

IMPROVEMENTS IN THE STATUS OF WOMEN AND INCREASED USE OF MATERNAL HEALTH SERVICES IN RURAL EGYPT

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ABSTRACT

This research investigated the association between the household status of women and their use of maternal health services in rural Egypt. Face-to-face interviews with a structured questionnaire to 201 married women were carried out in a village, posing questions about their health service utilization and their household socio-economic status. The association between service utilization and other variables was statistically analysed. Older ages at first marriage and higher education levels showed significant positive associations with the three outcome variables—regular antenatal care (ANC), deliveries attended by skilled health professionals, and deliveries at health facilities—of the use of maternal health services. Women who had not experienced physical assaults by husbands and had knowledge of community activities were more likely to receive ANC regularly; however, there were no significant association with the other two outcome variables. Participation in household decision-making and availability of assistance with household chores had no significant linkage to the use of maternal health services. Marriages to husbands with secondary or higher levels of education and residence in extended families were significantly associated with greater maternal health service usage. Our results suggest that the improved status of women in the household and moral support from family members contributes to an increase in the use of maternal health services.

Key Words: Maternal health services, Women's status, Family support, Egypt

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INTRODUCTION

As indicated in the Millennium Development Goals, decreasing maternal deaths is one of the most important global health objectives.¹⁾ With improved access to maternal health services, particularly in rural areas, maternal mortality ratios (MMR) are gradually decreasing in many developing countries.²⁾

However, although access to maternal health services has improved, their use has often not grown as expected. It is commonly observed that women do not recognize their health needs or

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that they are unable to make the right decisions about seeking health care.^{3,4)} To advance women's health, it is important not only to provide them with greater access to health services (supply side), but also to empower them so that they choose to employ such services (demand side).

MMR in Egypt has been decreased dramatically during the last two decades. According to national surveys, such as the Egypt National Maternal Mortality Study, MMR was 174 per 100,000 live births in 1992, 84 in 2000, and 55 in 2008.^{5,6)} The greater availability of public health services has contributed to this decrease, particularly in unprivileged areas such as southern governorates.⁷⁾ Access to basic health services is guaranteed to 99% of the Egyptian population, which is concentrated in a narrow area along the Nile River.²⁾

Despite this achievement, MMR in Egypt continue to be higher than those of many other middle income countries, including Arab nations such as Jordan.⁸⁾ In addition, about one-third of the maternal deaths are caused by delays in recognizing problems or seeking care.⁵⁾ Furthermore, such delays are closely related to the low socio-economic status of women in Egypt and several other Eastern Mediterranean Region countries.^{2,9)}

This research aims to investigate the association between the household status of women and the use of maternal health services in rural Egypt.

METHODS

A cross-sectional survey was carried out in a village in the Giza Governorate of the Arab Republic of Egypt in November 2007. The village, which has a population of around 20,000, is located around 14 km south of Cairo. Although the village was formerly composed of traditional extended families engaging in agriculture, it expanded rapidly by adding migrant nuclear families from other governorates because of its vicinity to the capital. Therefore, accurate censuses or household maps were not available.

We assumed that women had good access to health services, since the village had a public health centre that was staffed with a gynaecologist and nurses and that actively provided maternal and child health care at nominal fees. The villagers also sometimes consulted private physicians and hospitals in Cairo.¹⁰⁾

A total of 201 married women, younger than 50 years of age, were selected using a stratified sampling technique. We first divided the village into five sections, each with a similar population. Subsequently, we randomly visited about 40 households in each section and chose one woman from each household. Excluding the women who did not respond to necessary questions, we obtained a sample of 189 women between 20 and 50 years of age.

Face-to-face interviews with a structured questionnaire were carried out in Arabic by trained junior faculty members and students of Faculty of Nursing, Cairo University. The questionnaire was developed by referring to various survey questionnaires, such as Egypt Demographic and Health Survey,¹¹⁾ and revised after pretesting in the target field. It consisted of questions on women's health service utilization, such as frequency of antenatal care (ANC) attendance during pregnancies, places of last deliveries, and persons who assisted last deliveries. These variables were considered as outcome variables in the analysis described below. Questions regarding women's socio-economic status, such as levels of education of both wives and husbands; ages of marriage; cash incomes; availability of assistance with household chores; and women's status within households, including household decision-making; experiences of physical assaults by husbands, and awareness of and participation in community activities.

