

REPRODUCTIVE HEALTH PROBLEMS AMONG URBAN WOMEN: A STUDY OF FOUR METRO CITIES IN INDIA

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ABSTRACT

Community-based research in India has made it evident that reproductive problems are not confined to any special clinic-based population but is widespread within the community at large. Therefore, an attempt has been made in this paper to study the prevalence of reproductive health problems and treatment seeking behaviour among currently married women in four metro cities in India namely; Mumbai, Delhi, Chennai, and Kolkata. Further, this paper also examines the effect of socio-economic and demographic factors on self-reported reproductive health problems. Based on NFHS-2 data, the analysis shows that the prevalence of any reproductive health problem among women is the highest in Mumbai (54%) followed by Delhi (36%), Chennai (30%), and Kolkata (28%). A majority of women in all four metro cities have reported abdominal pain, itching, and burning sensation as the major problems while urinating. However, in spite of the high prevalence of reproductive health problems, a large proportion of such women in all these cities do not seek any advice or treatment for these problems. This study also examines determinants that affect the prevalence of reproductive health problems to help policy makers plan for proper interventions for improving woman's reproductive health.

Keywords: Women, Metro cities, Reproductive health problems, Significant.

Reproductive health problem is an important public health issue in most of the developing countries, The International Conference on Population and Development, held at Cairo in September 1994 stressed the importance of women's health, particularly of reproductive problems. Reproductive health is defined as "a state of complete physical, mental and social well-being and not

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merely absence of disease or infirmity, in all matters relating to reproductive system and its function and processes"¹. Several studies conducted in India have documented a high prevalence of self-reported reproductive health problems such as abnormal vaginal discharge, lower abdominal pain, irregular vaginal bleeding, lower abdominal pain, irregular vaginal discharge etc. among women of reproductive age²⁴. Most of these problems can be easily cured by early detection and proper treatment. Previous studies suggest that the majority of symptomatic women do not seek formal treatment⁵⁻⁶ or they seek treatment only when their symptoms increase in severity^{3,7,8}. Untreated reproductive health problems can cause pregnancy related complications, congenital infections, infertility and chronic pain. Such infections also significantly increase the risk of acquiring pelvic inflammatory disease (PID) and the likelihood of infection with HIV⁹⁻¹¹. Beyond adverse health consequences, women may also face serious social consequences in terms of marital disharmony and exclusion from social or religious life¹².

A study conducted by the Indian Statistical Institute, Kolkata, pointed out that women in metro cities are also at higher risk of reproductive health problems and there is a need to investigate these issues in detail¹³. In this paper, an attempt has been made to study the prevalence of reproductive health problems and treatment-seeking behaviour among currently married women of four metro cities namely; Delhi, Chennai, Kolkata and Mumbai in India. This paper also examines the net effect of various factors on reproductive health problems.

MATERIALS AND METHOD

For the present study, data relating to reproductive health problems in four metro cities have been extracted from the National Family Health Survey-2 (1998-99). The NFHS-2 collected information from ever married women on the basis of self-reported symptoms of reproductive health problems occurring in the three months prior to the survey such as vaginal discharge accompanied by itching, fever, bad odour and irritation around vaginal area, severe lower abdominal pain not related to menstruation and pain or burning while urinating or frequent or difficult urination. Currently married women were also asked whether they often experience pain during sexual intercourse or had ever experienced bleeding after coitus. All the women who reported at least one symptom were asked a follow-up question whether they sought formal treatment for the symptoms. The number of currently married women of age 15-49 years interviewed from Delhi; Chennai, Kolkata, and Mumbai were 2183, 870, 913 and 1876 respectively. Thus, the analysis in this paper is based on self-reported reproductive health problems

rather than those clinically diagnosed. In this paper reproductive health problems have been considered as problems related to any abnormal vaginal discharge (discharge accompanied by itching or irritation, bad odour, abdominal pain, fever and other problems), urinary tract infection, pain during intercourse and bleeding after intercourse.

Reporting of at least one symptom of reproductive health problems is considered as dependent variable. The dependent variable is dichotomized as the presence or absence of the condition. Available literature suggests that prevalence of reproductive health problems and treatment-seeking behaviour could possibly be influenced by a number of socio-economic factors such as education, income and rural-urban residence as well as by demographic factors such as age, parity, pregnancy wastage and contraceptive use²⁻³¹⁴. Taking these issues into account, the considered socio-economic and demographic variables were as follows: place of residence (Mumbai, Delhi, Chennai and Kolkata), age of the women (<=19 years, 20-24 years, 25 years and above), age at first cohabitation (<=19 years, 20-24 years, 25 years and above), parity of women (0,1, 2, 3, 4 and above), religion (Hindu, Muslim and others), caste (SC/ST, OBC and others), standard of living (low, medium, high), educational status of woman (illiterate, middle school completed, high school and above), experience of pregnancy wastage (no, yes), autonomy (low, medium, high) and current use of contraceptive methods (no, yes). A multivariate logistic regression analysis has been done to assess the net effect of each variable on the likelihood of reporting symptoms of reproductive health problems.

FINDINGS AND DISCUSSIONS

In all four metro cities, the prevalence of any one symptom of reproductive health problems among currently married women is 40 per cent, which is slightly higher than the national average (39.2%). It is reported that the self-reported symptoms of any reproductive health problems among currently married women ranges from 29 per cent in Kolkata to 54 per cent in Mumbai, 36 per cent in Delhi and 30 per cent in Chennai (Table 1).

Reproductive Health Problems		Mumbai	Delhi	Chennai	Kolkata
Any reproductive health problems		54.4	36.4	30.0	28.6
At least two reproductive health problems		22.7	16.7	14.4	11.5
Any abnormal vaginal discharge		46.4	29.9	22.4	20.2
VAGINAL DISCHARGE ACCOMPAIN ED BY	Itching or Irritation	22.3	14.9	11.4	9.9
	Bad odour	6.6	10.9	3.6	5.3
	Abdominal pain	25.8	19.3	17.5	13.3
	Fever	9.0	8.1	1.8	1.3
	Any other problem	29.7	2.8	2.2	3.1
Symptoms of a urinary tract infection		22.4	14.1	10.2	11.5
Pain during intercourse		8.5	9.4	10.6	6.9
Bleeding after intercourse		1.2	1.2	0.3	1.5

It is evident from Table 1 that in all four metro cities abnormal vaginal discharge was higher and bleeding after intercourse was the lowest among four types of reproductive health problems. It was further reported that vaginal discharge accompanied by lower abdominal pain was higher than any other problem except in Mumbai where abnormal vaginal discharge accompanied by other problems was reportedly high. It may be seen from Table 2 that among those who reported any one symptom of reproductive health problems, about half (51 per cent) of the women had not received any treatment or advice. Table 2 also presents the proportion of symptomatic women who sought treatment according to the type of providers they consulted. A higher proportion of women sought treatment from the private medical sector than the public medical sector in all the four metros. Results showed that in Chennai and Kolkata, more than 50 per cent of women did not seek any treatment for their reproductive health problems, whereas in Delhi and Mumbai, the proportions were 49 and 42 per cent, respectively.

Tables 3 and 4 show the self-reported symptoms of reproductive health problems among currently married women and their treatment seeking behaviour by socio-economic and background characteristics. The younger women (below 19 years) have reported more reproductive health problems in all four metro cities. In Delhi, Chennai and Mumbai treatment for reproductive health problems was marginally higher in the 'above 25 years age-group', whereas in Kolkata this

TABLE 2
PERCENTAGE OF CURRENTLY MARRIED WOMEN WHO SOUGHT
TREATMENT FROM DIFFERENT SOURCES FOR ANY REPRODUCTIVE'
HEALTH PROBLEM IN FOUR METRO CITIES OF INDIA

Sources of treatment for reproductive health problems	Percentage of those who sought treatment			
	Mumbai	Delhi	Chennai	Kolkata
Public medical sector	18.9 (112)	28.3(115)	29.9 (35)	3.1 (8)
Private medical sector	817(483)	74.6 (303)	70.1 (82)	91.2 (73)
Others	1.4(8)	0.9 (4)	-	-
Sought treatment from anyone source	57.9(591)	51.1 (406)	44.8(117)	30.7 (80)
Did not seek any treatment	42.1 (430)	48.9 (389)	55.2 (144)	69.3 (181)
Total women reported any reproductive health problem	1021	795	261	261

percentage was higher in the 'below 19 years age-group'. The prevalence of any one symptom of reproductive health among women who experienced first cohabitation at an early age (below 19 years) was higher in Mumbai (58%) and Delhi (42%) whereas Kolkata (30%) and Chennai (29%) showed somewhat similar picture. Treatment seeking behaviour among women who experienced their first cohabitation at an early age (below 19 years) was marginally better in Mumbai (59%). It may be noted that in Delhi, more women who had first cohabitation at 20-24 years age-group sought treatment. On the contrary, in Chennai and Kolkata, treatment seeking behaviour among women who had first cohabitation at higher ages (above 25 years) was not so good.

In Mumbai and Delhi, the prevalence of reproductive health problems was noticeably higher among those women who had four or more children. On the contrary, in Chennai and Kolkata, the prevalence rate was higher among women who had not given birth. In Mumbai, Chennai and Kolkata, the prevalence rate for seeking treatment was higher among women who have not given birth, whereas, there was no notable difference in treatment seeking behaviour in Delhi. It was also noticed in Kolkata and Delhi that the tendency to seek treatment was lowest among women who had four or more children. In Mumbai, Delhi and Chennai, reproductive health problems were higher among non-Hindus except in Kolkata. The tendency to seek treatment for reproductive health problems was higher among non-Hindu women, for example 65 per cent in Mumbai and 23 per cent in Delhi and 45 percent in Chennai which was higher among Hindus. On the contrary,

no significant difference between Hindu and non-Hindu women in their treatment seeking behaviour for reproductive health problems was observed, it was also observed that women belonging to SC/ST were reporting more reproductive health problems in all the four metros. Despite this, the tendency to seek treatment was higher among other caste women in all the four metros.

The women with high economic status reported less prevalence of reproductive health problems viz. 46 per cent in Mumbai, 32 per cent in Delhi, 23 per cent in Chennai and 25 per cent in Kolkata. On the other hand, the tendency to seek treatment is positively associated with the economic status of women. More educated women reported less of any reproductive health problems in all the metros. The percentage of women seeking treatment for reproductive health problems was markedly higher among literate women in all the four metros. It was found that the prevalence of reproductive health problems was substantially higher among women who had experienced pregnancy wastage viz. 41 percent in Delhi, 46 per cent in Chennai and 61 per cent in Kolkata. In Mumbai prevalence rate did not differ by pregnancy wastage. Treatment seeking behaviour was also better among women who had experienced pregnancy wastage in all the four metros. It was found that, in Mumbai and Kolkata, autonomy played a considerable role where the prevalence of reproductive health problems was negatively associated with autonomy; Similarly, in Chennai, 32 per cent of women of low autonomy reported relatively higher prevalence of reproductive health problems but there was slight difference in the prevalence rate with the women of medium and high autonomy. In Delhi, no notable difference in prevalence rate by autonomy was observed. The percentage of women seeking treatment for reproductive health problems was higher among women with high autonomy viz. 57 per cent in Delhi and 36 per cent in Kolkata. In contrast, women with less autonomy viz. 63 per cent in Mumbai and 55 per cent in Chennai availed of treatment. Contraceptive users reported a marginally higher prevalence rate of any one symptom than, non-users viz. 37 per cent in Delhi, 30 per cent in Chennai and 31 per cent in Kolkata. It was interesting to note that non-users in Mumbai reported a high prevalence of reproductive health problems. The tendency to seek treatment, was moderately higher among non-users, 50 per cent in Chennai followed by 37 per cent in Kolkata whereas it was higher among users in Delhi- (55%). However, the treatment seeking behaviour did not appear to vary by contraceptives' use in Mumbai.

