International Journal of Community Medicine and Public Health
Oo KM et al. Int J Community Med Public Health. 2022 Apr;9(4):1581-1586
http://www.ijcmph.com
pISSN 2394-6032 | eISSN 2394-6040

DOI: https://dx.doi.org/10.18203/2394-6040.ijcmph20220824

Original Research Article

Knowledge and awareness on breast cancer among midwives and auxiliary midwives from three townships in Lower Myanmar

Khin May Oo*, San Shwe, Le Le Win, Myo Khin, Aung Myo Min, Ye Htut, Htain Win

Yangon Research Consultative Group, Yangon, Myanmar

Received: 27 September 2021
Revised: 19 November 2021
Accepted: 29 November 2021

***Correspondence:**
Dr. Khin May Oo,
E-mail: pansytinoo@gmail.com

ABSTRACT

Background: In Myanmar, more than seventy percent of the population reside in rural areas and as the midwives (MW) and auxiliary midwives (AMW) are the basic health care workers who provide crucial health information to the rural women, their knowledge and awareness on breast cancer needs to be explored.
Methods: A cross-sectional descriptive study was carried out to assess the perceived knowledge and awareness of MWs and AMWs regarding the early signs and symptoms, risk factors, and screening of breast cancer.
Results: A total of 203 respondents (including 154 MWs and 49 AMWs) participated in the study. The mean age of the participants was 20.27±3.6 years and the majority (96%) was single. The majority of respondents (94%) had heard of breast cancer and breast cancer screening. AMWs had a significantly lower knowledge on risk factors such as: family history (68% versus 19%); nulliparity (62% versus 43%); change in shape of breast (47% versus 25%); dimpling (44.3% versus 18.45%); lumps in axilla (42% versus 21%); use of oral contraceptive pills (34% versus 8%) than the MWs.
Conclusions: More knowledge on breast cancer and breast cancer screening need be imparted to the MWs and AMWs to be able to convey knowledge and information of breast cancer to the women residing in rural areas.

Keywords: Midwives, Auxiliary midwives, Cancer, Breast cancer, Breast self-examination, Myanmar

INTRODUCTION

Cancer is a leading cause of disease worldwide and is estimated that 19.3 million cancer cases and 9.96 million cancer deaths occurred globally in the year 2020.. According to the global cancer observatory, over 75,000 new cases of cancer occur in Myanmar during 2020 with over 52,000 cancer-related deaths.[1] Breast cancer (BC) is the most common cancer and ranks second among cancer diseases and the fifth in terms of cancer mortality among women.[2] The World Health Organization (WHO) estimated that globally breast cancer affects 2.3 million women with 685,000 deaths in the year 2020.[3] The annual female cancer deaths were estimated as 24,000 deaths, of which breast cancer contributed to 11.9%. The crude rate of breast cancer in Myanmar has been estimated as 22.9 per 100,000 women.[4]

Breast cancer incidence has been reported to be increasing in Asia due to the changing patterns of life style and diet. Because of the late detection and inadequate access to effective care, survival of women with breast cancer in Asia is lower than in western countries.[5] Early detection of breast cancer plays an important role in improving the breast cancer outcome as small tumors are more likely to be in early stages. Breast cancer screening is checking a woman's breast for signs or symptoms of the disease. Three main tests that are used to screen the breasts are clinical breast examination (CBE), breast self-examination (BSE) and mammogram.[6] To facilitate early detection of breast cancer, adequate knowledge of breast cancer is important for facilitating breast cancer screening.[7]

In Myanmar, over 70% of the population resides in rural areas and midwives (MWs) and auxiliary midwives

(AMWs) are the basic health staff providing health-care that range from antenatal care and child delivery to health education and general health measures to the rural population.

The health system in Myanmar follows the country's administrative structure, with health departments at regional/state, district and township levels. At the township level there are township hospitals, station hospitals, urban health centers/maternal and child centers (MCH) and rural and sub-rural health centers (RHC and sub-RHC). Primary care infrastructure starts with the sub-RHCs at the grassroots level. MWs are on the frontline of health care system and the only point of contact with the local population.[8] However, MWs are not able to cover all rural villages and AMWs are trained as an extension arm to support the MWs.

