

ORIGINAL ARTICLE

Factors associated with post-natal care utilization among mothers in Maldives

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Abstract

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Post Natal Care (PNC) is an important service for mother and newborn during the vulnerable period. Proper postnatal follow up would help to prevent many maternal and fetal deaths. It can identify the danger signs of life threatening for mothers and babies. According to WHO, globally PNC utilization is quite low, especially in developing countries. In Maldives, which is a unique archipelago of 1192 islands, the information about the prevalence of PNC and factors associated with PNC has been limited. This cross sectional study was conducted to determine the prevalence of postnatal care utilization and factors associated with PNC among mothers in Maldives islands.

This research was a community based cross-sectional study undertaken in three different communities with primary, secondary and tertiary hospitals in Maldives. The data were collected from a sample of 253 mothers drawn from the study population using convenient sampling technique during May 3rd to 25th May 2015. Self-administered questionnaire, based on the factors from Andersen's health and utilization model including predisposing, enabling, and need factors, also the Donabedian model of healthcare quality, was given to collect the data. Our outcome variable focused on postnatal care utilization that categorized as whether they complete postnatal visit within 6 weeks after child birth or not. For data analysis, Chi-square test and multiple logistic regression were applied to evaluate factors associated with PNC.

The study revealed that the prevalence of PNC utilization was 34%. The results of multiple logistic regression indicated that cost of transportation, health insurance scheme, and mental health problem were the significant predictors for PNC utilization. Mothers who perceived that cost of transportation is expensive had more chance of getting PNC utilization 1.98 times (95% C.I:1.05 – 3.76) compared to those perceived that the cost is low. Mother who thought that the national health insurance scheme is very good had more chance of PNC utilization with 2.9 times (95% C.I: 1.21-7.03). Mother experienced mental health problem increased more chance of completing PNC with 2.0 times (95% C.I.: 1.07-4.05).

The study indicated that the prevalence of postnatal care utilization was very low. Therefore, strengthening the provision of health insurance scheme is very important to enhance the accessibility for health care service. For mothers with mental health problem, individual counseling is recommended. Regarding cost of transportation, the establishment of affordable public transportation would be a supportive factor for better utilization of health services.

Keywords: postnatal care utilization, primary hospital, secondary hospital, tertiary hospital, Maldives

ปัจจัยที่มีความสัมพันธ์กับการรับบริการที่คลินิก หลังคลอด ในหมู่เกาะ มัลเดิฟส์

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บทคัดย่อ

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ปัจจัยที่มีความสัมพันธ์กับการรับบริการที่คลินิกหลังคลอด ในหมู่เกาะ มัลเดิฟส์
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การรับบริการที่คลินิกหลังคลอดเป็นสิ่งที่สำคัญอย่างยิ่งสำหรับมารดาและทารกแรกเกิด การรับการบริการหลังคลอดที่เหมาะสมจะช่วยป้องกันการเสียชีวิตของทารกและมารดา โดยการตรวจหลังคลอดจะสามารถระบุสัญญาณอันตรายที่เกิดขึ้นกับมารดาและทารกแรกเกิดซึ่งจะช่วยป้องกันการเสียชีวิตของทารกและมารดาได้อย่างมีนัยสำคัญ องค์กรอนามัยโลกระบุว่าการรับบริการที่คลินิกหลังคลอดของประชากรทั่วโลกมีจำนวนค่อนข้างต่ำโดยเฉลี่ยอย่างน้อยประมาณ 60% ของประชากรในประเทศกำลังพัฒนา สำหรับประเทศไทยมัลเดิฟส์ ข้อมูลเกี่ยวกับ ความชุกของ การรับบริการที่คลินิกหลังคลอด และ ปัจจัย ที่เกี่ยวข้องกับการรับบริการที่คลินิกหลังคลอดยังคงจำกัด การศึกษาครั้งนี้มีวัตถุประสงค์เพื่อศึกษา ความชุกของการรับบริการที่คลินิกหลังคลอด และปัจจัย ที่เกี่ยวข้อง กับการรับบริการที่คลินิกหลังคลอดของมารดา ใน หมู่เกาะ มัลเดิฟส์

