EPIDEMIOLOGY RESEARCH DIVISION

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Epidemiology Research Division mainly focuses research activities on HIV/AIDS, malaria, Water and sanitation and Maternal Newborn and child health care, and non-communicable diseases including cardiovascular diseases.

RESEARCH PROJECTS

1   COMMUNICABLE DISEASES

1.1   HIV/AIDS

1.1.1 Grouped mindfulness training for improving psychological and reproductive behaviors among adolescents with parental HIV infection

An intervention study was conducted between May to December 2015 among adolescents aged 10 to 16 years with parental HIV infection in Pyay, Shwebo, Meikhtilar and Bago Townships with the objectives of determining the effectiveness of grouped mindfulness and reproductive health intervention to improve the psychological behaviors, and intention towards reproductive risk behaviors among adolescents with parental HIV infection. A total of 160 adolescents were included in the study. Eighty adolescents from Pyay and Shwebo Townships were assigned as the intervention group and the similar number of adolescents from Meikhtilar and Bago Townships were allocated as the control group. After the baseline assessment, intervention sessions were provided once a month for 3 successive months. Interventions included training on mindfulness practice and the provision of adolescent reproductive health information. Conventional gathering activities were also carried out for adolescents from the control group. First and second post-assessment were done immediately

and 3 months after the intervention respectively. Age of the children ranged from 10 to 16 years with the mean age of 12.8 ± 1.9 and 12.3 ± 1.8 years in intervention and control groups respectively. More female adolescents were included (53.8% and 58.8%), some were double orphans (33.8% and 26.2%) and the majority currently attended the school (72.5% and 90%). At the post intervention assessment, psychological behaviors of adolescents from intervention group were better than those in the control group. Specifically, the mean scores of emotional behavior (0.96 ± 0.9 vs. 4.2 ± 2.5, p=0.001) and conduct behavior (1.45 ± 1.1 vs. 2.79 ± 2.0, p=0.001) were significantly lower in the intervention group indicating less risk of developing behavioral problems. Moreover, among adolescents from intervention group, emotional (4.2 ± 2.5 vs. 0.96 ± 0.9, p=0.001) and conduct behavior scores (2.9 ± 1.9 vs. 1.4 ± 1.0, p=0.001) were significantly improved during post intervention assessments. Thus, provision of training on adolescent reproductive issues along with mindfulness practice is a new and effective strategy which could use to improve the psychological behaviors among adolescents with parental HIV infection.

1.2 MALARIA

1.2.1 Community baseline study on knowledge and practice of malaria and maternal, newborn and child health care in selected townships of Kayah State

A cross-sectional survey was conducted in 40 villages of 3 townships in Kayah State, in 2014. It was covered 674 households for assessing malaria prevention and control and maternal, newborn and child health (MNCH). Nearly 63% (423/674) of the households surveyed were occupied by big families (≥5 members). The range of family members varied from 1-13 (mean 5.41 ± 2.02). For malaria prevention and control, nearly 86% (577/674) of respondents were aware of malaria illness. Only 60.8% of respondents knew that mosquito bite could transmit malaria. Nearly 79% knew that sleeping under mosquito nets could prevent malaria. Approximately 70% (402/577) of respondents knew that they should seek advice and treatment from the RHC/sub-RHC followed by volunteers (218/577; 37.8%). Even though 55% (365/665) of respondents knew that insecticide treated nets were used to prevent from mosquito bite, only 27.7% (184/665) of respondents mentioned that sleeping under ITN could prevent malaria transmission. The bed-net ownership varied from one to ten (3.8 ± 1.8). The ratio of households to bed-nets was 1: 4 and each bed-net covered three householders (1:3). Most of the households owned long-lasting insecticide treated nets (LLIN) (1515/1994; 76%). Nearly 75% of available bed-nets were never washed while 17.2% of respondents reported washing bed-nets within one year. Despite the coverage of nearly 80%, the rate of sleeping under the bed-net previous night was not up to the satisfactory level. For MNCH, selected households with under five children (n = 521) were participated in the survey. Nearly 60% of respondents (307/521) were unable to mention the danger signs in pregnancy that might hamper seeking help from skilled providers. Rural and sub-rural health centers (44.6%) were their main preference as the first place to seek treatment for emergencies. Around 65% of respondents recalled their experiences of AN care by midwives. Nearly 71% of respondents reported the frequency of AN care of more than two times by skilled providers and 93.7% of them had received tetanus toxoid injection. The majority of respondents reported home deliveries (396/521; 76%). Even though their deliveries were assisted by midwives (209/521; 40.1%), unskilled assistance of traditional birth attendants (173/521; 33.2%) and relatives (260/521; 49.9%) were reported. During the delivery, only 18.8% (98/521) of respondents were referred mainly to the state hospital (73/98; 74.5%). Around 50% of respondents received post natal (PN) care for more than three times during first 45 days of delivery. However, PN care received from nurses/LHV/midwives was not high (199/511; 38.2%). Nearly 60% of respondents were unable to state the danger signs in

