

Patterns and determinants of maternity care in Damascus

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نماذج ومحددات الرعاية التوليدية في دمشق

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الخلاصة: صُمِّمَتْ هذه الدراسة الوصفية لوصف نماذج ومحددات الرعاية التوليدية التي تقدّم للسيدات في دمشق. وقد جمعت المعطيات من 39 سجلاً للولادات في محافظتين كبيرتين، وضمت 500 أمّاً أُنجِنَ أطفالاً أصحاء. وأجرى الباحثون مقابلات مع الأمهات في بيوتهن مستخدمين استبياناً مسبق التصميم جزئياً. وقد أظهر التحليل المتعدد المتغيرات لمحددات تكرار استخدام الرعاية السابقة للولادة أن المتغيرين التاليين يعدن بهما إحصائياً: ألا وهما السكنى في المدينة وزيارة مرفق الرعاية السابقة للولادة في الأثلوث الأول من الحمل. أما المتغيرات التي يُعْتَدُ بها إحصائياً للزيارة الباكرة التي تقوم بها الأم لمرفق الرعاية السابقة للولادة فهي المستوى التعليمي لدى الأم، والحمل الأول، وعدد الزيارات لمرفق الرعاية السابقة للولادة. كما يرتبط سن الشباب (العمر أقل من عشرين عاماً) بالزيارة الباكرة وتوقيتها في أول زيارة لمرفق الرعاية السابقة للولادة.

ABSTRACT This descriptive study was designed to describe the patterns and determinants of maternity care among Syrian women living in Damascus. All 39 birth registers in 2 large provinces were used to recruit 500 mothers of healthy newborns. Mothers were interviewed in their homes using a semistructured questionnaire. Multivariate analysis of the determinants of the frequency of use of antenatal care showed the following variables were significant: urban residence and visit to antenatal care in the 1st trimester. The significant variables for an early visit to antenatal care were the woman's level of education; being pregnant with the 1st baby; and number of visits to antenatal care. Being young (age < 20 years) also correlated with early timing of the 1st antenatal visit.

Caractéristiques et déterminants des soins de maternité à Damas

RÉSUMÉ Cette étude descriptive avait pour but d'exposer les caractéristiques et les déterminants des soins de maternité chez des femmes syriennes vivant à Damas. L'ensemble des 39 registres des naissances de deux grandes provinces ont été utilisés pour recruter 500 mères de nouveau-nés en bonne santé. Celles-ci ont été interrogées à leur domicile sur la base d'un questionnaire semi-structuré. L'analyse multivariée des déterminants de la fréquence d'utilisation des soins prénatals a montré que les variables suivantes étaient significatives : résidence en milieu urbain et visite prénatale au cours du premier trimestre. Les variables significatives influençant une visite prénatale précoce étaient le niveau d'instruction de la femme, le fait qu'il s'agissait d'une première grossesse et le nombre de visites prénatales. La jeunesse (âge < 20 ans) était également corrélée à une date précoce de première visite prénatale.

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Introduction

There is general consensus that the use of maternal health care services reduces maternal and child mortality and improves the reproductive health of women. The essence of maternity care is that it should be provided at all phases: pregnancy, birth and postpartum. This care is essential for both high- and low-risk pregnancies.

Over the past 2 decades, the Syrian Arab Republic has made remarkable progress in improving health outcomes among its population, particularly for children and pregnant women. From 1993 to 1999, the infant mortality rate dropped by 48% (from 34.6/1000 live births to 18/1000 live births), and the maternal mortality ratio dropped by 50% from 1990 to 2001 (from 143/100 000 live births to 65.4/100 000 live births) [1,2]. Although there have been no studies that explain the mortality decline, improvements in socioeconomic status, health services and individual factors may have been responsible.

Although considerable efforts have been made to improve maternity care in the country, government and professional priorities have dominated care, rather than the women's needs. Women's access to information, and their choice and involvement in decision-making are neglected. Maternity care is very much fragmented, and maternity practices deviate from evidence-based best practice [3,4].

