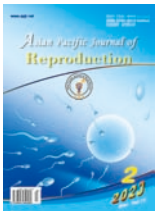

Original Article

Asian Pacific Journal of Reproduction

Journal homepage: www.apjr.net

doi: 10.4103/2305-0500.372374

Assessment of reproductive health service utilization in urban slums: Evidence from Western Rajasthan

Jyoti Sharma[1], Nitin Kumar Joshi[1], Yogesh Kumar Jain[1✉], Kuldeep Singh[1], Pankaj Bhardwaj[2]

[1]*School of Public Health, All India Institute of Medical Sciences, Jodhpur, India*

[2]*Department of Community Medicine and Family Medicine and School of Public Health, All India Institute of Medical Sciences, Jodhpur, India*

ABSTRACT

Objective: To assess the utilization of reproductive health services in urban slum of Jodhpur city, India.

Methods: A community based cross-sectional study was conducted in an urban slums of Jodhpur city amongst 300 married women of reproductive age between March and June 2021. Semi-structured questionnaire was used to gather demographic data and information about utilization of antenatal care (ANC) services, delivery and post-partum services.

Results: The majority of females were aged less than 25 years (*n*=195; 65.0%), married after 18 years (*n*=240; 80%), living in extended families (*n*=265; 88.3%) and with monthly family income less than 10 000 rupees (*n*=182; 60.7%). Statistically significant associations were found between ≥4 ANC visits and educational level of secondary and above (*OR* 2.47, 95% *CI* 1.03–6.28; *P*=0.04), older age (*OR* 15.70, 95% *CI* 14.87–16.54 for women aged 26-35 years, *OR* 16.14, 95% *CI* 12.12–20.01 for women aged ≥36 years; *P*<0.01), and backward and general castes (*OR* 15.91, 95% *CI* 13.57–17.85 for backward caste and *OR* 8.11, 95% *CI* 8.07–8.26 for general category of caste; *P*<0.01). Seven percent of females had undergone parturition. Older age was associated with higher risks of postpartum complications (*OR* 1.06, 95% *CI* 1.01–1.57 for women aged 26-35 years, *OR* 3.56, 95% *CI* 1.29–4.69 for women aged ≥36 years; *P*<0.01). In addition, risks of postpartum complications were associated with backward and general castes (*OR* 1.69, 95% *CI* 1.34–2.13 for backward classes and *OR* 5.01, 95% *CI* 4.29–5.31 for general category castes; *P*<0.01), and more than 4 ANC visits (*OR* 0.20, 95% *CI* 0.09–0.34; *P*<0.01).

Conclusions: More frequent ANC visits are associated with a lower risk of postpartum complications. Furthermore, a high utilization of reproductive health services represents good implementation of reproductive and child health programme at the peripheral level resulting in a stark rise in maternal health indicators in the state of Rajasthan.

KEYWORDS: Female; Pregnancy; Maternal health; Maternal health services; Prenatal care; Postpartum period; Facilities and services utilization; Health services accessibility

1. Introduction

With 16.7% of the world population, India remains the second most populous country of the world. With a constant increase in urbanization from 27.81% in 2001 to 31.16% in 2011 and a decadal growth rate of urban population of 12.18%, the urban slums have become more vulnerable to health hazards[1]. Such vulnerability may be attributed to inaccessibility to health services, irregular employment, illiteracy, lack of negotiating capacity and degraded environment[2].

In India, the women constitute a vulnerable group of population for health hazards due to the risk factors associated with child bearing[3]. The Reproductive and Child Health Programme in India was launched in 1997 with incorporation of components relating to

Significance

As there are no previous studies from the selected region, the findings of the study provide novel empirical data of the factors contributing to antenatal care, reproductive service utilization and risk of postpartum complications from western Rajasthan. This will contribute to gaining the knowledge regarding factors such as education, age, caste and other socio-economic factors, and guide the stakeholders for policy decisions to improve the health outcomes in the harsh climatic conditions of arid India.