AMWs are unpaid voluntary health workers and have been the largest community level front-line workers serving mothers and children in remote rural villages since the program commenced in 1978.[9] The Ministry of Health (MOH) executes the AMW training program by mobilizing funds from the MOH budget or from the international development partners. The training team is headed by Township Medical Officer (TMO) with the support of United Nations (UN) agencies, regional government, local Maternal and Child Welfare Associations and international development partners.[10] The AMWs are effective community health workforce, as they live in the hard-to-reach villages, speak the same dialect as the locals, understand the socio-cultural dimensions and are well accepted by the community.[11]

A recent study had elicited that women living in rural areas had inadequate knowledge of breast cancer.[12] For early detection of breast cancer in the rural population in Myanmar, it is of utmost importance that the MWs and AMWs themselves have adequate knowledge and awareness of the breast cancer. This study was conducted with the aim to explore the perceived level of knowledge and awareness of the breast cancer signs and symptoms, risk factors and breast cancer screening methods among the MWs and AMWs from three study sites in lower Myanmar.

METHODS

Study design and study area

A cross-sectional descriptive study was carried out with the objective to assess the perceived knowledge and awareness of the MWs and AMWs on early signs and symptoms, risk factors and screening methods of breast cancer. The study was carried out from January 2018 to March 2018, and included MWs and AMWs from three study areas (Kyaung Kone Township in Ayeyawady region and Mawlamyaing Township in Mon State and Paan Township in Kayin State) in lower Myanmar. All MWs and AMWs from the study areas were recruited. MWs and AMWs with less than one year of experience were excluded.

Sample size

Considering the percentage of nursing students knowing the symptoms of breast cancer as 50% (10), with reliability coefficient of 1.645, and margin of error 0.06, the required sample size was ~190. In order to adjust the non-response rate of 5%, 203 respondents were recruited.

Ethical consideration

Ethical approval was obtained from the Ethics Review Committee, Department of Medical Research, Ministry of Health and Sports, Republic of the Union of Myanmar.. Prior to the interview, the study was explained to the participants and each respondent was assured that all information would remain confidential and would be unlinked from the identity of the participant. A written informed consent was obtained from each participant.

Questionnaires and data analysis

A self-administered questionnaire developed by one of the authors (San Shwe) was used. It was based on a valid and reliable questionnaire used in a previous epidemiological study carried out in Myanmar to study the awareness of common female cancers (breast and cervical cancers) in 400 women residing in Yangon.[13]

The self-administered questionnaire was structured in two parts. Part one contained questions on demographic characteristics (age, marital status, and occupation) and second part comprised of knowledge on early signs and symptoms, risk factors and methods of breast cancer screening including breast self-examination (BSE).

Data analyses

Analyses of data were conducted with IBM® statistical package for the social sciences (SPSS) software version 23.0. Descriptive statistics (mean, standard deviation (SD) for intervals, and frequency with percentages for categorical variables) were calculated. Age and education levels were grouped for categorical analysis. To determine the associations between the categorical dependent variables, Chi-square tests were carried out. Data was shown as frequency/percentage for categorical variables and mean (SD) for continuous variables.

RESULTS

Demographic characteristics

A total of 203 respondents within 18 to 44 years of age participated in the study, of which 154 respondents (75.9%) were MWs and 49 (24.1%) were AMWs. All respondents were females and 96% were single. The mean age ±SD of the respondents were 20.27±3.6 years. There

was no significant difference between the mean age of the MWs (19.90±3.62 years) and the mean age of the AMWs (21.43±3.48 years).

Knowledge and awareness of signs of breast cancer

Half of the respondents (51.7%) were aware of breast lump as a sign of breast cancer. They were also aware that change in nipple shape (41.4%), discharge from nipple (26.9%) and lumps in axilla (37.4%) as important signs of breast cancer.

However, only few recognized some early signs of breast cancer such as thickening of breast skin (19.9%), swelling of the breast (21.0%), redness of breast skin (23.6%), soreness of breast (26.1%), and dimpling of breast skin (37.9%).