การศึกษานี้เป็นการเก็บข้อมูลแบบภาคตัดขวางโดยเก็บข้อมูลจากโรงพยาบาลระดับปฐมภูมิ ทุติยภูมิ และ ตติยภูมิในประเทศไทย มัลเดิฟส์ การสุ่มตัวอย่างแบบตามความสะดวกมีจำนวนกลุ่มตัวอย่างทั้งหมด 253 คน ดำเนินการระหว่าง 3-25 พฤษภาคม 2015 การเก็บข้อมูลโดยใช้แบบสอบถามซึ่งใช้ทฤษฎีของ Andersen's health and utilization model ซึ่งประกอบด้วยตัวแปร predisposing, enabling, และ need ร่วมกับ the Donabedian model of healthcare quality มีตัวแปรผล คือ ภายในช่วง 6 สัปดาห์หลังจาก การคลอดบุตร มารดาการรับบริการที่คลินิกหลังคลอดครบ 3 ครั้งหรือไม่ วิเคราะห์ข้อมูลโดยใช้การทดสอบไคสแควร์ และการวิเคราะห์ทดสอบโดยโลจิสติกพหุคุณ

การศึกษาพบว่า ความชุกของการรับบริการที่คลินิกหลังคลอด คิดเป็นร้อยละ 34 ผลการวิเคราะห์ทดสอบโดยโลจิสติกพหุคุณ พบว่าปัจจัยที่มีผลต่อการรับบริการที่คลินิกหลังคลอด ประกอบด้วย ค่าใช้จ่ายในการเดินทางเพื่อไปรับบริการ โครงการประกันสุขภาพ และมารดาที่ประสบปัญหาสุขภาพจิต โดยพบว่ามารดาที่ตระหนักร่วมกับใช้จ่ายในการเดินทางมีราคาสูงกว่า มีโอกาสที่ไปรับบริการจากคลินิกหลังคลอดสูงกว่า 1.98 เท่า (95% CI : 1.05-3.76) มารดาที่ตระหนักร่วมกับโครงการประกันสุขภาพแห่งชาติเป็นสิ่งที่มีประโยชน์มีแนวโน้มที่จะรับบริการจากคลินิกหลังคลอดสูงกว่า 2.9 เท่า (95% CI : 1.21-7.03) ปัญหาสุขภาพจิตของมารดาหลังคลอด สามารถเพิ่มโอกาสที่มารดาจะใช้บริการจากคลินิกหลังคลอด 2.0 เท่า (95% CI : 1.07-4.05)

ผลการศึกษาแสดงให้เห็นว่าความชุกของการรับบริการที่คลินิกหลังคลอดอยู่ในระดับต่ำ ดังนั้นการปรับปรุง โครงการประกันสุขภาพเพื่อเพิ่มการเข้าถึงการให้บริการด้านการดูแลสุขภาพเป็นสิ่งสำคัญ สำหรับมารดาหลังคลอดที่มีปัญหาสุขภาพจิตการให้คำปรึกษาส่วนบุคคลเป็นสิ่งที่ควรดำเนินถึง ในประเด็นเรื่องการเดินทาง เนื่องจากมัลเดิฟส์เป็นประเทศที่ล้อมรอบด้วยหมู่เกาะ จำนวนมาก ค่าใช้จ่ายในการเดินทางจะเป็นปัจจัยสำคัญในการเข้าถึงการบริการด้านสุขภาพดังนั้นการพัฒนาระบบทั่งมวลชุมชน สาธารณะที่เหมาะสมจะสามารถส่งเสริมการเข้าถึงการบริการด้านสุขภาพของประชากร

คำสำคัญ: การรับบริการที่คลินิกหลังคลอด โรงพยาบาลระดับปฐมภูมิ โรงพยาบาลระดับทุติยภูมิ โรงพยาบาลระดับตติยภูมิ หมู่เกาะมัลเดิฟส์

Introduction

Among 130 million newborn babies, four millions are dying within the first four weeks of life, with one third of all neonatal deaths occurred in the first week.¹ Although 99% of neonatal deaths arise in low and middle-income countries, little progress in reducing such deaths in the past 10-15 years of these countries was made. With this reason, focusing on newborn care to reduce new born death in developing country is very challenging.

