Contraceptive Practice and Reproductive Health among Naga Married Women in Lahe Township, Hard-to-Reach Area of Myanmar

Aung Kyaw Khant[1], Aung Aung[2], Poe Poe Aung[3], Kyaw Swar Aye[4], Ohnmar Myint[5], Zayar Myatthu[2], Ye Lin Soe[6], Nyan Lin Htet[7] & Ye Lin Aung[8]*

[1]Directorate of Medical Services, Nay Pyi Taw
[2]Health and Diseases Control Unit, Nay Pyi Taw
[3]Independent Researcher
[4]No.1 Medical Battalion, Mandalay
[5]Military Institute of Nursing and Paramedical Sciences
[6]Defense Services Liver Hospital (300-Bedded)
[7]No. 2 Military Hospital (700-Bedded)
[8]Defense Services Medical Research Centre

This study aimed to determine knowledge and practice of contraception and reproductive health, including delivery practices among Naga married women in Lahe Township in Naga Self Administrated Zone, Sagaing Region. Quantitative and qualitative interviews were employed from April to June 2019. Among 312 respondents, 78.2% were from rural villages and 54%, illiterate. Mean family members was 8 in a household (range 2-16) and mean age of married was 20 years (range 14-39). Although three quarter knew modern contraceptive methods, only 48.2% had uptake the method of contraception. Injection (74%) is the most preferred method, followed by the oral contraceptive pills (21%). About 83% of women reported home delivery and 25.1% had the experience of self-delivery. Only 22 participants (8.1%) had history of miscarriage. Women with higher education status were more likely to use the contraceptive methods compared to those with the lower education status (p=0.003). Women with higher education level had practiced delivery by skilled birth attendance compared to those with lower education level (p<0.001). Qualitative findings emphasized that Naga women were common in early marriage, unwilling to use contraceptive due to side-effects and lack of accessibility. Delivery was mainly assisted by the husband and relatives, sometimes self-delivery was common, with lack of clean delivery practice. According to community acceptance of premarital sex, there is no result of abortion from premarital sex. Despite adequate contraceptive knowledge, the uptake is still low in this study. Health promotion should be done to improve knowledge and utilization of contraception among Naga married women. Distribution of clean delivery kits should be promoted in Naga Land to prevent maternal and childhood mortality.

Key words: Contraception, Reproductive health, Hard-to-reach area, Naga married women, Myanmar

INTRODUCTION

Globally, 63 percent of married or in-union women among reproductive age of 15-49 years were using contraception in 2017 aimed to increase by 20 million in 2030.[1] The World Health Organization (WHO) targets the goal of universal access to

*To whom correspondence should be addressed.
Tel: +95-95187367
E-mail: agkyawkhant@gmail.com
DOI: https://doi.org/10.34299/mhsrj.009112

sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and program aimed to achieve by 2030.[2]

Lack of contraceptive use among millions of women in their childbearing age is major challenging situation in developing countries to achieve the WHO target.[3] As a result, uncontrolled population growth became the major barrier to socioeconomic advancement for developing countries.[4] More than one-tenth of married or in-union women have unmet need either unwanted or mistimed, leading to 18 million unsafe abortions every year in less-developed regions, contributing to high rates of maternal death and injury.[2]

Therefore, eliminating unmet need, increasing the awareness of family planning and the use of contraception are promising strategies to improve maternal and neonatal health, a decrease in unsafe abortion and improve socio-economic outcomes of the family.[5]

The short-term and reversible methods, such as the pill, injection and male condom are the commonly used methods in Africa and Europe whereas long-acting or permanent methods such as sterilization, implants and the intra-uterine device (IUD), are more common in Asia and Northern America.[6]

Myanmar is one of the countries in South-East Asia region with 70% of populations residing in rural areas where resources and interventions are scarce for beneficiaries among majority of mothers, newborn and under five children.[7] In recent years, Myanmar has been slowly but steadily moving towards the goal of healthy family planning and increasing contraceptive prevalence rate.

