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Factors associated with the delivery by skilled birth attendants among mothers of children under one year of age in a conflict affected rural area, Kawkareik District, Kayin State, Myanmar

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Abstract

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Reducing maternal and newborn mortalities is a global priority and the lives of mothers and newborns can be ensured by skillful care of skilled birth attendants (SBA) during and after childbirth. The impact of reducing child mortality and improving maternal health lead to improvement in global health development and reducing of poverty. Armed conflict areas have been affected by unequal distribution of maternal health services. Therefore, this study aimed to determine the prevalence and associated factors with delivery by a SBA in Kawkareik district, Kayin state, Myanmar.

A community based cross-sectional study was conducted in a rural area among women aged 15-49 years, who had a child under the age of one year. The data collection was conducted from April to May 2016. Multi-stage sampling was used to interview 245 women with a questionnaire, including constructs of the Health Belief Model. Logistic regression was used to examine predictors of delivery with a SBA.

Among 245 mothers, 54.7% had delivered with a SBA, 24.5% delivered with an auxiliary midwife and 20.8% delivered with a traditional birth attendant. The factors associated with delivering with a SBA were, low mother's education (Adj OR=0.10, 95% CI=0.03-0.32), low perceived seriousness (Adj OR=0.42, 95% CI=0.18-0.94), high perceived barrier (Adj OR=0.40, 95% CI= 0.20-0.84) and high perceived benefit (Adj OR=3.30, 95% CI= 1.20-9.07).

The SBA rate was low. Therefore, strategies are needed to focus on accessibility of services and developing effective innovative intervention strategies, especially in a conflict affected area, through promoting the benefit in delivering with a SBA and child health and alleviate the problems that were found as perceived seriousness and perceived barriers on delivery with skilled birth attendants.

Keywords: skilled birth attendants, conflict rural area, Kayin State, Myanmar

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ปัจจัยที่มีความสัมพันธ์กับการคลอดโดยผู้มีทักษะในการช่วยทำคลอดของมารดาที่มีบุตรอายุน้อยกว่า 1 ปี ในชุมชนชนบทที่ได้รับผลกระทบจากภาวะความขัดแย้งของตำบลแก้วการิค รัฐคิน ประเทศพม่า

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บทคัดย่อ

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ว. สาธารณสุขและการพัฒนา 2018;16(1):1-15

การลดอัตราการตายของมารดาและทารกเป็นเรื่องเร่งด่วนและสำคัญในระดับโลกซึ่งจะทำได้ด้วยการให้บริการคลอดและได้รับการดูแลจากผู้ช่วยคลอดที่มีทักษะในระหว่างคลอดและหลังคลอด ผลกระทบของการลดอัตราการตายของทารกและส่งเสริมสุขภาพมารดาจะช่วยให้มีการพัฒนาสุขภาพและลดภาวะความยากจนได้ในระดับโลก ในชุมชนชนบทที่มีความขัดแย้งทางการเมืองมีผลกระทบต่อการกระจายระบบบริการสุขภาพ ดังนั้นงานวิจัยนี้จึงมีเป้าหมายในการวัดอัตราความชุก และปัจจัยที่มีความสัมพันธ์ กับการคลอดโดยผู้ช่วยคลอดที่มีทักษะช่วยคลอดในตำบลแก้วการิค รัฐคิน ประเทศพม่า

การวิจัยนี้เป็นการวิจัยแบบตัดขวางในชุมชนชนบทในกลุ่มประชากรที่เป็นมารดาที่มีอายุระหว่าง 15 ถึง 49 ปี ที่มีบุตรอายุต่ำกว่า 1 ปี เก็บข้อมูลในระหว่าง เดือนเมษายน ถึง เดือน พฤษภาคม 2559 การสุ่มตัวอย่างทำโดยการสุ่มแบบหลายชั้น โดยคำนวณได้กลุ่มตัวอย่างจำนวน 245 คน เก็บข้อมูลโดยใช้ การสัมภาษณ์ ตามแบบสอบถามที่ได้จัดทำขึ้นตามกรอบทฤษฎี ความเชื่อทางสุขภาพ ข้อมูลที่ได้นำมาวิเคราะห์แบบการถดถอยลอจิคติคพหุคูณ เพื่อทำนายปัจจัยในการมาคลอดกับผู้ทำคลอดที่มีทักษะช่วยคลอด