TABLE 3

PREVALENCE OF ANY REPRODUCTIVE HEALTH PROBLEMS AMONG CURRENTLY MARRIED WOMEN BY SELECTED CHARACTERISTICS OF FOUR METRO CITIES IN INDIA

Variables	Any Reproductive Health Problem			
	Mumbai	Delhi	Chennai	Kolkata
<i>Age</i>				
<=19 years	67.9 (84)	50.0 (52)	48.3 (29)	41.9(31)
20-24 years	57.3 (323)	38.9 (339)	32.0 (147)	36.6 (161)
>=25 years	53.0(1469)	35.5(1792)	28.8 (694)	26.2(721)
<i>Age at first cohabitation</i>				
<=19 years	58.3(1164)	42.1(1246)	29.4(537)	29.9(568)
20-24 years	49.5(535)	29.9(803)	32.0(278)	29.2(243)
>=25 years	42.7(157)	22.4(134)	25.5(55)	19.6(102)
<i>Parity</i>				
0	57.3 (225)	35.6(177)	33.0(100)	43.1(109)
1	55.0(331)	32.2(332)	25.7(179)	26.9(264)
2:3	51.3(947)	35.3(1070)	30.9(492)	28.1(381)
4 and above	60.1 (373)	40.9(604)	30.3(99)	22.6(159)
<i>Religion</i>				
Hindu	52.0(1239)	36.4(1850)	29.3(730)	29.5(808)
Non-Hindu	59.2(637)	36.6(333)	33.6(140)	21.9(105)
<i>Caste</i>				
SC/ST	59.4(224)	46.2(437)	34.4(180)	29.8(131)
OBC	56.7(233)	39.7(277)	29.3(611)	17.6(17)
Others	53.3(1415)	32.9(1466)	25.3(76)	28.6(763)
<i>Economic status</i>				
Low	55.9(213)	43.5(131)	33.6(152)	35.7(98)
Middle	61.1(902)	46.6(588)	33.2(446)	29.7(501)
High	46.1(761)	31.7(1464)	22.8(272)	24.5(314)
<i>Educational status</i>				
Illiterate	64.2(441)	41.2(595)	29.5(251)	28.6(224)
Middle School completed	57.7(787)	43.4(569)	32.4(330)	31.1(376)
High School and above	43.8(648)	29.7(1019)	27.7(289)	25.6(313)
<i>Pregnancy wastage</i>				
No	54.4(1852)	36.4(2156)	29.6(846)	28.1(900)
Yes	54.2(24)	40.7(27)	45.8(24)	61.5(13)
<i>Autonomy</i>				
Low	66.1(657)	36.3(964)	34.0(197)	31.9(492)
Medium	50.7(831)	37.0(902)	28.3(399)	25.6(285)
High	42.6(387)	35.2(298)	29.7(273)	23.3(133)
<i>Contraceptive use</i>				
Not using	56.5(813)	34.9(788)	29.9(308)	22.2(230)
Using	52.9(1063)	37.3(1395)	30.1(562)	30.7(683)
All women	1876	2183	870	913

TABLE 4
PREVALENCE OF TREATMENT SEEKING BEHAVIOUR AMONG THOSE WOMEN WHO
REPORTED ANY ONE REPRODUCTIVE HEALTH PROBLEMS BY SELECTED
CHARACTERISTICS OF FOUR METRO CITIES IN INDIA

Variables	Sought Treatment			
	. Mumbai	Delhi	Chennai	Kolkata
<i>Age</i> <=19years 20-24 years >=25 years	49.1 (57) 57.3(185) 58.2 (779)	42.3(11) 43.2(58) 52.4 (337)	35.7 (14) 34.0(47) 48.0 (200)	38.5(13) 27.1 (59) 31.2(189)
<i>Age at first cohabitation</i> <=19 years 20-24 years >=25 years	58.5 (679) 57.8 (275) 52.2(67)	47.6 (250) 58.8(141) 50.0(15)	44.9(158) 44.9 (89) 42.9 (14)	31.2(170) 31.0 (71) 25.0 (20)
<i>Parity</i> 0 1 2-3 4 and above	62.8(129) 51.6 (182) 58.4(486) 58.9 (224)	49.2(31) 50.5(54) 54.2(205) 47.0(116)	54.5 (33) 39.1 (46) 42.8(152) 53.3 (30)	38.3 (47) 32.4 (71) 31.8(107) 13.9 (36)
<i>Religion</i> Hindu Non-Hindu	53.9 (644) 64.7 (377)	50.1 (341) 53.3 (65)	45.3(214) 42.6 (47)	30.7 (238) 30.4 (23)
<i>Caste</i> SC/ST OBC Others	57.1 (133) 53.0(132) 58.9 (754)	50.0(101) 48.2(53) 52.3(252)	37.1(62) 46.4(179) 52.6(19)"	17.9(39) - (3) 33.3(217)
<i>Economic status</i> Low Middle High	55.5(119) 55.0 (551) 63.2(351)	35.1 (20) 49.3(135) 54.1 (251)	33.3 (51) 43.2(148) 58.1 (62)	17.1 (35) 30.2(149) 37.7 (77)
<i>Educational status</i> Illiterate Middle School completed High School and above	49.1 (283) 162.1 (454) 59.9 (284)	45.3(111) 47.8(118) 58.4(177)	4015 (74) 45.8(107) 47.5 (80)	25.0 (64) 30.8 (117) 35.0 (80)
<i>Pregnancy wastage</i> No Yes	57.8(1008) 61.5(13)	51.0 (400) 54.5 (6)	44.8 (250) 45.5(11)	30.0 (253) 50.0 (9)
<i>Autonomy</i> Low Medium High	63.4(434) 54.9(421) 50.9(165)	47.1 (165) 53.0(177) 57.1 (64)	55.2 (67) 40.7 (113) 42.0 (81)	31.2(157) 27.4 (73) 35.5(31)
<i>Contraceptive use</i> Using Not using	58.0 (562) 57.7(459)	54.8 (285) 44.0(121)	42.0(169) 50.0 (92)	29.0 (210) 37.3(51)
<i>All women</i>	1021	795	261	261

The results of the logistic regression for reporting of any one symptom of reproductive health problems are shown in Table 5. The results were considered at 5 per cent level of significance. Table 5 clearly reveals that reporting of any reproductive health problems was significantly more prevalent among women who are residing in Mumbai. Further, women from Delhi, Chennai, and Kolkata reported 28, 34, and 68 per cent less symptoms of any reproductive health problems respectively than women from Mumbai. This may be attributed to the fact that better health facilities are available in Mumbai. It also reflects that more number of women (58%) visit health centres for treatment for reproductive health problems. Therefore, reporting of any reproductive health symptoms may be varied because, of availability of better health facilities. Age was positively correlated with reporting of reproductive health problems. The probability of reporting reproductive health problems are significantly higher among women aged 25 years and above as compared to their counterparts in the 15-19 years age group. It was observed that as age at first cohabitation increases, reproductive health problems tends to decline. Women who first cohabitated at age more than 24 years had around 51 per cent significantly less chance of any reproductive health problems. Parity was significantly negatively associated with reporting of any reproductive health problems. In contrast, caste of the woman, whether she had ever experienced pregnancy wastage and use of contraceptives, were not significantly associated with any reproductive health problems. But; the result still shows that use of contraceptives had a negative impact on woman's health. Woman's education was significantly associated with reporting reproductive health problems, i.e., more the years of schooling, the higher the odds of reporting reproductive health problems. Women who were educated up to middle school reported significantly 30 per cent more reproductive health problems as compared to illiterate women. A similar picture emerged with the economic status of household. In the religion categories, Hindu women were significantly more likely to report any one symptom of reproductive health problems as compared to non-Hindu women.

TABLE 5
LOGISTIC REGRESSION RESULTS OF REPORTING OF ANY
REPRODUCTIVE HEALTH PROBLEMS BY SELECTED CHARACTERISTICS IN
FOUR METRO CITIES OF INDIA

<i>Variables</i>	Any Reproductive	Health Problem
	Exp(B)	Sig.
<i>Place of residence</i>		
Mumbai®		
Delhi	0.72	0.01
Chennai	0.66	0.01
Kolkata	0.32	0.00
<i>Age</i>		
<=19 years®		
20-24 years	1.40	•0.15'
25 years and above-	2.15.	0.01
<i>Age at first cohabitation</i>		
<=19 years®		
20-24 years'	0.90'	0.32
25years'and above	0.49"	0.01
<i>Parity</i>		
1	0.59	0.01
2-3	0.59	0.01
4 and above	:0.43	0.00
<i>Religion'</i>		
HindiM		
Non-Hindu'	0.72	0.01
<i>Caste</i>		
SC/ST®.		
OBC	0.94	0.66
Others	0.99	0.92
<i>Economic status</i>		
Low®		
Middle	1.24	0.14
High .	1.41	0.04
<i>Educational status</i>		
Illiterate®		
Middle School completed	1:31	0.01
High School and above	1.43	0.01
<i>Pregnancy wastage</i>		
No®		
Yes	1.01	0.98
<i>Autonomy</i>		
Low®		
Medium	0.83	0.05
High	0.81	0.11
<i>Contraceptive use</i>		
Not using®		
Using	1.05	0.66

CONCLUSION

Even though the metros are demographically developed, the prevalence of any self-reported symptom of reproductive health problems was found to be quite high among the currently married women aged 15-49 years, in all the four metros. The prevalence of reproductive health problems was significantly high in Mumbai as compared to other metros included in the study; In spite of a high prevalence of reproductive health problems, a large proportion of such women in all these cities do not seek any advice or treatment. This is indeed sad because the metros are known to have a relatively higher level of socio-economic development in India. The tendency to seek treatment for reproductive health problems was found to be quite low in Kolkata; Among those who sought treatment, the private medical sector was more common than the public medical sector. A number of socio-economic and demographic variables influenced the prevalence rates as well as treatment seeking-behaviour. Among all independent variables, woman's individual determinants such as age, education and parity seemed to play an important role in influencing the prevalence rates as well as treatment seeking behaviour. In view of the above findings, this study shows the need for strengthening programmes aimed at improvement in woman's health in India and also provides valuable information for social scientists, policy makers and health professionals who are concerned with improving the quality of life of women in India.

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भारत में समुदाय-आधृत अनुसंधान से यह साबित हो गया है कि प्रजनन स्वास्थ्य समस्याएँ किसी विशिष्ट क्लिनिक-आधृत जनसंख्या तक ही संसीमित नहीं हैं, बल्कि यह पूरे समुदाय में व्यापक रूप से व्याप्त है। इसलिए इस लेख में भारत के चार महानगरों अर्थात्-मुंबई, दिल्ली, चेन्नई तथा कोलकाता में नवविवाहित महिलाओं में प्रजनन स्वास्थ्य समस्याओं की व्यापकता दर तथा उपचार प्राप्ति के उनके व्यवहार का अध्ययन करने का एक प्रयास किया गया है। इस लेख में स्वतः सूचित प्रजनन स्वास्थ्य समस्याओं पर सामाजिक-आर्थिक तथा जनांकिकीय घटकों के प्रभाव की भी जांच की गई है। राष्ट्रीय परिवार स्वास्थ्य सर्वेक्षण (एन.एफ.एस.एस.)-2 के आकड़ों पर आधारित विश्लेषण से देखा गया है कि महिलाओं में किसी प्रजनन समस्या की व्यापकता दर मुंबई में सबसे अधिक (54प्रतिशत), उसके बाद दिल्ली में (36प्रतिशत), चेन्नई में (30प्रतिशत) तथा कोलकाता में (28प्रतिशत) है। सभी चार महानगरों में अधिकांश महिलाओं द्वारा उदरीय दर्द, खुजली तथा पेशाब के समय जलन की अनुभूति प्रमुख समस्या के बावजूद इन सभी नगरों में ऐसी महिलाओं के एक बड़े भाग द्वारा इन समस्याओं के लिए कोई सलाह नहीं की गई अथवा उपचार नहीं कराया गया। यह अध्ययन प्रजनन स्वास्थ्य समस्याओं की व्यापकता दर को प्रभावित करने वाले उन निश्चायकों की भी जांच करता है जो महिलाओं के प्रजनन स्वास्थ्य में सुधार के लिए समुचित हस्तक्षेपों की योजना बनाने में नीति निर्माताओं की सहायता करते हैं।

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**LEVELS AND RISK FACTORS OF PERI-NATAL MORTALITY IN
ANDHRA PRADESH: A RECORD-BASED STUDY OF A PRIVATE
NURSING HOME**

P.S. Sekhar¹, Ch. Syamalamba² and D. Dangoria³

ABSTRACT

The present, study was conducted with the specific objectives to (i) analyse deliveries by age, parity, and type of delivery; and (ii) examine the trends in peri-natal mortality rate (stillbirth rate and early heb'natal mortality rate) and the high-risk factors influencing PNMR in Dangoria Maternity Nursing Home (DMNH), Hyderabad, Andhra Pradesh. An analysis over the years revealed that peri-natal mortality rate declined from 71/1000 births in 1971 to 22/1000 births in 2000. There has been an increase in the caesarean section rate in the nursing home over the years (27% in 2000) which is similar to the findings of some other recent studies. Over the years, the mean birth weight in the DMNH has improved marginally (100 grams) and recorded 2,796 grams by the year 2000. The low-birth weight (below 2,000 grams), as per the IAP criteria, declined from 10 percent in 1971 to three percent in 2000. The direct causes of low-birth weight like PIH, anaemia, eclampsia and pre-term births have significantly declined due to the provision of quality ANC in the nursing home.