Despite the high proportion of women who know different types of contraception, the uptake of contraception is still low in Myanmar. Consequently, the achievements are far from satisfactory in remote area as well as knowledge, practice and opinion on reproductive health of women in hard-to-reach areas and ethnic minority were not fully understood.[8]

Moreover, there are some hospital-based and community-based studies on utilization of contraceptive in urban and peri-urban of Yangon Region.[9-12] However, there is a gap in knowledge on utilization of contraceptive in hard-to-reach areas especially poor socio-economic region of Myanmar. It is often ignored to investigate the issues related to health services in a small community, particular ethnic minority or religious groups.

Lahe Township, one of the three townships in Naga Self Administrative Area in Myanmar, is an economically, socio-demographically and infra-structure limited area with the lower per-capita income, limited health services available and poor literacy rate compared to other areas.[13] According to 2014 Census, 24% were women of reproductive age (15-49 years) and 22% were currently married women and abortion was 4% among child bearing mothers. [13]

Moreover, birth rate was two times and infant mortality rate and under five mortality rates are significantly higher than regional and national data. Moreover, maternal mortality ratio was two times higher than that of the ASEAN data.[13]

Limited studies are found regarding maternal health care in hard-to-reach areas and low socio-economic status and inadequate access to primary health care.[14] This study aimed to determine knowledge and practice of contraceptive uptake and reproductive health among Naga married women in Lahe Township, hard-to-reach area of Myanmar.It would provide input for National Maternal and Reproductive Health Program to enhance the understanding of the factors influencing on contraceptive utilization status and reproductive health among residents for such minor population.

MATERIAL AND METHODS

Mixed methods study using quantitative and qualitative interviews were employed from April to June 2019. Eligible participants (Naga ethnicity, currently married women, age between 15 to 49 years) were randomly selected from four wards and eight villages in Lahe Township.

Data collection

Quantitative data collection

Face-to-face interview using pre-tested structured questionnaire was performed by well-trained research team assisted by the local translator. According to UNFPA Annual Report 2017, the proportion of contraceptive utilization among married population in Myanmar was 0.51.[15] Therefore, the calculated sample size was 266 by using the formula ($n = Z^2\ p\ q/\ d^2$); with the margin of error which was 0.06 and non-response rate of 10%, the minimal required sample size was 293 respondents.

Qualitative data collection

Qualitative data collection involved 4 sessions of Focus Group Discussion (FGD) with married women; 4 Individual Depth Interviews (IDI); and 4 Key Informant Interviews (KII). There were about 29 participants in FGD sessions and one FGD contains 7 to 8 participants, giving a total of 37. Two FGD sessions were conducted in randomly selected two villages and two FGD sessions took place in two randomly selected urban wards. Criteria set for the married women were the same as that of quantitative data collection. IDI was performed with 2 rural mothers and 2 urban mothers, all selected purposively among the interviewees involved in quantitative data collection after making sure that they came from different villages and wards and were able to communicate fluently in Myanmar language. KII was performed with 2 rural and 2 urban males who were husbands of the mothers selected for IDI. The interviews took place separately.

Data management and analysis

Errors and incompleteness were checked for questionnaire in the field after data collection. Double data entry and validation were done by Epidata software (version 3.1) and data management and analysis were done by STATA (version 14.0). P-value <0.05 was considered as statistically significant. Notes taken from all qualitative data collection sessions were transcribed and typed in Myanmar language soon after completion of data collection. Transcripts in Myanmar language were analyzed by thematic analysis after giving codes to themes and sub-themes that emerged.

Ethical consideration

Ethical approval was obtained from the Institutional Review Board Defense Services Medical Research Center (DSMRC), Myanmar. Administrative permission for the study was obtained from the Traditional Township Leaders, Township Medical Officer and General Administration Department of Lahe Township. Written informed consent forms (both verbal and written) in both quantitative and qualitative data collections were taken from each respondent. Privacy and confidentiality was ensured and the information that has been collected from this research project was kept confidential.