MWs had significantly better knowledge on the early breast cancer signs such as: lump in breast (51.7% versus 34.7%), dimpling of breast skin (44.3% versus 18.4%), change in shape of nipple (46.7% versus 25.0%), discharge from nipple (30.7 versus 14.9%) and lumps in axilla (42.4% versus 21.3%). However, AMWs were better than MWs on the recognition of redness of skin over the breast (20.4% versus 34.0%) and soreness of breast (37.5% versus 46.7%) as signs of breast cancer (Table 1).

Knowledge and awareness of risk factors

Half of the respondents knew that nulliparity (57.5%), family history of breast cancer (56.5%), and no breast feeding (48.0%) increased the risk of breast cancer.

However, only 27.9% were aware that oral contraceptives were included among the risk factors. MWs had significantly better level of knowledge that family history of breast cancer (68.0% versus 19.1%), nulliparity (62.1% versus 42.6%), and oral contraceptives (34 % versus 8.5%) increased the risk of breast cancer (Table 1).

Knowledge and awareness of breast cancer screening methods

Regarding the breast cancer screening methods, the majority (93.6%) knew about breast self-examination (BSE) as compared to 67.0% for mammography. MW had better knowledge than AMWs on BSE (94.4% versus 90.7%) and for mammography the percentage of AMWs was slightly higher (65.7% versus 71.4%).

There was no significant difference of knowledge and awareness on breast cancer screening methods between the MWs and AMWs (Table 1).

Source of information about breast cancer

Sources of information included health talks (73.7%), newspapers (24.2%), television (15.6%), radio (12.4%) and others (15.1%) which included printed materials, posters, seminars and workshops.

For the MWs, health educational talks (81.3%) were mainly the significant source of information on breast cancer, but for the AMS, the main source of information was the radio broadcasts (35.7%) (Table 2).

Table 1: Respondents' knowledge on different aspects of breast cancer.

Parameter	All respondents	Midwives	Auxiliary midwives	Chi-square (P value)
	Number (%)			MW versus AMW
Signs of breast cancer				
Lump in breast	105 (51.7)	88 (51.7)	17 (34.7)	P=0.01
Change in nipple shape	82 (41.4)	70 (46.7)	12 (25.0)	P=0.01
Dimpling of breast skin	75 (37.9)	66 (44.3)	9 (18.4)	P=0.001
Lumps in axilla	74 (37.4)	64 (42.4)	10 (21.3)	P=0.05
Discharge from nipple	53 (26.9)	46 (30.7)	7 (14.9)	P=0.05
Soreness of breast	52 (26.1)	34 (22.5)	18 (37.5)	P=0.05
Redness of breast skin	47 (23.6)	31 (20.4)	16 (34.0)	P=0.002
Swelling of the breast	42 (21.7)	29 (19.1)	13 (27.1)	NS
Thickening of breast skin	40 (19.4)	27 (17.8)	13 (26.5)	NS
Risk factors				
Family history of breast cancer	113 (56.5)	104 (68.0)	9 (19.1)	P=0.001
Nulliparity	115 (57.5)	95 (62.1)	20 (42.6)	P=0.02
No breast feeding	95 (48.0)	74 (49.0)	21 (44.7)	NS
Oral contraceptives	55 (27.9)	51 (34.0)	4 (8.5)	P=0.001
Screening methods				
BSE	175 (93.6)	136 (94.4)	39 (90.7)	NS
Mammography	122 (67.0)	92 (65.7)	30 (71.4)	NS

Table 2: Source of information about breast cancer among MWs and AMWs.

