

## RESEARCH ARTICLE



# Awareness and Attitude of Wives of Laborer Outmigrants Originating from Indian Subcontinent Towards Emergency Contraceptives- A Multi-Country Study

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## Abstract

**Objective:** The present study aims to analyze the attitude and awareness of wives of male migrants (WMM) towards EC (Emergency Contraceptives Pills) residing in either of three countries of the Indian subcontinent (India, Bangladesh, and Nepal). Further, the present study also aims to identify the socioeconomic determinants of the EC awareness of WMM. **Methods:** A cross-sectional survey of 621 WMM was conducted across multiple low-income sites in the three countries. **Findings:** The majority of the respondents (77.6%) reported being aware of EC methods, out of which the majority (32%) reported their friends circle to be the primary source of knowledge followed by husband (23.4%), family members (19.9%) and healthcare workers (9.8%), respectively. About 56% of the respondents reported that they consumed EC pills more than thrice in the last year. The study discovered that WMM engaged in unprotected intercourse about 5 times (SD= ±1.6) on average in the last year. While the reported consumption of EC pills by WMM was 2.6 times (SD= ±1.2) on an average during the same year. Regression analysis revealed that 'place of husband's migration' is the strongest determinant of WMM's EC awareness (OR=3.67, p<0.05), followed by 'age of the WMM' (OR=2.12, p<0.05), and 'religion' (OR=1.32, p<0.05) respectively. Furthermore, 'having children' was also found to be a significant determinant (p<0.05). **Novelty:** Firstly, the study offers an examination of comparison of WMMs' attitudes and awareness residing in three low- and middle-income countries (LMICs), an area not thoroughly investigated in previous studies. Secondly, the study has identified the factors influencing the awareness of EC among WMM, a subject largely unexplored in

prior research. **Conclusion :** We conclude that based on the findings the level of awareness of EC is not adequate and policymakers could use these findings to strengthen the reproductive health policies of targeted intervention groups.

**Keywords:** Emergency contraceptives; Left behind; Wives of migrants; India; Bangladesh; Nepal; Low- and middle-income countries

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## 1 Introduction

Unplanned pregnancies bring various health risks for both the mother and child, such as malnutrition, and illness, and can even lead to death. It also contributes to ongoing cycles of high fertility and hinders educational and job opportunities, resulting in long-term poverty that spans generations<sup>(1)</sup>. There is sufficient evidence from research that the rate of both intended and unintended pregnancies is higher in developing countries with the highest rates reported from Africa (136 and 86 per 1000), intermediate in Asia (78 and 49 per 1000), and least in Europe (49 and 38 per 1000)<sup>(2)</sup>. Factors such as marital status, employment status, ethnicity, and type of settlement have shown significant associations with unintended pregnancy<sup>(3)</sup>.

Unplanned pregnancies occur when access to effective contraception is limited, or when contraceptive methods are not used correctly or consistently. Research indicates that almost 40% of unintended pregnancies worldwide each year results from ineffective use of contraception, contraceptive failure, or lack of contraceptive use<sup>(4)</sup>.

Emergency contraception is a term used to describe contraceptive methods utilized to prevent pregnancy after sexual intercourse. The predominant emergency contraceptive (EC) pills often contain the hormone levonorgestrel. It gives a second chance to protect against unintended pregnancy if a couple engages in unprotected intercourse or if any regular contraception failure occurs. The EC pills can reduce the risk of unintended pregnancy by up to 95 %, when consumed within 72 hours of unprotected sexual exposure<sup>(5)</sup>.

Access to contraceptive methods depends on various factors such as awareness, age, education, economic status, and the availability of contraceptive services<sup>(6)</sup>. Additionally, cultural, and societal attitudes toward contraception may also influence access and utilization by a woman<sup>(7)</sup>. The situation gets more critical in the case of migrant diaspora residing in foreign lands. An exhaustive literature search revealed there are various research studies on the reproductive behavior of the migrant female population<sup>(8,9)</sup>. However, the findings are largely confined to either developed nations or high-income women or focused on forced migration victims instead of left behind wives of male migrants (WMM)<sup>(10)</sup>. Among these studies, majority of them have not conducted an in-depth analysis of awareness and attitude of WMM towards EC pills<sup>(11)</sup>.

