

SOCIODEMOGRAPHIC VARIABLES AFFECTING THE HEALTH SEEKING BEHAVIOUR OF MOTHERS IN A SAUDI COMMUNITY

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هدف الدراسة: أظهرت الدراسات ارتباط الرعاية الصحية أثناء الحمل بنتائج إيجابية للأمهات والأطفال . وهناك عدة عوامل تؤثر على استخدام هذه الرعاية حتى مع وجودها . هدف هذه الدراسة هو دراسة المتغيرات الديموغرافية للأمهات التي تؤثر على الرعاية أثناء الحمل وسلوكيات الأمهات تجاه الرعاية الصحية لأطفالهن دون السنتين من العمر .

طريقة الدراسة : هذه دراسة لعينة مقطعية من النساء في مدينة الرياض وتم استخدام طريقة عشوائية متعددة المستوى لاختيار عينة عشوائية من البيوت . وقد أدخلت كل النساء اللاتي لديهن طفل دون السنة الثانية في الدراسة . وتم جمع المعلومات عن طريق استبانة مسبقة الإعداد . واستخدم برنامج . info Epi للتحليل الإحصائي .

نتائج الدراسة : تظهر النتائج أن 97% من الأمهات قد حصلن على زيارة واحدة على الأقل أثناء الحمل بينما حوالي 82% حصلن على أكثر من 6 زيارات وكان معدل الولادات تحت إشراف طبي 97.8% وقد ارتبط استخدام الرعاية الصحية أثناء الحمل وعدد الزيارات إحصائياً بدرجة معتد بها بالعمر والتعليم والحالة الزوجية . وارتبط المتغيران الأخيران كذلك إحصائياً بمكان الولادة . وقد بلغ معدل الأمراض الشديدة لدى الأطفال 12% . وكان الإسهال أكثر الأعراض تكراراً لدى الأطفال (34.3%) ولم يكن هناك ارتباط إحصائي معتد به بينه وبين عمر أو جنس الطفل . وأظهرت الحمى (33.4%) اتجاهًا خطياً معتدلاً بها إحصائياً بزيادة بازدياد عمر الأطفال الإناث وازداد كذلك معدل صعوبات التنفس (16%) زيادة معتد بها إحصائياً بزيادة أعمار الأطفال الإناث . ومع أن حالات الإسهال والحمى كانت أكثر الأمراض تكراراً حسب تقرير الأمهات إلا أن صعوبات التنفس كانت الأكثر انتشاراً بين الأطفال الذين استعانوا بالرعاية الطبية .

أما من ناحية السلوكيات الصحية للأم فقد ارتبط ذهابها للفحص الطبي لطفلها المريض بجنسيتها وتعليمها والعمل وعدد الساعات التي تقضيها في العمل خارج المنزل وكانت هذه العلاقات معتدلاً بها إحصائياً ، وقد كان هناك ارتباط ذو قيمة إحصائية معتد بها بين معدل الأمراض الشديدة وعمر الأم والجنسية والعمل .

الخلاصة : تظهر الدراسة نسبة أكبر من الأمهات تتردد على الرعاية أثناء الحمل مما سبق نشره . وتظهر أمراض الأطفال التي ذكرتها الأمهات نفس الصورة التي سبق استخلاصها من دراسات سابقة داخل المستشفيات وتشير الدراسة إلى الحاجة إلى مزيد من الدراسات حول سلوكيات البحث عن الصحة عند الأمهات في مناطق أخرى من البلاد والحاجة إلى برامج توعية عن الممارسات الصحية موجهة بالخصوص للأمهات غير المتعلمات وصغيرات السن وذلك للحد من أمراض الطفولة .

الكلمات المرجعية : رعاية الحوامل ، المراضة عند الأطفال ، سلوكيات البحث عن الصحة ، متغيرات لدى الأمهات .

Objectives: Studies have shown that good antenatal care is associated with favorable outcome for both mothers and children. However, there are several factors that influence the utilization of such care even when available.

The objective of this paper is to examine maternal demographic variables that influence antenatal care and the desire of mothers to consult a physician when their children aged below two are ill.

Methods: This is a cross-sectional study of women living in Riyadh, Saudi Arabia. From a map of residential areas, a multi-stage sampling approach was employed to select a random sample of houses. All women with children aged less than two years were included in a house-to-house survey. A structured questionnaire was used for data collection. Epi-Info was used for statistical analysis.