neonates that required immediate care and referral. Approximately 34% of respondents revealed that the state hospital was the first place to seek care for newborns with danger signs. At the time of the survey, 73.7% (383/508) still breastfed their youngest child. The awareness of duration of exclusive breast-feeding less than one year was 73.2%. Only 24.2% (126/521) of respondents could show the vaccination cards. Very high percentages knew BCG and oral polio vaccinations (465/521, 89.3% and 458/521, 87.9%) and around 80% of respondents could cite the pentavalent vaccine. But, only 53% of respondents recognized measles vaccine. Of those who had received OPV, 85% of respondents had reported to receive the first dose after 15 days of delivery. Timely choices of health facilities for common childhood illnesses were important so as to prevent the progress into severity. This study elucidated the satisfactory coverage of insecticide treated nets to prevent transmission of malaria, universal coverage of immunization and improved information, education and communication activities for MNCH. However, an access to MNCH services provided at rural health facilities and the use of health technologies such as rapid diagnostic test for malaria, artemisinin combination therapy and insecticide treated nets were not up to the satisfactory level.

2 NON-COMMUNICABLE DISEASES

2.1 CARDIOVASCULAR DISEASES

2.1.1 Care-seeking behaviours and detection of target organ involvement among hypertensive patients in Yangon Region (2014-2015)

The study is a collaborative research project of Department of Medical Research, Cardiovascular Diseases Project, and Diabetes Project of Public Health. The study aimed to assess knowledge, attitudes, and practices related to hypertension among people with known history of hypertension who sought care in CVD clinics in public health care facilities in Yangon Region. A cross-sectional study was conducted from December 2014 to March 2015 among 622 hypertensive patients seeking care from 12 CVD clinics in Yangon Region. Trained interviewers used a pretested standard questionnaire and recorded the measurements of weight, height, ECG, blood pressure (BP), capillary blood sample with calibrated standardized machines. Data entry was done using Epi data software and analyzed using STATA.Over 90% of respondents was ≥40 years. Female to male ratio was 2, majority were married, had education of middle school or lower and household income varied from 200,000 to 300,000 Kyats. At least 60% of the study population knew on ways of controlling BP and some common complications of hypertension such as stroke and heart attacks. The respondents' households usually added salt in cooking or preparing food despite knowing salty food as unsuitable for health. Most of the respondents limited consumption of processed foods but rarely pay attention to sodium content on food labels. The vast majority of the respondents daily took lower than 5 servings of fruit and vegetable and was physically inactive. Over half of the respondents were overweight and high in total blood cholesterol. About 7 in 10 respondents had uncontrolled BP although they took medicines regularly. The study showed that about 6 in 10 respondents had at least one target organ involvement of hypertension (renal impairment or diabetes or abnormal ECG changes).This study indicated the need for strong behavior change communication programs for hypertensive patients focusing the regular monitoring of blood pressure, reduction of dietary salt consumption, more consumption of fruits and vegetables, adoption of physically active life and control of body weight.