Access to health services, traditional beliefs and cultural practices, individual qualities and health-care-seeking behaviour, as well as other factors, all contribute to the use of maternal health care. Several studies have been carried out to identify and understand the use of maternal health care services, especially in developing countries, where the services are underutilized [5–10]. As expected, there is no universal explana-

tion that applies to all places and times; the determinants of utilization of maternal health care services are not the same across socioeconomic and cultural contexts.

Since the way in which maternity care is provided is influenced by policies, availability and quality of services, and, most importantly, the health-care-seeking behaviours of the women, the current study aimed to describe the patterns of maternity care among Syrian women and to study its determinants. We hoped to contribute to the body of research on the use of maternal health services, and to articulate the policy implications of the findings.

Methods

Study design and data collection

All 39 birth registers in 2 large provinces in the country were used to recruit women for this descriptive study: 4 from Damascus, the capital city, and 35 from Rural Damascus (which is not in fact rural). A total of 500 mothers of healthy newborns (< 90 days old) were identified from those registers. Non-probability sampling (quota sampling) was used to select women. The quota sample was stratified by register and the number of births in each register during the previous year. Random selection of women from the birth register was then used to meet the target sample size.

Houses in the relevant areas were traced using phone numbers and/or *moukhtars* (civil registrars at the smallest administrative unit). Women were approached and their verbal informed consent was obtained; none refused to participate. Interviews were carried out by trained young female social scientists, to avoid any potential bias if medical personnel interviewed the women.

The interviews were based on a pre-designed and pretested semistructured

questionnaire that collected data on the sociodemographic characteristics of the women; their obstetric history; and on their use of care during the 3 stages of pregnancy and childbirth, namely antepartum, intrapartum and postpartum. Other data were also collected on the practices women experienced during their delivery, and also on their preferences about the place of delivery and birth attendant (reported elsewhere). The questionnaire was piloted on 20 women not included in the study, and necessary modifications were made.

Statistical analysis

The questionnaires returning from the field were coded, and data were entered into a personal computer. The data were cleaned and checked using range checks and validity checks. Analysis was done using the statistical package *SPSS* for Windows, version 10 [11]. Missing values were allowed for in the analysis.

Frequencies were calculated from the univariate analysis. Four selected dichotomous dependent variables were then constructed to indicate major relevant items of maternal care. They were as follows:

- If the woman received antenatal care, whether she had at least 4 visits or fewer than 4. This cut-off point was used in accordance with the 1994 World Health Organization recommendation [12].
- If the woman received antenatal care, whether the 1st visit was during the 1st trimester or later during the pregnancy.
- Place of delivery, whether at home or a health facility.
- Care provider who attended the delivery, whether a midwife or doctor, apart from the place of delivery.

Bivariate analysis was used to describe the relationships between different variables of interest and the dependent variables. To

study the determinants of maternal care use, a multivariate analysis was carried out and a logistic regression model estimated the likelihood. Multivariate analysis included only variables that showed a significant relationship with the outcomes of interest, as demonstrated by the bivariate analysis.

Results

Characteristics of the women

Table 1 presents the background characteristics of the women. Socioeconomic variables showed that 12.0% were highly educated and only 8.4% were working. Only 18.2% were primiparous, and 36.2% has a history of medical or obstetric problems during her last pregnancy.

Patterns of maternal health care

Tables 2–4 show the patterns of care as reported by women during their most recent experience of pregnancy and delivery that resulted in a live birth. Only 3.6% (18/500) of the women reported no use of antenatal care services. Of those, 14 women said that their pregnancy was normal and thus there was no need for them to visit the antenatal service. The mean number of ultrasound scans taken during pregnancy was 5.5 (standard deviation 3.2). Nearly 80% of those women who had an ultrasound said that it was done on request of the care provider, and only 15% requested the ultrasound themselves.

The majority of women had a normal delivery and gave birth at hospital. The rate of caesarean section was 13.6%. Midwives attended 91.0% of home deliveries. A quarter of those who paid for the delivery admitted that the payment was expensive for them.