The three variables for women's health service utilization were transformed into dichotomous values as follows: (1) whether a participant had attended ANC at least four times during her last

pregnancy, a frequency regarded as 'regular' by the World Health Organization (WHO);¹²⁾ (2) whether she had been attended in her last delivery by skilled health professionals; and (3) whether she had given birth to her last child at a health facility. Variables for participation in decision-making were transformed into scores, by aggregating the answers of relevant sub-questions.¹³⁾ In each sub-question, women who could make a decision alone were given a full score of two points, those who could only partly decide one point, and those who did not participate in the decision-making process zero points. The variable of decision-making on household issues was scored from zero to six and that on household expenditure was scored from zero to ten.

Associations between each of the outcome variables and socio-economic variables were tested by the chi-square test, and $P < 0.05$ was considered statistically significant. Crude odds ratios of variables for the use of maternal health services¹¹⁾ were calculated for each variable proxy to women's socio-economic status.¹⁴⁾

Ethical clearances for the study were obtained from the Ethics Review Committee of Nagoya University School of Medicine in Nagoya, Japan, and Faculty of Nursing, Cairo University in Cairo, Egypt. Written informed consent was obtained from all participants before the interviews.

RESULTS

The characteristics of the participants are shown in Table 1. The median age of the 189 women was 30 years. Over 60% married when they were less than 18 years old, and 25% married before they turned 16, the legally approved age of marriage. More than half of them had never attended school, while most of their husbands had attended at least primary schools and about 38% of them had studied at secondary or higher level schools.

About 20% had a job with cash income, and most of them stated that they could use their earnings without the permission of their husbands or other family members. Forty-two percent of the women had experienced physical assaults by their husbands. Several community-based activities, such as vocational training for women and literacy classes, had been implemented in the village, by both the government and non-governmental organizations; however, only 34% of the women were aware of these activities, and very few had actively participated in them.

No less than 48% had attended regular ANC, while about 30% stated that they never attended ANC during their last pregnancies. At the same time, 79% had been attended by skilled health professionals at their last deliveries. About 60% of the deliveries had been taken place at health facilities.

Table 2 shows the crude odds ratios of the variables of maternal health service utilization for each proxy variable of socio-economic status. The age of the first marriage and level of women's education are significantly associated with the three variables for use of maternal health services.

Women who had never been physically assaulted by their husbands and those who were aware of community activities were more likely to attend ANC regularly. However, these variables did not show a significant association with deliveries attended by skilled health professionals and deliveries at health facilities. Participation in household decision-making such as purchases and availability of assistance with household chores had no significant association with the three variables.

Marriage to husbands with secondary or higher levels of education was significantly associated with the increase of regular ANC attendance, deliveries attended by skilled health professionals, and deliveries at health facilities, as was residence in extended families.

Table 1. Sample characteristics (n = 189)

Variables of women's socio-economic status		N	%
Age	20–30	100	52.9
	31–40	56	29.6
	41–50	33	17.5
Age at first marriage	≤15	48	25.4
	16–17	69	36.5
	≥18	72	38.1
Level of education	no formal education	103	54.5
	≥primary school	86	45.5
Experience of husbands' physical assaults	yes	80	42.3
	no	107	56.6
	no answer	2	1.1
Awareness of community activities	yes	65	34.4
	no	124	65.6
Cash income	yes	39	20.6
	no	146	77.3
	no answer	4	2.1
Decision-making on household issues ^{a)}	score≤3	84	44.5
	score>3	103	54.5
	no answer	2	1.0
Decision-making on household expenditure ^{b)}	score≤5	84	44.5
	score>5	104	55.0
	no answer	1	0.5
Level of husbands' education	≤primary school	117	61.9
	>primary school	71	37.6
	no answer	1	0.5
Family structure	nuclear	93	49.2
	extended	96	50.8
Availability of household chores assistance	yes	66	34.9
	no	120	63.5
	no answer	3	1.6
Variables of health service utilization		N	%
Place of deliveries	health facilities	116	61.4
	home	73	38.6
Persons who attended deliveries	skilled health professionals	150	79.4
	traditional birth attendants etc.	39	20.6
Antenatal care (ANC) attendance	none	56	29.6
	1–3 times	40	21.2
	≥4 times	92	48.7
	no answer	1	0.5