2.2   National survey on prevalence of diabetes and non-communicable diseases in Myanmar
        (Please refer to the Annual Report of Nutrition Research Division)

3   HEALTH SYSTEMS RESEARCH

3.1   MATERNAL, NEWBORN AND CHILD HEALTH

3.1.1   Towards best practices: Challenges experienced by midwives during delivery and postpartum period in Northern Yangon District (Quantitative Aspect)

Maternal, newborn and child health care (MNCH) services are mainly provided by midwives among basic health staff in Myanmar. To date, midwives are bogged down with multiple activities due to the expansion of public health programs and increased population growth. Therefore, a cross-sectional descriptive study was conducted in Htantabin, Hmawbi and Hlegu Townships in Northern Yangon District in 2015. The primary objective was to identify the challenges experienced by midwives in the provision of delivery and postpartum care services. A total of 108 midwives were interviewed by using a structured, pre-tested questionnaire. The age ranged from 24 to 55 years (mean age of 36.4 ± 7.3 year). Almost all midwives performed their basic functions of delivery and post-partum care services. The mean numbers of delivery and postpartum patients were 5 and 7 per month respectively for each midwife. They encountered operational challenges including insufficient supply of drugs and instruments, poor patient compliance and increased workload in provision of the services. In particular, 13% of midwives stated that misoprostol was out of stock for few months which was essential for prevention of postpartum hemorrhage. Moreover, they did not have enough materials such as artery and sponge forceps (33.3%), single-used catheter (37.5%) and suture (58.3%). Nearly 64% of midwives experienced other health activities apart from MNCH services within previous one month in which 53.6% considered that such activities caused overburden to their routine MNCH services. With regards to insufficient supply and increased workload, 75% tried to overcome these challenges by reporting their superiors. Nearly all of the midwives could overcome the poor patient compliance by provision of health education to their patients. Regarding their needs, 87%, 64.8% and 42.6% of midwives respectively from three study sites suggested to provide a bicycle or motorcycle, more logistics supplies and more training related to MNCH services. According to the research findings and suggestions of respondents, midwives from peri-urban areas were needed to support more drugs and instruments supplies and transportation arrangement. In conclusion, this study highlighted the mostly encountered challenges that midwives had experienced in performing in MNCH services, and it also revealed the priority and practical means of solutions for overcoming the challenges for improving MNCH services.

3.1.2   Every child count: The immunization status of mobile migrant children in Bogale and Mawlamyinegyun Townships, Ayeyawady Region

A cross-sectional descriptive study was conducted in 87 villages in Bogale and Mawlamyinegyun Townships during 2014 focused on internal migrants who are moving around within the country. It aimed to determine the immunization status and factors influencing immunization of migrant children. A total of 493 migrant mothers having children under two-year old were selected by snowball sampling after collecting migrants information from Basic Health Staffs (BHSs) in each village and then interviewed with semi-structured questionnaires. Fifteen Focus-Group-Discussions with migrant mothers and Key-Informant-Interviews with 56 Voluntary Health Workers, 25 BHSs and 12 Village Health

Committee members were performed. Migrants were identified into four types--in inbound migrants (222/493, 45%), outbound migrants (194/493, 39.4%), mobile hawkers (25/493, 5.2%) and local mobile (52/493, 10.5%). Among 17 months to two years old migrant children, only (35/197, 17.76%) received full dose of EPI. Number of children with complete immunization was highest in local mobiles who frequently travel outside of their residential villages for not more than one month (5/20, 25%) and lowest in hawkers (1/9, 11.1%). More than two third of migrant mothers said migration was the main reason of missing EPI and nearly half of them refused EPI because of their misbelieves. Majority of migrant mothers did not aware the date and place of immunization at their destination villages. A few claimed transportation barriers and travel expenses to the place of immunization. Some BHS stated migrants were not included in their immunization due lists. BHS could not be able to determine which dose to administer because migrant mothers could not tell the dose that had been given. Some migrant mothers also did not have immunization cards. Majority of BHS suggested the local authority and employers could support them by collecting and sharing lists of under 2-year old migrant children. In conclusion, there should be a strong collaboration between health care providers, local authorities and employers to be able to get information of migrants. There should be a specific service delivery for migrants ensuring the better childhood immunization coverage.

