34 years | 395 | 83.5 |
| ≥ 35 years | 11 | 2.3 |
| Mean= 23 SD= 4.7 Min=15,Max= 42 | | |

**Table 2** Pattern of utilization of antenatal care

| Pattern of utilization of antenatal care | Frequency | % |
|---|---|---|
| Get antenatal care at least one time | | |
| Taken AN care | 460 | 97.3 |
| Not taken AN care | 13 | 2.7 |
| Pattern of AN care regularly | | |
| Yes | 348 | 75.7 |
| No | 112 | 24.3 |
| Place of AN care taken | | |
| Hospital | 20 | 4.3 |
| Health center | 280 | 60.9 |
| Most labour room | 11 | 2.4 |
| Private clinic | 35 | 7.6 |
| Home | 81 | 17.6 |
| other | 33 | 7.2 |
| First visit for antenatal care | | |
| 1st trimester(2-12) | 241 | 52.4 |
| 2nd trimester(13-28) | 200 | 43.5 |
| 3rd trimester.(>29) | 19 | 4.1 |
| Health care provider | | |
| Obstetrics and gynecology specialist (OG) | 21 | 4.6 |
| Doctor | 15 | 3.3 |
| Midwife | 316 | 68.7 |
| Lady Health visitor | 78 | 17.0 |
| Traditional birth attendant (TBA) | 30 | 6.5 |
| Distance to take AN care | | |
| Within 1 mile | 406 | 88.3 |
| 1-3 miles | 46 | 10.0 |
| ≥ 4 miles | 8 | 1.7 |

**Table 3** Practice of last child delivery

| Practice of last child delivery | Frequency | % |
|---|---|---|
| Mode of delivery | | |
| - Normal delivery | 406 | 88.3 |
| - Forceps delivery | 7 | 1.5 |
| - Lower Segment Cesarean Section (LSCS) | 47 | 10.2 |
| Place of delivery | | |
| Hospital | 88 | 19.1 |
| Home | 372 | 80.9 |
| Status of last child | | |
| Live birth | 464 | 98.2 |
| Still birth | 4 | 0.8 |
| Born with abnormalities | 2 | 0.4 |
| preterm | 3 | 0.6 |

**Table 4** Association between socio-demographic characteristics and patterns of utilization of antenatal care

| Variable | | Regular | | Not regular | | $X^2$ | *P-value* |
|---|---|---|---|---|---|---|---|
| | | n | % | n | % | | |
| Education | Low (illiterate, read and write) | 38 | 70.4 | 16 | 29.6 | 18.137 | 0.000** |
| | Medium (primary, middle, high school) | 243 | 72.3 | 93 | 27.7 | | |
| | High (university, Graduate, Post graduate) | 67 | 95.7 | 112 | 24.3 | | |
| Age at marriage | 14-24 years | 233 | 71.9 | 91 | 28.1 | 8.028 | 0.005** |
| | ≥25 years | 88 | 86.3 | 14 | 13.7 | | |
| Age at first pregnancy | 14-24 years | 231 | 72.2 | 89 | 27.8 | 6.852 | 0.009* |
| | ≥25 years | 117 | 83.6 | 23 | 16.4 | | |
| Occupation | Farmer | 157 | 68.6 | 72 | 31.4 | 12.456 | 0.000** |
| | Non farmer(government servant, merchant, odd job, dependent) | 191 | 82.7 | 40 | 17.3 | | |
| Husband's education | Low (illiterate, read and write) | 181 | 71.3 | 73 | 28.7 | 7.229 | 0.027* |
| | Medium (primary, middle, high school) | 136 | 79.5 | 35 | 20.5 | | |
| | High (university, graduate, post graduate) | 31 | 88.6 | 4 | 11.4 | | |
| Knowing the advantages of ANC | Yes | 309 | 78.2 | 86 | 21.8 | 10.068 | 0.002** |
| | No | 39 | 60.0 | 26 | 40.9 | | |
| Place of delivery of last child | Health center | 75 | 84.3 | 14 | 15.7 | 4.449 | 0.035* |
| | Home | 273 | 73.6 | 98 | 26.4 | | |
| The most Influence person | Husband | 144 | 80.4 | 35 | 19.6 | 9.384 | 0.009** |
| | Mother, mother in law, relatives and friends | 89 | 80.2 | 22 | 19.8 | | |
| | Self | 115 | 67.6 | 55 | 32.4 | | |

*$p$- *value* <0.05, **$p$-*value* < 0.01

10.0% of them were living one to three miles away from the health centers. A few of them (1.7%) were residing more than three miles distance from health center.

Table 3, regarding of mode of delivery, most of respondents (88.3%) was normally delivery. Only 1.5% of the studied women needed forceps delivery. Home delivery was most prevalent among the respondents showing 80.9% where as 19.1% delivered the nearest hospital. For the status of the last child delivery, live birth was 98.2%, 0.8% was still birth, 0.6% was preterm, and 0.4% was born with abnormalities.