Postnatal care is a primary step to save mother and newborns life.² Postnatal care provides all essential routine care for new bones, and extra care for babies with special conditions such as low birth weight or premature babies. Postnatal care is the time to identify the danger signs and symptoms for early referrals and clinical management. In this regard, postnatal care utilization is a reassuring protection to decrease maternal and neonatal mortality and other neonatal complication. In many countries, Antenatal Care (ANC) coverage is very high, whereas Postnatal Care Coverage (PNC) is lesser³. WHO defined^{4,5} postnatal period as the first six weeks after delivery composed of three visit. First visit will be on the 3rd day between 48 – 72 hours of baby's life, second visit will between 7- 14 days and the last visit will on the sixth weeks of delivery⁵. Proper follow up can prevent the newborn and mother from deaths and other infectious disease.

Maldives is a very small country composed of 341,256 total population⁶ with 173,172 male and 168,084 female. Maldives has a unique archipelago of 1192 islands; only 194 islands are inhabited⁷. Because islands are being clustered in the Indian Ocean, Maldives government initiates maternal and

child health care at each level. The government classified the hospital as thirteen atoll hospital (primary level), six regional hospital (secondary level), and 188 health centers at sub district level. Additionally, there is one government hospital and one private hospital in the capital island of Maldives (Male City) with tertiary care facilities.

In Maldives, maternal mortality rate is 13 per 1000 live births. Women who had 4 or more ANC visits was 85%. Among mothers who delivered in the health facility, 46% had received postnatal care within 4 hours, and 21% of mothers received postnatal care after 2 days of delivery⁸. Research study in Maldives about the factors associated with postnatal care utilization are limited. Factors associated with postnatal care utilization among the mothers are still questionable and need to explore. Therefore, this study aims to determine the prevalence of postnatal care and examine the factors associated with postnatal care utilization among mothers living in Maldives islands.

Methods

This study was a community based cross-sectional research conducted among mothers living in three different level of hospital in the islands of Maldives. We chose to collect data toward southern part of Maldives because the population are the original Maldivian people. After calculation sample size from 67% of estimated population of PNC utilization in Maldives that was stated in Maldives demographic health survey 2009, our study took account of 253 mothers from the southern part of the country. For more readily accessible to researcher, a convenience sampling by asking mothers who came to receive the

growth monitoring and vaccination from the target clinics were selected during May 3rd to 25th May 2015. Primary hospital, Gn. Fuvahmulak; secondary hospital, Addu atoll; and tertiary hospital, capital Male were included in the study. The study areas were selected based on the transport rout for the cost effectiveness of the study.

Data were obtained from mothers with 6 month to two-year-old child who came to register growth monitoring service from the particular hospital during the working hours. A structured questionnaire was given to the respondents for taking home to fill. Respondents were given 2-4 days' time in order to complete the questionnaire. Based on the Anderson's behavioral model of health care utilization together with Donabedian's model of quality care, the predictors in this study included predisposing factors, enabling factors, need factors, and perceived quality of care factors. Under the predisposing factors; age, education, occupation, type of family, knowledge, and distance to hospital and cost of transport were included. Enabling factors include the birth place, number of children, hospital hours, income and health insurance. As need factors, after birth complication, breastfeeding difficulty, sickness of baby, health education, perceived mental health problem such as depression and anxiety during PNC period, and life threatening experience after birth were included. Perceived quality of care consists of counselling, effectiveness of doctors treatment, and opinion about the first postnatal care quality. The main outcome variable focused on postnatal care utilization that categorized as whether they complete 3 postnatal visit within 6 weeks after child birth or not.