The mean length of stay at hospital after a normal delivery was 7.4 hours, 28.5 hours for caesarean sections. Only 8.6% of

Table 1 Background characteristics of the study women (n = 500)

Characteristic	No.	%	Characteristic	No.	%
<i>Woman's age (years)</i>			<i>Place of residence</i>		
< 20	54	10.8	Urban	236	47.2
20–29	280	56.0	Rural	264	52.8
30–39	133	26.6	<i>Parity</i>		
40+	33	6.6	Primiparous	91	18.2
<i>Family size</i>			Multiparous	409	81.8
3	115	23.0	<i>History of spontaneous abortion</i>		
4–5	235	47.0	Yes	154	30.8
6+	150	30.0	No	346	69.2
<i>Housing ownership</i>			<i>History of induced abortion</i>		
Own house	288	57.6	Yes	10	2.0
Share house	212	42.4	No	490	98.0
<i>Woman's education (years)</i>			<i>History of stillbirth</i>		
≤ 6	147	29.4	Yes	33	6.6
7–9	191	38.2	No	467	93.4
10–12	102	20.4	<i>History of perinatal death</i>		
13+	60	12.0	Yes	51	10.2
<i>Woman's status</i>			No	449	89.8
Husband's only wife	466	93.2	<i>History of non-normal delivery^a</i>		
Husband has more than 1 wife	44	6.8	Yes	167	33.4
<i>Husband's education (years)</i>			No	333	66.6
≤ 6	140	28.0	<i>Interval from last pregnancy (years) (n = 400)</i>		
7–9	207	41.4	≤ 1	49	12.3
10–12	61	12.2	2–3	206	51.5
13+	92	18.4	4+	245	36.2
<i>Woman's work status</i>			<i>History of medical or obstetric problems during last pregnancy</i>		
Not working	458	91.6	Yes	181	36.2
Working and earning	42	8.4	No	319	63.8
<i>Husband's work</i>					
Professional	69	13.8			
Labourer	228	45.6			
Small industry	80	16.0			
Other	123	24.6			
<i>Family income (monthly, Syrian pounds)</i>					
< 5000	39	7.8			
5000–10 000	239	47.8			
10 000+	222	44.4			

^aRefers to both caesarean sections and instrument delivery.

women reported that a postpartum visit was scheduled for them; however, this proportion increased to over 25% among women who had problems after delivery.

Determinants of maternal health care use

Tables 5 and 6 show the results from the bivariate analysis. Results from multivari-

Table 2 Antenatal care status of the study women

Item	No.	%
<i>No. of antenatal visits</i>		
0	18	3.6
1–3	140	28.0
4+	342	68.4
<i>Timing of 1st antenatal visit</i>		
1st trimester	386	80.1
2nd or 3rd trimester	96	19.9
<i>Reasons for antenatal visits</i>		
Follow up	388	80.5
Medical problem	86	17.8
Other	8	1.7
<i>Location attended</i>		
Health centre	16	3.3
Private clinic	452	93.8
Other	14	2.9
<i>Antenatal care provided by</i>		
Male obstetrician	123	25.5
Female obstetrician	334	69.3
Other	25	5.2
<i>Got the care from</i>		
Same person	396	82.2
Different people	86	17.8
<i>Had an ultrasound</i>		
Yes	472	97.9
No	10	2.1
<i>Had multivitamins and minerals</i>		
Yes	461	95.6
No	21	4.4
<i>Had an antenatal card</i>		
Yes	29	6.0
No	453	94.0
<i>Had a companion</i>		
None	22	4.6
Husband	144	30.1
Sister/mother	122	25.5
In-law	83	17.4
Other	107	22.4
<i>Paid for visits</i>		
Yes	471	97.7
No	11	2.3

Totals are different due to missing values and/or inapplicable data.

ate logistic regression analysis showed that the main determinants of having delivery at a health facility were the woman's level of education (OR = 2.04; 95% CI: 1.25–3.34); having a medical problem during the last pregnancy (OR = 1.7; 95% CI: 1.01–2.75); and, as expected, use of antenatal care (having 4+ antenatal care visits during pregnancy) (OR = 2.2; 95% CI: 1.3–3.7). The 2nd model estimated the likelihood of being attended at birth by a doctor rather than a midwife. The significant variables in the model were: having a medical problem during the last pregnancy (OR = 1.57; 95% CI: 1.01–2.5); and the use of antenatal care, as previously defined (OR = 1.93; 95% CI: 1.2–3.2).