^{a)} The total score of decision-making on household issues of three sub-questions (0–2 points each): (1)What to cook (2)Children's schooling (3)Family planning ^{b)} The total score of decision-making on household expenditure of five sub-questions (0–2 points each): (1)Furniture and household items, such as electric appliance, bed (2)Daily use items and groceries, such as fruit, vegetable (3)Your personal items, such as clothes, shoes (4)Husband's personal items, such as clothes, shoes (5)Children's items, such as clothes, toys, stationery

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Table 2. Association between women's health service utilization and other variables

Variables	Regular ANC attendance		Deliveries attended by skilled health professionals		Deliveries at health facilities	
	Crude OR	(95%CI)	Crude OR	(95%CI)	Crude OR	(95%CI)
Age						
>30	1.00	–	1.00	–	1.00	–
≤30	7.35 ^{a)}	3.85–14.05	7.46 ^{a)}	3.09–18.01	5.29 ^{a)}	2.79–10.02
Age at the first marriage						
≤15	1.00	–	1.00	–	1.00	–
16–17	4.22 ^{a)}	1.72–10.33	3.54 ^{a)}	1.46–8.61	3.05 ^{a)}	1.42–6.56
≥18	12.66 ^{a)}	5.06–31.78	3.33 ^{a)}	1.40–7.93	3.71 ^{a)}	1.72–8.01
Level of education						
no formal education	1.00	–	1.00	–	1.00	–
≥primary school	5.59 ^{a)}	2.98–10.47	2.98 ^{a)}	1.36–6.54	5.42 ^{a)}	2.78–10.57
Experience of husbands' physical assaults						
yes	1.00	–	1.00	–	1.00	–
no	2.56 ^{a)}	1.41–4.66	1.54	0.76–3.14	1.22	0.68–2.22
Awareness of community activities						
no	1.00	–	1.00	–	1.00	–
yes	2.19 ^{b)}	1.18–4.04	1.43	0.66–3.10	1.51	0.81–2.84
Cash income						
no	1.00	–	1.00	–	1.00	–
yes	0.52	0.25–1.09	0.79	0.34–1.85	0.51	0.25–1.04
Decision-making on household issues						
score≤3	1.00	–	1.00	–	1.00	–
score>3	0.57	0.32–1.03	0.93	0.46–1.90	0.71	0.39–1.28
Decision-making on household expenditure						
score≤5	1.00	–	1.00	–	1.00	–
score>5	0.63	0.35–1.12	0.88	0.43–1.80	0.79	0.44–1.43
Level of husbands' education						
≤primary school	1.00	–	1.00	–	1.00	–
>primary school	2.31 ^{a)}	1.26–4.23	2.38 ^{b)}	1.05–5.36	2.82 ^{a)}	1.46–5.42
Family structure						
nuclear	1.00	–	1.00	–	1.00	–
extended	1.83 ^{b)}	1.02–3.26	3.33 ^{a)}	1.54–7.18	2.28 ^{a)}	1.25–4.15
Availability of household chores assistance						
no	1.00	–	1.00	–	1.00	–
yes	1.05	0.58–1.92	0.93	0.44–1.95	0.92	0.50–1.71

^{a)} p value < 0.01

^{b)} p value < 0.05

DISCUSSION

Although access to maternal health services was guaranteed in the study village, the rate of utilization was still low, as regular ANC attendance, deliveries attended by skilled health professionals, and deliveries at health facilities equalled only 48%, 79%, and 61% of the total sample, respectively. This result was similar to or a little better than an earlier nationwide survey in 2005.¹¹⁾

To improve women's health in developing countries, every woman must have access to appropriate health services, particularly during pregnancy and childbirth, when women's health is most likely to be at risk. However, as mentioned previously, even though such services are affordable and accessible, women do not always use them because of various social constraints. Our study seeks to identify the social factors that influence the use of maternal health services in rural Egypt.