Parameter	All respondents	MW	AMW	Chi-square
	Number (%)			MW versus AMW
Health talks	137 (73.7)	117 (81.3)	20 (47.6)	P=0.001
Newspapers	45 (24.2)	37 (25.7)	8 (19.0)	NS
Television	29 (15.6)	24 (16.7)	5 (11.9)	NS
Radio	23 (12.4)	8 (5.6)	15 (35.7)	P=0.001
Others (printed materials, posters, seminars, workshops)	28 (15.1)	20 (13.9)	8 (19.0)	NS

DISCUSSION

The findings from the present study demonstrated the gaps in knowledge and awareness on the breast cancer signs and symptoms, risk factors, and breast cancer screening methods among the MWs and AMWs from 3 study sites in lower Myanmar. In the rural areas, midwives and auxiliary midwives are the basic health staff providing health-care to the rural population. The role of MWs and AMWs in the breast cancer control is extremely important as they are the only health personnel that could provide health education and right information to the women residing in rural areas, as breast cancer is a serious health problem in Myanmar and ranks 4 among the cancers with 6,912 (9.3%) new cases and more than 2,900 deaths in 2020.[14]

A total of 203 participants (154 MWs and 49 AMWs) were included in this study. All participants were females with the mean age of 20.27±3.6 years and the majority (96%) was single. Findings revealed that 51.7% of the respondents were aware of breast lump, change in nipple shape (41.4%), lumps in axilla (37.4%) and discharge from nipple (26.9%) as signs of breast cancer. However, only few recognized some early signs of breast cancer such as thickening of breast skin, swelling of the breast, redness of breast skin, soreness of breast, and dimpling of breast skin.

MWs had significantly higher knowledge and awareness on early breast cancer signs such as: lump in breast, dimpling of breast skin, changes in shape of nipple, discharge from nipple and lumps in axilla (Table 1). This finding was not unexpected, as MWs have to complete a two-year midwifery diploma course at respective midwifery training schools before they are posted as primary health workers within the government health system providing maternal and child care in rural and hard to reach areas. AMWs are recruited as unpaid voluntary health workers from their respective villages and trained for six months (three months of theory and three months of practice) by the township health department using an AMW training manual. AMW trainings are guided by the Maternal and Reproductive Health Division under the Ministry of Health and Sports. Although AMWs are trained by the health system, they are not part of the remuneration.[15]

Regarding the risk factors of breast cancer, half of the respondents were aware that nulliparity (57.5%), family history of breast cancer (56.5%), and no breast feeding (48.0%) increased the risk of breast cancer. However, only (27.9%) knew that oral contraceptives were included among the risk factors (Table 1).

For the breast cancer screening methods, the majority of respondents (93.6%) knew about BSE as compared to 67.0% for mammography. No significant difference of knowledge and awareness was detected on breast cancer screening methods between the MWs and AMWs (Table 1).

The findings of the present study were similar to a study conducted on 270 nurses in Ethiopia in which 57.8%were knowledgeable about breast cancer. Among the signs and symptoms, half of the respondents were aware of breast lumps (58.1%), nipple retraction (54.8%), breast skin changes (54.1%), pain on breasts (53.7%) and blood stained discharge from nipple (51.1%). More than half of the respondents (69.1%) mentioned family history of breast cancer as a risk factor among others. As for the breast cancer screening methods, (74.8%) mentioned BSE, 44.4% identified CBE by a health professional and only 38.5% stated mammography as the detection or screening methods.[16] The findings from our study were also comparable to a study on 248 nursing students of which 50% knew the symptoms of breast cancer and 57% knew nulliparity as one of the risk factors.[17] The percentage of respondents with awareness on signs and symptoms, risk factors and screening methods in our study was lower, when compared to a study conducted on 210 nurses in Iran in which 65.9% had excellent knowledge on signs and symptoms, 34.6% on the risk factors of breast cancer and 38.9% were aware that oral contraceptives were included in the risk factors.[18]

In another study conducted on Italian and Greek student midwives revealed that (53% of Greek and 57% of the Italian students) were well-informed about the risk factors, and (84%of Italian students and 74% of Greek students) knew the screening tests for breast cancer, were similar to our findings. However, a higher percentage of respondents (67% of Greeks and 32% of Italian students) considered consumption of contraceptive pills for more than 5 years as a risk factor.[19]

Different sources of information on breast cancer had been mentioned by different authors. In our study, sources of

information of breast cancer included health talks (73.7%), newspapers (24.2%), television (15.6%), radio (12.4%) and others (15.1%) which included printed materials, posters, seminars and workshops. For the MWs, health educational talks (81.3%) were significant source of information, but for the AMWs, radio was the main source of information (Table 2).