When we modelled the variables as to predict the determinants of the frequency of use of antenatal care, the following variables were significant: urban residence (OR = 1.73; 95% CI: 1.1–2.8); and early visit to antenatal care (in the 1st trimester) (OR = 9.1; 95% CI: 5.3–15.8). It should be noted that we excluded from this analysis the 18 women who did not have any antenatal care.

As for the determinants of timing, the 1st antenatal visit in the 1st trimester of pregnancy showed that the significant variables in the model were the woman's level of education (OR = 1.93; 95% CI: 1.1–3.4); being pregnant with the 1st baby (OR = 6.3; 95% CI: 1.4–28.8); and also the number of visits to antenatal care (OR = 9.0; 95% CI: 5.3–16.7). Being young (age < 20 years) also correlated with early timing of the 1st antenatal visit (OR = 2.9; 95% CI: 1.1–7.7).

Discussion

This study examined the maternal health care use among 500 women in Damascus

Table 3 Intrapartum care status of the study women

Item	No.	%	Item	No.	%
<i>Type of delivery</i>			<i>Delivered by the same person as in antenatal period</i>		
Normal	418	83.6	Yes	180	37.3
Caesarean section	68	13.6	No	302	62.7
Instrument	14	2.8	<i>Delivered by the same person as last delivery</i>		
<i>Place of delivery</i>			Yes	110	27.6
Public hospital	160	32.0	No	289	72.4
Private hospital	174	34.8	<i>Companion at labour</i>		
Clinic	60	12.0	None	212	42.4
Home	102	20.4	Husband	7	1.4
Other	4	0.8	Sister/mother	97	19.4
<i>Person attending delivery</i>			In-law	67	13.4
Male obstetrician	141	28.2	Other	117	23.4
Female obstetrician	223	44.6	<i>Companion at birth</i>		
Midwife	120	24.0	None	315	63.0
Other, including traditional birth attendant	16	3.2	Husband	2	0.4
<i>Reasons for choosing care provider</i>			Sister/mother	71	14.2
Accessibility	32	6.5	In-law	44	8.8
Cost	43	8.7	Other	68	13.6
Skilfulness	240	48.7	<i>Paid for delivery</i>		
Other	33	6.7	Yes	404	80.8
None ^a	145	29.4	No	96	19.2

Totals are different due to missing values and/or inapplicable data.

^aFor those who sought care from public hospitals, there was no choice of care provider.

and Rural Damascus provinces and the main determinants of that use. Our results do not represent women throughout the country since we only targeted women in the capital and its surroundings. The women in our study had a higher proportion of deliveries at health care facilities and were more frequently attended by doctors at birth, as compared to the national figures [7]. This is due to fact that we covered a better served area of the country. However, we do not think that this will bias our findings since the main aim of our study was to investigate the determinants of maternal health care use; this is a factor of the availability of the health services as well as the health-care-seeking behaviour of women.

Our results showed that women who had received more than 6 years education at school were more likely to have their births at a health facility and to have better use of antenatal services in terms of numbers of visits and also the timing of the 1st visit. In their study of the use of maternal health services in Jordan, Obermeyer and Potter found that higher levels of education were associated with greater use of antenatal care, while larger numbers of children in the household and rural residence were associated with less use of antenatal care [8]. Urban residence was also associated with the use of antenatal care in our study. In India, Bhatia and Cleland confirmed