✉To whom correspondance may be addressed. E-mail: dryogeshjain14@gmail.com

This is an open access article distributed under the terms of the Creative Commons Attribution-Non Commercial-Share Alike 4.0 License, which allows others to remix, tweak and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

For reprints contact: reprints@medknow.com

©2023 *Asian Pacific Journal of Reproduction* Produced by Wolters Kluwer- Medknow.

How to cite this article: Sharma J, Joshi NK, Jain YK, Singh K, Bhardwaj P. Assessment of reproductive health service utilization in urban slums: Evidence from Western Rajasthan *Asian Pac J Reprod* 2023; 12(2): 52-57.

Article history: Received: 21 June 2022; Revision: 16 September 2022; Accepted: 29 October 2022; Available online: 30 March 2023

safe motherhood, and infection control, while reducing social and geographical disparities in access to utilization of services[4,5].

According to National Family Health Survey 4 (NFHS-4), 51.2% in Indian mothers had at least four antenatal care (ANC) visits and only 37% of the women had more than four antenatal visits. In urban area, this corresponded to 66.4%, while in rural area 44.8% of women were utilizing at least four ANC visits. These number corresponded to only 38.5% with four visits in the state of Rajasthan with 53.8% in urban areas and 34.1% in rural areas, according to NFHS-4[6,7]. Furthermore, the World Health Organization (WHO) estimates that, of 536 000 maternal deaths occurring globally each year, 136 000 take place in India[8]. Estimates of the global burden of disease showed that India contributed 25% to disability-adjusted life years lost due to maternal conditions alone[9,10].

Maternal deaths are detrimental to social development and wellbeing and mainly occur due to unavailability, inaccessibility, unaffordable or poor-quality care[11]. Though many studies have been conducted in many metropolitan cities of India, very few have been conducted at Jodhpur, which is associated with its harsh climatic conditions[12]. Thus, the study was conducted to assess the utilization of reproductive health services in urban slum of Jodhpur city.

2. Subjects and methods

2.1. Study settings

A community based cross-sectional study was planned in the months of March to June 2021 in an urban slums of Jodhpur city after the due permission of the Institutional Ethical Committee of All India Institute of Medical Sciences, Jodhpur.

2.2. Sampling

Sample size was calculated considering the ANC coverage among married women in urban areas of Rajasthan as 75%, and taking 95% confidence and 5% precision[7]. After accounting for non-respondents, a sample size of 300 was used for the study. Purposive sampling was done to include married women of reproductive age group (15-49 years) residing in the slum for at least 6 months, and had given live/still births in last 2 years or those who were currently pregnant.

2.3. Data collection

Data were collected using a semi-structured questionnaire developed based on extensive review of literature, translated and back translated from the local language and reviewed by the study supervisors to account for reliability. It was then pre-tested for validity amongst a pilot group prior to study initiation. Information was gathered regarding socio-demographic variables such as age, caste, religion, household income, education, family type and information regarding utilization of ANC services, self-reported iron-folic acid tablet consumption, place of delivery and postpartum period. The time from consent to questionnaire completion took approximately 20 min to complete.

2.4. Statistical analysis

Data were analyzed using SPSS v16 and proportions were calculated for categorical variables, while for numerical variables, frequency and percentages were calculated. *Chi*-square test and binary logistic regression were used to compare variables such as ANC visits and risk of post-delivery complications across socio-demographic parameters, with *P*-value less than 0.05 considered as statistically significant.

2.5. Ethics statement

The ethical clearance was obtained from the Institute Ethics Committee of All India Institute of Medical Sciences (AIIMS), Jodhpur, Rajasthan, India (Certificate Reference Number: AIIMS/IEC/2018/521). Informed consent was obtained from all the study participants before commencing the data collection and confidentiality and anonymity was maintained at all stages of the research.