RESULTS

Among 312 respondents, 78.2% of them were from rural areas and half of them (55%) were illiterate. Over half of the married women (53.9%) were aged range from 25 to 35 years. Two-third of them (70%) were employee and the mean age of marriage of the study participants was 20 (range 14-39). More than 53% lived in extended family and mean numbers of family member in a household was 7.5 (range 2-21).

Previous pregnancy experiences

Regarding the previous pregnancy experience, 272 participants (87.7%) had history of child delivery, 226 participants (83.1%) delivered at home and 42 participants (15.4%) delivered at the township/

Table 1. Socio-demographic characteristics and previous pregnancy experience of the study participants from Lahe Township, 2019

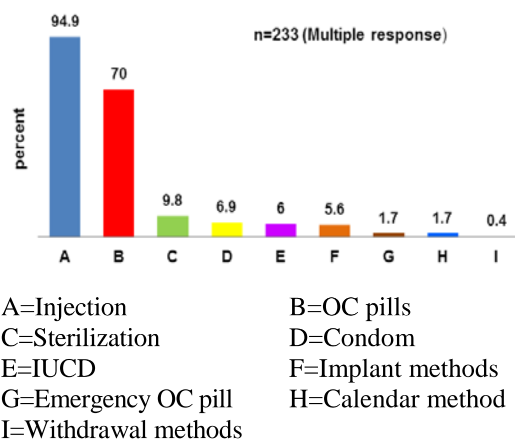
	Frequency	Percent
Age group (yr) (n=312)		
17-24	90	28.8
25-35	168	53.9
36-50	54	17.3
Educational status(n=307)		
Illiterate	169	55.1
Primary school education	90	29.3
Middle school and above	48	15.6
Occupation of caregiver (n=301)		
Dependent	90	29.9
Employee/ Self-employ	211	70.1
Family type (n=304)		
Nuclear	141	46.4
Extended	163	53.6
	Mean(SD)	Min-Max
Age of participants	29.2 (6.9)	17-50
Numbers of family member	7.5 (3.2)	2-21
Age of marriage	20 (3.8)	14-39
Previous pregnancy experience	Frequency	Percent
Place of delivery(n=272)		
Home	226	83.1
Government hospital/health post	42	15.4
Private hospital and maternity home	4	1.5
Mode of delivery by whom (n=272)		
Doctor	63	23.2
Skilled birth attendance (Nurse/ Midwife)	44	16.2
Trained birth attendance and CHW	32	11.8
Friends/ relatives/ Husband	73	26.8
No one/ self-delivery	60	22
History of miscarriage (n=283)		
Yes	23	8.1
No	260	91.8

station hospital. Only 4 mothers (1.5%) delivered at private hospital and maternity home. About 26.8% of the pregnant women delivered with the assistance of their husband, friend or relatives, and 22% of the participants did not take any help from others and they delivered the baby by themselves. About 44 pregnant women (16.2%) delivered with the help of skilled birth attendant (nurse, midwife and health assistant), 32 participants (11.8%) delivered with the help of trained birth attendant and community health workers, 63 participants (23.2%) delivered with the help of medical doctor. Among 283 respondents, 8.1% of them had history of miscarriage at least once in their life-time. A total of 19 women were currently pregnant and half of them had planned on their delivery (Table 1).

Respondents with lower education level had higher experience of home delivery compared to delivery at the health center (84.3% *vs* 15.7%) (p=0.017). It was also found that respondents with higher education level had practiced delivery by skilled birth attendance compared to those with lower education level (78.9% *vs.* 50.7%) (p<0.001).