Table 4 Postpartum care status of the study women

Item	No.	%
<i>Postpartum visits scheduled</i>		
Yes	43	8.6
No	457	91.4
<i>Length of stay in hospital (hours)</i>		
1–2	74	22.2
3–11	168	50.3
12–24	81	24.2
25+	11	3.3
<i>Support to initiate breastfeeding</i>		
Yes	97	19.4
No	403	80.6
<i>Informed about contraceptive use</i>		
Yes	18	3.8
No	452	96.2
<i>Informed about potential problems for which to seek care</i>		
Yes	42	8.4
No	458	91.6
<i>Problems encountered in postnatal period^a</i>		
Yes	336	67.2
No	164	32.8
<i>Sought care for complications after delivery</i>		
Yes	151	44.9
No	185	55.1
<i>Person sought for care</i>		
Doctor	134	88.7
Midwife	17	11.3

Totals are different due to missing values and/or inapplicable data.

^aPain was included in this item; this explains the high proportion.

the association between socioeconomic factors, including maternal education, and the use of maternal health services [7]. Educated women are considered to have greater awareness of the existence of maternal health care services and the benefits of using such services. They are likely to enjoy more autonomy within and outside

the household and the skills acquired from schooling enable women to communicate with health professionals and be more demanding about health care services.

This study showed that having a medical or obstetric problem in the last pregnancy increased the likelihood of having a delivery at a health facility and being attended at delivery by an obstetrician, after controlling for other confounders. This finding is very important, since it implies that the women's experience can explain a change in their behaviour. Magadi et al. argued that the variations in the use of maternal health services can be present at the level of the individual woman, depending on the circumstances of the pregnancy [6]. However, in normal circumstances, there is an expectation that health-seeking behaviour will be homogenous at the individual level.

Important findings from this study include the extensive use of private health services. This is a critical issue that needs further attention at the country level. The importance of working with as well as supervising the private sector was recently stressed [13]; however, when thinking about this issue one should also think of the disproportionate number of health care facilities between urban and rural areas. The absence of continuity of care from pregnancy through the postnatal period was also evident. Studies of continuity of care demonstrate the beneficial effects of such continuity [14]. Our results also indicated some deviation from the best-evidence practice where, for example, the services did not allow companionship at labour and delivery, and also when extensive use of ultrasound was noted. Enkin et al. classified the physiological and psychosocial support at labour and delivery as a proven beneficial form of care, and they did not recommend having routine and frequent ultrasounds during pregnancy [15].

Table 5 Results of bivariate analysis for potential determinants of place of delivery and birth attendants

Variable	Place of delivery				P-value	Birth attendant				P-value
	Home No.	Home %	Health facility No.	Health facility %		Midwife No.	Midwife %	Doctor No.	Doctor %	
<i>Woman's age (years)</i>					0.036					0.065
< 20	8	7.5	46	11.7		12	8.8	42	11.5	
20–29	52	49.1	228	57.9		70	51.5	210	57.7	
30–39	34	32.1	99	25.1		39	28.7	94	25.8	
40+	12	11.3	21	5.3		15	11.0	18	4.9	
<i>Woman's education (years)</i>					< 0.001					< 0.001
≤ 6	49	46.2	98	24.9		53	39.0	94	25.8	
7+	57	53.8	296	75.1		83	61.0	270	74.2	
<i>Woman's working status</i>					0.408					0.351
Yes	11	10.4	31	7.9		14	10.3	28	7.7	
No	95	89.6	363	92.1		122	89.7	336	92.3	
<i>Husband's education (years)</i>					0.074					0.046
≤ 6	37	34.9	103	26.1		47	34.6	93	25.5	
7+	69	65.1	291	73.9		89	65.4	271	74.5	
<i>Ever had abortion or stillbirth or a prenatal death</i>					0.727					0.363
No	62	58.5	223	56.6		82	60.3	203	55.8	
Yes	44	41.5	171	43.4		54	39.7	161	44.2	
<i>Medical problem during last pregnancy</i>					0.033					0.032
None	77	72.6	242	61.4		97	71.3	222	61.0	
Yes	29	27.4	152	38.6		39	28.7	142	39.0	
<i>Birth order</i>					0.224					0.845
1st	15	14.2	76	19.3		24	17.6	67	18.4	
2nd or higher	91	85.8	318	80.7		112	82.4	297	81.6	
<i>Area of residence</i>					0.656					0.659
Urban	48	45.3	188	47.7		62	45.6	174	47.8	
Rural	58	54.7	206	52.3		74	54.4	190	52.2	
<i>No. of antenatal visits</i>					< 0.001					< 0.001
< 4	43	44.8	97	25.1		52	41.6	88	24.6	
4+	53	55.2	289	74.9		73	58.4	269	75.4	
<i>Time of first antenatal visit</i>					0.024					0.018
1st trimester	69	71.9	317	82.1		91	72.8	295	82.6	
2nd or 3rd trimester	27	28.1	69	17.9		34	27.2	62	17.4	