พบว่าจากมารดา 245 คนมี ร้อยละ54.7% ได้คลอดกับผู้ที่มีทักษะช่วยคลอด และ 24.5% คลอดกับผู้ช่วยผดุงครรภ์ 20.8% คลอดกับหมอตำแย ปัจจัยที่มีความสัมพันธ์กับการคลอดกับผู้มีทักษะช่วยคลอด ได้แก่ ระดับการศึกษาของมารดาในระดับต่ำ (Adj OR=0.42, 95%CI=0.03-0.32) การรับรู้ภาวะความรุนแรงในระดับต่ำ (Adj OR=0.42, 96%CI=0.18-0.94) การรับรู้ถึงอุปสรรคในระดับสูง (Adj OR=0.40, 95% CI=0.20-0.84) และการรับรู้ประโยชน์ของการคลอดกับผู้ช่วยคลอดที่มีทักษะ ระดับสูง (Adj OR=3.30, 95% CI= 1.20-9.07)

ผลการวิจัยพบว่ามารดาคลอดกับผู้ช่วยคลอดที่มีทักษะมีจำนวนน้อย ดังนั้นจะต้องเพิ่มการเข้าถึงบริการทำคลอดอย่างปลอดภัยและพัฒนากระบวนการที่จะช่วยส่งเสริมให้มารดาเลือกรับบริการในการคลอดอย่างปลอดภัยกับสถานบริการทางสุขภาพในชุมชนชนบท โดยเฉพาะชุมชนที่ได้รับผลกระทบของความขัดแย้ง ควรทำโดยให้ข้อมูลให้หญิงตั้งครรภ์เข้าใจและรับรู้ถึงประโยชน์ในการคลอดกับผู้ช่วยคลอดที่มีทักษะต่อภาวะสุขภาพของทารก และให้ข้อมูลให้รับรู้ถึงความรุนแรงของปัญหาที่อาจจะเกิด รวมทั้งให้เห็นว่ามีอุปสรรคน้อยในการไปรับการคลอดกับผู้ช่วยคลอดที่มีทักษะในการทำคลอด

คำสำคัญ: ผู้มีทักษะในการช่วยทำคลอด ชุมชนชนบทที่มีความขัดแย้ง รัฐคิน ประเทศพม่า

Introduction

Reducing maternal and newborn mortalities is a global priority and the lives of mother and newborn can be ensured by skillful care of SBA during and after childbirth.[1-2] The impacts of reducing child mortality and improving maternal health lead to improve the global health development and reduce poverty,[1,3,4] Most maternal deaths, stillbirths and neonatal deaths can be corrected by SBA during childbirth and emergency condition, such as in case of obstetric complications occurring and the SBA can manage effective interventions for saving the lives of both mother and newborn.[3] All women and children from all countries need skilled care during pregnancy, delivery, newborn and postnatal, after 45 days of delivery.[1]

SBA is involving an important role during delivery by providing emergency obstetric and newborn care and the rate of SBA is an internationally accepted indicator of the success of interventions to achieve the Millennium Development Goals 4 and 5 for child mortality and maternal health.[1,3,5] The rate of SBA is positive contribution of reducing maternal mortality rate (MMR).[4,6] .The SBA rate is different between developing countries and developed countries.[6-7] Unequal distribution in the rate of SBA utilization also occurred among urban (87%) and rural (56%) populations in developing countries.[7-8]