3. Results

3.1. Socio–demographic characteristics

The participant screening process is seen in Figure 1. Out of the total 300 study participants, 65.0% (*n*=195) were from the age group of 15 to 25 years while the education below primary and above secondary level was found to be nearly equal with 49.3% (*n*=148) and 50.7% (*n*=152), respectively. The majority of participants were married after 18 years of age (*n*=240; 80%), lived in extended families (*n*=265; 88.3%) and had a monthly family income less than Rupees (Rs.) 10 000 (*n*=182; 60.7%). Most of the study participants had less than 3 children (*n*=228; 76.0%), belonged to muslim religion (*n*=191; 63.7%) and other backward class castes (*n*=232; 77.3%) Furthermore, 218 (72.7%) females were regularly consuming iron-folic acid tablets prescribed to them, and 275 (91.7%) had undergone or were planning to undergo more than 4 ANC checkup visits (Table 1).

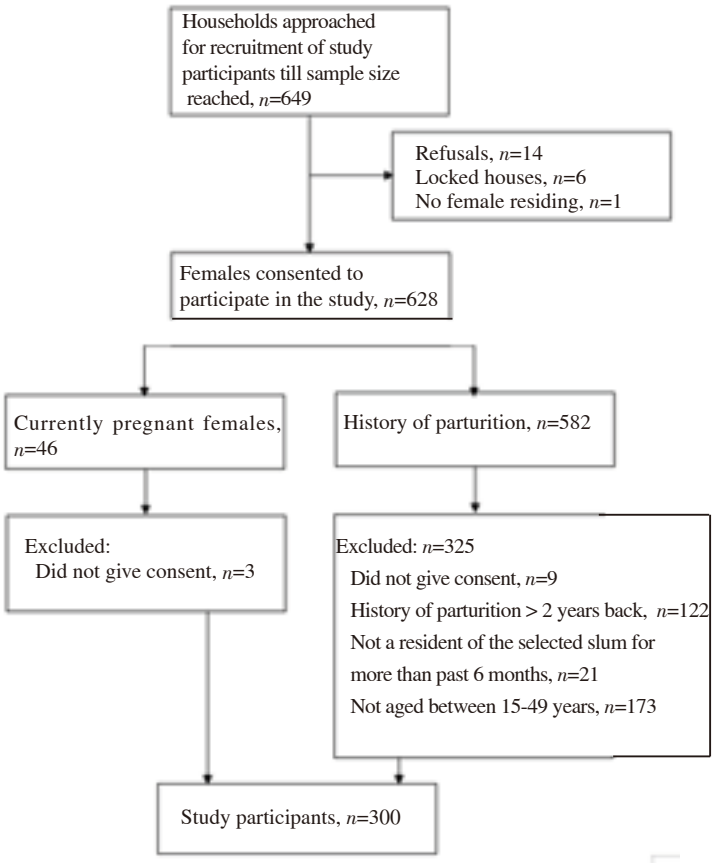

Figure 1. Flowchart of the participant screening process.

Table 1. Socio-demographic distribution of the study participants (*n*=300).

Characteristics	Number	Percentage (%)
Age groups, years		
15-25	195	65.0
26-35	101	33.7
≥36	4	1.3
Education level		
Primary and below	148	49.3
Secondary and above	152	50.7
Age of marriage, years		
<18	60	20.0
≥18	240	80.0
Family type		
Extended	265	88.3
Nuclear	35	11.7
Family monthly income, rupees		
<10 thousand	182	60.7
≥10 thousand	118	39.3
Total number of children		
Less than 3	228	76.0
3 or more	72	24.0
Religion		
Hindu	109	36.3
Muslim	191	63.7
Caste		
SC/ST	60	20.0
OBC	232	77.3
General	8	2.7
Antenatal care visits		
≥4	275	91.7
<4	25	8.3
Iron-folic acid tablet consumption		
Yes	218	72.7
No	82	27.3

SC/ST: scheduled castes/scheduled tribes; OBC: other backward castes.