Another interesting finding is that the use of antenatal care explained the place of delivery and the person attending the delivery as seen from the tables. One can

argue that antenatal care encourages women to seek delivery assistance by doctors and also to have the birth at a health facility. It is well known that regular antenatal

Table 6 Results of bivariate analysis for potential determinants of number of antenatal visits and timing of the first antenatal visit

Variable	No. of antenatal visits				P-value	Timing of the first antenatal visit				P-value
	< 4		4+			1st trimester		2nd or 3rd trimester		
	No.	%	No.	%		No.	%	No.	%	
<i>Woman's age (years)</i>					0.003					< 0.001
< 20	12	8.6	42	12.3		50	13.0	4	4.2	
20–29	78	55.7	196	57.3		229	59.3	45	46.9	
30–39	33	23.6	92	26.9		94	24.4	31	32.3	
40+	17	12.1	12	3.5		13	3.4	16	16.7	
<i>Woman's education (years)</i>					< 0.001					< 0.001
≤ 6	58	41.4	77	22.5		90	23.3	45	46.9	
7+	82	58.6	265	77.5		296	76.7	51	53.1	
<i>Woman's working status</i>					0.904					0.176
Yes	11	7.9	28	8.2		28	7.3	11	11.5	
No	129	92.1	314	91.8		358	92.7	85	88.5	
<i>Husband's education (years)</i>					0.491					0.739
≤ 6	42	30.0	92	26.9		106	27.5	28	29.2	
7+	98	70.0	250	73.1		280	72.5	68	70.8	
<i>Ever had abortion or stillbirth or a prenatal death</i>					0.453					0.004
No	83	59.3	190	55.6		231	59.8	42	43.8	
Yes	57	40.7	152	44.4		155	40.2	54	56.3	
<i>Medical or obstetric problem during last pregnancy</i>					0.79					0.663
None	89	63.6	213	62.3		240	62.2	62	64.6	
Yes	51	36.4	129	37.7		146	37.8	34	35.4	
<i>Birth order</i>					0.002					< 0.001
1st	14	10.0	76	22.2		88	22.8	2	2.1	
2nd or higher	126	90.0	266	77.8		298	77.2	94	97.9	
<i>Area of residence</i>					0.03					0.617
Urban	56	40.0	174	50.9		128	47.2	48	50.0	
Rural	84	60.0	168	49.1		204	52.8	48	50.0	
<i>No. of antenatal visits</i>										< 0.001
< 4						73	18.9	67	69.8	
4+						313	81.1	29	30.2	
<i>Time of first antenatal visit</i>					< 0.001					
1st trimester	73	52.1	313	91.5						
2nd or 3rd trimester	67	47.9	29	8.5						

care is important for identifying women at increased risk of adverse pregnancy outcomes and for establishing good relations

between the women and their health care providers [12]. Assistance during delivery is an important component in reproductive

health care services. Although assistance during delivery is associated with the place of delivery, those variables were treated separately in our study. Midwives attended births at hospitals and homes.

The results provide a basis for a number of policy implications. First, education was found to have an important impact on the use of maternal care, suggesting that improving maternal education should have an impact on the use of maternal care services. Secondly, the use of antenatal care services needs to be encouraged, and an evidence-based antenatal package should be given to all pregnant women. The findings suggest

that maternal care programmes at the country level should be reviewed and revisited.

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