In Myanmar, major non-Burma ethnic groups are the Arakanese, Chin, Kachin, Karen, Karenni, and Mon, all of which have their own states in which they are the dominant ethnic group.[9] All these states have ethnic insurgent activities of varying intensities against the Myanmar Military (Tamadaw). Armed conflict affects an unequal distribution of maternal health in Myanmar.[9] In 2013, based on data of the health information system working group (HISWG) survey, infant mortality rate (IMR) was 91 per 1000 live birth in Eastern Burma while it was 41 per 100 live birth for the whole county, and 73% of mothers delivered with a non-SBA, a traditional birth attendant (TBA) in the study area.[9]

Although delivery by SBA rate has been dramatically increasing, one third of pregnant mothers are still delivering with unskilled birth attendants and one in fourth of children are being delivered without caring by a SBA.[10] This study aims to understand contextual factors that are influencing delivery with a SBA in conflict affected rural area, Kayin State. Contextual factors are conceptualized by components of the Health Belief Model in order to determine delivery with a SBA.[11] Study findings will give inputs in improving maternal and child health status in the contexts of Kayin State.

Methods

Study setting

The study district is in Kayin State, which is situated on the eastern part of Myanmar. It covers an area of 1783.69 square kilometers with a total population of 235,924 people (49 % male and 51 % female), the majority (78%) of which reside in villages. In the district, there are one 100 bedded hospital, 7 rural health center and 14 private clinics. Seven rural health centers provide maternal and child health care services for rural population.

Study design and participants

Community based cross sectional study was conducted in 245 women who had children under

one year of age at the time of data collection. Data was collected April 21st to May 20th 2016. Multi-stage sampling was applied to select participants. In Kawkareik District Health Department, there are 7 Rural Health Centre (RHC) and each RHC have 4 to 5 Sub Rural Health Centre (SRHC) and every SRHC over average 5-10 villages. Therefore one SRHC were selected randomly from each RHC and among these selected SRHC, 3 villages was selected through simple random sampling from each SRHC. Finally 10-12 numbers respondent was selected from each village by using simple random sampling method. Inclusion criteria of participants are women 15-49 years with at least one child (under one year) and women who are living at residence village at least one year.

Sampling method

Multistage sampling was used to recruit a sample of 245 mothers with a child under one year of age. In Kawkareik District Health Department, there are seven Rural Health Centres (RHC) and each RHC has 4 to 5 Sub-Rural Health Centres (SRHC) and every SRHC covers on average 5-10 villages. Therefore, one SRHC was selected randomly from each RHC and among these selected SRHCs, three villages were selected through simple random sampling from each SRHC. Then three villages were randomly selected from each SRHC and finally 10-12 respondents were selected from each village by using simple random sampling.

Definition of skilled birth attendants

SBA is an accredited health professional-such as midwife, doctor or nurse who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate postnatal period and in the identification, management and referral of complications in women and newborn.[1]

Measurement

The questionnaire consisted of the following sections, socio-demographic structure, obstetric history, accessibility of services, and knowledge on pregnancy, safe delivery and danger signs, perceived seriousness, perceived susceptibility, perceived benefits, perceived barrier, cue to action and perceived self-efficacy. Socio-demographic questions included age, religion and race, educational level of respondent and husband, occupational status and monthly income.

Questions on obstetric history and accessibility of services were close ended and multiple choice questions. Those were adopted from one study in Indonesia,[11] including costs, physical access, quality of services (type of health provider, relationship with provider (attitude of provider, being treated with respect, and availability of services), complication on mother and newborn.[11] In total 19 questions were included.

The questions on knowledge of pregnancy, safe delivery and danger signs were developed based on the maternal and child health (MCH) hand book, and five portions of questions were included.[12] The score was 2 for a correct answer and 1 for an incorrect answer and 0 for not known. The level of knowledge was categorized into three groups: High knowledge, moderate knowledge and low knowledge based on quartile statistic.