Knowledge and practice of modern contraceptive methods

Fig. 1 revealed that among 297 participants, 233 (78.5%) women knew modern contraceptive methods and injection was known by 94.9% of women, followed by Oral Contraceptive pills (OC pills) (70%). Very few participants (0.4%) knew withdrawal method as one of the methods of contraception.



A=Injection B=OC pills
C=Sterilization D=Condom
E=IUCD F=Implant methods
G=Emergency OC pill H=Calendar method
I=Withdrawal methods

Fig. 1. Knowledge on types of modern contraceptive methods among married women in Lahe Township

Fig. 2 showed that among 294 participants, about 117 (39.8%) women used modern contraceptive methods. Majority of them (74%) utilized injection methods, followed by oral contraceptive pills (21%). The least common methods were intra-uterine implantation and female sterilization (3% and 2%, respectively). The main reasons for avoiding the use of modern contraceptive methods were due to the belief of traditional

culture such as self-oppose, husband-oppose and want to baby, and lack of accessibility such as lack of health care providers, shameful or afraid to go to health Centre. (44.6% and 41.7%, respectively).

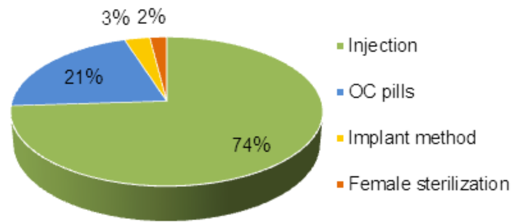


Fig. 2. Types of modern contraceptive methods currently used among married women

Participants with higher education status were more likely to use the contraceptive methods compared to those who with the lower education status (p=0.003). Women with job were less likely to use contraceptive method than dependent (p<0.0001). Participants who lived in urban areas were more practice modern contraceptive methods than those who lived in rural areas (p<0.001). In addition, higher proportion of women with high knowledge used the contraception more (p<0.001). (Table 2 & 3)

Qualitative findings

Some participants mentioned that early marriage was common in their ethnics group and contraceptive practice was not popular because of their lack of knowledge on contraceptive methods and accessibility. Some people stated that as follow;

"*Most young people got married at the age of 17 or even earlier like 13 to 14 years. They did not practice any method to prevent pregnancy. They would take any number of children that they would get. Older generation had around 8 to 10 children but nowadays, it is around 4 to 5 children per family.*"

(30 years old woman, from a urban ward)

"*Reasons for not taking contraceptive were that they did not have knowledge and some could not afford to buy contraceptives.*"

(20 years old woman, from a rural village)

Table 2. Association between sociodemographic characteristics and contraceptive knowledge in relation to contraceptive practice among married women

	Contraceptive Practice		P value
Educational status (n=289)	Yes Frequency (%)	No Frequency (%)	
Illiterate	56(35.2)	103(64.8)	0.004*
Primary education	32(36.8)	55(63.2)	
Middle school and above	27(62.8)	16(37.2)	
Occupation (n=283)			
Dependent	53 (58.9)	37 (41.1)	0.0001*
Employee/ Self-employ	63 (32.6)	130 (67.4)	
Residence (n=294)			
Rural	79 (34.6)	149 (65.4)	0.001*
Urban	38 (57.6)	28 (42.4)	
Family member (n=294)			
2-7 numbers	71 (43.1)	94 (56.9)	0.20*
8-21 numbers	46 (35.7)	83 (64.3)	
Age of marriage (n=290)			
≤20	79 (42.9)	105 (57.1)	0.236*
>20	38 (35.8)	68 (64.2)	
Knowledge on modern contraceptive methods (n=294)			
Yes	117 (50.9)	113 (49.1)	<0.0001#
No	0	64 (100)	

*Chi-squared test p-value
Fisher's exact test p-value

Table 3. Association between educational status, place of delivery and delivery person among married women from Lahe Township