By and large, the researchers claim that irrespective of the reasons for migration, the vulnerability of WMM increases as spousal migration happens, with no exception to economic activity-related reasons. This is most prominent when the cross-border migrants originate from low- and middle-income countries (LMICS) taking up 'blue collar' jobs<sup>(12)</sup>. In LMICS there are prevalent patriarchal norms, therefore this migration is dominated by the male gender. It is an idiosyncrasy of the male out-migration to leave their spouse back in their home country, usually with in-laws and kids<sup>(13)</sup>. While the migration does bring financial relief to families back home and add to the household income portfolio, but the added responsibilities of the WMM outweighs the benefits<sup>(14,15)</sup>. These women may be residing in rural areas or urban slums which further aggravates their health vulnerabilities<sup>(16)</sup>. Hence, when the patriarchal norms and the absence of a husband in the household overlaps one of the most vulnerable subsections of women health in terms of unaddressed reproductive needs emerges. Researchers have argued that the reproductive awareness of WMM is meagerly explored and emergency

contraceptives is the least<sup>(17)</sup>.

To close this knowledge gap, it is important to understand the awareness and attitude of wives of international migrants engaged in marginal or laborer work in a foreign country. Indian subcontinent caters to the majority of the labor manpower demand in Middle Eastern countries. Therefore, the present study aims to analyze the attitude and awareness towards EC of WMM residing in either of the three countries of the Indian subcontinent (India, Bangladesh, and Nepal) whose husbands have migrated to gulf countries or other countries of Indian subcontinents for labor or other marginal income work. Further, the present study also aims to identify the socioeconomic determinants of awareness of WMM towards EC.

## 2 Methodology

The study follows a cross-sectional survey design based on empirical data. The data collection from WMM was done by using an interview schedule in the three selected countries of the Indian subcontinent, namely, India, Bangladesh, and Nepal. Sample size determination was done at a 95% confidence level and 5% margin of error. The prevalence (proportion of expatriates) for each country was taken as 16% and the value was derived from the available literature. The final sample size (N) was determined to be 621. To match the sample drawn from the three countries, the survey was conducted in low-income areas which are hubs for male migration to Gulf countries. For each included country (India, Bangladesh, and Nepal) specific sites for data collection were identified (Table 1).

**Table 1. Selected survey sites and sample size**

S. No.	Country	District	Sites	Sample Size
1	Bangladesh	Dhaka	Gulshan	112
		Dhaka	Baridhara	95
2	Nepal	Kathmandu	Lalitpur	123
		Kathmandu	Jaulakhel	84
		Patna	Phulwari	34
3	India	Hyderabad	Indiranagar	42
		Hyderabad	Bushannagar	40
		Bengaluru	Devara Jeevanahalli	91

Rapid listing in each site was done to identify the potential respondent, i.e., WMM. From the listing, systematic random sampling was done to draw the sample. For each country, the sampling from each site was done using the PPS (Probability Proportional to Size) approach.

Sampling criteria established were: 1) The age of respondent woman is between 15-49 years, and husband must have migrated at least one year ago; 2) The husband migrated out of the country for economic activity.

Interviews were conducted using a paper-based tool which were prepared in English and also translated to the local language of the areas. The tool consisted of two parts with socio-demographic and EC sections. The EC awareness section was adapted from a past study<sup>(18)</sup>. The testing of the tool was done in low-income neighborhoods (not under the study) of each country. Necessary adjustments to the tool were made, and tool validity was ensured (Cronbach's alpha = 0.755). Data analysis was performed using R-Statistical Package software. Analysis involved univariate analysis to derive proportions, and bivariate analysis was conducted with Chi-square testing. Lastly, binary logistic regression analysis was performed to identify predictors of emergency contraceptive awareness and usage, respectively.

## 3 Results

### 3.1 Background Characteristics

The analysis of all the respondents irrespective of the origin country was done at first. The analysis revealed that the median age of WMM was 27 years (IQR=7). The majority of the surveyed WMM were found to be literate above the high-school level (62.5%) and about 37.5% were found to be educated below the high-school level. The majority of the respondents (57.5%) were found to be following Hinduism, about 28.7% were found to be following Islam, and the rest 13.8% of the respondents were found to be following other religions, namely Christianity, Buddhism, etc. Of all the surveyed WMM, about 59% were residing in joint families, whereas about 41% lived in nuclear families. It was found that about a quarter of the surveyed WMM had no children, with over a half of them (55%) having up to two children, and one-fifth of them (20%) having more than two children.