Table 4, there was association between the education of women, her husband and the utilization of antenatal care. However, occupation

**Table 5** Multiple logistic regression analysis of utilization of antenatal care

| Variables | | Adjust odds ratio | 95% C.I for OR | | *p-value* |
|---|---|---|---|---|---|
| | | | lower | upper | |
| Education | Low | 1 | 0.499 | 2.018 | 0.993 |
| | High | 1.003 | | | |
| Age at marriage | 14-24 | 1 | 0.658 | 2.772 | 0.412 |
| | 25-44 | 1.35 | | | |
| Age at pregnancy | 14-24 | 1 | 0.307 | 0.849 | 0.010* |
| | 25-44 | 0.673 | | | |
| Influential person to take ANC | Husband | 1 | 1.037 | 2.647 | 0.055 |
| | Others | 1.657 | | | |
| Husband's education | Low | 1 | 0.060 | 3.183 | 0.415 |
| | High | 0.438 | | | |
| Occupation | Non-Farmer | 1 | 0.269 | 0.663 | 0.000* |
| | Farmer | 0.423 | | | |
| Place of delivery | Home | 1 | 1.087 | 3.837 | 0.026* |
| | Health center | 2.042 | | | |
| Knowing the advantages of ANC | Not know | 1 | 1.918 | 12.380 | 0.007* |
| | Know | 3.370 | | | |

of the husband was not associated with the utilization of antenatal care. Women who age of marriage and age at first pregnancy was associated with the pattern use utilization of antenatal care by women more than 25 year old were regularly using ANC. There also was significant association between knowing the advantages of antenatal care, place of delivery of last child, the most influence person and patterns of utilization of antenatal care.

Table 5, multiple logistic regressions analysis was used to identify the association between the independent factors and the pattern of utilization of antenatal care which were found statistic significant in chi square test. Age at first pregnancy, occupation, place of ANC taken, influential person to take ANC service were significantly associated with utilization ANC service. The final model illustrates that four selected factors were found to be significantly associated with utilization ANC service, age at first pregnancy (AOR = 0.673, CI = 0.307 – 0.849), occupation (AOR = 0.423, CI = 0.269 – 0.663) place of ANC taken (AOR = 2.042, CI = 1.087 – 3.837) knowing the advantages of ANC (AOR = 3.370, CI = 1.918 – 12.380)

## DISCUSSION

From the study the education level of women was significantly associated with the utilization of antenatal care pattern. The women in this study who had medium and high educational level utilized ANC than those who had low education. This finding was consistent with the findings of other studies in rural Tamil Nadu, South India [10]. Therefore this study supported that the education of the mothers are essential in utilization of ANC pattern.

Regarding the educational level of the respondent's husband, husbands with low educational level was 55.6%, 37% was secondary school with medium level, only 7.4% was high educational level and university level. It was found that there was significant relationship between educational level of husbands and utilization of ANC among women having under 1 year child (p=0.027). The result also revealed that women whose husbands with higher educational utilized ANC service more than women whose husbands with lower educational level. The results also followed the findings of the study in Philippines [11].

Majority of the respondents were farmers because this study location was in rural areas. The results revealed that there was significant association between utilization of ANC and occupation of respondents (*p-value*=0.00). This result indicated that women who were farmers utilized ANC pattern regularly than other respondents did. The farmers could earn some amount of money so that they might have greater ability to travel outside the home to seek antenatal care. The finding did not follow the result in the study of that pregnant mothers who had low income, low education and were farmers did not attend ANC regularly Kiwuwa and Mufubenga [12]. However, the study done in Northern Nigeria found out similar finding. Income generating occupation of the studied women had positive influence on the rate of utilization of antenatal care. Therefore, empowering of women economically could lead to higher utilization of antenatal care utilization among rural women leading to positive impact on maternal and child health.

In this study, family income had an association with the utilization pattern of antenatal care showing *p-value* of 0.034. It was found out that the higher the family income per month the higher the regularity of taken antenatal care. This results followed the findings of the studies of Sharma [13] and Magadi et al. [14]. There was significant association between income and ANC utilization pattern. The result was also supported to the study done in Ecuador where a significant relationship was found between household income status and utilization of preventive and curative services of maternal and child health. Accessibility and affordability of antenatal care could depend on the family income.

The findings also showed that majority of respondents with one or two times of having pregnancy was 63.2%, respondents having 3 or 4 times of having pregnancy was 24.7% and only 12.1% of respondents had 5 to 12 times of pregnancy. The average number of pregnancy was one to two times indicating the trend of having less pregnancy. The association between parity and pattern of utilization of antenatal care among respondents was not found out in this study showing p=0.219. The findings of this study were different from the findings of Mathews, Mahendra, Kilaru and Ganapathy in India [15] and Mekonnen and Mekonnen from Ethiopia that there was a negative association between number of pregnancy and utilization of ANC pattern [16].