Our findings suggest that women who married before the age of 18 and who received insufficient formal education were less likely to use maternal health services than the women who married later. Similar results have been observed in Nepal, where the use of maternal health services increased along with the amelioration of women's educational and income levels.^{15,16)} Women who married early without formal education were likely to be subordinated to their husbands and parents-in-law and were unable to participate in household decision-making, including their own health needs.^{17,18)} Formal education and marriage at a mature age contributed to the improvement of the familial status of women by providing them with higher self-esteem and confidence. Thus, they were able to seek health services according to their own needs; in other words, their demands for such services increased.^{19,20)}

Similarly, the experience of physical assaults by husbands may reflect the subordinate status of women in their families.²¹⁾ Our findings show that physical assaults by husbands were negatively associated with regular ANC attendance but not with the other two outcome variables—deliveries attended by skilled health professionals and deliveries at health facilities. The reason for this association with ANC attendance is not clear. However, since childbirths were major family events, and the outcome could be easily recognized by anyone in the family, household decision-makers might opt for seeking proper delivery care, regardless of the status of women. However, in the case of attending ANC, pregnant women might need to make decisions by themselves or to convince household decision-makers to permit such attendance, even though they had no serious symptoms. This fact indicates that regular attendance at ANC required women to understand the importance of preventive care, enjoy a good status in the household, and be allowed to go out freely.^{22,23)}

This could explain another finding why women who were aware of community activities were more likely to attend regular ANC than those who were not. Women with a good familial status could easily obtain information outside the household and participate freely in community activities. Participating in them allowed women to attain greater self-esteem and self-confidence through social achievement and the enhancement of their decision-making abilities. Consequently, such women were likely to understand the importance of preventive maternal health care.²⁴⁾ Women with educated husbands were also more likely to seek maternal health services, because these men were likely to understand their wives' health needs and offer proper advice.^{25,26,27)}

We expected that women who lived with parents-in-law would have difficulty seeking health services, as observed in previous studies in Nepal and India.^{28,29)} However, our results show that women who lived with extended families were more likely to avail themselves of such facilities than those living with only husbands and children. In addition, the availability of assistance with household chores was not significantly associated with a reliance on maternal health services.

Our results suggest that members of extended families were likely to encourage women to seek health care, rather than to share household work.

Therefore, two factors, the educational levels of husbands and extended family households pointed to the existence of moral and not just physical or economic support for women.¹⁶⁾ Perhaps we arrived at this finding because we selected maternal health services as a variable of women's access to health services. Childbirth would be an important family event; thus, all family members might be willing to give moral support to pregnant women seeking medical supervision. The attitude of family members might be different in case the women suffered from other illnesses. Further studies are required in this regard.

We expected that the use of maternal health services would increase, if women could make various household decisions or had cash income that they could freely spend. Previous studies show that women with authority and economic autonomy in the family could decide and act according to their own needs, including medical ones.¹⁵⁾ However, our findings do not show the linkage between familial decision-making authority and economic autonomy and a rise in the employment of maternal health services. This result may be explained by similar reasons to those for family moral support. In addition, the fees of maternal health services in rural Egypt might be too low to be influenced by household income.

As our findings indicate, currently younger generation made greater use of maternal health services, perhaps because they had fewer childbirth experiences than older women. The Egypt Demographic and Health Survey reveals that lower birth order is associated with more involvement with maternal health services.¹¹⁾ Another possibility is that the supply for maternal health services might have been different among age groups. However, as our sample size is not big enough to stratify the results by age group, further studies are needed to exclude the influence of age.

Through this study, we sought to show that women's utilization of or demand for health services would increase with the improvement of their household status. Our results suggested that improved status of women in the household, as well as moral support from family members, contribute to the greater reliance of women on maternal health services and particularly on regular ANC attendance.

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REFERENCES

- 1) United Nations. Road map towards the implementation of United Nations Millennium Declaration: Report of the Secretary-General. 2001, New York.
- 2) Koblinsky M. Reducing maternal mortality: Learning from Bolivia, China, Egypt, Honduras, Indonesia, Jamaica, and Zimbabwe. 2003, The World Bank, Washington, DC.
- 3) Currie D, Wiesenbergs S. Promoting women's health-seeking behaviour: Research and the empowerment of women. *Health Care Women Int*, 2003; 24(10): 880–899.
- 4) Qureshi N, Shaikh BT. Women's empowerment and health: The role of institutions of power in Pakistan. *East Mediterr Health J*, 2007; 13(6): 1459–1465.