Measures to improve maternal nutrition, proper policy to educate at the community level and guiding and explaining primi mothers about the necessity of availing of the facilities of antenatal care, safe delivery and quality of new-bom care are suggested.

Keywords: Peri-natal mortality, Low-birth weight, Macerated stillbirth, Wigglesworth classification, Caesarean section.

Peri-natal mortality means death of a baby during twenty-eight weeks of gestation period to first seven days after birth. Neonatal and peri-natal mortality

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data are scanty in India which are largely institution-based and have no uniform pattern of reporting. Due to improved health standards, the infant mortality rate has declined from 76.5/1000 during 1992-'93 to 67.6/1000 during 1998-'99. Still there is no significant difference in the incidence of neo-natal mortality during the two periods¹. The primary causes of neo-natal mortality are sepsis, asphyxia and malformations in a community setting followed by low birth weight and immaturity in a hospital setting²⁻⁴.

Despite the fact that child survival programmes have been implemented in the country for 30 years and safe motherhood programmes for 15 years, essential newborn care has been neglected in policies and programmes⁵. With the implementation of the above programmes, the post-neo-natal mortality has declined more and faster than peri-natal mortality. In other words,, peri-natal mortality consists of both still birth rate (SBR) and early neo-natal mortality rate (ENMR). At the national level, peri-natal mortality rate (PNMR) was estimated at 47.21/1000 births in 1989 and 45 in 1999⁶.

Effective reduction of high neo-natal deaths (especially the peri-natal deaths) remains a major challenge. The Government of India has made newborn health as a priority area of concern in the Tenth Five-Year Plan'. The Millennium Development Goal calls for a two-thirds of reduction in child mortality rate. Infections, birth asphyxia and low birth weight have been identified as the key research priorities, to tackle neo-natal mortality⁵. It has also been suggested to investigate the. causes, of stillbirths and neo-natal .deaths separately instead of PNMR^{4,7} which reviewed more than 300 neo-natal research studies published in four indexed journals in India and reported that only 13 per cent of research studies are from private medical institutions, even though they cater to majority of urban and semi-urban communities.

The empirical studies based on peri-natal mortality were broadly classified into- (i) studies based on one time reference; (ii) studies comparing two or more time reference points; (iii) comparing hospital and community settings in a locality in a reference period; and (iv) experimental group with control group within a community setting. The selected review of studies indicates the existence of some gap in the peri-natal care research that include lack of studies based on private medical institutions' database. There are also lack of comparative studies between public and private institutions in order to assess the influence of intervention factors such as ante-natal care, maternal weight gain, low-birth weight, increase in caesarean section rate, etc. So, the present study was conducted with the specific

objectives to (i) analyse deliveries by age, parity, and type of delivery; and (ii) examine the trends in peri-natal mortality rate (stillbirth rate and early neo-natal mortality rate) and the high-risk factors influencing PNMR.

MATERIALS AND METHOD

This paper studies the causes of PNMR in a private maternity nursing home in Hyderabad, Andhra Pradesh. The Dangoria Maternity Nursing Home (DMNH) with 30 beds was established in 1970 for level-1 newborn care. The DMNH maintains birth register; pre-natal check-up card, inpatient record and newborn care by a consultant paediatrician. With regard to the women who have delivered in the hospital, the nursing home's birth register has information on their age, parity; last child born (in months), and details pertaining to the baby including birth weight, mode of delivery, sex, Apgar score, doctor attending delivery and any specific neo-natal problems/remarks. The causes of PNMR were classified according to the Wigglesworth classification⁸.

The database of DMNH provides an ideal situation of deliveries in a nursing home including ante-natal care, delivery (booked cases) and newborn care by skilled medical attendants: The observations drawn from the study can also be extended to community and in turn, they can help in reframing the policy decisions.

The study examined the database of DMNH during the cross-sectional years 1971, 1989, 1999 and 2000. Wherever possible, results have been compared with another Government hospital data and a rural hospital in Narsapur which is maintained by DMNH in Medak district, 55 kilometers away from Hyderabad. The reference year 1971 coincides with the first year of DMNH and the later two years 1989 and 1999 report the situation before and after the introduction of Reproductive and Child Health Programme. Chi-square test and regression techniques have been used to analyse the data.

FINDINGS AND DISCUSSION

Delivery Care

The total deliveries conducted per annum in DMNH increased from 236 in 1971 to 1,340 in 1989 and reached 1,864 in the year 2000. In the early 1970s, the delivery load was concentrated during July to December months, but since, late 1980s about 130 to 150 deliveries were conducted every month. It is found that the median age of women delivered in DMNH declined from 24.7 years in 1971 to 22 years in 1999.

The study further found that more than two-thirds of the deliveries (68%) were conducted as normal vaginal delivery during 1971, but marginally declined to 60 per cent by late 1990s. Deliveries by forceps and episiotomy (EPI) accounted for 25 per cent in 1971 which declined to 10 percent by 2000. The decline in forceps mode of deliveries may be attributed to availability of ultrasound scanning devices.

The caesarean section rate doubled from seven per cent in 1971 to 16 per cent in 1989 and 27 per cent in 2000. Since the inception of the hospital, more than 96 per cent had live births in spontaneous deliveries. With regard to caesarean (LSC) deliveries, 96 per cent had live births in 1999 as compared to 82 per cent in 1971. According to NFHS-II (2000) survey, the percentage of caesarean section deliveries was 14.5 during the preceding three years of survey in Andhra Pradesh (22.2% in urban and 11.9% in rural areas).

The number of teenage mothers (17 years or less) and mothers above 30 years of age admitted for deliveries declined in late 1990s as compared to early 1970s. The percentage of mothers aged 19 or less declined from 17 per cent in 1971 to about 8 per cent in 2000 (Table 1). Similarly, number of mothers with more than 30 years of age, sharply declined from 23 per cent in 1971 to less than five per cent in late 1990s. The primi-gravida constituted 32 per cent in 1971 which increased to about 47 per cent in 2000. Multi-gravida mothers (4 and above) also declined sharply. According to NFHS-II (2000) survey, in Andhra Pradesh, more than 34 per cent of the mothers delivered in the last three years were below 20 years and only two per cent were above 35 years of age.

TABLE 1
PERCENTAGE OF PREGNANT WOMEN BY AGE AND PARITY (1971-2000)

	1971	1989	1999	2000
Age of mother				
Below 19	16.9	15.4	11.2	7.9
19-24	30.9	47.7	59.0	56.4
25-29	29.2	27.9	24.2	24.5
Above 30	23.0	9.0	5.6	3.2
Parity of mother				
Primi gravida	31.8	39.1	47.3	46.7
Gravida-I	22.9	32.3	34.0	36.7
Gravida-II	11.9	16.8	13.9	13.1
Gravida III and above	33.4	11.9	4.8	3.5
All	100.0(236)	100.0(1340)	100.0(1687)	100.0(1864)

Newborn Birth Weight

A comparison of mean birth weight in DMNH over the years, 1971-2000 indicates only a slight improvement of less than 100 grams. The mean birth weight increased from 2,709 grams (S.D. = 567) in 1971, to 2,796 grams (S.D.= 451) in 2000. The male babies were slightly heavier than female babies. Some other research studies in Andhra Pradesh reveal a mean birth weight between 2,515 and 2,730 grams⁹⁻¹¹.

Table 2 compares the mean birth weight in the three hospitals; DMNH, one Government hospital in Hyderabad and the rural hospital in Narsapur during 1999. Mean birth weight of newborns was the lowest in rural Narsapur hospital (2,737 grams) followed by the Government hospital, Hyderabad (2,756 grams) and DMNH of 2,792 grams. The differences in mean birth weights of babies between the three hospitals are very marginal. Further analysis showed that the percentage of LBW babies (below 2,500 grams) was 20 per cent in DMNH and Government hospital, Hyderabad, while it was about 24 per cent in the Narsapur hospital. The higher mean birth weight at DMNH was due to the fact that all mothers weighed above 45 kgs and availed regular ante-natal care. Only 78 per cent of the mothers were 45 kgs or more who had delivered in the rural Narsapur hospital and 37 per cent, who delivered in the Government hospital. An analysis (not in the paper) of 300 case records of DMNH during 1999 revealed that maternal weight below 45 kgs, Hemoglobin (Hb) level below 11 g/dl, and less than three ante-natal checkups were significantly correlated with delivery of low birth weight (LBW) babies; Moreover, two-thirds of LBW babies were born to gravida-2 mothers with short birth interval of less than 24 months.

TABLE 3

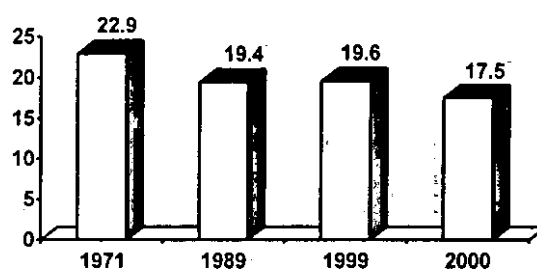
MEAN BIRTH WEIGHT OF NEWBORNS IN THREE HOSPITALS IN 1999

Sex of the Child	Govt. Hospital, Hyderabad	DMNH, Hyderabad	Rural Hospital, Narsapur
Male	2789+508	2815+525	2780+493
Female	2750+513	2768+487	2693+585
Overall	2756+504	2792+507	2737+542
Maternal weight at the time of delivery			
Below 45 kgs	62.5	-	23.4
Above 45 kgs	37.5	100.0	77.6

(Figures are statistically significant at 5% level)

Birth weight is not only a crucial determinant for the growth of survival and development of the baby but also a valuable indicator of maternal health, nutrition and quality of ante-natal services. Low birth weight (LBW) babies face higher risk of mortality than babies of normal birth weight. According to NFHS-II (2000), more than half (56%) of babies born in the state were not weighed at birth. But in DMNH, all newborn babies were weighed immediately after delivery. The primi¹ gravida,- elderly mothers (>35 years) and mothers who had not received good quality ante-natal care carry the potential risks of delivering LBW-babies¹². Three other Indian studies¹³¹⁵ have also reported similar trend in the delivery of low birth weight babies (39.8, 25.5 and 42% respectively). However, "the LBW babies (below 2,500 grams) in DMNH were 22.9 per cent in 1971 which marginally declined to 47.5 per cent in 2000 (Table 3). According to the Indian Academy of Paediatrics (IAP), a newborn baby weighed below 2,000 grams is considered as low-birth weight in the Indian situation¹⁶. Accordingly, the babies below 2,000 grams were 8.8 per cent in 1971 which declined to 4.8 per cent in 1989 and 2.8 percent in 2000. As a consequence, as per the IAP criteria, newborns in the 2000-2,499 grams category were 14-16 percent over the last three decades period in DMNH. These babies can be included in the category of 'normal' birth weight babies as per the IAP criteria.