Most of the studied women (88.3%) were residing within one mile distance of health center from their home. Some of them were living one to three miles away from the health centers and only 1.7% of the studied women were residing more than three miles distance from health center. In this study, there was no association between pattern of utilization of antenatal care and distance of health center from home among respondents. This result also supported the findings WHO and UNICEF [17], Chandhiok et al. [18] and van Eijk et al. [19]. In their studies, there was no relationship between utilization of ANC service and accessibility to ANC service in term of cost, distance, waiting time and convenience of transportation. However, a study carried out in Ethiopia indicted that utilization of antenatal care was positively associated with residing within 10 km of the health center. Accessibility of antenatal service can influence the utilization of antenatal care.

## CONCLUSION

The major objective of this study was to identify factors influencing the utilization of antenatal care among women of reproductive age residing in rural areas of Magway division. The rural women who received antenatal care in this study were 97.2%. Compared to the study done in Ethiopia the antenatal care utilization was better in this study. However, among those who received antenatal care, 43.1% received antenatal care regularly, 56.9% received antenatal care irregularly. They did not go at every appointment to meet the health care provider.

The highest frequency of taken antenatal care was 2 and the lowest was 1. Most of the women received two visits of antenatal care during their last pregnancy. Education level of the studied women was significantly associated with the utilization of antenatal care and this finding was consistent with the findings of other studies. Therefore this study supported that the education of the mothers are essential in health care delivery system. The youngest age of studied mothers was 15 years and the eldest was 49 years old with mean age of 31 years. Although, antenatal care should be taken as soon as the woman is pregnant, most of the women in this study received antenatal care during their second trimester. Most of the married women in the study reported that they had taken antenatal care they commenced in first trimester and did not take regular antenatal care. The main factors contributing the utilization of antenatal care were the educational status of the respondents and monthly family income.

Although the study found out that there was high percentage of women in rural areas of Magway division utilized antenatal care services the frequencies of antenatal visit was inadequate and they did not visit according to the appointment given by health care providers. Antenatal care should be started in first trimester as soon as the woman knows that she is pregnant. WHO recommended to attending antenatal care clinics in first trimester and at least four visits during pregnancy. Majority of the women received antenatal care during their first trimester. Most of the studied women attended antenatal care only two to three times. Some of them had only one antenatal care check up. Antenatal care services provided to women during their pregnancy, which could have resulted from initial contact with antenatal care provider, were most related to continuation of antenatal care visits and overall utilization. Therefore, the health care provider should ask them to attend at least four visits and more. To have more women who attend antenatal care clinics and attend early and regularly promotion should be targeted at rural women. However, to improve the regularity of antenatal visits and overall utilization,

the quality of antenatal care including health education should be improved.

## RECOMMENDATION

Based on these findings, it is recommended that more efficient and effective health education programmes should be undertaken to improve awareness and utilization of antenatal care. It is hoped that the results of the study will improve policy makers' understanding of the influencing factors of utilization of antenatal care and serve as one of the important tools for any possible intervention aimed at improving the low utilization of maternity care services in the Myanmar.

The majority of women get health information from mass media and health personnel. Therefore, mass media should be easy to reach because the majority of people finish primary school or secondary school in rural areas. ANC information should be distributed directly to every commune to make sure that every people obtain health information.

Health education such as knowledge in ANC should be added to the mass media for motivating the women to ANC service, improving their knowledge and education the husbands to help, allow or bring their wives to visit ANC services. The reason is that husband's supports play an important role for more utilization of ANC service.

The accessibility to ANC service is difficult in remote areas, but the data showed that health concern was more important than distance and waiting time. Therefore, health personnel should have home care visits in order to provide ANC service to pregnant women who face the difficulty to come to ANC service.

Government, local authorities and other concerning sectors should invest more to rural areas in order to improve infrastructure, provide health service free of charge for people with low income. Priority policies should be made for people in rural areas to increase the income because the data in this study showed that the majority of them had low income.

Maternal and child health services should be moved forward on a reform that would expand coverage particularly to low and middle income households.

## RECOMMENDATIONS FOR FURTHER STUDY

The results of this study did not show the outcomes of utilization of ANC service. Therefore, community based data collection or cohort, case control studies should be conducted in the future. For example, it includes birth weight of newborns, complications of mothers during and after delivery between the mothers who utilized ANC service regularly and the mothers who do not utilize or less utilize ANC service.

This study was conducted only in rural areas of Magway region, Myanmar, the results can not present for the whole pregnant women in rural areas of Magway region. Therefore, community based cross sectional study should be conducted in urban areas of Magway region in the future.

The target population of this study was only women having under 1 year child who were belong to the majority group living in rural areas. Therefore, target population of future study should be women from urban areas because the differences of socio-demographic factors and health status such as geography, lifestyle, belief, education, income. They also face the more difficulties than people living in urban areas when they want to access to health service because of poor transportation, and insufficient equipment, drugs, health personnel at health commune stations.

Although most of the married women in the study reported that they had taken antenatal care they commenced in first trimester and did not take regular antenatal care. The main factors contributing the utilization of antenatal care were the educational status of the respondents and monthly family income.

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