The majority of the respondents (53.1%) reported that they were married for more than five years, and 46.9% reported being married for less than 5 years. Data regarding husband’s characteristics indicates that the median age of the husbands was 30 years (IQR=6). Although over three-fourth (77%) of the respondents reported that their husbands were educated beyond high school, yet majority of their husbands (73.3%) were engaged in labor work. Over half of the respondents (54.9%) reported that they usually receive less than USD 300 per month. The data regarding the place of migration shows that KSA was the most preferred place for migration by the husbands of the study group, accounting for 43.6%, followed by UAE and Qatar at 16.9% and 12.6% respectively. About three-fifths of the respondents said that their husbands have migrated for more than five years.

As the study was conducted in three different countries, the background characteristics of the three countries’ respondents were checked by employing cross-distribution and Chi-square test (Table 2). By and large, the findings indicate that most of the background characteristics of the WMM of the three countries had striking resemblance except for the number of children and place of migration. The reason behind variation is due to the sociocultural norms and government policies regarding population growth control in each of the nations.

**Table 2. Cross-distribution of respondent’s country by demographic and socioeconomic factors (n=621)**

<b>Variables</b>	<b>India</b>	<b>Nepal</b>	<b>Bangladesh</b>	<b>Chi-sq.</b>
<b>Age</b>				
15-24 years	14.8%	47.7%	37.5%	6.95
25-34 years	8.3%	59.5%	32.2%	
35 years or more	15.0%	60.0%	25.0%	
<b>Religion</b>				
Hinduism	45.0%	35.8%	19.2%	1.2
Islam	52.4%	30.8%	16.8%	
Others	47.4%	32.3%	20.3%	
<b>Educational status</b>				
Up to high school	46.5%	31.6%	21.9%	1.84
Above high school	56.3%	26.8%	16.9%	
<b>Type of family</b>				
Nuclear	30.5%	34.2%	35.3%	0.67
Joint	28.6%	30.6%	40.8%	
<b>Number of children**</b>				
None	46.3%	26.3%	27.4%	9.5
Up to two	25.8%	38.3%	35.9%	
More than two	35.2%	30.1%	34.7%	
<b>Husband’s age</b>				
15-24 years	33.7%	29.3%	37.0%	2.4
25-34 years	36.9%	32.0%	31.1%	
35 years or more	38.2%	34.7%	27.1%	
<b>Husband’s educational status</b>				
Up to high school	22.8%	45.5%	32.3%	1.28
Above high school	22.0%	39.1%	38.9%	
<b>Husband’s occupation</b>				
Laborer in construction	40.4%	30.6%	29.0%	0.171
Others	38.5%	29.8%	31.7%	
<b>Monthly remittance (in USD)</b>				
Up to 300 USD	28.9%	32.0%	39.1%	1.16
More than 300 USD	35.5%	30.3%	34.2%	
<b>Region of husband’s migration*</b>				
Saudi Arab	39.1%	29.6%	31.3%	22.78
United Arab Emirates	39.5%	25.6%	34.9%	
Qatar	30.0%	34.2%	35.8%	
Other countries	23.2%	54.4%	22.4%	
<b>No. of years of migration</b>				
Less than five years	34.4%	31.4%	33.2%	2.78
More than five years	40.4%	36.6%	23.0%	

Significance: \*p<0.01, \*\*p<.05, \*\*\*p<0.1

### 3.2 Awareness and Attitude Towards EC

Aggregated data analysis of the three countries (N=621) revealed that the majority of the respondents (77.6%) reported being aware of EC methods. Among those who reported being aware (N=482), the majority (32%) reported their friend-circle as the primary source of knowledge followed by the husband (23.4%), family members (19.9%), and healthcare workers (9.8%), respectively. About 83% of the respondents reported having used EC in the past, with about 56% of them reporting the consumption of EC pills more than thrice in the last one year. The findings discovered that on average a WMM had 5 times (SD= ±1.6) unprotected coitus in the last year. In contrast, on average a WMM reported consuming the EC pill 2.6 times (SD= ±1.2).

The majority of the surveyed WMM (69.4%) reported that their husband usually gets EC if needed, followed by those who reported getting EC themselves (24.8%) and with the help of a friend (5.8%). Respondents were asked if needed would they buy the EC from a medical store. The findings revealed that the majority of the respondents (72.7%) won't do so. The respondents were further asked to mention the main reason for not doing so. The majority of the respondents (52.4%) reported shyness, followed by it being prohibited by the family (33.1%) and the stigma associated with a woman buying a contraceptive (14.5%).

The respondents who were aware but never used an EC (N=83) were asked about the primary reason. The analysis of data revealed that the majority (31.3%) did not use the EC due to prohibition by their husband or family, followed by fear of side effects (26.5%). The other reason for not using EC was religious reservations and reported by 18.1% of the respondents.