FIG. 1
PERCENTAGE OF LOW-BIRTH WEIGHT NEWBORNS IN DMNH



Birth weight (gms)	1971	1989	1999	2000
' Below 1499	3.5	2.2	1.2	0.1
1500-1999	5.3..	.2.6 ., :	2.7	2.7
2000-2499	14.1	14.6	-15.7	14.7
2500-2999	43.6-	39.6	42.7	46.0
3000-3499	25.6	32.8	28.9	28.4
Above 3500	7.9	8.4	8.8	8.0
All	100.0	100.0	100.0	100.0

As per the IAP criteria, LBW in DMNH was three per cent in 2000 while it was 17.5 per cent as per the international standards. It has also been observed that special attention has been given to prevent LBW through quality, ante-natal care, maternal nutrition interventions, delivery and post-partum period rather than treating LBW after childbirth which emphasizes the need to integrate maternal and neo-natal health strategies. The logarithmic trend equation of low-birth weight newborns declined during 1971-2000 by 0.07 per cent per annum in DMNH ($R^2=0.89$ and the coefficient significant at one per cent level).

Trends in Peri-natal Mortality Rate

The modified Wigglesworth classification of peri-natal mortality rate indicates macerated stillbirths and low-birth weight as the major causes of peri-natal mortality. The neo-natal mortality rate in the state (48.4) is higher than the national level (46.1) although the post-neo-natal mortality has been far lower than the national average. Neo-natal mortality has not recorded any marked decline in the state during 1971-'97. So, some experts suggest the need for addressing the overall socio-economic and health status of the women and particularly, their nutritional levels¹⁷.

Table 4 shows that the peri-natal mortality rate in DMNH declined from 72.7/1000 births during 1971-73 to 28.4/1000 births during early 1990s (1991-'93) and it further decreased to a low level of 20.2/1000 births during the period 1998-2000 (Table 4). The stillbirth rate declined sharply from 37.8/1000 during the period 1971-73 to 6.97/1000 births by early 1980s and remained around 9/1000 during other triennium years. The Early Neo-natal Mortality Rate (ENMR) declined by three-folds from 34.9/1000 during 1971-73 to 11.3/1000 live births during 1998-2000. Some research studies in Andhra Pradesh reported PNMR in the range of 80 to 100 per 1000 births¹⁸⁻²⁰. The National Family Health Survey estimated the neo-natal mortality of 47.7/1000 births in 1998-'99 as compared to 52.7/1000 in 1992-'93²¹ in Andhra Pradesh. A recent study conducted in Mahabubnagar district of Andhra Pradesh reported a neo-natal mortality rate of 65/1000 live births³. The leading cause of neo-natal deaths was sepsis (34%) followed by asphyxia (24%), pre-maturity (20%) and congenital anomalies (11%). The logarithmic trend equation of PNMR declined by 0.43 per cent during 1971-2000 in DMNH ($R^2=0.89$ and coefficient significant at one per cent level).

TABLE 4

Triennium Period	Early Neo-natal Mortality Rate	Still Birth Rate	Peri-natal Mortality Rate
1971-73	34.93	37.81	72.74
1981-'83	26.09	6.97	33.06
1984- '86	21.34	7.67	29.01
1991-'93	20.16	8.24	28.40
1994- '96	16.08	6.60	22.68
1998-2000	11.29	8.91	20.20

TRENDS IN PERINATAL MORTALITY IN DMNH DURING 1971-2000

High-Risk Factors Responsible for PNMR during Delivery

Many research studies have identified mother's age, parity, factors related to pregnancy such as bad obstetric history, LSC and PIH; causes related to intrapartum like thick meconium, breech, cord abnormalities and asphyxia are high-risk factors influencing PNMR. The percentage of peri-natal mortality among teenage mothers and mothers above 30 years declined from 17 per cent and 23 per cent in 1971 to a low of 11 and 6 per cent respectively in the year 1999 (Table 5). The risk of PNMR among primi-gravida mothers remained around 38-43 per cent in all reference years. Mothers who had undergone LSCs are at high-risk and PNMR increased three-folds from seven per cent in 1971 to 26 per cent in 1999 due to admission of high-risk deliveries in the last hour. The other risk factors of PNMR namely; bad obstetric history (BOH), PIH and Rh-negative were successfully controlled in DMNH due to complete ante-natal care and awareness of mothers. In case of intra-partum factors, cord abnormalities and asphyxia were the major causes for PNMR. The cord abnormalities are unexpected complications at delivery and cannot be assessed during pregnancy even with the help of ultrasound scanning.

The peri-natal mortality in infants associated with risk factors such as LBW babies (pre-term, intra-uterine growth retardation (IUGR) and twin), asphyxia and congenital anomalies declined over the years in DMNH. The IUGR-LBW was associated with 86 per cent of peri-natal deaths in 1971 which declined to 33 per cent in 2000.

TABLE 5
FACTORS CONTRIBUTING TO PERI-NATAL DEATHS

Risk Markers	1971	1989	1999	2000
Maternal Age				
Below 19 year	16.9	15.4	10.7	8.6
Above 30 year	23.0	9.0	5.7	4.6
Parity				
Primi Gravida	42.9	35.3	37.0	38.1
Multi-Gravida(More then IV)	28.6	19.6	8.6	6.1
High-risk Pregnancy				
Bad OB history	28.6	7.8	2.9	2.0
LSCs	7.1	15.5	25.7	20.5
PIH	21.4	3.9	8.6	6.1
RH-Negative	-	4.0	2.4	3.6
Intrapartum Factors				
Thik meconium	14.3	7.8	5.7	2.0
Breech	-	5.9	8.6	4.1
Cord adnormalities	-	5.9	2.9	12.2
Asphyxia	-	11.8	17.1	8.2

High Risk Pregnancies and.PNMR

Infants born to primi-gravida women are at high-risk and most likely to experience peri-natardeath as compared to multi-Gravida mothers (Table 6). The tertiary care medical institutions always accept high-risk pregnancies and hence, have higher PNMR. In spite of higher percentage of high-risks due to primi and LSC sections, the PNMR in the DMNH is below at 22/1000 births during 1998-2000.

TABLE 6
HIGH-RISK PREGNANCIES AND PERI-NATAL MORTALITY (IN %)

Risk Factors	1971	1989	1999	2000
Parity of Mother				
Primi	26.7	50.0	41.9	52.8
Multi-gravid a	26.7	27.8	9.7	8.3
Mode of Delivery				
LSC delivery	6.6	29.0	8.3	27.8
Spontaneous	1.9	-	0.7	-

Ante-natal care, safe delivery and high standard newborn care are important factors in reducing neo-natal mortality rate. According to NFHS-II (2000), children of women who received, all three types of care have lower risk of neonatal mortality (14,3 deaths per '1000) than those with only one or two types of care (49 deaths per 1000). in Andhra Pradesh As per the Wigglesworth's classification⁵, the leading causes of deaths were macerated stillbirth and asphyxia which together accounted for more than three-fourths (79,9%) of peri-natal mortality in 1971 and it declined to two-thirds (68%) in 2000 (Table 8). On the other hand, the LBW declined from 67 per cent in 1971 to 36 per cent in 2000. The unknown factors accounted for 26,1 per cent of peri-natal deaths in the year 2000.

TABLE 7

'CAUSES OF PERI-NATAL MORTALITY (WIGGLESWORTH CLASSIFICATION IN %)

Causes of Death	1971	1989	1999	2000
Macerated stillbirth	53.3	25.5	45.7	42.2
Asphyxia	26.6,	29.4	28.5	'26.2
Congenital anomalies		7.8	5.7	4.7
Premature	1.7	7.7	8.6	-
Low birth weight	66.6.	56.7	28.6	35.7
Other causes	13.3	25.5	11.4	26.1

The stillbirth rate in DMNH remained around 7 to 9,per 1000 births during the decade 1989-1999. The macerated foetus and fresh stillbirths due to asphyxia were declined. The fresh stillbirths due to asphyxia were close to the time of delivery and were potentially preventable. The unexplained causes for perinatal mortality increased four-folds. Thus, it is emphasized that strategies are to be put in place to improve the ante-natal and intrapartum care to decrease the rate of stillbirths.

TABLE 8

FACTORS CONTRIBUTING TO STILL BIRTH (PER CENT)

Causes of Death	1989	1999
Asphyxia	61,6	44.5
Congenital anomalies	8.2	6.0
Macerated foetus	22.0	14.9
Unexplained causes	8.2	34.6

CONCLUSION

Since inception, it has been found, the Dangoria Maternity Nursing Home has been maintaining a systematic information database on ante-natal cards, in-patient and birth records along with post-partum care. An analysis over the years revealed that peri-natal mortality rate declined from 71/1000 births in 1971 to 22/1000 births in 2000. There has been an increase in the caesarean section rate in the nursing home over the years (27% in 2000) which is similar to the findings of some other recent studies.

Over the years, the mean birth weight in the DMNH has improved marginally (100 grams) and recorded 2,796 grams by the year 2000. The low-birth weight (below 2,000 grams), as per the IAP criteria, declined from 10 per cent in 1971 to three per cent in 2000. Based on WHO standards, there is no decrease in low-birth weight babies (IUGR) even in the urban areas. The direct causes of low-birth weight like PIH, anaemia, eclampsia and pre-term births have significantly declined due to the provision of quality ANC in the nursing home. Indirect initiatives in reducing IUGR require full ANC, delay in marriage age (8% of births are from mothers below -20 years of age) and implementation of temporary family planning methods to enhance birth interval. A proper maintenance of systematic ante-natal and newborn records in public health institutions is the need of the hour. The authors also suggest that an appropriate IEC strategy may be designed to propagate messages on the issues like increase in female age at marriage, interval between births (>3 years) by using temporary contraceptive methods, female literacy and maternal nutrition of pregnant mothers. Scientific studies based on the analysis of the risk factors like maternal Anthropometric, maternal weight gain and economic cost in relation to pregnancy might provide an in-depth understanding of the twin problems of low-birth weight and PNMR.

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वर्तमान अध्ययन निम्नलिखित विशिष्ट उद्देश्यों के लिए संचालित किया गया था: (1) आयु, समानता तथा प्रसव-स्वरूप के आधार पर प्रसवों का विश्लेषण, तथा (2) डंगोरिया मैटर्निटी नर्सिंग होम (डी.एम.एन.एच.), हैदराबाद, आंध्रप्रदेश में प्रसवकालीन मृत्यु दर (मृत-जन्म दर तथा नवजात शिशु शीघ्र मृत्यु दर) और प्रसवकालीन मृत्युदर को प्रभावित करने वाले उच्च जोखिम घटकों की प्रवृत्ति की जांच करना। कई वर्षों के रिकार्ड के एक विश्लेषण से ज्ञात हुआ है कि प्रसवकालीन मृत्यु दर वर्ष 1971 में 1000 जन्म दर पर 71 से घटकर वर्ष 2000 में 1000 जन्म दर पर 22 रह गई थी। यहां नर्सिंग होम में कई वर्षों के रिकार्ड के अनुसार उदरच्छेदन दर (सीजैरियन सैक्शन रेट) (वर्ष 2000 में 27 प्रतिशत) में वृद्धि हुई है जो कुछ अन्य वर्तमान अध्ययनों के निष्कर्षों के अनुकूल है। कई वर्षों के रिकार्ड के अनुसार डंगोरिया मैटर्निटी नर्सिंग होम में औसत जन्म भार में मामूली सा (100ग्राम) सुधार हुआ है तथा वर्ष 2000 तक 27.96 ग्राम रिकार्ड किया गया था। आई.ए.पी.मानदण्ड के अनुसार निम्न जन्म भार (2000ग्राम से नीचे), वर्ष 1971 में प्रतिशत से घटकर वर्ष 2000 में तीन प्रतिशत रह गया था। नर्सिंग होम में गुणकारी प्रसवपूर्व परिचर्या सेवा के प्रावधान से पी.आई.एच. रक्ताल्पता, गर्भक्षेपक तथा समयपूर्व जन्म जैसे अल्प जन्म भार के प्रत्यक्ष कारणों में महत्वपूर्ण रूप से कमी हुई है।

मातृ-आहार में सुधार के उपाय करने, समुदाय स्तर पर शिक्षित करने की समुचित नीति बनाने तथा प्रसवपूर्व परिचर्या सेवा, सुरक्षित प्रसव संबंधी सेवाएं लेने और गुणकारी नव-जात शिशु परिचर्या सेवाओं की आवश्यकता के बारे में प्रथमजात माताओं का मार्गदर्शन करने तथा कारण स्पष्ट करने के सुझाव दिए गये हैं।

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DEPENDENCY STATUS OF ELDERLY IN A RURAL AREA

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ABSTRACT

This paper summarises the dependency status of elderly in a rural area. 360 elderly aged 60 years and above were selected from all 24 sub-centre villages of Primary Health Centre, Daurala, Meerut district of Uttar Pradesh. Findings indicated that fortunately majority of the sample respondents were totally independent for Physical Activities of Daily Living (PADL), walking being the commonest activity for, dependence. The dependence for Instrumental Activities of Daily Living (IADL) was significantly high and only a few of them were found to be totally independent for IADL. This dependence was the highest for cooking. It is worthwhile to note that in majority of the cases, the primary helpers in daily activities of elderly were children.