For the reliability, a pilot study was conducted among 30 mothers with 6 month to two-year-old child living in one part of the capital named "Hulhumale". This is an artificially reclaimed island that take 20 minutes by engine Dhoni (sea vessel) to the capital Male and later declared as a part of capital city. The result was measured using Cronbach alpha test; getting Cronbach coefficient 0.616. This study was approved by the experts committee at Mahidol University together with National Research Committee (NRC) at Ministry of Health, Maldives.

Data were analyzed by SPSS version 21. Descriptive statistics were applied to describe the basic features of the data. Univariate analysis were used to find the association between the independent variable and dependent variable. Finally multiple logistic regression were used to predict the factors associated with the PNC utilization.

Results

As shown in table 1, the majority (83.4%) of the subject were less than 30 years of age, whereas respondents above 30 years were 16.6%. With regards of education, over 2/3 (79.4%) of the subjects were below the level of college, while 20.6% of respondents reported as college and above. Over 2/3 (70%) of spouse education was higher than secondary education, while 30% of the respondents spouse had education less than primary level. More than half (55.3%) of the respondents were living in a single family, while 44.7% of them were living in an extended family.

In terms of occupation, majority (73.1%) of the mothers were unemployed. Among the spouse, 71.9% were working as government officers, professional and others. 28.1% of them were working in the tourism

industry and doing their own business. With regards of knowledge, 86.6% of respondents know the reason why they need to do follow up for PNC. Similarly 81% of the subject were aware of the follow up date

for PNC. Nearly half (48.2%) of the respondents live far from hospital. Majority (66.8%) of the respondent stated that the transport cost is not expensive.

Table 1 Distribution of respondents by predisposing factors

Predisposing Factors	n= 253	Frequency	Percentage
Age	30yrs or less than	211	83.4
	Above 30yrs	42	16.6
(Median= 30 years; QD= 4; Min= 17; Max= 49)			
Mother's education	Lower than college	201	79.4
	College and above	52	20.6
Husband's education	Less than primary	76	30
	Higher than secondary	177	70
Type of family	Extended family	113	44.7
	Single family	140	55.3
Mom occupation	No job	185	73.1
	In Job	68	26.9
Husbands occupation	Business & tourism	71	28.1
	Others, government officers & professional	182	71.9
Know the Importance of PNC	Yes	219	86.6
	No	34	13.4
Know PNC timing	Yes	205	81
	No	48	19
House is far from hospital	Yes	122	48.2
	No	131	51.8
Transportation	Expensive	84	33.2
	Not expensive	169	66.8

As Table 2, nearly half (49.4%) of the respondents agreed that the health insurance scheme was good. In terms of family income, over half (54.5%) of the respondents, their family get income less than MRF 10,000 per month. 26.9% of the respondents' family had income between MRF 10,000 to 15,000, while 18.6% of respondents' family get more than MRF 15,000 per month respectively. Among the respondents, 71.9% of them were having one to two children, while 28.1% were having 3 or more children. Over half (51.4%) of the respondents had delivered their last child at tertiary level hospital, whereas 48.6% of them had delivered in secondary and primary level hospital. Regarding hospital hours, 90.1% agreed that the present hours of hospital was convenient.

Over half (67.2%) of the respondents receive health education for follow up. With regards of complication during pregnancy, 81% of mothers reported as no complication. Mothers who had experienced breastfeeding difficulties were 20.9%. Nearly half (41.5%) of the respondents' baby had fall sick during the first 6 months of their age. In terms of mental health such as depression and anxiety, 28.1% of respondents had gone through depression after delivery. 75.8% of respondents had received counselling for PNC. With regards of quality and effectiveness of doctors treatment, over half (75.9%) of respondents were agreed it is effective. 44.3% of respondents stated that the quality of first neonatal care were good (table 2).