3.1.3   Access and utilization of maternal and child health care services among migrants in Bogale and Mawlamyinegyun Townships
(Please refer to Annual Report of Medical Statistics Division)

3.1.4   Role of voluntary health workers in maternal and child health care for migrants in Bogale and Mawlamyinegyun Townships, Myanmar
(Please refer to Annual Report of Medical Statistics Division)

3.2   WATER AND SANITATION

3.2.1   Factors influencing willingness to use chlorine products to treat drinking water at point-of-use in peri-urban households, Yangon Region

This study was conducted in North Dagon Township, Yangon Region in 2014. Altogether four wards were selected first and allocated for intervention and control areas. In each ward, 50 households with under-five children was selected at random from under-five registers of midwives summing up to 100 households in two intervention wards and the same number in control wards. For the 100 households in intervention areas, trained interviewers provided the chlorine product for a one month free trial. The interviewers visited both intervention and control areas to ask a few questions about water collection and treatment behavior after one month. At the end of one-month trial period, interviewers visited again each intervention household for a follow-up survey to measure self-reported product usage and update product preference as well as answer questions about their experience with the product and collect information on final product preferences including willingness to use and supporting factors and challenges. Households reported highest usage of the cloth-filter, although explaining the health hazards of untreated drinking water. The cloth-filter (83.5%) and boiling method (81%) were generally self-reported to be used more than Aqua tabs (32%) after intervention. However, reported used of Aqua tabs increased from 8% to 32% after one-month trial period. Intervention wards had higher level of knowledge and practices in household water treatment and storage than control wards. They were more likely to do safe drinking water (for example: boiling, filtering and chlorination) than control wards. In conclusion, there was still a lower usage of chlorine products in both intervention and control groups. There is still considerable work to be done in the areas of improving water quality

and addressing sanitation and hygiene practices. Introducing a culturally appropriate and community accepted point-of-use household water treatment system is one of the several interventions that may reduce burden from waterborne diseases in peri-urban setting.

SERVICES PROVIDED

ACADEMIC

Sr.	Name	Course	Responsibility
1.	Dr. Ko Ko Zaw	MPH Epidemiology lectures for Master of Public Health(MPH) Training	Lecturer/Supervisor/ External examiner
		MPTM training at (UM1), (UM2) University of Medicine (Mandalay)	Lecturer/ External examiner
		Workshop on Research Methodology (2015)	Lecturer

EPIDEMIOLOGY RESEARCH DIVISION (POL)

Deputy Director & Head	…	Dr. Thida MBBS, MMedSc(Public Health) (UMM)
Research Officer	…	Dr. Phyu Phyu Thin Zaw MBBS (UMM), PhD (Epidemiology)(Prince of Songkla University, Thailand), Postdoctoral Study(Asia Health Policy, Stanford University)
	…	Dr. Kyaw Ko Ko Htet MBBS (UMM)
	…	Dr. Kyaw Zayar Lynn MBBS (UMM)
	…	Dr. Thinzar Aung MBBS (UMM)
Research Assistant (2)	…	Daw Thi Thi Htun BSc(Botany) (UDE)
Research Assistant (3)	…	Daw Yee Yee Myint BSc(Physics) (MU)
	…	Daw Nwe Nwe Kyaw BSc(Physics) (UDE), Dip. Marketing Management (MRCC)
	…	Daw Sandar Htay BSc(Physics) (UDE)
	…	Daw Phyu Phyu Khaing BA(Geography) (UDE)
	…	U Min Htut Kyaw BA(Economics) (UDE)

Epidemiology Research Division mainly focuses research activities on Health Systems, HIV/ AIDS, tuberculosis and reproductive health.

RESEARCH PROJECTS

1   COMMUNICABLE DISEASES

1.1   TUBERCULOSIS

1.1.1. Assessment of effectiveness of active case detection for tuberculosis cases using two consecutive mobile team activities in hard-to-reach area, Laukkai Township, Northern Shan State, Myanmar

