HYSTERECTOMY AMONG WOMEN IN INDIA

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Abstract

Hysterectomy is the surgical removal of uterus. Hysterectomy is the second most frequently performed surgery for non-pregnancy related issues among women around the world. It will result in instant menopause and the women will experience all the physiological changes of menopause after undergoing a hysterectomy. She will no longer menstruate and will not be able to bear children. This study used the data from NFHS-4(2015-16) that involved a sample of 699686 women in the age group of 15-49 years in India. Of them, 22053 women had undergone hysterectomy. Univariate and bivariate techniques are used for identifying factors responsible for the hysterectomy. Chi-square and Logistic regression is used for analysis. The hysterectomy prevalence is estimated as 3.2 percent in India, highest in South Indian states especially in Andhra Pradesh (8.9 %). The mean age at hysterectomy is 34 years. The hysterectomy among women in the age group 40-49 years are more compared to other age groups. Women in rural area had higher percent of hysterectomy compared to urban area. The study showed that, hysterectomy was higher among less educated women. Prevalence of hysterectomy was higher among ever married women. In the case of religion, hysterectomy was more among Hinduand Christianwomen compared to other religious groups. According to caste, women belonging to OBC had higher rates of hysterectomy. Prevalence of hysterectomy is higher among employed women. According to wealth index, people in the middle section of the society had higher rate of hysterectomy.More than half of women undergone the operation in private hospitals.About 5 percent of women who had hysterectomy are covered by insurance.

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The most frequent cause of hysterectomy is excessive bleeding in India. Hysterectomies at young age had serious long term health implications for women. It is a potential public health concern affecting the health of the women and needs to be addressed.

Introduction

Hysterectomy is the removal of the uterus and in the most cases, the cervix (neck of the uterus). When the ovaries and the tubes are also removed along with the uterus, the procedure is known as hysterectomy and bilateral oophorectomy. Hysterectomy is the second most frequently performed surgery for non-pregnancy related issues among women around the world (Pandey et al, 2014). It will result in instant menopause and the women will experience all the physiological changes of menopause after undergoing a hysterectomy. She will no longer menstruate and will not be able to bear children. Hysterectomy is generally advised for medical conditions like menstrual irregularities, mostly fibroids and dysfunctional uterine bleeding, uterine prolapse, endometriosis, uncontrolled infection of uterus, cancerous growth. When used rationally it is an invaluable treatment for various diseases, a procedure that saves many lives and improves the quality of lives for many others. Although hysterectomy saves lives and improves quality of life, when performed at an early age it has some side effects as well. Hysterectomies during reproductive tenure of life are not only an abrupt end to the reproductive functions, but also have several effects on the overall health of women. It is a major surgery that leads to morbidity and onset of menopausal symptoms in women. When menopause occurs in women less than 40 years of age (mostly of which are induced) it leads to onset of early menopause or premature menopause. Early menopause leads to greater risk of heart attack, stroke and bone diseases. Due to these effects, doctors suggest that hysterectomy as a last resort, and should be avoided as treatment modality for indications that can be managed by other alternative treatments like laparoscopic ablation, cryosurgery which do not involve removal of

uterus. Women who undergone hysterectomy face a multitude of physical and psychosocial problem both before and after the hysterectomy (Zhang et al, 2005). Hysterectomy group showed slightly higher mean scores regarding anxiety and depression. Physical symptoms in the form of body pains are present more in hysterectomy group (Jain and Chandrakar, 2016).Difficulties faced in day-to-day life due to poor menstrual health, women are obliged to undergo the procedure even after knowing the financial and physical implications of undergoing major surgery. Better future health, comfortable routine and work security appear outweigh the risk associated with hysterectomy operation. All women, regardless of the circumstances that lead to the hysterectomy and the type of surgery, reported facing varying degrees of physical, sexual and psychological problems. Physical symptoms in the form of body pains are present more in hysterectomy group.

Objectives of the Study

The objective of the present study focuses on the prevalence of hysterectomy among women (15-49) years in India. The objectives are to understand the socio economic and demographic profile of women who had undergone hysterectomy and to identify the predictors and underlying determinants of hysterectomy.