Table 2 Distribution of respondents by enabling, need and perceived quality of care factors

Factors	n= 253	Frequency	Percentage
Opinion for Health Insurance scheme	Very good	40	15.8
	Good	125	49.4
	Not Good	88	34.8
Family income/month	MRF 10,000-15,000	138	54.5
	MRF >15,000	68	26.9
	MRF < 10,000	47	18.6
Number of children	2 or less	182	71.9
	3 or more	71	28.1
Place of last child birth	Primary & secondary hospital	123	48.6
	Tertiary hospital	130	51.4
Hospital opening hours	Not convenient	25	9.9
	Convenient	228	90.1
Health education from nurse	Yes	170	67.2
	No	83	32.8
Complication in pregnancy	Yes	48	19
	No	205	81
Life threatening experience	Yes	15	5.1
	No	240	94.9
Breast feeding difficulty	Yes	53	20.9
	No	200	79.1
Baby had sickness	Yes	105	41.5
	No	148	58.5
Had depression	Yes	71	28.1
	No	182	71.9
Counselling for PNC	Yes	192	75.9
	No	61	24.1
Dr's treatment is effective	Agree	192	75.9
	Disagree	61	24.1
Quality of first neonatal care	Very good	96	37.9
	Good	112	44.3
	Not Good	45	17.8

Table 3 explained the association between PNC utilization and predisposing factors. The result revealed that there is a statistically significant association with PNC utilization and information about the PNC follow up date ($P= 0.036$). Mothers who know the information about the follow-up date were 2.2 times

more likely to utilize the PNC service. Among other predisposing factors, we found that age, education occupation, type of family, distance to hospital and the cost of transport doesn't show statistically significant with PNC utilization.

Table 3 Association between predisposing factors and utilization of PNC

Predisposing Factors	Utilization of PNC				P-value
	n	Complete%	Incomplete%	Crude OR (95% CI)	
Age					
>30	211	33.6	66.4	1	
<31	42	35.7	64.3	1.10(0.55-2.19)	.796
Mothers education					
Lower than college	201	33.8	66.2	1	
College and above	52	34.6	65.4	1.04(0.55-1.97)	0.915
Husbands education					
Less than primary	76	34.2	65.8	1.01(0.58-1.79)	0.962
Higher than secondary	177	33.9	66.1	1	
Family type					
Extended Family	113	36.3	63.7	1.20(0.71-2.03)	0.490
Single family	140	32.1	67.9	1	
Mothers Occupational status					
No Job	185	34.6	65.4	1.11(0.61-1.99)	0.739
In Job	68	32.4	67.6	1	
Husbands Occupation					
Business & tourism	71	29.6	70.4	1	
Others (Government officer, professionals)	182	35.7	64.3	1.32(0.73-2.39)	0.355
Know the importance of PNC					
Yes	219	35.6	64.4	1.79(0.78-4.16)	0.171
No	34	23.5	76.5	1	
Know the PNC follow up date					
Yes	205	37.1	62.9	2.23(1.06-4.75)	0.036
No	48	20.8	79.2	1	
House is far from the hospital					
Yes	122	33.6	66.4	1	
No	131	34.4	65.6	1.03(0.61-1.74)	0.901
Opinion about the cost of transport					
Expensive	84	40.5	59.5	1.53(0.89-2.64)	0.126
Moderately good	169	30.8	69.2	1	

Table 4 explained the association between PNC utilization with enabling factors, need factors and perceived quality factors. The result indicated that there is a statistically significant association between PNC utilization with family income ($P= 0.026$). Mothers who have family income between 10,000-15,000 MRF are 1.98 times more likely to use PNC service comparing to mothers with family income

more than who have family income less than 10,000 MRF. However, number of children, place of last child birth, hospital hours, health education, complication during pregnancy and after birth, breastfeeding difficulties, babies and mothers' health, and quality of first neonatal care doesn't show statistically significant association with PNC utilization.