Educational status (n=267)	Health centre delivery Frequency (%)	Home delivery Frequency (%)	P value
Illiterate	23 (15.7)	124 (84.3)	0.017*
Primary education	9 (11)	73 (89)	
Middle school and above	12 (31.6)	26 (68.4)	
	Skill birth attendant Frequency (%)	Friends/ relatives Frequency (%)	
Illiterate	73 (49.3)	75 (50.7)	0.0001*
Primary Education	33 (40.7)	48 (59.3)	
Middle school and above	30 (78.9)	8 (21.1)	

*Chi-squared test p-value

The participants discussed that babies were mostly delivered at home and their relative and/or husbands conducted the delivery. Traditionally, child delivering procedure was taught by their parents before they got married and there was no birth attendance in

their rural areas. One of the husbands from KII stated that-

"I helped my wife to deliver our baby. I was taught by my parents how to deliver the baby. I cooked rice soup for my wife to have after the delivery. I cleaned all the blood with the cloth and so on."

(25 years old husband, from a rural village)

"We do not have traditional birth attendants and the family members have to help with the delivery process whoever is available at the time of delivery."

(24 years old women)

However, some risky behaviors or practices during delivery practice were found from the qualitative findings. They used thin and sharp bamboo strips for cutting the umbilical cord at the time of delivery. One participant described that -

"*We only delivered baby at home, usually by mothers or aunts, but also by husband. We were taught by our parents on how to deliver the baby before we got married and how to cut the umbilical cord with thin and sharp bamboo strip. I delivered by myself according to the teaching from my parents and it was the same as I learnt."*

(26 year old man, from a rural village)

Moreover, abortion rate was flattened in this ethnic community because the community accepts that getting pregnant before marriage is not a stigma, women can keep the pregnancy and deliver the baby whether they are married or not. In addition, premarital sex is common in this ethnic community and sometimes they get married when women get pregnant. Some people shared their experiences as followed:

"Abortion is very rare in our community. When a woman gets pregnant even if she is not married, there is no stigma and she would keep the pregnancy and deliver the baby; the community is accepting. No need to do abortion."

(30 years old man, from a rural village)

"There are young men and young women living together in the community without getting married. It is around 20% of couples who would not get married but live together. Sometimes, they will get married if the women get pregnant."

(25 years old man, from a rural village)

DISCUSSION

The study was conducted in remote areas where the minor ethnic tribe of 'Naga' is resided. Naga is one of the Tibetan-Burmese ethnic tribes, residing in Sagaing Region in North Western Myanmar, where geographic accessibility and infrastructure are under-developed. This study identified knowledge and practice of contraception among Naga married women and their delivery behavior, by mixed methods.

Most of the participants were from rural area with younger age group between 25-35 years and more than half were illiterate. The study highlighted that the participants had high knowledge in contraception, but the use of contraception was low, due to traditional culture such as self-oppose, husband-oppose and want to baby, and lack of accessibility such as lack of health care providers.

Thus, health promotion should be done to improve utilization of contraception among Naga married women. Home delivery is common and women deliver with the help of their husband, family members (such as mother, sister and aunt) and friends. On account of community acceptance on premarital sex, abortion may not be resulted from premarital sex.

Firstly, regarding the demographic characteristics of Naga married women, majority of women and their husband are illiterate with large family size (mean number of family members=7.5) which was similar to other study conducted in Lahe Township, Naga Land.[14] The mean age of marriage for women was 20 with the youngest of 14 years. This was younger than the mean age of marriage in Kayah ethnic group (22.5 years), which is one of the ethnic minorities in South-east Myanmar.[16]

Secondly, most of the participants knew modern contraceptive methods, primarily having knowledge of injection method followed by the OC pills. Other studies done in ethnic minority in Myanmar evidence the similar findings that the majority of women have knowledge about contraception on 3 months injections followed by OC pills.[17]

Moreover, study conducted in Northern Shan state describes that most frequent know contraceptive methods are “injectable”, “oral pills” and “Intra Uterine Contraceptive Devices (IUCDs)”.[18] Furthermore, knowledge about condom is low among Naga married women in this study, representing that they do not have enough knowledge of dual protection of using condoms; that is highly effective in preventing pregnancy as well as protecting against Sexually Transmitted Infections (STIs), including HIV as a physical barrier.[19-22] Therefore, condom promotion and health education should be provided among women in this Naga community.