In Myanmar, estimated tuberculosis (TB) prevalence is still high at 473 per 100,000 populations in 2013. This cross-sectional study was aimed to test the method of using two-times mobile activities on TB Case Notification Rates (CNR) among 15 years and above adults and the possible barriers at two months interval in Laukkai Township jurisdiction during 2013. Local people, with or without TB symptoms, were invited for participation through a formal administrative communication channel. Local administrative authorities, Basic Health Staff, TB Community Health Workers and translators assisted the activities. Diagnosis was made based on clinical history, Chest X-Ray (CXR), sputum microscopy and/or culture results. There were 2064 and 923 participants in each activity. During the first and second activities, symptom screening (100% and 100%), CXR (99.0% and 99.2%), sputum samples for microscopy (14.4% and 20.8%) and culture (13.9% and 18.1%) were taken. Bacteriological confirmed TB cases at the first and second activities were 22 (1066/100,000 population of case notification rate) and 10 (1083/100,000 population) ($p>0.05$) and all form TB cases were 85 (4118/100,000 population) and 41 (4442/100,000 population) ($p>0.05$). After excluding participants out of the Laukkai jurisdiction, 2057 and 801 were left. The bacteriological confirmed TB cases of the first and second activities became 22 (1070/100,000 population) and 7 (874/100,000 population) ($p>0.05$); and all form TB cases were 85 (4132/100,000 population) and 28 (3496/100,000 population), respectively ($p>0.05$). Geographical accessibility and participant recruitment were the barriers. The tested

method shows no significant CNR reduction with the available participants; however, it reveals consistently high CNR in the study area.

1.1.2. Feasibility study on role of INGOs in TB control in Kokang Self-administered Zone, Northern Shan State, Myanmar

Cross-sectional descriptive study was conducted in resource limited hard-to-reach high TB burden Kokang Self-administered Zone to explore potential of involving INGO staffs in raising community TB awareness, referral and defaulter tracing while conducting their field activities. Fifty-three face-to-face interviews with INGO staffs and 14 key informant interviews with INGO representatives and public health care providers were done during July 2014. Asia Medical Doctors Associations (AMDA), Asia Harm Reduction Network (AHRN), Health Poverty Action (HPA), World Vision (WV), CARE and Adventist Development and Relieve Agency (ADRA) were implementing health related activities in the whole area. Median age of the staffs was 27 years with inter-quartile range of 23-31 years. About 68% were males and over 87% were speaking local languages. More than 86% met their target population at least once a month. Working duration was 3.8 ± 1.9 hours. More than 98% of staffs were willing to share TB facts, 92.5% were willing to refer symptomatic patients. More than 81% said they could take anti-TB drugs on behalf of TB patients on their ways to the villages if requested. Defaulter tracing could be done by themselves (52.8%) or through their target population (50.9%). All participants from qualitative finding stated that close coordination and collaboration between local public health care providers and INGO staffs for future plan, training on TB management to their staff, available TB posters in Kokang language and referral form were crucial. It could be concluded that having close coordination and collaboration partnership with all INGOs can be a potential to improve community TB awareness, case detection and treatment outcome in Kokang Self-administered Zone.

1.1.3 Management of tuberculosis in hard-to-reach area, Laukkai Township, Northern Shan State, Myanmar

This cross-sectional descriptive study was conducted to explore the management of tuberculosis (TB) in Laukkai Township, hard-to-reach area. Fifty-one face-to-face interviews and 12 in-depth interviews were conducted with 37 General Practitioners (GPs) including two in-service GPs and three medical officers from Asian Harm Reduction Network (AHRN), and 14 Basic Health Staff (BHSs) during 2013. All GPs had medical training from three to seven years and 67.6% were Chinese who were trained from China. Compared to BHSs, total mean knowledge score on TB management was significantly low among GPs (30 ± 6.5 Vs. 14 ± 10.2). About 64% of BHSs and 10.8% of GPs had exposure on TB training given by National Tuberculosis Programme (NTP). AHRN was providing TB management in line with NTP guideline. Forty percent of GPs were providing anti-TB treatment and diagnosis was made from clinical and Chest X-Ray (CXR) findings. According to qualitative findings, 100 to 150 TB patients were taking treatment mainly at four GP kings yearly. Anti-TB drugs given by GPs were loose tablets or capsules originated from China. Treatment duration ranged from six months to one and a half to two years depending on the severity of the disease and follow-up CXR findings. Interval for follow-up examination depended on the severity of the disease and affordability of the patients. No sputum recheck was requested during follow-up examination except CXR. Existing management of TB by GPs in hard-to-reach area was not in line with NTP guideline. Therefore organizing them to involve in TB control in collaboration with NTP is essential.