Table 4 Association between enabling, need, and perceived quality factors and utilization of PNC.

Factors	Utilization of PNC				P-value
	n	Complete%	Incomplete%	Crude OR (95% CI)	
Opinion for Health Insurance scheme					
Very Good	40	47.5	52.5	2.16 (0.99-4.67)	0.051
Good	125	32.8	67.2	1.16 (0.65-2.10)	0.615
Good	88	29.5	70.5	1	
Family Income/month					
MRF10,000-15,000	68	45.6	54.4	1.98 (1.09-3.62)	0.026
MRF >15,000	47	29.8	70.2	1.00 (0.49-2.07)	0.992
MRF <10,000	138	29.7	70.3	1	
Place of Last child birth					
Primary & secondary	123	30.1	69.9	1	
Tertiary	130	37.7	62.3	1.41 (.83-2.37)	0.202
Experienced mental health problem					
Yes	71	42.3	57.7	1.65 (0.93-2.90)	0.085
No	182	30.8	69.2	1	

Table 5 shows the result of multiple logistic regressions, controlled for other factors of predisposing, enabling, need and quality of care. Significant predictors for PNC utilization include opinion about the cost of transport, health insurance scheme, and experienced mental health problem. Mother who perceived that cost of transportation was expensive has more chance of getting PNC utilization 1.98 times (95%

C.I:1.050 – 3.755) compared to those perceived that the cost was low. Mother's opinion for the national health insurance scheme with very good has more chance of PNC utilization 2.9 times (95% C.I: 1.21-7.03). Experienced mental health problem increases the chance of completing PNC with 2.0 times (95% C.I.: 1.07-4.05) more.

Table 5 Multiple logistic regression for factors associated with PNC utilization

Variables	Utilization of PNC		
	Adj. OR	95% C.I	P-value
Opinion for transport cost	Expensive	1.99	1.05 – 3.76
	Not expensive	1	
Opinion for health insurance scheme	Very. good	2.92	1.21 – 7.03
	Good	1.20	0.61-2.38
	Not good	1	
Family income per month	MRF 10,000-15,000	1.82	0.88-3.75
	MRF >15,000	0.93	0.39-2.24
	MRF <10,000	1	
Place of last child birth	Primary & secondary hospital	1	
	Tertiary hospital	1.18	0.60-2.32
			0.640
Experience mental health problem	Yes	2.09	1.07-4.05
	No	1	

Table 6 indicated the proportion of PNC utilization and significant predictors by three different level hospital. The results indicated that the highest percentage of PNC utilization was found in secondary level hospital, and the lowest in primary level hospital. Regarding opinion for transportation cost, although mothers reported the transportation was not expensive, they were less likely to complete PNC utilization. However, mothers in the secondary and tertiary level

hospitals were more likely to complete PNC utilization than mothers in primary level hospital, even though the transportation is expensive. In terms of health insurance, mothers in tertiary and secondary hospital who reported the health insurance was very good will be more likely to complete PNC utilization. Regards to mental health problem, mothers experienced in mental problem will be less likely to complete PNC service except mothers in secondary level hospital.

Table 6 Proportion of PNC utilization and significant predictors by three different level of hospitals

Factors	Primary		Secondary		Tertiary	
	Complete	Incomplete	Complete	Incomplete	Complete	Incomplete
PNC utilization	27.4	72.6	40.7	59.3	33.3	66.7
Opinion for Transport cost						
Expensive	27.3	72.7	44.7	55.3	46.4	53.6
Inexpensive	27.5	72.5	38.3	61.7	28.2	71.8
Opinion for Health Insurance						
Scheme						
Very Good	20.0	80.0	58.8	41.2	53.8	46.2
Good	36.4	63.6	27.8	72.2	33.9	66.1
Not Good	20.0	80.0	46.4	53.6	23.3	76.7
Experienced mental health problem						
Yes	45.5	54.5	52.4	47.6	35.9	64.1
No	24.2	75.8	36.7	63.3	31.7	68.3