Thirdly, injection method is found to be the most commonly used for contraception, followed by the OC pills. Very few women use sterilization and implant method due to lack of access to health care providers. Similar findings are found in the study done in rural area of Kayin State, Myanmar that the most common modern contraceptive method used among the married reproductive age women are injectable form (60%) follow by OC pills (28%).[17] Another study done in Shan state that most frequent used method are injectable (64.2%) and oral pills (24.6%).[18]

Furthermore, contraceptive knowledge and practice are consistent and logical in this study that they use the prefer method that they know properly. It is consistent with other studies that knowledge on birth spacing is associated with practice, and current use of contraceptive.[12, 16] Qualitative findings evidence that culturally, Naga families wanted as many children as they can. It is evidenced that using contraceptive method is emancipatory and transformative to woman’s life and it also helps to avoid unwanted or mistimed pregnancies.[22] Studies also show that contraceptive use could improve the ability of women to be involved in productive work and other socio-cultural aspects by averting unwanted pregnancies.[23-25]

Fourthly, premarital sex is not uncommon among adolescents in Naga Land. However, positively, the community accepts that getting pregnancy before marriage is not a stigma and the couple can get married, keep the pregnancy and deliver baby. This is significant positive finding in Naga community that differs from the background of Myanmar culture. As a consequence, induced abortion is rare in that area which leads to decrease the maternal mortality. Fifthly, among the married women who have an experience of child delivery, majority of them deliver at home and very few women deliver at the health facility which is consistent findings from other studies done in Lahe and Northern Shan State that most of the women practice home deliveries for easy and uncomplicated labours.[14, 26] Delivery practices in Naga community are quite different from other communities in Myanmar.[12, 16, 27]

Furthermore, qualitative findings reflect that home delivery is assisted by their family members especially the husbands and know the process of child delivery learnt from their parents. Oppositely, in Myanmar culture in general, husband is not allowed to enter the labour room in both home delivery and facility-based delivery. Other two studies from Nepal report that some women believe that a presence of husband during delivery can cause complication[28] and put them at risk of “pollution”.[29]

Thus, it can be said that the culture of Naga Land community in delivery practice, accompanying by the husband and/ or the family members is very encouraging for the pregnant women at the time of delivery. However, institutional delivery or delivery with skilled birth attendant should be encouraged to this community.

In contrast, the risky habit of cutting umbilical cord with a sharp bamboo piece is not a safe and clean practice for the baby. It can be prone to infection via umbilical cord. Similar findings found in Lao community state that most of the trained birth assistants cut the umbilical cord by using a bamboo called "Mai Ka See" or razor blade.[30] Another study done in Nepal describe that some participants use sickle or razor blade to cut the cord.[31] Therefore, it is recommended that health literacy and safe delivery practices should be promoted for aseptic technique and clean delivery kits should be distributed to this community.

Lastly, findings report that women with lower education level have higher experience of home delivery compared to women with higher education. Similar findings from other studies reveal that women with post-secondary education are 2.48 times more likely to deliver at a healthcare facility than women with primary education[32] and maternal and paternal education are significantly and positively associated with utilization of institutional delivery.[33] Additionally, participants with higher education status are more likely to use the contraceptive methods compared to those who with the lower education status in this study.