The perception questions were adapted from "Health Belief Model of Breast Cancer Screening

(BCS) for Female College" by Frankenfield.[13] Original questions were developed based on the health belief model and questions were constructed by perceived seriousness of breast cancer with 6 questions, perceived susceptibility with 12 questions, perceived benefit with 11 questions, perceived barrier with 17 questions, cue to action with 8 questions and self-efficacy with 12 questions. Additionally, self-efficacy questions were adopted from a study on "Birth plans and health facility based delivery in rural Uganda."[14-15]

Based on above two reference studies, questions were constructed into perceived seriousness (6 questions), perceived susceptibility (3 questions), perceived benefits (3 questions), perceived barrier (7 questions), cue to action (4 questions) and self-efficacy (3 questions) on delivery by SBA. The result of reliability test were for Cronbach's alpha were as follows, Knowledge questions was 0.77, perceived seriousness was 0.55, perceived susceptibility was 0.45, perceived benefit was 0.66, perceived barrier was 0.80, cue to action was 0.70 and self-efficacy was 0.50.

In this study, perception questions consisted of both negative and positive aspects. For positive questions, the score was 5 for strongly agree, 4 for agree, 3 for Neutral, 2 for disagree and 1 for strongly disagree. For negative questions, the score was 5 for strongly disagree, 4 for disagree, 3 for neutral, 2 for agree and 1 for strongly agree. The level of attitude was divided into high, moderate and low.

These questions were developed based on the conceptual framework and prior to the data collection they were pre-tested to assess reliability and validity in a sample of 30 mothers. Then finalized questions were written in English, then translated to Myanmar and back translated into English by two MNCH experts.

Data processing and analysis

Data were collected by two trained data collectors who had four years of experience as field workers, and they were Kayin by race. One assistant had completed 10th grade and another had completed 11th grade. They were trained on the questionnaire administration, purpose, ethics and procedure of the survey one day by the principal investigators. The study protocol was approved by the Ethical Review Board of Mahidol University (Certificate of approval number: **2016/121.2903**). Written informed consent was obtained from each participant prior to the interview.

Collected questionnaires were checked for data validity, coded and entered into SPSS version 22 software. Descriptive statistics were used to describe the date. Scales were not normally distributed, therefore scores were trichotomized (based on statistically equal proportions) for frequency distribution and dichotomized (using the median as cut-off score) for the multivariable model. Bivariate analysis and multivariable logistic regression was conducted to calculate the crude odd ratio (COR) with 95% Confidence Intervals (CI) to determine the association between independent variables and dependent variable (delivery by skilled birth attendant). All variables that were significant at bivariate analysis, p-value <0.05, were included in multivariable model.

Results

Delivery by skilled birth attendant was the dependent variable and respondents were mothers with children under one year of age. Respondent answers were cross-checked with a health volunteer report during interview. As a result, 54.7% of respondents

delivered with a SBA.

There were 245 mothers with a child under one year of age that participated in this study. The age range was 18 to 47 years, and 56.3% of mothers were less than 29 years old. Four-fifth of mothers (79.2%) were Kayin and 98% were Buddhist, 22.9% of mothers and 27.8% of husbands were not illiterate and nearly 50% of mothers and 44% of husbands attained primary education. Comparatively, 20.8% of mothers reached secondary education level and only 17.6% of husbands attained secondary education level. About half of mothers (51.8%) were dependent and less than one third (29.8%) reported to engage in farming and 8.6% were manual workers. Also, about half of the husbands (49.4%) were working as a farmer. One third of husbands (35.1%) was working as manual worker and 9.4% were working in their own business. More than half of the mothers (58.8%) were living in their own house, 44.5% lived with 3 to 5 family members and 44.9% were staying together with 6 to 9 family members. About three quarters of mothers (74.3%) managed their family income by themselves and only 18% reported that their family incomes were managed by their parents (Table 1).