3.2. ANC services

On analysis of the data collected regarding utilization of services, it was observed that out of 300 participants, 275 females (91.7%) had undergone or were planning to undergo (in case of currently pregnant females) 4 or more ANC visits. The maximum distribution was in the age group 15-25 years (*n*=181), education level of secondary or above (*n*=145), age of marriage above 18 years (*n*=222), extended family type (*n*=243) and monthly family income of less than Rs.10000 (*n*=163). There was statistically significant difference between ≥4 ANC visits and <4 ANC visits in education level of the females (χ^2=5.61, *P*=0.018) (Table 2).

3.3. Factors associated with ANC check-ups

Upon application of binary logistic regression for assessment of factors related to more than 4 ANC visits by the females, it was observed that age, educational level of secondary or above and caste were the most contributory to the ANC check-ups with adjusted odds ratio and 95% confidence intervals of 15.70 (14.87–16.54) for age group 26-35 years, 16.14 (12.12–20.01) for age group ≥36 years, 2.47 (1.03–6.28) for secondary education level, 15.91 (13.57–17.85) for OBC caste and 8.11 (8.07–8.26) for general category of caste (Table 3).

3.4. Place of delivery and post-delivery complications

A total 257 study participants had undergone parturition, out of whom, 214 (83.3%) had done it in a government facility, 20 (7.8%) in a private facility and 23 (8.9%) females had undergone non-institutional delivery at home. A total of 18 study participants (7%) had suffered from postpartum complication, such as excessive bleeding (*n*=5), fits (*n*=3), puerperium fever (*n*=8) and odorous secretions from vagina (*n*=2). A majority of them got treatment from either a public or a private healthcare facility. The risk of postpartum complications was significantly associated with age with adjusted odds ratio and 95% confidence intervals of 1.06 (1.01–1.57) for age group 26-35 years and 3.56 (1.29–4.69) for age group ≥36 years; caste with adjusted odds ratio of 1.69 (1.34–2.13) for backward classes and 5.01 (4.29–5.31) for general category castes; and more than 4 ANC visits with adjusted odds ratio of 0.20 (0.09–0.34) (Table 4).

Table 2. Socio-demographic distribution and reproductive health service utilization patterns (antenatal care visits) of the study participants.

Demographic characteristics	Number, *n*(%)	Antenatal care visits, *n*(%)		χ^2	*P*-value
		≥4	<4		
Total	300	275(91.7)	25(8.3)		
Age groups, years					
15-25	195 (65.0)	181(92.8)	14(7.2)	1.570	0.456
26-35	101(33.4)	90(89.1)	11(10.9)		
≥36	4(1.3)	4(100.0)	0(0.0)		
Education level					
Primary	148(49.3)	130(87.8)	18(12.2)	5.606	0.018
Secondary	152(50.7)	145(95.4)	7(4.6)		
Age of marriage, years					
<18	60(20.0)	53(88.3)	7(11.7)	1.091	0.300
≥18	240(80.0)	222(92.5)	18(7.5)		
Family type					
Extended	265(88.3)	243(91.7)	22(8.3)	0.693	0.957
Nuclear	35(11.7)	32(91.4)	3(8.6)		
Family monthly income, rupees					
<10 thousand	182(60.7)	163(89.6)	19(10.4)	2.687	0.101
≥10 thousand	118(39.3)	112(94.9)	6(5.1)		
Religion					
Hindu	109(36.3)	98(89.9)	11(10.1)	0.693	0.396
Muslim	191(63.7)	177(92.7)	14(7.3)		
Caste					
SC/ST	60(20.0)	54(90.0)	6(10.0)	0.952	0.621
OBC	232(77.3)	213(91.8)	19(8.2)		
General	8(2.7)	8(100.0)	0(0.0)		

Table 3. A binary logistic regression for association of factors with ≥4 antenatal care visits among the respondents.