Regular course of nursing (78.9%) and training (17%), radio (41.5%), television (43.3%), reading books and other sources were mentioned by Lemlem and co-authors.[16] In another study carried out in Saudi Arabia, the authors mentioned radio/television (56.2%), printed materials including journals and newspapers (34.8%), friends (3.6%), family physician (5.2%), colleagues (17.7%) and internet (26.3%) as the source of information.[20]

In Myanmar, the government introduced BSE as a primary healthcare level in the package for essential non-communicable diseases (PEN) and encourages promotion of regular BSE practice by sharing information through pamphlets and MOHS website.[21,22] For the MWs and AMWs posted to villages in hard-to-reach areas, accessibility to the website is not easy as internet connections are not easily available in the villages. Printed material including brochures with information on breast cancer, distributed by the MOHS through the respective Township Health Departments, could give right information and knowledge to the MWs and AMWs, who would provide health education on breast cancer to the rural women. Breast cancer awareness raising activities are few in the country. Shwe Yaung Hnin Si Cancer Foundation hosted the World Cancer Day 2018 and conducted community-based breast cancer education programs.[23]

Limitations

Limitations of this study include omission of questionnaires on CBE in the screening methods as the current protocol requires the clinical examination of the breast to be done by a medical doctor in a hospital setting. BSE was not asked in detail, as the study was only on knowledge and awareness of breast cancer.

CONCLUSION

Breast cancer is a serious health problem in Myanmar, and the present study revealed the gaps in knowledge and awareness on breast cancer signs, risk factors and screening methods among the MWs and AMWs from three townships in lower Myanmar. The findings highlighted the need to provide more effective teaching and training programs for the MWs and AMWs. Since work-based trainings are not feasible for the health-care workers posted to hard-to-reach rural villages, under-graduate training should be targeted. Comprehensive breast cancer information on early signs and symptoms, risk factors and breast cancer screening methods, should be included in the teaching curriculum for the MWs and the AMW manual. Salient information should be provided through the television networks and radio broadcasts. Printed materials such as pamphlets and brochures with short messages on breast cancer should be distributed regularly to rural health centers to enable the MWs and AMWs to deliver correct information on breast cancer to the rural women.

ACKNOWLEDGEMENTS

Authors would like to thank the Director of the Ayeyawady Regional Health Department and the Directors of Mon State and Kayin State Health Departments for their permission and support.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Ethics Review Committee, Department of Medical Research, Ministry of Health and Sports, Republic of the Union of Myanmar

REFERENCES

1. Global Cancer Observatory IARC, France. Available at: https://gco.iarc.fr/tomorrow/en/dataviz. Accessed on 15 December 2020.
2. Bray F, Ferlay J, Soerjomataram I, Siegel RL, Torre LA, Jemal A. Global cancer statistics 2018: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. CA Cancer J Clin. 2018;68(6):394-424.
3. Breast cancer. Available at: https://www.who.int/news-room/fact-sheets/detail/breast-cancer. Accessed on 05 May 2021.
4. Savin S. Cancer Country Profile. WHO Fact Sheet. Available at: https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwiI7OyGsrn2AhW2S2wGHeU_DWwQFnoECAUQAQ&url=https%3A%2F%2Fwww.who.int%2Fcancer%2Fcountry-profiles%2Fmmr_en.pdf&usg=AOvVaw0Gf196TybEBpBDid78wJuC. Accessed on 05 May 2021.
5. Yip CH. Breast cancer in Asia. Methods Mol Biol. 2009;471:51-64.
6. Screening: Kinds of Screening Tests. Available at: http:/www.cdc.gov/cancer/breast/basic_info/screening.htm. Accessed on 05 May 2021.
7. Bener A, El Ayoubi HR, Moore MA. Do we need to maximize the breast cancer screening awareness? Experience with an endogamous society with high fertility. Asian Pac J Cancer Prev. 2009;10:599-604.
8. UNFPA Myanmar Myanmar SRMNAH Workforce Assessment. Available at: https://myanmar.unfpa.org/en/publications/myanmar-srmnah-workforce-assessment. Accessed on 07 May 2021.
9. Department of Health: Ministry of Health Myanmar: Situational Analysis on training and utilization of Auxiliary Midwives. In. Yangon: Department of Health. 1985.