Results: Results show that 96.6% of the mothers had at least one antenatal care visit, while 80.9% had had more than six visits. Delivery under medical supervision was reported by 97.8% of the sample. The use of antenatal care and the number of visits were statistically significantly associated with age, education and marital status. The last two variables were also statistically significantly associated with the place of delivery. Nearly 83% of the mothers reported one or two illnesses in their children within the last two weeks. About 90.5% of these mothers consulted

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a physician on the illness and there was a 12.4% severe morbidity rate as evidenced by hospital admission. Physician consultation was statistically significantly associated with nationality, education and the occupation of the mother $p < 0.05$. Hospital admission was also statistically significantly associated with age, nationality and occupation of the mother $p < 0.05$.

The commonest illness in the children in the last two weeks was diarrhea (34.3%) followed by fever (33.4%) and breathing difficulties (16%), although the highest frequency of episodes of illness was diarrhea and fever. Nevertheless, breathing difficulties followed closely by ear infection constituted the two highest prevalences among children who were brought for medical consultation (94.4% and 93.3% respectively).

Conclusion: The study shows a higher proportion of mothers attending antenatal care than has been previously reported for the country. The pattern of reported children's illnesses reflects what has been previously seen from hospital studies. It also shows a high rate of physician consultation. This is probably due to the extensive coverage of free government health services in Riyadh. It will be worthwhile to document other socio-demographic variables affecting health seeking behavior of mothers in other parts of the country. There is a need to educate young illiterate mothers in sound child rearing practices. This will help minimize the distress of childhood diseases.

Key Words: Antenatal care, Morbidity of children, Health seeking behaviors, Maternal variables.

INTRODUCTION

Through the Ministry of Health, Saudi Arabia has developed a comprehensive nation-wide health service. In view of the high fertility rate, antenatal care (ANC) is an essential part of this health service.¹ Studies have shown that good maternal child health services can substantially improve child survival.² It is also associated with favorable outcome and, therefore, the improvement in the health status of both mothers and children.^{3,4} Important contributory factors to the utilization of such care apart from its availability and accessibility, are the sociodemographic characteristics of the mother.⁵ In Saudi Arabia, antenatal care is now widely available in the primary health care system, a familiar setting to the potential consumers.⁵ A study in Bangladesh has shown that the provision of health services does not guarantee its use since cultural and religious beliefs can interfere with health seeking behavior.⁶⁻⁸ There is, therefore, a need to note the health seeking behavior of the mothers during the antenatal period and during the first two years of life of their children. Studies on the morbidity of children under two in the community are scarce, as most research work has originated from the hospital setting. This study will examine (1) maternal socio-demographic variables that influence the utilization of antenatal care services and the health seeking behavior of mothers in the course of their children's illnesses, and (2) the morbidity pattern of children under two years of age in a two-week period.

MATERIAL AND METHODS

This was a cross-sectional study in Riyadh, the capital of Saudi Arabia in April, 2003. The sampling plan utilized a map of the residential area of Riyadh available at the Ministry of health as a convenient sampling frame. This was randomly divided into areas of household blocks. From this list of areas, a simple random sample of 4 areas was selected. In each of these areas, blocks demarcated by roads were clearly identified and from the list of blocks, a random sample of two blocks was selected from each area. A systematic sample of one in three houses was subsequently selected in the multi-stage random sampling procedure. In each selected house, all mothers with children aged below two years were included in the study.

A structured questionnaire was used for data collection. It sought information on socio-demographic characteristics of the mothers, antenatal care, child illness in the last two weeks, if the child was seen by a physician, and if the child was admitted into hospital as a result of this illness. Hospital admission was taken as an indication of severe morbidity for the purpose of this study.

Epi-Info statistical software was used for data entry and statistical analysis. A bivariate analysis was carried out to relate socio-demographic variables to antenatal care use and other health-seeking behavior of the mother for her child under two years. Chi square test or one of its derivatives was used as appropriate with p-value set at the 0.05 level.

RESULTS

The demographic characteristics of the mothers in this study in relation to their use of ante-natal care during pregnancy are presented in Table 1. All 446 mothers had one child each under the age of two years. There was an overall high use of antenatal services. The proportion of mothers who had made at least one antenatal visit (ANC) was 96.6%, CI: 95.0% - 98.3% while those with six or more antenatal visits were 80.9%, CI: 77.3%, 84.6%. Only 10 women had delivered at home, giving an overall delivery at modern health facilities as

97.8%: CI: 96.4% - 99.1%. Of the 436 who had delivered in modern health facilities, 63 (14.4%) had delivered in the primary health care centers, while the others, had gone to secondary or tertiary hospitals.