Demographic characteristics	*aOR*	95% *CI*	*P* value
Age groups, years			
15-25	1.00		
26-35	15.70	14.87–16.54	<0.01
≥36	16.14	12.12–20.01	
Education level			
Primary	1.00		
Secondary	2.47	1.03–6.28	0.04
Age of marriage, years			
<18	1.00		
≥18	1.50	0.58–3.88	0.40
Family type			
Extended	1.00		
Nuclear	0.92	0.26–3.33	0.90
Family monthly income, rupees			
<10 thousand	1.00		
≥10 thousand	1.89	0.71–4.98	0.20
Religion			
Hindu	1.00		
Muslim	0.47	0.16–1.36	0.17
Caste			
SC/ST	1.00		
OBC	15.91	13.57–17.85	<0.01
General	8.11	8.07–8.26	

aOR: adjusted odds ratio; *CI*: confidence interval.

Table 4. A binary logistic regression for association of factors with risk of postpartum complication among the respondents.

Demographic characteristics	*aOR*	95% *CI*	*P* value
Age groups, years			
15-25	1.00		
26-35	1.06	1.01–1.57	<0.01
≥36	3.56	1.29–4.69	
Education level			
Primary	1.00		
Secondary	0.89	0.33–2.39	0.81
Age of marriage, years			
<18	1.00		
≥18	0.89	0.27–2.96	0.85
Family type			
Extended	1.00		
Nuclear	1.50	0.40–5.69	0.55
Family monthly income, rupees			
<10 thousand	1.00		
≥10 thousand	1.26	0.45–3.50	0.66
Religion			
Hindu	1.00		
Muslim	0.17	0.23–1.30	0.08
Caste			
SC/ST	1.00		
OBC	1.69	1.34–2.13	<0.01
General	5.01	4.29–5.31	
Antenatal care visits			
<4	1.00		
≥4	0.20	0.09–0.34	<0.01

aOR: adjusted odds ratio; *CI*: confidence interval.

4. Discussion

The present study provided an overview of the utilization of reproductive health services in an urban slum of Jodhpur city. Various indicators for utilization of services were found to be significantly higher in the women who were educated secondary and above levels as compared to primary and illiterate. These finding is supported by various studies, conducted by Mugo *et al*[13], Uppadhaya *et al*[14], Muyunda *et al*[15] and Sharma *et al*[16]. in various parts of the country, which reported a positive influence of literacy on utilization of antenatal services. Similarly, our study revealed a 72.7% females regularly consuming iron-folic acid as per the prescription. The results concur with the findings of Ugwu *et al* which reported 76.3% compliant females[17], but are higher than those in rural India, as reported by Pal *et al* with only 62% compliance amongst the pregnant females[18].

An important finding from the study was over 90% women availing four or more ANC visits. This was in contrast to the findings of study conducted by Uppadhaya *et al*[14] reporting only 32.8% mothers who had received four or more antenatal visits, Chauhan *et al*[19] with only 14.8% of the women receiving four or more ANC visits and Regassa *et al*[20] with 77.4% women. Reason of higher ANC utilisation in the present study may be due to the incentivized motivation of the Accredited Social Health Activists (ASHAs) for completing four ANC visits of every pregnant female.

The results also show that one fifth of the women were married before 18 years of age, which was similar to the findings of Malathi *et al* with stated 11.7% of the women being married before 20 years of age[21]. The NFHS-4 report of Rajasthan also indicates a 20.3% prevalence of women getting married before the age of 18 years in urban areas[7]. The findings may be due to a combination of cultural, traditional and religious arguments in context to the local beliefs coupled with the stigma attached to premarital sex and child bearing[22].

A very small proportion of women belonged to nuclear families. These findings were in contrast to the results of Malathi *et al*[21] in rural districts of Karnataka, where over one-thirds participants belonged to nuclear families and those by Gupta *et al*[23], in urban slums of Lucknow city, with over 70% participants from nuclear family. The difference may be due to the religious differences of study participants in all the studies.