Lastly, all the aware respondents (N=482) were asked if they think that EC should be taken after consultation with healthcare workers. The data revealed that slightly above three-fourths of the respondents do not think so, whereas merely one-fourth think medical consultation with a doctor should be done.

To compare the awareness and attitude of the respondents from the three countries Chi-square test was conducted (Table 3). Overall, the awareness and attitude of the respondents of India, Nepal, and Bangladesh were found to be statistically different in terms of proportion (p<0.05).

**Table 3. Cross-distribution of awareness and attitude to EC with the nationality of the respondents**

Variables	India	Nepal	Bangladesh	Chi-Sq.
<b>Aware of EC*</b>				
Yes	53.8%	35.1%	11.1%	29.8
No	65.2%	19.4%	15.4%	
<b>Primary source of knowledge about EC*</b>				
Friends	36.2%	38.6%	25.2%	87.5
Family members	54.5%	12.3%	33.2%	
Husband	18.0%	70.1%	11.9%	
Mass media	33.3%	33.3%	33.3%	
Healthcare worker	20.2%	34.6%	45.2%	
Others=100	25.3%	45.0%	29.7%	
<b>Ever used EC*</b>				
Yes	45.5%	33.0%	21.5%	24.6
No	26.8%	25.9%	47.3%	
<b>EC consumed in last one year*</b>				
Up to twice	62.8%	25.3%	11.9%	15.8
thrice or more	45.2%	29.0%	25.8%	
<b>Person who gets EC for you (usually)*</b>				
Husband	39.9%	42.3%	17.8%	51.3
Friend	30.4%	35.0%	34.6%	
Self	36.6%	12.0%	51.6%	
<b>Reluctance in buying EC from medical/pharmacy shop*</b>				
Yes	23.3%	32.8%	43.9%	35.6
No	53.1%	13.0%	33.9%	
<b>Reason for not buying self*</b>				
Shy	43.6%	43.3%	13.1%	49.8
Not allowed by family	16.9%	31.1%	52.0%	
Buying EC is a stigma	18.1%	42.4%	39.5%	
<b>Main reason for not using*</b>				
Religious	20.0%	40.0%	40.0%	10.8
Husband/family don't allow	23.1%	42.6%	34.3%	

*Continued on next page*

*Table 3 continued*

Fear of adverse effects	59.2%	27.0%	13.8%	
Other reasons (on other contraceptives/want more kids)	25.0%	50.0%	25.0%	
<b>Believe a doctor should be consulted before taking ECP*</b>				
Yes	48.6%	21.4%	30.0%	13.9
No	31.1%	21%	47.9%	

Significance: \*p<0.01, \*\*p<.05, \*\*\*p<0.1

### 3.3 Determinants of EC Awareness

To find out the determinants of EC awareness binary logistic regression analysis was carried out. The awareness of the respondents was considered as the outcome variable. A set of 12 sociodemographic and economic variables were entered for analysis. The analysis revealed that the overall developed model can explain 44.6% variation in the outcome variable (Nagelkerke R squared 0.446, p<0.05). The results of the model-failure test (Hosmer-Lemeshow Test) revealed that the model is less likely to fail ).

Out of 12 independent variables four were found to have a significant effect on the EC awareness of WMM (p<0.05). Based on the odds, ‘place of husband’s migration’ is the strongest determinant (OR=3.67, p<0.05), followed by ‘age of the WMM’ (OR=2.12, p<0.05) and ‘religion’ (OR=1.32, p<0.05). Furthermore, ‘having children’ was also found to be a significant determinant (p<0.05). It is crucial to highlight that at a 90% confidence level ‘family type’ was also found to be a significant determinant.