Table 1 Number and percentage of respondents by socio-demographic factors

Variables (Socio-demographic characteristics)		n	%
Mother's age in years (Median=28, Min=18, Max=47)	15-19	18	7.3
	20-29	120	49
	30-39	73	29.8
	40-49	34	13.9
Marital Status	Married	245	100
Religious	Buddhist	240	98
	Islam	4	1.6
	Hindu	1	0.4
Race	Burma	21	8.6
	Kayin (Pha Lone)	93	38
	Kayin (Shaung)	101	41.2
	PaO	4	1.6
	Mon	20	8.2
	Others	6	2.4
Living status	Own house	144	58.8
	Rental house	1	0.4
	Parent's home	83	33.9
	Father/mother-in-law's house	11	4.5
	Relative's house	6	2.4

Table 1 Number and percentage of respondents by socio-demographic factors (Cont.)

Variables (Socio-demographic characteristics)		n	%
Number of family members	3-5	109	44.5
	6-8	110	44.9
	9 and above	26	10.6
Monthly income	≤30000MMK	124	50.6
	30001-90000 MMK	60	24.5
	90001 MMK and above	61	24.9

Education and occupation of mothers and their husbands		Mothers		Husbands	
		n	**%**	**n**	**%**
Education	No formal education	56	22.9	68	27.8
	No formal education but can read and write	21	8.6	26	10.6
	Primary education	117	47.8	108	44.1
	Secondary education	30	12.2	26	10.6
	High school	15	6.1	14	5.7
	College and above	6	2.4	3	1.2
Occupation	Dependent/not working	127	51.8	4	1.6
	Farmer	73	29.8	121	49.4
	Own business	12	4.9	23	9.4
	Employee	2	.8	3	1.2
	Government	10	4.1	8	3.3
	Manual worker	21	8.6	86	35.1

Accessibility of services and knowledge of danger signs

Most of the mothers (78.8%) were living within 3miles (5 km) and 21.2% were residing more than 3 miles (5 km) away from the nearest health facility; the most available mode of transportation to the health facility was the motor-cycle (63.7%), followed by walking (13.1%). Over one fourth of the mothers (29%) reported that transportation charges was a burden to them. Almost half of the mothers (46.5%) had a high level of knowledge of antenatal, postnatal and newborn's danger signs (Table 2).

Table 2 Distribution of respondents by accessibility to SBA or health facilities and knowledge on AN, PN and newborn's danger signs

Variables		n	%
Distance from home to health facility	0.1 to 3 miles	193	78.8
	More than 3 miles	52	21.2
Available Transportation	Walking	32	13.1
	Bullock	5	2.0
	Boat	12	4.9
	Bicycle	3	1.2
	Motorcycle	156	63.7
Burden for transportation charges(n=244)	No	173	70.6
	Yes	71	29.0
Knowledge on AN, PN and Newborn's danger signs	Low (0- 30.6)	79	32.2
	Medium (30.7 – 32.9)	45	18.4
	High (more than 32.9)	114	46.5

SBA=Skilled birth attendant; AN=Antenatal care; PN=Postnatal care

Health beliefs of mothers

Mothers who had delivered their last born with the SBA had significantly higher health beliefs in terms of seriousness, susceptibility, benefits, perceived lower barriers, cues to action and self-efficacy of delivery with a SBA than mothers who had delivered their last born with an unskilled birth attendant (Table 3).