In the present study, 7% of the women suffered from postpartum complications and a majority of them got treatment from either a public or a private healthcare facility. A similar study conducted by Worku *et al* showed only 52.1% seeking treatment from skilled health care provider[24], while the study conducted by Regassa *et al* revealed the utilization of postpartum complications services to by only 37.2%[20]. It also may be due to a high awareness amongst the study participants and results from a greater motivation for utilization in form of Janani Suraksha Yojana schemes and free of cost services right from prepartum period in the Rajasthan state. Postpartum care is a very important aspect of reducing maternal mortality, as postpartum hemorrhage is the leading cause of maternal death worldwide, with an estimated mortality of 140 000 per year[25,26]. Furthermore, in India postpartum hemorrhage contributed to 38% of all maternal deaths and a majority of these deaths occurred within 4 hours of delivery[27]; such positive findings from the state of Rajasthan are of immense public health significance.

The current study has many strengths along with a few limitations. The study provided evidence-based findings regarding utilization of reproductive and child health services from the Thar region of western Rajasthan, however, being a cross-sectional descriptive study, it provided only a snapshot of the utilization tendencies for the specific time period in which the study was conducted.

In conclusion, the present study reveals the status of reproductive and child health utilization in the Thar region of western Rajasthan. More frequent ANC visits are found to be significantly associated with higher education levels, which may have been a determining factor for a trend towards institutional deliveries. The overall analysis of the data represents good implementation of Reproductive and Child Health Programme at the peripheral level resulting in a stark rise in maternal health indicators. Incentives provided by various schemes such as free of cost services, Janani Suraksha Yojana and Rajshree Yojana schemes may have been a motivating factor for developing a greater trust on government health facilities. This study reveals the further scopes for extensive studies and could provide directions for guiding for policy and program decisions about various aspects of maternal and child health in the remote arid regions of the country.

Conflict of interest statement

The authors declare no conflicts of interest.

Funding

This study received no extramural funding.

Authors' contributions

Jyoti Sharma was involved in data curation, formal analysis, investigation, validation and writing original draft. Nitin Kumar Joshi was involved in conceptualization, data curation, formal analysis, methodology, resources, supervision, and review. Yogesh Kumar Jain was involved in methodology, use of statistical software,

visualization, writing of original draft, review and editing. Pankaj Bhardwaj was involved in conceptualization supervision, resources, validation and review. Kuldeep Singh was involved in supervision, validation and final review.

References

[1] Government of India. *Census tables*. [Online] Available from: https://censusindia.gov.in/census.website/data/census-tables [Accessed 21 June 2022].

[2] Centre for Global Health Research. *Million death study (MDS)*. [Online] Available from: https://www.cghr.org/projects/million-death-study-project/ [Accessed 21 June 2022].

[3] Hazarika I. Women's reproductive health in slum populations in India: Evidence from NFHS-3. *J Urban Health* 2010; **87**(2): 264-277.

[4] National Rural Health Mission. *Rajasthan*. [Online] Available from: http://www.nrhmrajasthan.nic.in [Accessed 21 June 2022].

[5] National Rural Health Mission. *Government of Rajasthan call for expressions of interest for managing urban RCH centres in slum areas*. [Online] http://rajswasthya.nic.in/Urban%20RCH%20Adv.pdf [Accessed 21 June 2022].

[6] International Institute for Population Sciences (IIPS) and ICF. 2017. *National Family Health Survey (NFHS–4), 2015–16: India*. Mumbai: IIPS.

[7] National Family Health Survey, India. *Rajasthan: Main report*. [Online] Available from: http://rchiips.org/nfhs/data/rj/rjchap8.pdf [Accesssed 21 June 2022].

[8] World Health Organization. *Maternal mortality in 2000: Estimates developed by WHO, UNICEF and UNFPA*. [Online] Available from: http://whqlibdoc.who.int/hq/2000/a81531.pdf [Accessed 21 June 2022].

[9] Murray CJL, Lopez AD, World Health Organization, World Bank & Harvard School of Public Health. *The Global burden of disease: A comprehensive assessment of mortality and disability from diseases, injuries, and risk factors in 1990 and projected to 2020*. World Health Organization. Available from: https://apps.who.int/iris/handle/10665/41864 [Accessed 21 June 2022].