Keywords: Physical dependence, Instrumental dependence, Elderly dependency, Daily living.

Physical state of body deteriorates with advancement of age leading to physical impairment as well as disability in long-term. Lawton and Body (1969) have been instrumental in developing one of the earliest measures of functional ability. Their 'Physical Self Maintenance Scale' rated the subjects' competence in the behaviours of toileting, feeding, dressing, locomotion, bathing and grooming whereas their 'Instrumental Activities of Daily Living Scale' measured the subjects' ability to do shopping, housekeeping, travel independently, use telephone, handle finances, personal laundry and take own medication. The subjects' performance was scored as one for each item independently performed and nil for not doing so¹. However Katz and Akpom considered six basic activities: bathing, dressing, getting to toilet, moving about, continence and feeding as measurements of activities of daily living (ADL). For those living in more affluent societies, it may be

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pertinent to ask them about their ability to use a telephone, washing machine and public transport or about other functions relevant to autonomous living in that particular cultural milieu concerned². This study is a sincere effort to assess the ability of elderly to live independently as an individual for their daily needs.

MATERIALS AND METHOD

The present study was carried out at block level Primary Health Centre, Daurala, in Meerut district of Uttar Pradesh which is a Rural Field Training Centre of the Department of Community Medicine, LLRM Medical College, Meerutj covering the area by a network of 24 sub-centres. For the purpose of the study, 360 elderly people aged 60 years and above were selected on the basis of their morbidity prevalence rate of 52 per cent- as per the reports of National Sample Survey Organization 1998³ with 95 per cent confidence interval and a relative precision of 10 per cent. These 360 sample respondents i.e. 15 elderly people aged 60 years and above from each of the 24 sub-centres villages were selected by house-to-house visit starting from a random point. However, four persons (1.1%) were dropped from the study due to their non-cooperative attitude. The information was collected by personal interview with each sample population using a pre-designed and pre-tested proforma.

Functional Ability

Functional ability was measured by combining the Physical Self Maintenance Activities and Instrumental Activities of Daily Living relating to autonomous living in the local cultural milieu viz. eating, dressing, walking around, toileting, bathing, handling money, cooking, shopping, house keeping and travelling. The subject's performance was scored as 'one' for each item independently performed and 'nil' if unable to do so¹.

Socio-economic Status

The following criteria were used to assess the socio-economic status of the families of the sample population. The majority of the families had farming as the sole occupation while others had both farming and other sources of income. For those who had additional sources of income apart from farming; the income from the farming was equated as Rs. 30 per bigha of the land area per month and added into their monthly income as per the following:

Class	Income per Capita⁴	Land per Capita⁵
I	Rs. 1000 or more	34 or more bigha
II	Rs. 500-999	18-33 bigha
III	Rs. 300-499	9-17 bigha
IV	Rs. 150-299	4-8 bigha
V	Rs. <150	<4 bigha

Educational Status

The educational status of the sample population was classified as per the census of India-1991⁶, in the following categories: (a) Illiterate: A person who can neither 'read nor write' including the one who was capable of reading and/or writing only figures and/or his/her name; (b) Just literate: A person who could 'read' or 'read and write' in any language but had not passed primary school examination; (c) Primary: This group included the people who had passed primary school examination, (d) Middle: This included the people who studied beyond primary school and passed eighth class; (e) Higher secondary: Individuals who studied beyond eighth class and passed higher secondary examination; and (f) Graduate and above: Individuals who had passed either BA or BSc. or equivalent examination.

FINDINGS

A total of 356 elderly aged 60 years and above were studied. Maximum number of the respondents were in the age group of 60-69 years which includes males (47.4) and females (52.8%). Three-fifths (60.7%) of elderly were illiterate and about two-fifths (38.2%) of them belonged to the low socio-economic status. Majority (82.3%) of elderly were found enjoying life with joint families and most of the females were housewives (94.1%).

Physical Activities of Daily Living (PADL)

It may be seen from Table 1 that majority (87.7%) of the sample respondents were totally independent for physical activities of daily living (PADL) while rest 12.3 per cent were dependent for one or more physical activities on others; including total dependence of 0.3 per cent. The age-group of 80 years and above contributed to 84.1 per cent of dependence of the elderly with dependency rate of 69.8 per cent for their physical activities of daily living. This difference between the early-olds (60-79 years) and the more older persons aged 80 years

and above for dependency was statistically significant. Dependency rate of females (75 %) in the older-old group (80 years and above) was little more than the males (64%) which was statistically not significant ($p>0.05$).

TABLE 1
AGE AND SEX-WISE DISTRIBUTION
OF PHYSICAL ACTIVITIES OF DAILY LIVING (PADL) STATUS

Activity Score	0	1	2	3	4	5
Age gr. & Sex (n)	Tot. Dep. No.	No.	No.	No.	No.	Tot. Ind. No.
60-69(169)	0(0)	0(0)	0(0)	1(0.6)	4(2.4)	164 (97.0)
Male (66)	0(0)	0(0)	0(0)	0(0)	2 (3.0)	64 (97.0)
Female (103)	0(0)	0(0)	0(0)	1(0.9)	2(1.9)	100 (97.1)
70-79(134)	0(0)	0(0)	1 (0.7)	0(0)	1 (0.7)	132 (98.5)
Male (77)	0(0)	0(0)	0(0)	0(0)	1(1.3)	76 (98.7)
Female (57)	0(0)	0(0)	1(1.7)	0(0)	0(0)	56 (98.2)
80+ (53)	1(1.9)	7(13.2)	21(39.7)	4(7.5)	4(7.5)	16(30.2)
Male (25)	1 (4.0)	3(12.0)	9 (36.0)	2 (8.0)	1 (4.0)	9(36.0)
Female (28)	0(0)	4 (14.3)	12(42.8)	2(7.2)	3(10.7)	7 (25.0)
Total (356)	1 (0.3)	7(1.9)	22 (6.2)	5(1.4)	9(2.5)	312(87.7)
Male (168)	1 (0.6)	3(1.8)	9(5.4)	2(1.2)	4(2.4)	149 (88.6)
Female (188)	0(0)	4(2.1)	13(6.9)	3(1.6)	5(2.6)	163 (86.7)

(Figures in parentheses indicate percentage)

$$X^2 = 188.13 \quad df=1 \quad p < 0.001 \quad (60-79 \text{ Vs } 80+)$$

$$X^2 \text{ (M vs F)} = 0.337, df=1, p>0.5$$

Table 2 indicates that the dependency rate declined insignificantly with the level of education, for example, from 12.5 per cent in case of illiterates to 11.1 per cent in case of just literates. Similarly, an insignificant decline trend was also observed with reference to socio-economic status, 16.2 per cent among the low socio-economic classes (IV and V) and 9.5 per cent in case of middle socio-economic classes (II and III).

The inability in doing specific physical activity of daily living was the highest in walking (11.2%) followed by bathing (9.3%), toileting (6.7%) and eating (0.3%) for males and a similar trend was also observed in case of females (Table 3). The inability for bathing was the highest among illiterates (11.6%) and it was 14.6 per cent among those belonging to low socio-economic status (class V) (Table 4).

TABLE 2
PHYSICAL ACTIVITIES OF DAILY LIVING (PADL) STATUS
IN RELATION TO HOUSEHOLD PROFILE

Activity Score	0	1	2	3	4	5
	Tot. Dep. No.	No.	No.	No.	No.	Tot. Ind. No.
Educational status (n)						
Illiterate (216)	•1 (0.4)	4(1.8)	16(7.4)	2 (0.8)	4(1.8)	189(87.5)
Just Lit.(48)	0(0)	1 (2.1}	2(4.2)	1 (2.1)	2(4.2)	42- (87.5)
Primary (61)	0(0)	2 (3.3)	2 (3.3)	1 (1.6)	2(3.3)	54 (88.5)
Middle (18)	0(0)	0(0)	1 (5.5)	0(0)	1 (5.5)	16 (88.9)
Higher Sec.(9)	0(0)	0(0}	1(11.1)	0(0)	0(0}	8 (88.9)
Graduate and above (4)	0(0)	0(0)	0(0)	1 (25.0)	0(0)	3 (75.0)
Socio-economic status (n)						
I(10)	0(0)	0(0)	1 (10.0)	1 (10.0)	0(0)	8 (80.0)
II (84)	0(0)	1(1.2)	2(2.4)	1(1.2)	2(2.4)	78 (92.8)
III (126)	1 (0.8)	2(1.6)	8(6.4)	2(1.6)	1 (0.8)	112(88.9)
IV (88)	0(0)	2 (2.3)	7(8.0)	1(1.1)	2(2.3)	76 (86.3)
V(48)	0(0)	2(4.2)	4(8.3)	0(0)	4(8.3)	38 (79.1)
Total (356)	1 (0.3)	7(1.9)	22 (6.2)	5(1.4)	9(2.5}	312(87.7)

(Figures in parentheses indicate percentages of total) X^2 (illit. Vs fit.) = 0.009, df=1, $p>0.5$

TABLE 3
ABG AND SEX-WISE DISTRIBUTION OF INABILITY OF SPECIFIC
PHYSICAL ACTIVITIES OF DAILY LIVING (PADL)

Age gr. & Sex (n)	No.	Dress No.	Walk No.
60-69 (169)	0(0)	0(0)	4 (2.4)
Male (66)	0(0)	0(0)	2 (3.0)
Female (103)	0(0)	0(0)	2 (1.9)
70-79 (134)	0(0)	0(0)	2 (1.4)
Male (77)	0(0)	0(0)	1 (1.3)
Female (57)	0(0)	0(0)	1 (1.7)
80+ (53)	1 (1.9)	19(35.8)	34 (64.1)
Male (25)	1 (4.0)	8 (32.0)	16 (64.0)
Female (28)	0(0)	11(39.3)	18(64.3)
Total (356)	1 (0.3)	19 (5.3)	40 (11.2)
Male (168)	1 (0.6)	8(4.8)	19(11.3)
Female (188)	0(0)	11(5.8)	21 (11.1)

TABLE 4
INABILITY OF SPECIFIC PHYSICAL ACTIVITIES OF DAILY LIVING
RELATION (PADL) IN RELATION TO HOUSEHO

	Eat No.	Dress No.	Walk No.	Toilet No.	Bath No.
Educational status (n)					
Illiterate (216)	1(0.5)	14 (6.5)	19(8.8)	18(8.3)	25(11.6)
Just Lit. (48)	0(0)	2(4.1)	7(14.6)	2(4.1)	3 (6,2)
Primary (61)	0(0)	2 (3.3)	10(16.4)	3(4.9)	3(4.9)
Middle (18)	0(0)	0(0)	2(11.1)	1 (5.5)	1 (5.5)
Higher Sec. (9)	0(0)	1(11-1)	1(11.1)	0(0)	1(11.1)
Graduate and above (4)	0(0)	0(0)	1 (25.0)	0(0)	1 (25.0)
Socio-economic status (n)					
I(10)	0(0)	1 (0.0)	2 (20.0)	1 (10.0)	1 (10.0)
II (84)	0(0)	3 (3.6)	5 (5.9)	3 (3.6)	3 (3.6)
III(126)	1(0.8)	8 (6.4)	16(12.7)	5(4.0)	12(9.5)
IV (88)	0(0)	5(5.7)	8(9.1)	9(10.2)	11(12.5)
V(48)"	0(0)	2(4.2)	9(18.8)	6(12.5)	7 (14.6)
Total (356)	1(0.3)	19(5.3)	40(11.2)	24(6.7)	34(9.3)

Instrumental Activities of Daily Living (IADL)

It was observed that about one fifth (19.7%) of the sample population was totally dependent and only 7.3 per cent of them were totally independent while rest 73.0 per cent of them were dependent for either one or more instrumental activities of daily living on others. Total dependence for IADL was significantly higher in older-olds (80 years and above) as compared to young-olds (60-79 years) ($p < 0.001$), but no significant difference in dependence for IADL was found between males and females ($p > 0.5$). However, statistically significant difference in the distribution of dependence was observed as male subjects were maximally dependent for four activities (IADL) (35%) while females were maximally dependent for one IADL (27.6%) as shown in Table 5 ($p < 0.001$).