Discussion

Post-natal care (PNC) has been advocated as the best way to prevent maternal and newborn deaths. However, PNC utilization in many countries is still very low. This study aims to determine the factors associated with PNC utilization among mothers in Maldives islands. We found that cost of transportation, health insurance scheme, experienced mental health problem were significantly associated with PNC utilization. Maldives has established country health insurance scheme towards the achievement of universal health coverage⁵ to provide the accessibility to health service. Health insurance scheme provides financial assurance to the public. It's a challenge in many countries to improve people's health, especially

for the poor. Therefore, better health insurance scheme would highly impact utilization of postnatal care services. This study indicated that if people have positive thinking about health insurance scheme, they are more likely to have PNC utilization (OR=2.92, 95% C.I.:1.21-7.03).

Like our study, a study in Indonesia⁶ compared the utilization rate of maternal health care between the people registered under the health coverage scheme and non-registered people. The result shows that the service utilization was significantly improved (OR=1.84, 95% C.I.:1.18-2.89) among the people registered under the health coverage scheme. In order to improve health services access of population, many countries has established health care financ-

ing strategies. Sub-Saharan Africa countries are the countries that established community based health insurance scheme to bring good impacts for health care especially for maternal health. Previous research from West Africa⁷ also indicated that membership in community based health insurance scheme positively use maternal health services.

Mental health problem over PNC period is another problem among postnatal mothers. Actually, it is the most common psychiatric condition among childbearing age women specially during the post-natal period⁸⁻¹². In this study, 28.1% of respondent mothers experienced mental health problem over PNC period. Our study indicated that mothers who experienced mental health problem over PNC period were 2.0 times more likely to utilize the service. The prevalence of mothers who experienced mental health problem over PNC period, especially postpartum depression in developed countries is approximately¹³ 10-15%, while the prevalence in low and middle income countries about 40%. The results may be influenced with the characteristics of the study population. Regarding the utilization of health service, some previous study disclosed that mothers with depressive symptoms have more frequent contact with health care professionals¹⁴⁻¹⁷. A study to investigate the influence of depressive symptoms on utilization of health services¹⁸ revealed that depressive symptoms are highly associated with health service utilization with over 50% of utilizers having first month postpartum depression.

Additionally, our study supported that cost of transportation significantly associated with postnatal care utilization. Respondent who reported that transport cost was expensive were 1.9 times (95% C.I.: 1.05-3.76) more likely to utilize the PNC service.

This result may due to the living standard that vary by income. Our results indicated that utilization of PNC was higher among mothers living in the secondary and the tertiary level of health facility, and most of the respondents indicated the transportation cost was expensive were from the both level hospitals that are the city and urban areas. It is possible that the mothers from the secondary and the tertiary level hospitals have to use transportation in order to travel to have PNC services even the transportation is expensive. Transportation impacts health through the accessibility¹⁹, therefore facilitation transport among patients is a good policy to increase health care utilization. A study to find the barriers and facilitator related to use of postnatal care service²⁰ supported that transportation was a strong personal barrier to impede the utilization of PNC service.

Recommendation

Our study indicated that the prevalence of postnatal care utilization was very small. Cost of transportation, health insurance scheme, and mental health problem were the factors effecting the PNC utilization. Therefore, strengthening the provision of health insurance scheme is very important strategy to enhance the accessibility for health care service. For mothers with depressive symptoms, individual counselling should be recommended. Additionally, more frequent and close contact with mothers would be helpful to improve mother and child health. This could be more possible by promoting home visiting programs by health workers. Another point is cost of transportation. Because Maldives is a country clustered into many islands, transport costs would be very influential. For this reason, establishment of

affordable public transportation would be a supportive factor for increasing health services utilization. Additionally, training community volunteers regarding postnatal home visiting to reduce transportation barrier will be a good option.

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