[10]Menon G, Singh L, Sharma P, Yadav P, Sharma S, Kalaskar S, et al. National burden estimates of healthy life lost in India, 2017: An analysis using direct mortality data and indirect disability data. *Lancet Global Health* 2019; **7**(12): e1675-e1684.

[11]World Health Organization. *Why do so many women still die in pregnancy or childbirth?* [Online] Available from: http://www.who.int/features/qa/12/en/ [Accessed 21 June 2022].

[12]Jain Y, Joshi N, Shah K, Chittora I, Joshi V. Intravenous verses oral iron supplementation for anaemia of pregnancy in the arid region of Western India: A retrospective cohort study. *Int J Reprod Contracept Obstet Gynecol* 2022; **11**(4): 1177.

[13]Mugo NS, Dibley MJ, Agho KE. Prevalence and risk factors for non-use of antenatal care visits: Analysis of the 2010 South Sudan household survey. *BMC Pregnancy Childbirth* 2015; **15**: 68.

[14]Uppadhaya S, Agrawal N, Bhansali S, Garg K, Singh M. Utilization of antenatal health care services and its impact on birth weight of newborn in rural area of Western Rajasthan, India. *Int J Community Med Public Health* 2017; **4**: 680.

[15]Muyunda B, Makasa M, Jacobs C, Musonda P, Michelo C. Higher educational attainment associated with optimal antenatal care visits among childbearing women in Zambia. *Front Public Health* 2016; **4**: 127.

[16]Sharma N, Kumar S, Devgan S. A study on utilization of antenatal care services in urban slums of Amritsar city, Punjab, India. *Int J Community Med Public Health* 2017; **4**(3): 698-703.

[17]Ugwu EO, Olibe AO, Obi SN, Ugwu AO. Determinants of compliance to iron supplementation among pregnant women in Enugu, Southeastern Nigeria. *Niger J Clin Pract* 2014; **17**(5): 8.

[18]Pal PP, Sharma S, Sarkar TK, Mitra P. Iron and folic acid consumption by the ante-natal mothers in a rural area of India in 2010. *Int J Prev Med* 2013; **4**(10): 1213-1216.

[19]Chauhan A. Antenatal care among currently married women in Rajasthan, India. *Asian Pac J Trop Dis* 2012; **2**: S617-S623.

[20]Regassa N. Antenatal and postnatal care service utilization in southern Ethiopia: A population-based study. *Afr Health Sci* 2011; **11**(3): 390-397.

[21]Malathi, Karkada S, Ansuya. A study on the awareness of utilization of reproductive and child health (RCH) services in the selected villages of Udupi District, Karnataka. *Int J Nurs Educ* 2010; **2**: 28-31.

[22]Joshi V, Hanumantha Setty N, Joshi N, Jain Y, Bhardwaj P, Singh K. Mental health and nutritional issues: A dual burden among adolescent school going girls of urban and rural Jodhpur. *Int J Community Med Public Health* 2021; **8**(12): 5823.

[23]Gupta P, Srivastava V, Kumar V, Jain S, Masood J, Ahmad N, et al. Newborn care practices in urban slums of Lucknow city, UP. *Indian J Community Med* 2010; **35**(1): 82-85.

[24]Worku AG, Yalew AW, Afework MF. Maternal complications and women's behavior in seeking care from skilled providers in North Gondar, Ethiopia. *PLoS One* 2013; **8**(3): e60171.

[25]World Health Organization. *Maternal mortality*. [Online] Available from: https://www.who.int/news-room/fact-sheets/detail/maternal-mortality [Accessed 21 June 2022].

[26]Edhi MM, Aslam HM, Naqvi Z, Hashmi H. Post partum hemorrhage: Causes and management. *BMC Res Notes* 2013; **6**: 236.

[27]Centre of Health Informatics, National Institute of Health and Family Welfare. Postpartum haemorrhage. National Health Portal of India. [Online] Available from: https://www.nhp.gov.in/disease/gynaecology-and-obstetrics/postpartum-haemorrha [Accessed 21 June 2022].

Publisher's Note

The Publisher of *the Journal* remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.