Table 3 Distribution of the Health Belief Model components by SBA

Health belief model component		Unskilled birth attendant	Skilled birth attendant	Chi-square
	Level (scores)	n (%)	n (%)	P-value
Perceived seriousness of delivery by SBA	Low (0-19.9) Medium (20-22.9) High (23+)	47 (65.3) 35 (44.3) 29 (30.9)	25 (34.7) 44 (55.7) 65 (69.1)	<0.001
Perceived susceptibility of pregnancy and delivery by SBA	Low (0-9.9) Medium (10-12.9) High (13-15)	41 (74.5) 40 (41.7) 30 (31.9)	14 (25.5) 56 (58.3) 64 (68.1)	<0.001
Perceived benefit of delivery by SBA	Low (0-11.9) Medium (12-14.9) High (15-20)	43 (60.6) 42 (46.2) 26 (31.3)	28 (39.4) 49 (53.8) 57 (68.7)	<0.001
Perceived lower barrier of delivery with SBA	Low (0-14.9) Medium (15-22.9) High (23-35)	59 (80.8) 28 (32.6) 24 (27.9)	14 (19.2) 58 (67.4) 62 (72.1)	<0.001
Cues to action	Low (0-12.9) Medium (13-17.9) High (18-20)	49 (60.5) 42 (51.9) 20 (24.1)	32 (39.5) 39 (48.1) 63 (75.9)	<0.001
Self-efficacy of delivery with SBA	Low (0-8.9) Medium (9-10.9) High (11-15)	53 (65.4) 16 (44.4) 42 (32.8)	28 (34.6) 20 (55.6) 86 (67.2)	<0.001

Predictors of delivery with SBA

In adjusted Logistic Regression Analysis, high perceived benefits was positively associated with SBA, while higher education, low perceived seriousness, high perceived barriers was negatively associated with SBA (Table 4).

Table 4 Crude and adjusted odds ratios (OR) and 95% confidence intervals (CI) of factors associated with delivery by skilled birth attendant among mothers

Independent variables	COR (95% CI)	P-value	Adj OR (95% CI)	P-value
Race				
Others ethnic group	1			
Kayin (Phalone and Shaung)	0.23 (0.07-0.38)	0.892	---	
Husband Occupation				
Manual Worker	1		1	
Others(Farmer, Own Business	0.29 (0.14-0.46)	<.001	0.56 (0.21-1.53)	0.257
Mother's education				
Secondary or above	1		1	
Primary or less	0.32 (0.19-0.45)	0.010	0.10 (0.03-0.32)	0.000
No of family members				
3-5 members	1		1	
6 members or more	0.17 (0.05-0.29)	0.012	1.85 (0.92-3.72)	0.083
Perceived susceptibility				
High	1		1	
Low	0.34 (0.22.0.46)	<.001	0.47 (0.21-1.03)	0.059
Perceived seriousness				
High	1		1	
Low	0.36 (0.25-0.49)	<.001	0.42 (0.18-0.94)	0.035
Perceived barrier				
Low	1		1	
High	0.34 (0.22-0.46)	<.001	0.40 (0.20-0.84)	0.015
Perceived benefits				
Low	1		1	
High	2.58 (1.53-4.34)	<.001	3.31 (1.20-9.07)	0.020
Cues to action				
High	1		1	
Low	0.29 (0.17-0.41)	<.001	0.65 (0.27-1.61)	0.353
Self-efficacy				
High	1		1	
Low	0.26(0.14-0.38)	<.001	0.62 (0.30-1.30)	0.200

COR=Crude Odds Ratio; CI=Confident Interval; AdjOR=Adjusted Odd Ratio

Discussion

Although utilization of SBA rate has increased over time, around one third of women still continue to have unsafe deliveries (MOH/UNICEF 2013)[16]. This study revealed (54.7%) of respondent were delivery with SBA. Left of mother 24.5% and 20.7% of women were delivered with AMW and TBA. Women living in rural area still practice cultural norms and therefore utilization of TBA is still high in rural area[17-18]. This study revealed that only 54.7% of mothers had delivered their last born with a SBA. This finding is slightly lower than country wide SBA rate of the 2013 WHO report of South East Asia region for rural women in Myanmar (63%).[19] According to that report, the country wide SBA rate in Myanmar was 70.6% and the rate of SBA in rural area was 63%.[19-20] One study conducted in Myanmar found that 74% of deliveries was conducted by SBA.[21] Compared with this study, SBA rate was quite good because of urban setting population.[21] Another study in urban Myanmar found the utilization rate of SBAs was 70%, but the definition of "skilled" differed with this study. In a previous study, the Lady Health Visitor, Midwife and including Auxiliary Midwife are SBA.[22] In the Myanmar health system, the Auxiliary Midwife is not included in skilled health personal. Another study that was also done in Myanmar at the delta region found that 51.4% of home deliveries were delivered by SBA.[23] In summary, the current study results showed that the rate of SBA was slightly lower than the national figure because the study area is in a conflict area that has experienced conflict for over 60 years by Army and Non-State Actors. As a consequence of the long conflict, the education of the community is poor that is leading to poor knowledge in health. Because of the unstable setting, health infrastructure is also not sufficient and difficult to access.