It is evident from Table 6 that there had been a decreasing trend of inability for IADL with an increase in educational qualification. This inverse relationship was found to be statistically significant ($p < 0.001$). A majority of the sample population from the poorest of the poor socio-economic class were found to be totally dependent (45.8%) while those belonging to upper and upper middle socio-economic classes (I and II) were not so ($p < 0.001$).

TABLE 5
AGE AND SEX-WISE DISTRIBUTION OF
INSTRUMENTAL ACTIVITIES OF DAILY LIVING (IADL) STATUS

Activity Score	0	1	2	3	4	5
Age gr. and Sex (n)	Tot. Dep. No.	No.	No.	No.	No.	Tot. Ind. No.
60-69(169)	12(7.1)	40 (23.6)	27(16.0)	34 (20.1)	41 (24.2)	15(8.9)
Male (66)	5(7.6)	9(13.6)	6(9.1)	13(19.7)	24 (36.3)	9(13.6)
Female (103)	7(6.8)	31(30.1)	21(20.4)	21 (20.4)	17(16.5)	6 (5.8)
70-79 (134)	19(14.1)	30 (22.4)	12(8.9)	17(12.7)	45 (33.6)	11(8.2)
Male (77)	9(11.7)	14(18.1)	4(5.2)	11(14.3)	34 (44.1)	5 (6.5)
Female (57)	10(17.5)	16 (28.0)	8 (14.0)	6 (10.5)	11(19.3)	6(10.5)
80+ (53)	39 (73.6)	7(13.2)	3(5.7)	1(1.9)	3(5.7)	0(0)
Male (25)	18 (72.0)	2(8.0)	2(8.0)	1 (4.0)	2(8.0)	0(0)
Female (28)	21 (75.0)	5(17.8)	1(3.6)	0(0)	1 (3-6)	0(0)
Total (356)	70 (19.7)	77 (21.6)	42(11.8)	52(14.6)	89 (25.0)	26(7.3)
Male (168)	32 (19.0)	25 (14.9)	12(7.1)	25 (14.9)	60 (35.7)	14(8.3)
Female (188)	38 (20.0)	52(27.6)	30 (16.0)	27 (14.3)	29 (15.4)	12(6.4)

Figures in parentheses indicate percentages of total)
 $\chi^2(\text{lit. vs illit.}) = 30.732, df=4, p<0.001$ $X^2=57.179, df=10, p<0.001$

It can be seen from Table 7 that majority of males (90.5%) were dependent on others for cooking. For handling money, only 28.5 per cent of males were dependent on others in comparison to 89.3 percent of females ($p<0.001$). It was found that 90.5 per cent of the elderly males depended on others for cooking. It was also found that 38.7 per cent of males and 54.5 per cent of females depended on others for travelling. Similarly, more number of females (71.2%) depended on others for shopping than the males (42.2%). It was seen that for all the activities, dependence of elderly on others rose with the increase in age.

It is evident from Table 8 that majority of illiterate elderly persons were found dependent on others for cooking (87.0%) and handling money (78.2%). The elderly persons from low socio-economic class were found maximally dependent on others for cooking (70.0%). Most of the elderly (833%) did not require any one to help them in their daily activities and those (16.7%) who required were helped out by their children or children in-laws in majority of cases (13.8%).

TABLE 6
INSTRUMENTAL ACTIVITIES OF DAILY LIVING (IADL) STATUS IN
RELATION TO HOUSEHOLD PROFILE

Activity Score	0	1	2	3	4	5
	Tot. Dep. No.	No.	No.	No.	No.	Tot. Ind. No.
Educational status (n)						
Illiterate (216)	55 (25.4)	59 (27.3)	22 (10.2)	27(12.5)	49 (22.7)	4(1.8)
Just Lit. (48)	5 (10.4)	7 (14.6)	6 (12.5)	11(22.9)	15(31.2)	4(8.3)
Primary (61)	6 (9.8)	7 (11.4)	10(16.4)	12(19.6)	17 (27.8)	9(14.7)
Middle (18)	2 (11.1)	3 (16.7)	2 (11.1)	2 (11.1)	5 (27.8)	4 (22.2)
HigherSec.(9)	1 (11.1)	1 (11.1)	2 (22.2)	0 (0)	2 (22.2)	3 (33.3)
Graduate and above (4)	1 (25.0)	0 (0)	0 (0)	0 (0)	1 (25.0)	2 (50.0)
Socio-economic Status (n)						
I (10)	1 (10.0)	1 (10.0)	2 (20.0)	1 (10.0)	3 (30.0)	2 (20.0)
II (84)	3 (3.5)	10(11.9)	12(14.2)	22 (26.2)	27 (32.1)	10(11.9)
III(126)	21 (16.6)	26 (20.6)	18(14.3)	18(14.3)	35 (27.8)	8 (6.3)
IV (88)	23 (26.1)	28 (31.8)	7 (7.9)	9 (10.2)	17(19.3)	4 (4.5)
V(48)	22 (45.8)	12(25.0)	3 (6.3)" '	2 (4.1)	7 (14.6)	2 (4.1)
Total (356)	70 (19.7)	77(21.6)	42(11.8)	52 (14.6)	89 (25.0)	26 (7.3)

Figures in parentheses indicate percentages of

$\chi^2(\text{lit. vs illit.}) = 30.732, df=4, p<0.001$ $\chi^2 = 57.179, df=10$

Majority of elderly (83.3%) answered that they did not require anyone to help in their daily activities but this independence for daily activities was found to be more (87.7%) when asked in details for each PADL that is eating, dressing, walking, toileting and bathing. Available literature has not adequately highlighted the status of functional ability in the elderly. Only available, study conducted in an urban area of Delhi⁷ reported that 93.9 per cent and 0.4 per cent of elderly are totally independent and totally dependent respectively.

Educational qualification was found to have marginal impact on dependency as this decreases from 12.5 per cent in illiterates to 11.1 per cent in just literates. The socio-economical status was also found to have apparent relationship with dependence, for example, 16.2 per cent in low socio-economic classes (IV and V) and 9.5 percent in middle socio-economic classes (II and III). However, these differences were not found to be statistically significant ($p>0.05$) with PADL.

TABLE 7
AGE AND SEX-WISE DISTRIBUTION OF INABILITY OF SPECIFIC IADL

Age gr. & Sex (n)	Handling Money No.	Cooking No.	Shopping No.	House Keeping No.	Travelling No.
60-69 (169)	103 (60.9)	127 (75.1)	96 (56.8)	17(10.0)	67 (39.6)
Male (66)	13(19.7)	56 (33.1)	27 (40.9)	11 (16.6)	22 (33.3)
Female (103)	90 (87.3)	71 (68.9)	69 (67.0)	6 (5.8)	45 (43.7)
70-79 (134)	68 (50.7)	102 (76.1)	61 (45.5)	45 (33.6)	54 (40.3)
Male (77)	18(23.4)	71 (92.2)	23 (29.8)	34 (44.1)	23 (29.8)
Female (57)	50 (87.7)	31 (54.3)	38 (66.6)	11 (19.3)	31 (54.3)
80+ (53)	45 (84.9)	52 (98.1)	48 (90.6)	45(84.9)	47 (88.7)
Male (25)	17(68.0)	25(100.0)	21 (84.0)	25 (100.0)	20 (80.0)
Female (28)	28 (100.0)	27 (96.4)	27 (96.4)	20 (71.4)	27 (96.4)
Total (356)	216(60.7)	281 (78.9)	205 (57.6)	107 (30.0)	168 (47.2)
Male (168)	48 (28.5)	152 (90.5)	71 (42.2)	70 (41.6)	65 (38.7)
Female (188)	168 (89.3)	129 (68.6)	134 (71.2)	37(19.7)	103 (54.5)
p for x ² (sex)	p<0.001	p<0.001	p<0.001	p<0.001	p<0.005

TABLE 8
INABILITY OF SPECIFIC IADL IN RELATION TO HOUSEHOLD PROFILE

	Handling Money No.	Cooking No.	Shopping No.	House keeping No.	Travelling No.
Educational status (n)					
Illiterate (216)	169 (78.2)	188 (87.0)	145(67.1)	67(31.0)	107(49.5)
Just Lit. (48)	22 (45.8)	32 (66.6)	22 (45.8)	15(31.2)	21 (43.8)
Primary (61)	19 (31.1)	39 (63.9)	27 (44.2)	16(26.2)	28 (45.9)
Middle (18)	4 (22.2)	13 (72.2)	7 (38.9)	4 (22.2)	9 (50.0)
Higher Sec. (9)	1 (11.1)	6 (66.6)-	3 (33.3) .	5 (55.5)	2 (22.2)
Graduate and above (4)	1 (25.0)	3. (75.0)	1 (25.0)	0 (0)	1 (25.0)
p for x ²	p<0.001	p<0.001	p<0.001	p>0.5	p>0.5
Socio-economic status (n)					
I (10)	5 (50.0)	7 (70.0)	4(40.0)	1(10.0)	3(30.0)
II (84)	46 (54.7)	53 (63.1)	24(28.5)	18(21.4)	21(25.0)
III (126)	73 (57.9)	101 (80.9)	70(55.5)	38(30.1)	52(41.3)
IV (88)	53 (60.2)	74 .(84.1)	62(70.4)	28(31.8)	66(75.0)
V (48)	39 (81.2)	46 (95.8)	45(93.7)	22(45.8)	26(54.1)
Total (356)	216(60.7)	281(78.9)	205(57.6)	107(30.0)	168(47.2)
p for x ²	p<0.05	p<0.001	p<0.001	p<0.02	p<0.001

Most of the elderly (92.7%) were dependent on others for one or more IADL for example cooking (78.9%) and handling money (60.7%). This inability in cooking and handling money was different in males (90.5% and 28.5%) and females (68.6% and 89.3%) respectively. Inabilities for specific IADL were also found to be significantly associated with literacy status and socio-economic status of the individual.

Rowe and Kahn have popularized the concept of 'Successful ageing', their findings from the longitudinal study on ageing indicated that some older persons live with minimal or no physiologic loss in comparison to their younger counterparts. Most of the respondents stated that successfully growing old means not only the absence of diseases or physiologic change but also effectively compensating the physiologic changes and diseases associated with ageing. A better term for this might be called 'Effective Ageing'⁸.