The majority of mothers were older than 30 years. Very few mothers were aged below 20 years of age and they had used the ANC the least (proportion 75%) and had also made the lowest number of antenatal visits (6 or less). The use of antenatal care and a good number of visits were

Table 1: Maternal demographic characteristics in relation to use of antenatal care services, Riyadh, 2003

Maternal characteristics	Number of mothers	Antenatal Care		Delivery at modern health facility (%)
		ever using (%)	6 or more visits (%)	
Age (years):				
< 20	8	75.0	37.5	87.5
20-24	75	96.0	84.0	98.7
25-29	97	97.9	80.4	97.9
30-34	121	96.7	82.6	99.2
35-39	105	98.1	83.6	97.1
40+	40	95.0	72.5	95.0
p-value		0.022	0.024	0.235
Nationality:				
Saudi	416	96.4	81.7	97.8
Non-Saudi	30	100.0	70.0	96.7
p-value		0.290	0.114	0.676
Education:				
Illiterate	16	87.5	56.3	75.0
Primary	32	90.6	68.8	90.6
Intermediate	55	92.7	72.7	98.2
Secondary	122	99.2	83.6	100.0
University	221	97.7	85.1	99.1
p-value		0.009	0.005	0.0001
Occupation:				
Housewife	187	95.2	77.5	96.3
Students	35	97.1	82.9	97.1
Health Workers	22	95.5	72.3	100.0
Education (Teaching)	148	97.3	83.8	98.6
Administration	54	100.0	87.0	100.0
p-value		0.492	0.34	0.372
Marital status:				
Married	429	97.2	81.8	98.4
Divorced/Widowed	17	82.3	58.8	82.4
p-value		0.001	0.018	0.005
Hours working outside:				
< 8 hours	269	97.9	85.9	91.1
8 hours plus	90	95.9	84.5	92.0
Not applicable	187	95.2	77.5	96.3
p-value		0.523	0.222	0.341
Parity:				
1-2	163	96.3	86.6	91.8
3-4	156	96.2	81.8	93.2
5-6	82	98.8	75.9	90.0
7+	45	95.6	74.4	84.4
p-value		0.542	0.117	0.151

statistically significantly associated with age at the 5% level of probability.

Neither nationality nor occupation of the mothers had statistical significant association with the use of antenatal care, the number of antenatal visits or the place of delivery ($p>0.05$). However, the education of mothers was statistically significantly associated with use of ANC, the number of ANC visits and the place of delivery. There was a steady increase in the proportion utilizing ANC, having more than six antenatal visits and delivery in a modern health care facility with the rise in the level of education ($p<0.001$). The mothers who had no formal education had the lowest proportions of these variables as shown in Table 1. The few divorced or widowed mothers had a lower proportion in the use of ANC, attending

ANC more than six times and even delivery at modern health facilities as compared to the married ones. Thus, marital status was also statistically significantly associated with these variables. All other maternal variables examined, such as parity and number of hours of work outside the home did not have any statistically significant association with the antenatal variables and place of delivery.

The health seeking behavior of mothers for their children's illnesses in the last two weeks and the percentages of those whose children had actually been admitted to hospital are shown in Table 2. Out of the total sample of mothers, 370 (82.9%) had a child who had suffered from one or more of the common illness episodes in the last two weeks. A high proportion of these mothers (90.5%) had consulted physicians for their children's

Table 2: Maternal socio-demographic characteristics, physician consultation and hospital admission during child illness in last two weeks, Riyadh, 2003