Data and Methodology

In the study Secondary data were used. Data from the fourth (2015-2016) round of National Family Health Survey (NFHS) were taken for the study. The National Family Health Survey is a large-scale, multi-round survey conducted in a representative sample of households throughout India. A total of 628900 household were selected as the sample. Interviews were carried out among 699686 women aged 15-49. NFHS-4 covered all 29 states and 7 Union Territories in India.

Univariate and bivariate techniques are used to identify the factors responsible for the hysterectomy. In addition to univariate and bivariate analysis, Chi-square and Logistic regression are used for the analysis.

Result and Findings

Table 1: Background Characteristic of Women (15-49) in the Sample, NFHS 4 (2015-16).

Variables	Categories	Percentage
Age	15-30	51.4
	30-39	26.8
	40-49	21.8
Type of residence	Urban	34.6
	Rural	65.4
Religion	Hindu	80.6
	Muslim	13.8
	Christian	2.4
	Others	3.3
Caste	SC/ST	30.7
	OBC	45.2
	Others	24.1
Education	Illiterate	27.5
	Primary	12.5
	Secondary	47.3
	Higher	12.8
Marital status	Never Married	22.7
	Ever Married	77.3
Occupation	No	70.9
	Yes	29.1
Wealth Index	Poor	37.3
	Middle	20.6
	Rich	42.1
Had Hysterectomy	No	75.9
	Yes	24.1
Total		699686

Table 1shows the background characteristics of women (15-49) in the sample, NFHS 4 (2015-16). The survey was conducted among 699686 women aged (15-49) and most of women in the sample belonged to (15-30) age group (i.e. 51 percent) than (31-39) and (40-49) years (27% and 22% respectively). According to type of residence most of the women are from rural area (65%) than urban area (35 %). In the case of religion most of the women belong to Hindu category (i.e. 81 percent) than other categories. According to caste most of women belong to OBC (i.e. 45 percent), SC/ST (31%) and others (24%). Most of women in the sample are having secondary level education (47%). In the case of marital status, most of the women are ever married (77%) and never married (23%). Most of women in the sample are unemployed (71%) and employed (29 percent). According to wealth index, 42 percent of women are in rich category, 37 percent are poor and 21 percent are in middle class. Prevalence of hysterectomy in the sample is about 24 percent.

Table 2: Percentage of Women (15-49) who had Hysterectomy by Indian States and Union Territory, Regional Wise (2015-16).

States/Union Territory	Percentage
INDIA	**3.2**
NORTH	**2.1**
Chandigarh	1.57
Haryana	1.85
Himachal Pradesh	2.21
Jammu and Kashmir	2.57
Delhi	1.11
Punjab	2.63
Rajasthan	2.25
Uttarakhand	2.04

	CENTRAL	**2.4**
	Chhattisgarh	1.88
	Madhya Pradesh	3.00
	Uttar Pradesh	2.24
	EAST	**3.3**
	Bihar	5.36
	Jharkhand	2.33
	Odisha	2.14
	West Bengal	2.03
	NORTH EAST	**1.1**
	Arunachal Pradesh	1.82
	Assam	0.94
	Manipur	1.55
	Meghalaya	1.13
	Mizoram	1.03
	Nagaland	1.50
	Sikkim	1.25
	Tripura	1.29
	WEST	**3.1**
	Dadra and Nagar Haveli	3.87
	Daman and Diu	3.31
	Goa	2.67
	Gujarat	4.19
	Maharashtra	2.57
	SOUTH	**4.8**
	Andaman and Nicobar Islands	1.73
	Andhra Pradesh	8.91

Karnataka	3.00
Kerala	1.83
Lakshadweep	0.93
Puducherry	1.63
Tamil Nadu	3.42
Telangana	7.69

Table 2 shows Percentage of women (15-49) who had hysterectomy in Indian States and Union territory (2015-16). In the NFHS-4, total number of women in the sample is 699,686, among them 22053 (3.2%) women had hysterectomy. Regional wise distribution across the nation shows that the highest percentage is 4.8 in the southern region, 3.3 percent in east, 3.1 percent in west, 2.4 percent in central, 2.1 percent in north and the lowest among all is in north east (1.1%). The highest prevalence of hysterectomy is in the state Andhra Pradesh with 8.9 percent followed by Telangana(7.7%), Bihar(5.4%), Gujarat(4.2%), Dadra and Nagar Haveli(3.9%), and the prevalence of hysterectomy was lowest in Lakshadweep(0.9%), followed by Assam(0.9%), Mizoram(1%), Delhi(1.1%), Meghalaya(1.1%), and Tripura(1.3%).