Conclusion

Despite adequate contraceptive knowledge, the uptake is still low in this study. Utilization of modern contraceptive should be encouraged by health care providers. It has been found out that education plays a vital role in better contraceptive usage and delivering practice. Hence, married women in Naga land should be empowered with health care education in order that they will be able to make healthy contraceptive decision and child delivery.This study highlighted that the policy makers, health service providers and community leaders need to promote the use of contraception, institutional delivery, delivery with skilled birth attendant and distribution of clean delivery kits in Naga Land to prevent maternal and childhood mortality.

Competing interests

The authors declare that they have no competing interests.

ACKNOWLEDGEMENT

We would like to extend our thanks to Major General Soe Win, Director of Directorate of Medical Services for his permission in doing research and funding support. Our sincere thanks are conveyed to Dr Kyi Minn, from Myanmar Health and Development Consortium for his guidance and technical support and Dr Yan Naung Win for their technical supports. We have much pleasure in expressing our gratitude to Dr Htet Phyo Wai, TMO of Lahe Township hospital for allowing research in this area and his support during data collection period in that area. Special thanks are owed to all the participants in Lahe Townships and also to volunteers for their enthusiastic participations in this study.

REFERENCES

1. United Nations, Department of Economic and Social Affairs, Population Division. World Family Planning 2017 Highlights (ST/ESA/SER.A/414).
2. United Nations, Department of Economic and Social Affairs, Population Division. Trends in Contraceptive Use Worldwide 2015 ST/ESA/SER.A/349).
3. World Health Organization. *Annual World Health Repor*t 2016.
4. Sharma RK & Rani M. Contraceptive use among tribal women of central India: experiences among DLHS-RCH–II Survey. *Research and practice in social sciences* 2009; 5(1): 44-66.
5. Indongo INK. Contraceptive use among young women in Namibia: Determinants and policy implications: University of Pretoria; 2007.
6. Joshi R, Khadilkar S & Patel Madhuri. Global trends in use of long-acting reversible and permanent methods of contraception: Seeking a balance. *International Journal of Gynaecology and Obstetrics* 2015 Oct;131 Suppl 1:S60-3.