Mother's characteristics	Number of sick children	Consulting Physician No. (%)	Admitted to hospital No. (%)
Age (years):			
< 20	8	7 (87.5)	3 (37.5)
20-29	145	125 (86.2)	17 (11.7)
30-39	182	172 (94.5)	24 (13.2)
40+	35	31 (88.5)	2 (5.7)
p-value		0.187	0.0001
Nationality:			
Saudi	345	316 (91.5)	45 (13.0)
Non-Saudi	25	19 (76.0)	1 (4.0)
p-value		0.003	0.04
Education:			
Illiterate	15	9 (60.0)	3 (20.0)
Primary	30	25 (83.3)	5 (16.6)
Intermediate	49	42 (85.7)	4 (8.1)
Secondary	106	96 (90.5)	15 (14.2)
University	170	163 (90.8)	19 (11.2)
p-value		0.0001	0.112
Occupation:			
Housewife	139	133 (95.6)	27 (19.4)
Students	33	28 (84.8)	1 (3.0)
Health sector employee	19	19 (100.0)	3 (15.8)
Education sector employee	129	110 (85.2)	10 (7.8)
Administration job	50	45 (90.0)	5 (10.0)
p-value		0.0001	0.002
Hours working outside:			
< 8 hours	151	127 (84.1)	16 (10.6)
8 hours plus	80	75 (93.7)	13 (16.3)
Not applicable	139	133 (95.6)	17 (12.2)
p-value		0.005	0.538
Parity:			
1-2	135	126 (93.3)	19 (14.0)
3-4	132	121 (91.6)	15 (11.4)
5-6	64	55 (85.9)	7 (10.9)
7+	39	33 (84.6)	5 (12.8)
p-value		0.164	0.890

Table 3: Common illness of children under two years by specific age group, Riyadh, 2003

Illnesses	Age group of children (months) - %				Total %	p-value
	1-	7-	13-	19-24		
All Children						
Diarrhea	28.8	40.1	32.4	36.5	34.3	0.187
Fever	25.8	35.8	38.0	46.3	33.4	0.037
Vomiting	17.8	19.8	16.9	24.4	19.0	0.755
Breathing difficulties	9.8	20.4	14.1	26.8	16.0	0.013
Constipation	14.7	16.1	16.9	36.6	17.6	0.01
Ear-infection	14.1	23.4	25.4	24.4	20.4	0.094
Male Children	95	91	40	19	245	
Diarrhea	25.3	41.7	30.0	42.1	33.5	0.088
Fever	29.5	39.6	47.5	31.6	36.3	0.196
Vomiting	14.7	19.8	22.5	21.1	18.4	0.682
Breathing difficulties	7.4	22.0	15.0	21.1	15.1	0.04
Constipation	13.6	14.3	15.0	31.5	15.1	0.216
Ear-infection	13.7	23.1	30.0	21.1	20.4	0.15
Female Children	68	70	31	22	191	
Diarrhea	33.8	37.1	34.5	31.8	35.0	0.963
Fever	20.6	31.4	25.8	59.1	29.8	0.007
Vomiting	22.1	20.0	9.6	27.3	19.9	0.394
Breathing difficulties	13.2	18.6	12.9	31.8	17.3	0.210
Constipation	17.6	18.6	19.4	31.5	40.9	0.110
Ear-infection	14.7	24.3	19.4	27.3	20.4	0.446

illnesses, and about 12% reported that their children had been admitted into a modern health care facility as a result of the illness.

Mothers younger than twenty years of age reported the highest proportion of physicians' consultations (87.5%) although this did not reach the level of significance. They, however, had a statistically significant high proportion of recent admissions to hospitals ($p < 0.001$). More Saudis reported consulting physicians in modern health facilities than non-Saudis (91.5% vs 76.0%) and had higher admissions (13.0% vs 4.0%). These associations were statistically significant ($p < 0.05$).

Physician consultation for a child's illness was also statistically significantly affected by the education of the mother, for illiterate mothers constituted the lowest proportion of women consulting physicians on their children's illness (60%). It was also significantly related to occupation ($p < 0.001$) and the number of hours spent outside the house ($p < 0.05$).

Hospital admissions of sick children (12.4%), a measure of severe morbidity in this study, was also statistically significantly associated with age, nationality, and occupation ($p < 0.05$). Parity of the mother and the number of hours at work, however, were not statistically significantly associated with hospital admission.