**Table 4. Regression analysis results representing significant determinants of EC awareness**

Input Variables	OR	Wald	95% Confidence Interval	
			Lower Limit	Upper Limit
<b>Age**</b>				
15-29 years <sup>@</sup>				
Above 29 years	2.12	4.10	1.33	4.54
<b>Religion**</b>				
Hinduism <sup>@</sup>				
Others	1.32	1.99	1.20	3.78
<b>Educational status</b>				
Up to high school <sup>@</sup>				
Above high school	3.12	1.35	0.78	3.86
<b>Type of family***</b>				
Nuclear <sup>@</sup>				
Joint	0.77	1.87	0.11	1.22
<b>Having children*</b>				
No <sup>@</sup>				
Yes	0.59	3.42	0.29	0.89
<b>Husband’s age</b>				
15-29 years <sup>@</sup>				
Above 29 years	2.56	0.76	0.98	3.46
<b>Husband’s educational status</b>				
Up to high school <sup>@</sup>				
Above high school	0.54	0.15	0.24	1.55
<b>Husband’s occupation</b>				
Laborer in construction <sup>@</sup>				
Others	4.43	1.63	0.55	5.20
<b>Monthly remittance (in USD)</b>				
Up to USD 300 <sup>@</sup>				
more than USD 300	1.40	1.27	0.56	1.56
<b>Region of husband’s migration*</b>				
Gulf countries <sup>@</sup>				
Indian subcontinent countries	3.67	4.29	2.65	4.52
<b>No. of years of migration</b>				

*Continued on next page*



Table 4 continued

Less than five years <sup>@</sup>				
More than five years	3.11	1.76	0.80	4.29

Significance: \*p<0.01, \*\*p<.05, \*\*\*p<0.1 @Reference category

## 4 Discussion

Adopting from past studies, the analysis was planned. Many past researchers have used sociodemographic and economic factors as independent variables<sup>(19,20)</sup>. This adds to the strength of the methodology.

The results of the present study align with past research on EC awareness and usage patterns among women of reproductive age in various settings. For example, alike our results, a study reported a high level of EC awareness among urban population. Nevertheless, opposing results were reported by past researchers<sup>(21)</sup> i.e., lesser awareness level among rural populations. These discrepancies highlight the influence of socioeconomic factors and geographic location on EC awareness. Furthermore, our results regarding the primary sources of knowledge about EC are consistent with those of recent studies which also identified friends and family members as significant sources of information<sup>(22,23)</sup>. However, unlike our findings, past researchers reported a higher reliance on healthcare workers for EC knowledge among their study population, suggesting potential variations in information dissemination strategies across different regions<sup>(24)</sup>. Regarding EC utilization patterns, the present study corroborates the findings of recent research, which also identified a trend of repeated EC usage among WMM, indicating a need for further investigation into the underlying factors driving this behavior<sup>(25)</sup>. Additionally, our results regarding the role of husbands in procuring EC resonate with the findings of a sociological study, highlighting the importance of spousal dynamics in contraceptive decision-making processes<sup>(26)</sup>.

In terms of barriers to EC access and utilization, our study echoes the findings of previous research, which identified societal stigma and cultural norms as significant impediments to contraceptive uptake among women in conservative communities<sup>(27)</sup>. These consistent findings underscore the need for targeted interventions to address misconceptions and reduce barriers to EC access across diverse cultural contexts.

By comparing results with past research on emergency contraception, several major strengths of the present study emerge. Firstly, the multicentric nature of the study enables comparison among one of the most vulnerable subsets of women residing in different LMICs. Secondly, the identification of significant predictors adds to the novelty and strength of the study.

The policymakers can develop intervention packages to augment EC awareness and foster reproductive well-being and contribute to the achievement of the SDG-3 (health) and women empowerment.

## 5 Conclusion

This study provides insight into important factors impacting reproductive health behaviors on the Indian subcontinent by examining the knowledge of spouses of laborer outmigrants. The results show that the surveyed population has a fair amount of knowledge regarding EC techniques, with significant national differences. Significant gaps in utilization exist despite awareness, and these gaps are driven by social, cultural, and familial variables. The respondents' varying primary sources of knowledge, frequency of EC usage, and access hurdles are indicative of varied socio-cultural contexts. A strong role for the husband in obtaining EC highlights the significance of spouse participation in reproductive decision-making. However, many women's autonomous access to EC is impeded by societal conventions and psychological inhibitions including shyness and stigma. Religion, family structure, and demographics all have a big impact on EC awareness, which emphasizes how hard it is to change people's reproductive health habits. The study emphasizes the necessity of focused interventions that address sociocultural barriers and encourage wise choices when using ECs. Logistic regression analysis identifies key determinants of EC awareness, emphasizing the influence of the husband's migration, age, religion, and parenthood status. These findings provide valuable insights for designing tailored interventions to enhance EC uptake and promote women's reproductive autonomy.

Overall, the study underscores the importance of culturally sensitive approaches in addressing the reproductive health needs of WMM in three LMIC countries. By addressing these challenges, policymakers and healthcare providers can empower women to make informed choices regarding their reproductive health, thereby fostering healthier communities and promoting gender equity.

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