2 NON-COMMUNICABLE DISEASES

2.1 METABOLIC DISEASES

2.1.1 Metabolic risk factors and associated morbidities in people residing in Pin Tee village, Pyin Oo Lwin Township: general health status, disease prevalence and socio-economic factors

A cross-sectional descriptive study was done in Pin Tee village, Pyin Oo Lwin Township in order to assess the general health status and socio-economic factors. A total of 270 subjects were recruited in the study. Of them, male female ratio was 42:58. Mean age (SD) was 44.6 years (16 years). Majority was between 51-60 years (20%). Sixty-five percent of subjects were under 60 year old. Shan and Bamar were majority having 60% and 30% respectively. Most of subjects were primary level education. Proportion of married person was 67% and single was 22%. Most of subjects (77%) were farmers of their own land. Family income level of 40% was between 150000 – 300000 kyats. Median household family size was 4. Most of subjects took traditional medicine (83%), multivitamin (34%) and iron tablets (11%). Sixty-nine percent of subjects had family history of hypertension. Secondly, one-third (31%) had family history of heart disease or stroke and 28% had family history of arthritis. Bone/joint pain was most frequently reported illness of subjects (63%). Second most frequent illness was hypertension (28%). History of fracture was reported by 19% of subjects. History of blood transfusion was also reported by 16%. Blood disorder was reported by 14%. Common sufferings among the subjects were insomnia (47%), dizziness (42%), weight gain (38%), and tiredness/fatigue (33%). Out of 270, 61 women had their age of menopause. Average age of menopause was 46 (SD=6) years. General health status was assessed based on free from suffering any signs and symptoms and personal psychosocial feeling on their daily living. For internal comparison, medium score was used as a cut-point for categorizing high and low health status. Male had higher percentage of "high health status" than female (62% vs. 51%, p = 0.057). Singles had higher percentage of "high health status" than ever-married (68% vs. 50%, p = 0.026). There was no other socio-demographic parameter which had association with health status. Associating dietary habit to general health status was "drink of milk". Milk drinkers had higher health status than non-milk drinkers (58% vs. 38%, p = 0.035). Other risk behaviors like alcohol drinking, smoking, sedentary life style and no exercise were not associating with general health status of villagers.

2.1.2 Metabolic risk factors and associated morbidities in people residing in Pin Tee village, Pyin Oo Lwin Township: bone mineral density and associated factors

A cross sectional descriptive study was conducted during 2014 to assess bone mineral density (BMD) status using Quantitative Ultrasound according to standard operating procedure among 270 participants from Pin Tee village of Pyin Oo Lwin Township. Mean age (SD) of the participants was 44.58 (±15.96) years (ranged from 18 to 86 years). Female participants were 57.8% and 39.1% were menopause with the mean menopausal age of 46.1 (± 6.1) years. More than half of the participants were Shan (59.6%), Bamar (30.4%), Da Nu (8.1%) and others (1.9%). Educational statuses of the participants were illiterate (4.5%), primary school level (65.2%), middle school level (14.8%), and university level (4.4%). About 78% were married and most of the participants (75.6%) were farmers and dependents were 10.4%. Mean duration of working with their current job was 24.12 (± 15.69) years among 239 working people. Monthly family income were 150,000-300,000 kyats (39.5%), 50,000-100,000 kyats (34.6%), <50,000 kyats (23.2%) and >300,000 kyats (2.7%). The mean T-score measurement of BMD was -0.69 (± 0.9) (ranged from -3.20 to 1.8). About 61% of

them were normal, 36.3% were osteopenia and 3% was osteoporosis. There was no detected osteoporosis among 104 male participants. However, 5.1% of 156 female participants were found to have osteoporosis. Among the osteopenia patients, female patients were more than male patients (44.2% vs. 25.4%), $p < 0.001$. It was statistically significant found that osteopenia and osteoporosis increased with increasing age ($p < 0.001$); however there was no association between BMI and BMD measurement.