CONCLUSION AND RECOMMENDATION

The study concludes that a majority of elderly enjoyed effective ageing till the age of 75 years and above in terms of their physical activities of daily living. After the age of 80 years, the dependence is significantly raised. However, they are largely dependent on instrumental activities of daily living for some support. Educational and socio-economic status were found to have positive impact on dependency status. Majority of the rural elderly are still enjoying the support of their children and in-laws with the strong roots of joint family system in our country. Some gender disparity was observed for certain activities like cooking and handling money being biased in favour of males. Promotion of joint family system as a tradition in our country may be the answer to keep their ageing effective. Adults living with their parents and grandparents may be provided incentives in the form of job security to unemployed and extra perks to employed. The middle-aged population should be sensitized against the gender discrimination especially for money matters and light household activities like cooking and house-keeping. Promotion of home-based occupations in rural areas like poultry, mat making, fishing, incense stick (*agarbati*) making etc. would help elderly to AGE with WAGE. The programme for adult education, should be made aggressive to get results in the form of low dependence of our elderly people,

इस लेख में ग्रामीण क्षेत्र में वृद्धजनों की पराश्रयता स्थिति का उल्लेख किया गया है। इस अध्ययन के लिए उत्तरप्रदेश राज्य के प्राथमिक स्वास्थ्य केन्द्र, दौराला, जिला मेरठ के सभी 24 उप-केन्द्रीय गांवों से 60 वर्ष तथा इससे अधिक आयु 360 वृद्धजनों का चयन किया गया था। निष्कर्षों में उल्लेख किया गया है कि सौभाग्य से अधिकांश सैम्पल उत्तरदाता सबसे आम पराश्रित गतिविधि होने जैसे दैनिक रहन-सहन, चहल-कदमी की शारीरिक गतिविधि के लिए तथा पूर्णतः अनाश्रित थे। दैनिक जीवन की गतिविधियों के लिए पराश्रयता काफी अधिक थी तथा उनमें से कुछेक दैनिक जीवन की यांत्रिक गतिविधियों के लिए पूर्ण रूप से अनाश्रित देखे गए थे। यह पराश्रयता खाना बनाने के लिए सबसे अधिक थी। यह उल्लेखनीय है कि अधिकांश केसों में बच्चे वृद्धजनों की दैनिक गतिविधियों में प्रथम मददगार थे।

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**BREAST-FEEDING PRACTICES AMONG MOTHERS IN A
RURAL COMMUNITY OF EASTERN NEPAL**

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Yadav***** and S.R. Niraula*******

ABSTRACT

.Many, factors influence the. timing of initiation of breast-feeding and weaning of the babies. To study the breast-feeding practices in a rural community of eastern Nepal, a sample of 96 mothers who had babies up to two years of age were interviewed in a household survey. The study revealed that two-thirds of the mothers initiated breast-feeding between six .and. 24 hours after delivery, 23 per cent of the mothers initiated breast-feeding within six hours of delivery while 48.96 per cent of them initiated breast-feeding after 12 hours of birth but before 24 hours. It was a common practice to discard their colostrums (74.02%) among the respondents. In more than two-thirds of the cases, 'family members were the sources of information for breast-feeding. More than three-fourths of the mothers introduced solid food to their babies after six months of age but continued breast-feeding'even for more than two years. It was further found that illiterate mothers'continued breast-feeding to their babies for a longer period as compared to the educated mothers...

Keywords: Exclusive breast-feeding; Weaning, Solid food, Cultural practices.

The World Health Organization (WHO) estimates that, a million and half deaths can be avoided every year by means of maternal breast-feeding¹. Breast-feeding continues to be the norm in low-income countries but the period of exclusive breast-feeding after birth is often short. .Based on evidence, WHO recommends exclusive breast-feeding for the first six months of life which is in agreement with a previous recommendation made by the UNICEF. Despite great efforts towards the promotion of maternal breast-feeding, gain in terms of incidence and prevalence of maternal breast-feeding have not been as great as to be desired². Hence, the importance of policies to encourage maternal breastfeeding is advocated.

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Mother's decision on whether to breast-feed or not and for how long to breast-feed is influenced by multiple factors such as motivation, family support, cultural Support, Pre and post-natal education, in addition to appropriate training on maternal breast-feeding technique.. These socio-economic and cultural practices have an influence on the child rearing practices in different countries 'and even it differs from state to state in a country. Studies in many countries reveal that only 35 per cent of the children are exclusively breast-fed during the time after birth to four months of age³. It is established that the nutritional and health status of the infants mainly depends on the feeding practices of the community. So, breastfeeding over bottle-feeding is emphasised as an effective tool for improving survival and the health status of children. The objective of the study was to find out the practice of breast-feeding among the mothers in a rural community of eastern Nepal.

MATERIALS AND METHOD

The study was conducted in a rural community in the eastern region of Nepal. There were five regions and 75 districts in Nepal. Each district has many Village Development Committees (VDCs) and Municipalities. VDC is usually divided into nine wards. Two wards (No. 7 and 9) were randomly selected from Darvesha VDC which is situated in Morang district of eastern region of Nepal. The study was undertaken by the B.P. Koirala Institute of Health Sciences which works in close co-ordination with the Government health care system for various field-based programmes. Sub-Health Post (SHP) is the lowest level of health care delivery system functioning at "the VDC level. Maternal and child health (MCH) services are delivered through Maternal and Child Health Workers (MCHWs) at the SHP. All the households of the wards'7 and 9 were included in the study. Data were collected from the mothers of infants and children up to two years of age through a house-to-house survey, using a pre-tested, semi-structured interview schedule regarding breast-feeding practices of mothers and .their socio-cultural and demographic profiles.

FINDINGS

It was found that the wards 7 and 9 had a total of 459 households with, a population of 2,525. There were 96 infants and children in the age group of 0-24 months during the survey period. The highest number of children were in the age group of 13-18 months (29%) followed by 19-24.and 0-6 (26%) each and 7-12 months (19%). More than a half (53%) of the children were boys. More than a half

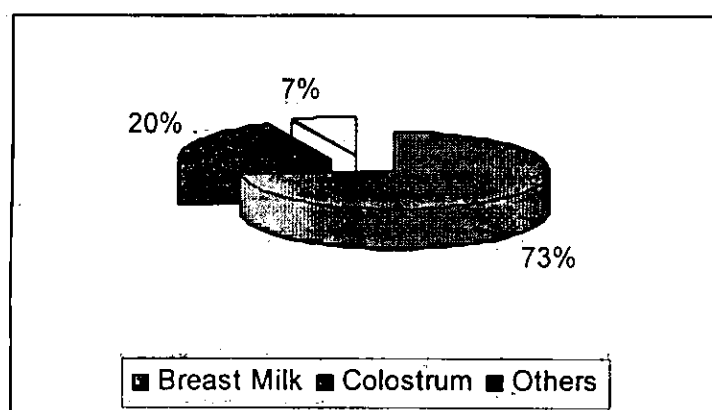
of the mothers were illiterate and only less than 15 per cent had formal education up to middle school or higher.

Table 1 shows that 22.92 per cent of the mothers initiated breast-feeding within six hours of delivery and 87.50 per cent of them started it within 24 hours of delivery: It was observed that more than 40 per cent of mothers continued, to breast-feed their babies, even for more, than two years of age. Two-thirds of the mothers acquired information regarding breast-feeding from their own family members and about one-third (30%) from the para-medical staff such as Traditional Birth Attendants (TBAs), Village Health Workers (VHWs) and Female Community Health Volunteers (FCHVs). 74.02 per cent of the, rural mothers breast-fed their babies after discarding colostrum and only one-fifth of them fed the colostrum to their infants. A small proportion; (7%) of mothers gave prelacteal feed like boiled water, goat milk, sugar water and honey as first feed to their newborns (Fig 1).

TABLE 1
DISTRIBUTION OF THE CHILDREN BY INITIATION OF BREAST-FEEDING

Time (in Hours)	Number of Infant and Children	Percentage
0-6	22	22.92
6-12	15	15.62
12-24	47	48.96
>24	12	12.50
Total	96	100

FIGURE 1
DISTRIBUTION OF CHILDREN (N= 96) ACCORDING TO THEIR FIRST FEED GIVEN AFTER BIRTH



(Others include boiled water, sugar water, goat milk and honey)

The study found that 74.02 percent of the mothers threw the colostrums and a few of them (2.50%) even applied the colostrum on the body of the new-bom (Table 2). Only 19 mothers fed colostrum to their infants and 18 (23.30%) mothers stated that they did. not secrete, colostrum. Only four per cent of the mothers informed that they started feeding solid food to their infants before four months of age. More than 80 per cent of the respondents told that they introduced solid food first for the baby only when he/she became six months (Fig 2).

TABLE 2
DISTRIBUTION OF MOTHERS BY THEIR USAGE OF COLOSTRUM

Usage	Number of Mothers	Percentage
Discarded	57	74.02
Not secreted	18	23.30
Applied on the body '	2	2.50
Total	77	100

FIGURE 2
DISTRIBUTION OF THE CHILDREN (N=96) BY
THE.INTRODUCTION OF SOLID FOOD (AGE IN MONTHS)

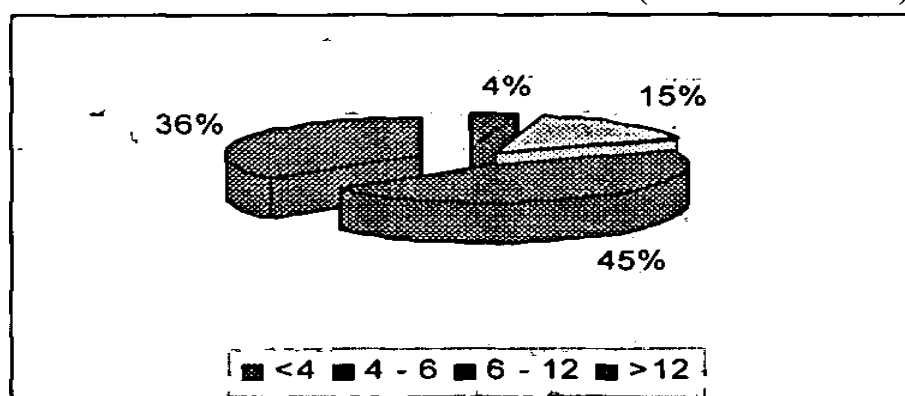


Table 3 shows that the educational status of-mothers did not have any significant impact on discontinuation of breast-feeding before one year and after that ($p < 0.15$). Equal number of women, 29 per cent each, continued breast-feeding for a period of 6 months and 6-12 months respectively who had middle level of education. Similar trend was also observed in case of mothers who had education above middle level.

Table 3
DISTRIBUTION OF MOTHERS ACCORDING TO
THEIR LITERACY-STATUS AND CONTINUATION OF BREAST-FEEDING

Literacy status	Less than or up to 6 months	6-12 months	12-24 months	Total
Illiterate	9(30)	3(10)	18(60)	30
Primary	5(42)	2(16)	5(42)	12
Middle	2(29)	2(29)	3(42)	7
>Middle	2(33)	2(33)	2(33)	6
Total	16	9	28	55

(Figures in parentheses indicate percentage to the total number)

DISCUSSION

Sub-optimal breast-feeding practices still prevail in many countries especially in traditional rural communities. South-Asian women are not a homogenous group hence, differences are seen in their cultural and religious practices and in the prevalence rate of breast-feeding among them⁴. 88 per cent of the mothers in this study initiated breast-feeding within 24 hours and only a few of them started it within the first few hours as found in some other studies conducted in India⁵⁶. The reasons for this kind of breast-feeding practices may be attributed to their deep-rooted cultural practices and beliefs. One of the common misconceptions found among women in the Indian sub-continent is that breast-milk secretes only after 14 days of delivery⁷. This study showed that 20 per cent of the mothers gave colostrum to their newborns and the rest gave either breast milk or different types of prelacteal feeds such as boiled milk, goat milk, sugar water, honey, etc. which is similar to the findings of another study⁸. It was found in the current study that 20 per cent of the mothers initiated solid food first to their children before six months. Another study conducted in Italy has also reported similar findings⁹.

Feeding practices are influenced by many factors and educational level of the mothers is one of them. The present study demonstrated that mothers who had education up to middle school or higher, breast-fed their babies for a shorter duration as compared to the illiterate mothers. This finding is consistent with the findings of some other studies conducted in 15 developing countries¹⁰. It was also found that two-thirds of the mothers acquired knowledge of feeding practices from their own family members which is similar to the findings of a Saudi Arabian study¹¹.

Though breast-feeding is universal and is continued for a long time' in accordance with the WHO recommendations to continue breast-feeding as long as possible but there is a need to study the type of breastfeeding which is common in practice. The-feeding of colostrums as well as exclusive breast-feeding need to be encouraged and promoted in order to facilitate, the newborn babies to derive all benefits of good health.