- 5) Campbell O, Gipson R, Issa AH, Matta N, El Deeb B, El Mohandes A, Alwen A, Mansour E. National maternal mortality ratio in Egypt halved between 1992–93 and 2000. *B World Health Organ*, 2005; 83(6): 462–471.
- 6) Ministry of Health and Population. *Maternal mortality rate at delivery*. Egypt's Information Portal, The Egypt Cabinet Information and Decision Support Center (IDSC). Available at: http://www.eip.gov.eg/nds/nds_view.aspx?id=5313; 2009 [accessed 30.04.11].
- 7) Gipson R, El Mohandes A, Campbell O, Issa AH, Matta N, Mansour E. The trend of maternal mortality in Egypt from 1992–2000: An emphasis on regional differences. *Matern Child Health J*, 2005; 9(1): 71–82.
- 8) UNDP. *The Arab Human Development Report 2005: Toward the Rise of Women in the Arab World*. 2006, United Nations, New York.
- 9) Mahaini R. Improving maternal health to achieve the Millennium Development Goals in the Eastern Mediterranean Region: a youth lens. *East Mediterr Health J*, 2008; 14 Suppl: S97–106.
- 10) Khattab H, Younis N, Zurayk H. *Women, reproduction, and health in rural Egypt: The Giza study*. 2000, The American University in Cairo Press, Cairo.
- 11) El-Zanaty F, Way A. *Egypt demographic and health survey 2005*. 2006, Ministry of Health and Population, Cairo.
- 12) Villar J, Bergsjö P. *WHO antenatal care randomized trial: Manual for the implementation of the new model*. 2002, World Health Organization, Geneva.
- 13) Schuler SR, Hashemi SM. Credit programs, Women's empowerment, and contraceptive use in rural Bangladesh. *Stud Fam Plann*, 1994; 25(2): 65–76.
- 14) Malhotra A, Schuler S. Women's empowerment as a variable in international development. In *The Measuring empowerment: Cross-disciplinary perspectives*, edited by Narayan D. pp.71–88, 2005, The World Bank, Washington, DC.
- 15) Furuta M, Salway S. Women's position within the household as a determinant of maternal health care use in Nepal. *Int Fam Plan Perspec*, 2006; 32(1): 17–27.
- 16) Matsumura M, Gubhaju B. Women's status, household structure and the utilization of maternal health services in Nepal. *Asia Pac Popul J*, 2001; 16(1): 23–44.
- 17) UNICEF. *Early Marriage: A harmful traditional practice*. 2005, New York.
- 18) UNFPA. *Alcala M. State of World Population 2005: The promise of equality, gender equity, reproductive health and the Millennium Development Goals*. 2005, New York.
- 19) Shrestha S. Socio-cultural factors influencing adolescent pregnancy in rural Nepal. *Int J Adolesc Med Health*, 2002; 14(2): 101–109.
- 20) Bloom SS, Wypij D, Das Gupta M. Dimensions of women's autonomy and the influence on maternal health care utilization in a North Indian city. *Demography*, 2001; 38(1): 67–78.
- 21) Koenig MA, Ahmed S, Hossain MB, Mozumder A. Women's status and domestic violence in rural Bangladesh: Individual- and community-level effects. *Demography*, 2003; 40(2): 269–288.
- 22) Chapagain M. Conjugal power relations and couples' participation in reproductive health decision-making: Exploring the links in Nepal. *Gender, Technology and Development*, 2006; 10(2): 159–189.
- 23) Baldo MH, Al-Mazrou YY, Farag MK, Aziz KMS, Khan MU. Antenatal care, attitudes, and practices. *J Trop Pediatr*, 1995; 41 Suppl 1: 21–29.
- 24) Kar SB, Pascual CA, Chickering KL. Empowerment of women for health promotion: a meta-analysis. *Soc Sci Med*, 1999; 49(11): 1431–1460.
- 25) Bharati S, Pal M, Bharati P. Obstetric care practice in Birbhum District, West Bengal, India. *Int J Qual Health C*, 2007; 19(4): 244–249.
- 26) Raghupathy S. Education and the use of maternal health care in Thailand. *Soc Sci Med*, 1996; 43(4): 459–471.
- 27) Navaneetham K, Dharmalingam A. Utilization of maternal health care services in Southern India. *Soc Sci Med*, 2002; 55(10): 1849–1869.
- 28) Simkhada B, Porter MA, van Teijlingen ER. The role of mothers-in-law in antenatal care decision-making in Nepal: a qualitative study. *BMC Pregnancy Childbirth*, 2010; 10: 34.
- 29) Saikia N, Singh A. Does type of household affect maternal health? Evidence from India. *J Biosoc Sci*, 2009; 41(3): 329–353.