Table 3 shows the commonest illnesses reported by the mothers according to the age and sex distribution of the children. The commonest

Table 4: Common illness episodes among children under two years in the last two weeks, and proportion seen by a physician, Riyadh, 2003

Illnesses	% children affected	No. of episodes	No. (%) seen by a physician	p-value
Diarrhea	34.3	152	133 (87.5)	0.019
Fever	33.4	147	135 (91.8)	0.00001
Ear infection	20.4	89	83 (93.3)	0.002
Vomiting	19.0	83	69 (83.1)	0.626
Constipation	17.6	79	67 (84.8)	0.230
Breathing difficulties	16.0	72	68 (94.4)	0.001

illness was repeated diarrhea which affected 34.3% of the children. The distribution of diarrhea by age and within each sex group were not statistically significant ($p > 0.05$), but the highest proportion occurred between 7-12 months. There was a statistically significant linear trend in the proportions with fever (33.4%) as the age of child rose ($p < 0.05$). The age differential of fever was statistically significant among females as opposed to males ($p < 0.05$). Ear infections and vomiting (20.4% and 19% respectively) did not show any statistically significant association with age and sex ($p > 0.05$). Allergy and chest infections as

manifested by breathing difficulties (16%) statistically significantly increased with age, the lowest proportion being in children aged less than seven months ($p < 0.05$). However, while a significant association was found among males, females did not show any significant trend with age ($p > 0.05$). The frequency distribution of the common illness episodes reported and the proportions who had consulted a physician are shown in Table 4. The highest frequency of illness episodes was diarrhea and fever (34.3% and 33.4% respectively). However, difficulties in breathing, followed closely by ear infection, constituted the two highest prevalences among children of mothers who had sought medical help (94.4% and 93.3% respectively).

DISCUSSION

The study shows the use of ANC services by a high proportion of women (96.6%). This is higher than was previously reported in Saudi Arabia.¹ Eighty one percent of these women had had more than six antenatal visits, a figure that was also higher than had been previously reported.⁹

Delivery at a modern health care facility was also high, 97.8%, 14.4% of whom had delivered at a primary health care center. These figures are higher than those reported in Al-Baha in 1994.⁵ This could be explained by the fact that the present sample was from Riyadh, the capital, where supply and utilization of health services was expected to be higher than in other areas. Results, therefore, are not representative of the country as a whole.

The use of ANC services was associated with age, education and marital status. Mothers who were widowed or divorced in the course of their pregnancy used the ANC services the least. This is also similar to what had been found elsewhere.¹⁰ Contrary to some previous reports, no significant association was found between nationality, parity, occupation and the number of working hours outside the home and the use of ANC services or the number of antenatal visits.^{9,11} Age and education, however, were found to be significantly associated with attendance at ANC, and more than six ANC visits. This is similar to what has been documented elsewhere.^{10,12} Studies show, however, that categorization of women's antenatal care status on the strength of the number of visits masks a wide variation in the quality of care received.¹³

As regards the health seeking behavior of the mother during a child's recent illness, the study showed that a high proportion (90.5%) of ill children had been brought to the physician in the

last two weeks, with a hospital admission rate of 12.4%. The high rate of physician consultation reflects a wide coverage of free hospital care and the high quality of health services.¹⁴ Children of young non-working Saudi mothers showed the highest hospital admission rate. This was statistically significant at $p < 0.05$, while illiterate mothers had the lowest physician consultation rate, which was also statistically significant at $p < 0.001$. Similar findings have been reported by other researchers.¹⁵ The study shows that the non-working Saudi mother is more likely to bring her child to a physician for consultation. This is expected, in view of the easy access Saudis have to the primary health care services and that in an urban sample such as this it is relatively easy for women to travel independently. Although physician consultation and hospital admission rates were generally high for the total sample, previous studies have shown that seeking medical help greatly affected the child's survival or succumbing to a respiratory illness or diarrhea.¹⁶

In the present sample, the highest proportion of illness episodes were diarrhea and fever; the highest proportion among children aged 7-12 months was diarrhea. This is similar to what has been found in other studies.^{6,14,17} Breathing difficulties increased with age and although constituting the lowest of the illness episodes, was the highest among those who sought medical help, followed closely by ear infection and fever. This is understandable, as such illnesses can be distressing to both child and mother. A similar result had been documented elsewhere.⁶

Finally, this study highlights the need to have health education programmes that target young and illiterate mothers and those with limited education. These programmes should stress the benefits of regular attendance at ANC and well-baby clinics to mother and child. The proper and timely use of oral rehydration therapy should be taught to vulnerable groups i.e. young and illiterate mothers. Breast feeding as the optimal method of infant feeding should be consistently encouraged by health personnel as well as the media. Furthermore, individual child-doctor visits should be used as opportunities for mass and one to one health education forums on optimal maternal child health. Finally, in addition to monitoring the quantity of ANC received, there should be regular evaluation of health services, particularly antenatal care services and well-baby clinics, in order to guarantee the quality of care provided.

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