7. Ministry of Health, The Republic of the Union of Myanmar. Health in Myanmar. Nay Pyi Daw, 2014.
8. Non-govermental Organization. *Maternal Death and Servillence Report.* 2016.
9. Kyaw Thuya. Contraceptive use pattern among the married couples in Hmawbe cantonment area. [MMedSc *thesis*].Yangon: Defence Services Medical Academy; 2008.
10. Myint Myint Wai, Bjertness E, Thein Thein Htay, Liabsuetrakul T, Aye Nyein Moe Myint, Stigum H, *et al*. Dynamics of contraceptive use among married women in North and South Yangon, Myanmar: Findings from a cross-sectional household survey. *Contraception: X* 2020; 2: 100015
11. Myint Myint Wai, Bjertness E, Stigum H, Thein Thein Htay, Liabsuetrakul T, Aye Nyein Moe Myint, *et al*. Unmet need for family planning among urban and rural married women in Yangon Region, Myanmar: A cross-sectional study. *International Journal of Environmental Research and Public Health* 2019; 16(19): 3742.
12. Wai Phyo. Knowledge, attitude and practice on contraceptive utilization among the married women in Hlaing Tharyar Township. [MMedSc *thesis*] Yangon: Defence Services Medical Academy; 2009.
13. *Layshii Township Report, Myanmar Population Cencus* (2014)(2017).
14. Win Le Shwe Sin Ei, Than Lwin Tun, Chit Htun, Gignoux E, Kyaw Thu Swe, Incerti A, *et al*. Nagaland health assessment: High mortality rates and difficulty accessing essential health services in Lahe Township, Republic of the Union of Myanmar. *PLOS ONE* 2019; 14(5): e0216925.
15. UNFPA Myanmar. *UNFPA Annual Report, 2017.*
16. Wann Thu. Knowledge and practice on birth spacing among married women in Loikaw township, Kayah State. [MMedSc *thesis*]. Yangon: University of Public Health; 2012.
17. Sabai Tun, Perngparn U & Areesantichai C. Factors affecting utilization of family planning services among married women of reproductive age living in the rural area of Kayin State, Myanmar. *International Journal of Multidisciplinary Research and Publications* 2019; 2(1): 76-80.
18. Kyaw Oo, Theingi Myint, Moe Kyaw Myint, Phyu Phyu Thin Zaw & Kyaw Ko Ko Htet. Current practice of contraception and intentions to use hormonal implants among married couples of reproductive age in Upper Myanmar. *About of the 44th Myanmar Health Research Congress*; 2016 Jan 5-9; Yangon, Myanmar. p. 41.
19. Steiner RJ, Liddon N, Swartzendruber AL, Rasberry CN & Sales JM. Long-acting reversible contraception and condom use among female US high school students: Implications for sexually transmitted infection prevention. *JAMA Pediatrics* 2016; 170(5): 428-434.
20. Marcus JL, Katz KA, Krakower DS & Calabrese SK. Risk compensation and clinical decision making-the case of HIV preexposure prophylaxis. *New England Journal of Medicine* 2019; 380(6): 510-512.
21. CA. Condoms for the prevention of HIV transmission. 2021; 1-6
22. World Health Organization. Family planning/ Contraception Fact Sheet. (2017 & 2018).
23. Conde-Agudelo A, Rosas-Bermudez A & Norton MHJP. Birth spacing and risk of autism and other neurodevelopmental disabilities: A systematic review. *Pediatrics* 2016; 137(5): e20153482.
24. Frenette M. Why do larger families reduce parental investments in child quality, but not child quality per se? *Review of Economics of the Household* 2011; 9(4): 523-37.
25. Frost JJ & Lindberg LD. Reasons for using contraception: perspectives of US women seeking care at specialized family planning clinics. *Contraception* 2013; 87(4): 465-72.
26. Thida, Hla Soe Tint, Kyaw Zeyar Lynn, Nwe Nwe Kyaw & Kyaw Zin Thant. Family Planning Practice and Reproductive Health Needs among Rural Married Women in Laukkai Township, Kokang Self-Administered Zone, Northern Shan State, Myanmar. *Myanmar Health Sciences Research Journal* 2017; 29(3): 227-32.
27. May Me Thet, Ei Ei Khaing, Diamond-Smith N, Sudhinaraset M, Sandar Oo & Tin Aung. Barriers to exclusive breastfeeding in the Ayeyarwaddy Region in Myanmar: Qualitative findings from mothers, grand-mothers, and husbands. *Appetite* 2016; 96: 62-9.
28. Lewis S, Lee A & Simkhada P. The role of husbands in maternal health and safe childbirth in rural Nepal: A qualitative study.

BMC Pregnancy and Childbirth 2015; 15: 162-171.

29. Thapa N, Chongsuvivatwong V, Geater AF & Ulstein M. High-risk childbirth practices in remote Nepal and their determinants. *Women Health* 2000; 31(4): 83-97.
30. Sychareun V, Phengsavanh A, Hansana V, Somphet V & Menorah S. Cultural beliefs and traditional rituals about child birth practices in Lao PDR. 2011; 1-36.
31. Sharma S, Van Teijlingen E, Hundley V, Angell C & Simkhada P. Dirty and 40 days in the wilderness: Eliciting childbirth and postnatal cultural practices and beliefs in Nepal. *BMC Pregnancy and Childbirth* 2016; 16(1): 147-159.
32. Egharevba J, Pharr J, van Wyk B & Ezeanolue E. Factors influencing the choice of child delivery location among women attending antenatal care services and immunization clinic in Southeastern Nigeria. *International Journal of Maternal and Child Health and AIDS* 2017; 6(1): 82-92.
33. Seme A & Seifu A. Institutional delivery services utilization by women of childbearing age in southwest Showa zone, Oromia Region. *Ethiopian Medical Journal* 2017; 55(1): 49-61.