10. Wangmo S, Suphanchaimat R, Htun WMM, Aung TT, Khitdee C, Patcharanarumol W, et al. Auxiliary midwives in hard to reach rural areas of Myanmar: filling MCH gaps. BMC Public Health. 2016;16:914.
11. The Republic of the Union of Myanmar Health Systems Review. Asia Pacific Observatory on Health Systems and Policies. Heath Systems in Transition. 2014;4(3).
12. Myint NMM, Nursalam N, Mara'ah Has EM. Exploring the influencing factors on breast self-examination among Myanmar women: a qualitative study. Jurnal Ners. 2020;15(1):85-90.
13. Mon MM, Mon M, Than KK. Women's awareness, knowledge and perceived magnitude regarding common female cancers in Yangon, Myanmar. Asian Pac J Cancer Prev. 2009;10:1047-50.
14. Myanmar: Summary Statistics 2020. The Global Cancer Observatory, March 2021. Available at: https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwjM772as7n2AhVa73MBHfZNAlIQFnoECAQQAQ&url=https%3A%2F%2Fgco.iarc.fr%2Ftoday%2Fdata%2Ffactsheets%2Fpopulations%2F104-myanmar-fact-sheets.pdf&usg=AOvVaw1kP6XrvKzoJZ31fusBSkjn. Accessed on 07 May 2021.
15. Sein T. Health volunteers; third workforce for health-for-all-movement. Regional Health Forum. 2006;28-48.
16. Lemlem SB, Sinishaw W, Hailu M, Abebe M, Aregay A. Assessment of Knowledge of breast cancer and Screening Methods among Nurses in University Hospitals in Addis Ababa, Ethiopia, 2011. Hidawi Publishing Corporation ISRN Oncology. 2013;470981.
17. Aye TT, Mon S. Knowledge, attitude and prevention practice about breast cancer among female nursing students in University of Nursing (Yangon), Myanmar. Ann Oncol. 2016;27(9):19-29.
18. Atashi HA, Vaghar ME, Olya M, Mirzamohammadi P, Zaferani H, Hadizadeh AM, et al. Knowledge, Attitudes and Practices toward Breast cancer among Midwives in a Breast Cancer Educational Seminar in Tehran. Arch Breast Cancer. 2020;7(1)29-36.
19. Maria T, Kleanthi G, Ioannis B, Katerina L. Knowledge of breast cancer screening of Greek and Italian student midwives. A comparative study. Health Science J. 2009;3(2):72-9.
20. Habib F, Salmon S, Safwat M, Shalaby S. Awareness and Knowledge of Breast Cancer among University Students in Al Madina Al Munawara Region. Middle East J Cancer. 2010;1(4):159-66.
21. Ministry of Health and Sports. Training of Trainers Manual for Package for Non-Communicable Disease Interventions (PEN), Ministry of Health and Sports, Myanmar. Nay Pyi Taw: Ministry of Health and Sports, Republic of the Union of Myanmar. 2017.
22. Ministry of Health and Sports. Breast Self-examination. Nay Pyi Taw: Ministry of Health and Sports, Republic of the Union of Myanmar. 2019.
23. Soe YSY, Win ZN, Aung T, Win T, Htun YY. "You Can Breast Health Club" Empowering Healthy of Myanmar to enhance Breast Cancer Awareness and Take Action. J Global Oncol. 2018;4(2).

Cite this article as: Oo KM, Shwe S, Win LL, Khin M, Min AM, Htut Y, Win H. Knowledge and awareness on breast cancer among midwives and auxiliary midwives from three townships in Lower Myanmar. Int J Community Med Public Health 2022;9:1581-6.