3. HEALTH SYSTEMS RESEARCH

3.1 REPRODUCTIVE HEALTH

3.1.1 Abstinent-only or comprehensive sex education at schools: preferences of students, teachers and parents

School-based sexual health education is already well known for its ability to reach adolescents of diverse backgrounds in prevention of STI/HIV and unwanted pregnancies. In recent years, there has been a debate about the pros and cons of adopting abstinence-only approach as an alternative to a more comprehensive approach of sex education. Studies on both sides indicated the drawbacks of each method. The best solution will depend on the various social and cultural contexts of each country. This study aimed to explore the preferences of type of sex education among students, teachers and parents in Myanmar schools so that current school sex education could be tailored to the special needs of adolescents and the society. This was a school-based, cross-sectional descriptive study which was conducted in all Basic Education High Schools in Pyin Oo Lwin Township, Myanmar by using both qualitative and quantitative methods. A total of 150 students, 150 parents and 120 teachers were randomly selected to answer face-to-face interviews on their preferences between two types of sex education and their RH knowledge. A total of 8 FDG among students, 4 FDGs among parents and 4 FGDs among teachers were done to explore more details on their insights on school sex education for adolescents. Factors associated with main outcomes were determined using multivariate logistic regression. Qualitative data were analyzed by using modified grounded theory approach to content analysis. The preference for type of sex education among students, parents and teachers were contradicted to each other. While 73% of student's preferred comprehensive sex education at schools, only 38% of parents and 41% of teachers preferred such type of sex education. The 11th graders, students from BEHS (2) and (3) were more likely to prefer comprehensive sex education. Students who had a parent with low level of RH knowledge, or a negative behavioral intention were less likely to prefer comprehensive sex education at schools. There are contradictions of preferences for sex education among students, teachers and parents. While more students preferred comprehensive sex education, the teachers and parents preferred abstinence-only sex education. The levels of RH knowledge among all participants were unsatisfactory reflecting the insufficiency of current sex education classes at schools. To make the current school sex education more effective, authors suggested revising the current curriculum more specific and culturally appropriate. Regular trainings for the RH teachers at schools should be constantly provided. Same gender classes should be encouraged.

3.1.2 Current practice of contraception and intentions to use hormonal implants among married couples of reproductive age in Upper Myanmar

The hormonal implant, which is a reversible, simple, low-risk, long duration modern contraceptive method, is not popular and less utilized in Myanmar. This study investigated the knowledge, attitude, practice of married women of reproductive age on intentions to use

hormonal implants.This study was conducted by using a cross-sectional descriptive design with both qualitative and quantitative approaches. Multistage sampling method was applied. Two townships (Thibaw and Naungchio) of Northern Shan State were purposively selected. Four hundred married couples of reproductive age in two urban wards and two rural villages in each township were randomly selected. The women in different phase of contraception and their husbands were purposively selected to participate in focus group discussion (FGD) sessions. One FGD session with the wives and one with their husbands in each ward and villages were conducted. Respondents had average age 31.4 (7.0) years for the wives and 33.7 (7.8) years for the husbands. Median monthly family income of the couples was 150,000 kyats. Median expected number of children was 2. Perceived optimum interval between children was 3 years. Most frequent known contraceptive methods were "injectable", "oral pills", "IUD", "female sterilization" and "implants". Women had more awareness of all contraceptive methods than men. Less than 30% of respondents knew the effective duration of hormonal implant. Current contraceptive use rate was 66.7% among wives. Most frequently used method was "injectable" (64.2%) and "oral pill" (24.6%). Majority of users got spouses' encouragement on their use. However, detail discussion regard on contraception between couples was not frequent (5.6% of users).The discontinuation rate of previous users was 23.8%. Reasons were "to get more children" (40%) and "health concern" (20%).Hormonal implant method had ever heard by 70% of respondents. Ever-heard rate was higher among wives than husbands (78% vs. 61%, p<0.001). Willingness to use the implant method was not much different between wives and husbands (40% vs. 37%, p=0.388).Safe and long acting were most frequent reasons for willing to use. Frequent reasons for dislike the implants were "afraid to be inserted" (18%) and "less prefer than others" (15%).Community needs more information about hormonal implant for promotion of use.

SERVICES PROVIDED

ACADEMIC

Sr. No.	Name	Course	Responsibility
1.	Dr. Phyu Phyu Thin Zaw	- 8th APCRSHR Scientific Committee - The Lancet Myanmar Series	Member of Secretariat, Trainer and Reviewer Country coordinator