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Lkkjk'k

अनेक घटक शिशुओं के स्तनपान प्रारम्भ करने के समय को तथा स्तन्यमोचन को प्रभावित करते हैं। पूर्वी नेपाल के एक ग्रामीण समुदाय में स्तनपान व्यवहारों का अध्ययन करने के लिए 96 माताओं जिनके दो वर्ष तक आयु के शिशु थे, के एक सैम्पल एक एक परिवार सर्वेक्षण में साक्षात्कार किया गया था। अध्ययन से ज्ञात हुआ कि दो तिहाई माताओं द्वारा प्रसव होने के पश्चात छः तथा चौबीस घण्टे के अन्दर स्तनपान कराना प्रारम्भ कर दिया गया था। 23 प्रतिशत माताओं ने प्रसव होने के छः घण्टे के अन्दर स्तनपान कराना प्रारम्भ कर दिया था जबकि उनमें से 48.96 प्रतिशत माताओं द्वारा जन्म के 12 घण्टे पश्चात किन्तु 24 घण्टे से पहले स्तनपान कराना प्रारम्भ कर दिया था। उत्तरदाताओं में अपना नवदुग्ध (74.02 प्रतिशत) निकालने का यह एक आम व्यवहार था। दो-तिहाई से भी अधिक केसों में, परिवार के सदस्य स्तनपान कराने के लिए सूचना-स्रोत थे। तीन-चौथाई से भी अधिक माताओं द्वारा छः माह के पश्चात अपने शिशुओं को ठोस आहार देना शुरू कर दिया था किन्तु दो वर्ष से भी अधिक समय तक स्तनपान कराना भी जारी रखा था। यह भी देखा गया कि शिक्षित माताओं की तुलना में अशिक्षित माताओं द्वारा अपने शिशुओं को लम्बे समय तक स्तनपान कराना जारी था।

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HEALTH CARE SEEKING BEHAVIOUR AMONG MEN IN AN URBAN SLUM FOR REPRODUCTIVE MORBIDITY

Y. Uppal*, S. Garg**, V.K. Gupta**, B. Mishra***, Manju Rahi* and R. Malhotra*

ABSTRACT

A total of 268 males residing in an urban slum of Delhi were interviewed to study their [socio-demographic characteristics, perceived reproductive morbidity and sources of health care facilities utilised by them for reproductive morbidity during the last 6 months preceding the study. The study revealed that majority of the sample respondents were in the age-group of 20-29 years and 154 were married. Out of 268 males, 64 (23.9%) had some kind of perceived reproductive morbidity, of which, 25 (39.1%) did not seek any treatment from any health care facility. Of those who sought any treatment, more than half (56.5%) preferred informal sources, the study revealed. so, the authors feel the necessity for making people aware of the availability of formal health care services for male reproductive morbidity.

Keywords: Reproductive health, STDs, Formal health care, Informal health care, EC campaigns.

Consequent upon the International Conference on Population and Development (ICPD) held in Cairo in 1994, more focus on involvement of men in reproductive health as well as in reproductive morbidity among males has been observed. The early detection and treatment of individuals infected with sexually transmitted diseases (STDs) and other reproductive health problems is an important aspect of promotion of reproductive health. This strategy targets both 'secondary prevention of complications at the individual level' and 'primary prevention of further transmission at the population level'¹. Therefore, it is essential to have an insight into the prevailing health care seeking behaviour of the people to formulate an effective health care strategy for sexually transmitted diseases (STDs)" and other reproductive health problems².

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Studies conducted in India and other developing countries³⁻⁷ have been limited to the assessment of the health care seeking behaviour of males only for sexually transmitted diseases but not for overall reproductive morbidity. Moreover, these studies have been confined to clinic or hospital settings, where the only motivated or severely affected and infected individuals would report. This kind of hospital or clinic-based study doesn't present a complete and true picture of the disease prevalence rate at-the community level. However, a few studies have been conducted to analyse various aspects of sexual health problems of males at the community level^{8,9}.

OBJECTIVE

The objective of the study is to find out the health care seeking behaviour of males for their reproductive morbidity at the community level.

MATERIALS AND METHOD

The present study examines the pattern of health care seeking behavior by males in the age group of 20-50 years residing in an urban slum of Delhi for their reproductive morbidity. The study was conducted during April 2000 - March 2001. The slum is situated close to the Maulana Azad Medical College: (MAMC), New Delhi, which includes four clusters namely; *Hathi Park*, *Rouse Avenue*, *Harijan Mazdoor Basti* and *Dhobi Ghat*. The slum area has a population of 3,676, residing in 826 hutments. The eligible study population i.e., unmarried and married males; constituted 30 per cent of the slum population. Lok Nayak Hospital; a tertiary government hospital which is situated at a distance of approximately 500 metres away from the slum area has all kinds of health care facilities and offers diagnosis and treatment for reproductive morbidity of the males. Besides, a health centre run by the Department of Community Medicine, MAMC, situated at a distance of approximately 50 metres from the slum, provides all kinds of general health care services. Two quacks were also offering treatment of reproductive morbidity inside the slum area.

A sample size of 250 eligible males was calculated as sufficient on the basis of prevalence of any reproductive morbidity (28.0%) based on a pilot study conducted in the same area some time ago. But in this study, 268 were interviewed out of 275 contacted. To draw the sample respondents, initially every third household was selected by a systematic random sampling technique. Then, the male members of the household in the specified age group were enrolled. If

two or more male members were present in one household, one of them was selected by random sampling through lottery method. If the household did not have any eligible male or found locked on three consecutive visits, the next household was included for the study. A pre-tested, semi-structured interview schedule was administered to the respondents after getting their verbal consent; Information was collected on socio-demographic characteristics of the sample respondents and their perceived reproductive morbidity-in the last six months preceding the study. Information-was also collected on the sources of health care facilities utilized by them for reproductive morbidity.

In this study, 'health care seeking behaviour' is defined as "any Activity undertaken by individuals who perceive themselves to have a health problem or to be ill for the purpose of finding an appropriate remedy⁶". STD clinics, government health care facilities and qualified allopathic doctor's clinic were taken as 'formal health care sources' and chemists, quacks, *tantriks* (magic healers), friends and relatives were taken as 'informal health care sources'. The study was conducted after ethical clearance by the protocol committee of Maulana Azad Medical College, New Delhi. Data were tabulated and analyzed using Epi-Info version-6.04.

FINDINGS AND DISCUSSION

268 (97.6%) were interviewed out of 275 males contacted for the study. Table 1 depicts the socio-demographic profile of the study subjects. 50.4 percent of the respondents were in the age group of 20-24 years. The mean age of the respondents was 27.8 ± 7.3 years, Most of the respondents were educated (70.9%) and belonged to nuclear families (47.8%). More number of respondents belonged .to lower or upper lower socio-economic status as per the classification made by Gupta and Mahajan¹⁰. Almost all (92.9%) of them were employed and more than a half (52.7%) of them had migrated from other states.

TABLE 1
SOCIO-DEMOGRAPHIC PROFILE OF STUDY SUBJECTS

Characteristics	N	%
Age (years)		
20-24	135	50.4
25-29	49	18.3
30-34	39	14.6
35-39	23	8.6
Above 40	22	8.3
Religion		
Hindu	157	58.6
Muslim	11	41.4
Literacy status		
Literate	190	70.9
Illiterate	78	29.1
Socio-economic status		
Upper	4	1.5
Lower upper	14	5.2
Middle	39	14.6
Upper lower and Lower	211	78.7
Type of family		
Nuclear	128	47.8
Joint	99	36.9
Singletons	41	15.3
Marital status		
Married	149	55.6
Unmarried	108	40.3
Divorced	5	1.9
Widower	6	2.2
Working status		
Employed	249	92.9
Unemployed	19	7.1
Migration to Delhi		
Yes	141	52.7
No	127	47.3

Out of 268 men interviewed 64 (23.9%) had some kind of perceived reproductive morbidity. Out of them, 25 (39.1%) did not seek treatment from any formal or informal health care source. Of those who sought any treatment, more than a half (56.5%) preferred informal sources (Table 2). Similar findings were also reported by Roy V et al³. The findings of the present study are in agreement with the findings of Fonck K et al who reported that individuals suffering from sexually transmitted diseases had gone more often to chemists and traditional healers⁵. Similar findings were also observed in a study conducted in Zambia which showed that majority of the men with signs of sexually transmitted infections had first gone to a traditional healer, friend or relative who had some knowledge of herbs⁷. The reasons for majority of the respondents to seek treatment for reproductive morbidity from informal sources could be due to the lack of knowledge about the importance of prompt medical care. Also, stigma attached to the Sexually Transmitted Infections and lack of privacy in formal sources make them to go in for informal sources of treatment⁸. However, it was reported that informal sources are not capable of treating the diseases¹⁰⁻¹³.

In contrast, a few of the respondents with symptoms associated with reproductive morbidity sought treatment from formal health care sources also. For example, 29 (10.8%) had problem of burning micturition but only seven sought treatment, four (57.1%) from formal sector and three (42.9%) from informal sector. In case of men (16) with complains of itching of private parts, only seven (43.8%) sought treatment, six (85.7%) from formal health care sources and one from informal health care resources. Out of 268 respondents, 154 were married and five of them reported to have some infertility morbidity of whom three went to formal health care sources for treatment. Ten people had complaints of scrotal swelling of which only six took treatment and majority of them availed of the services from the informal sources (66.7%). Among the seven individuals who had sought treatment for genital ulcer, more than a half of them (57.2%) sought it from the informal health care sources. With regard to urethral discharge, there was an equal distribution of people availing of services from informal and formal services (Table 2). It was observed that majority of those who had scrotal swelling or genital ulcer consulted informal health care sources, probably because of the social stigmas attached to these diseases, known as "*gupt rog*"⁹ and patients of this kind may like to keep it as a secret matter.

TABLE 2
PERCEIVED REPRODUCTIVE MORBIDITY AND HEALTH CARE
SEEKING
BEHAVIOUR OF THE RESPONDENTS

Perceived reproductive morbidity	Total Number (%) N = 268	Total no. of men seeking care n (%)	No. of men seeking care from formal sector n(%)	No. of men seeking care from informal sector n(%)
Burning micturition	29(10.8)	7(24.1)	4(57.1)	3 (42.9)
Itching of private parts	16(5.9)	7 (43.8)	6 (85.7)	1 (14.3)
Scrotal swelling	10(3.7)	6 (60.0)	2 (33.3)	4 (66.7)
Urethral discharge	9 (3.3)	6 (66.7)	3 (50.0)	3 (50.0)
Genital ulcer	9 (3.3)	7(77.8)	3 (42.8)	4 (57.2)
Infertility*	5(3.2)	4 (80.0)	3 (75.0)	1 (25.0)
Any morbid condition	64(23.9)	39 (60.9)	17(43.5)	22 (56.5)

*N = 154 ever married males

25 (39.1%) out of 64 didn't go in for treatment.

The findings of the study highlight the use of both informal as well as formal sources of treatment for reproductive morbidity by males residing in an urban slum. The use of formal health care facilities, by the people for treatment of their reproductive morbidities needs to be promoted through Information, Education and Communication (IEC) activities in the study area.

Lkkjk'k

दिल्ली के एक शहरी स्लम में रहने वाले कुल 268 पुरुषों का इस अध्ययन से पूर्व विगत छः माह के दौरान उनके सामाजिक-जनांकिकी अभिलक्षण, अनुभूत प्रजनन रूग्णता तथा प्रजनन रूग्णता के लिए उनके द्वारा प्रयुक्त स्वास्थ्य परिचर्या सुविधाओं के स्रोतों का अध्ययन करने के लिए साक्षात्कार किया गया था। अध्ययन से ज्ञात हुआ है कि अधिकांश सैम्पल उत्तरदाता 20-29 वर्ष के आयु-वर्ग के थे तथा उनमें से 154 विवाहित थे। 268 पुरुषों में से 64 (23.9 प्रतिशत) को किसी न किसी प्रकार की प्रजनन रूग्णता की अनुभूति थी, जिनमें से 25 (39.1 प्रतिशत) पुरुषों द्वारा किसी भी स्वास्थ्य परिचर्या सुविधा से किसी प्रकार का उपचार नहीं कराया गया था। अध्ययन से ज्ञात हुआ है कि उनमें से जो किसी प्रकार का उपचार करवाना चाहते थे उनमें आधे से अधिक (56.5 प्रतिशत) ने अनौपचारिक स्वास्थ्य परिचर्या सेवाओं की उपलब्धता के बारे में लोगों को अवगत कराने की आवश्यकता समझी गई है।

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