The study found that higher education of the mother was associated with delivery by SBA. This result is supported by previous study findings in Myanmar, Afghanistan, Nepal and Ethiopia.[16, 24-27] Education is very important in health care decision making.[28] In adjusted analysis, perceived seriousness, perceived benefit and perceived barrier were significant associated factors with delivery by SBA. This study showed that women perceived that delivered with SBA is important for saving the life of the mother and baby and were more likely to deliver with the SBA. Similar results were also found in a qualitative study that was conducted in Northern Uganda in post-conflict area.[29] Rural women tend to perceive that pregnancy and delivery is a normal human process and that is why SBAs may not be considered important in the delivery process.[30-31] Therefore, the perception of the seriousness of delivery complications is a predictor of delivering with the SBA. The study found that women who had high perceived SBA benefits beliefs were 3.3 times more likely to delivery with the SBA than women who perceived that they had low benefit. This study result was also found in a review of determinants of delivery services use.[32]

This study found in agreement with previous studies,[33-34] that women with low perceived barriers to delivery with SBA were more likely to deliver with a SBA than women with high perceived barrier beliefs. Belief in a traditional healer was also one kind of barrier among rural women to deliver with the SBA.[35] One study in Ghana pointed out that provider fees was one of the barriers to access

the quality health care services from a skilled health provider.[36] If they perceived provider fees as barriers, they would not deliver with the SBA.34 Two studies conducted in Nepal also showed income and transportation difficulty were barriers to use health care services from SBA.[35,37]

As found in this study, two studies in Ethiopia also found that perceived benefits are one of the more powerful perceptions in prompting people to adopt healthier behaviours.[38] The greater the perceived benefit, the greater the likelihood of engaging in new behaviors to decrease the risk. Additionally, in behavior changing processes, it is complexity and people need to easily access the health information and need to create a favorable environment to engage in changing new behavior. Therefore, cues to action becomes one added factor in the HBM. Then people's ability is needed to do positive new behaviors. That is why self-efficacy is added in the HBM.[39] Therefore, more studies are needed to find out more associated factors that are related with perceived barriers in order to use effective intervening in health promotion of MCH activities.

Study limitations

The study was cross-sectional and therefore no causative conclusions can be drawn. Data were collected from 8 Rural Health Centers from one district, which is a conflict affected area in Myanmar, so they are not generalizable to other states and divisions in Myanmar. A further limitation was that two of the used sub-scales had a low Cranach alpha.

Conclusions and Recommendations

The rate of SBA in this rural area is lower than the country wide data of SBA utilization in rural areas. Higher mother's educational level, high perceived seriousness, high perceived benefit, low perceived barriers on the delivery with a SBA were significant predictors for the delivery by a SBA. Therefore, strategies are needed to focus accessibility of services and to develop effective, innovative and realistic strategies, especially for conflict affected areas, through promoting of knowledge for delivering with a SBA and child health and alleviate the problems that were found as perceived seriousness and perceived barriers on delivery with a SBA. Health promotion activities should be targeted at lower educated mothers. Qualitative research is also needed in order to know the problems as to why women have difficulty in accepting to deliver with a SBA. Based on the study results, policies need to pay special attention to people who are living in conflicted affected areas because the context is more complex than other areas in Myanmar.

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