Table 3: Percentage Distribution of Women (15-49) by the Age at which they had done Hysterectomy.

Variable	Categories	Percentage
Age at Hysterectomy	<30	31.6
	30-39	44.8
	40-49	23.6
Total		**100.0**

Table 3 shows the percentage distribution of women (15-49) by the age at which they had done hysterectomy in India. The mean age at hysterectomy is 34 years. Percentage of women who had hysterectomy at the age (30-39) is

higher (i.e. 45 percent).About 32 percent had hysterectomy before reaching the age of 30 and 23 percent had hysterectomy after age 40 yrs.

Table 4: Distribution of Women (15-49) who had Done Hysterectomy by Type of Hospital.

Variable	Categories	Percentage
Place of Hysterectomy	Public hospital	32.3
	Private hospital	66.8
	NGO and Others	0.9
Total		(22053) 3.2

Table 4 shows the percentage of women (15-49) who had done hysterectomy by type of hospital. Majority of women undergone hysterectomy in private hospital (i.e. 67 percent) than public hospital (32 %) and NGO and others (1 %).

Table 5: Percentage of Women (15-49) who had Done Hysterectomy by their Background Characteristics in India.

Variable	Categories	Percentage
Age***	15-29	0.4
	30-39	3.6
	40-49	9.2
Place of Residence***	Urban	2.7
	Rural	3.4
Education Completed***	No education	5.7
	Primary	4.3
	Secondary	2.1
	Higher	1.0
Marital Status***	Never Married	0.04
	Ever Married	4.1

Religion***	Hindu	3.4
	Muslim	2.2
	Christian	3.3
	Others	2.3
Caste***	SC/ST	2.7
	OBC	3.6
	Others	3.1
Employment Status***	Not Employed	2.8
	Employed	4.5
Wealth***	Poor	2.8
	Middle	3.6
	Rich	3.3
Total		(22053) **3.2**

(Significant Level If (P<0.1=*), (P<0.05=**), (P<0.01=***))

The table 5 shows that percentage of women (15-49) who had done hysterectomy by their background characteristics in India, 2015-16. The mean age of hysterectomy in India is 34 years. Hysterectomy prevalence was high in rural areas (3.4 %) than urban area (2.7 %). Prevalence of hysterectomy is higher in less educated women (e.g. no education is 6 percent and primary education is 4 percent). Prevalence of hysterectomy is higher among ever married women (4 %) compared to never married women. A higher proportion of Hindu and Christian women (3.4% and 3.3% respectively) undergone hysterectomy as compared to Muslim (2 %) and other religious groups (2 %). Similarly, the prevalence of hysterectomy was more among women from OBC (4 %) and other castes (3.1%) than scheduled caste/ scheduled tribe (2.7 %). According to employment status, prevalence of hysterectomy is higher among employed women (4.5%) than unemployed women (3 %). The study shows that prevalence of hysterectomy was slightly

higher among women in middle class families (4 %) than women in poor category (2.8 %), and rich category (3.3 %).

Table 6: Percentage of Women (15-49) who had Hysterectomy done by their Reproductive Health Characteristics in India.

Variable	Categories	Percentage
Age at menarche	<12	0.1
	12-14	0.07
	>14	0.1
Sterilized***	No	3.4
	Yes	5.2
Total children ever born***	No children	0.2
	One child	1.6
	Two children	4.2
	Three or more	6.0
Ever pregnancy terminated***	No	3.0
	Yes	4.0
Age at first cohabitation***	<15	6.8
	15-20	3.4
	21-35	2.6
	36-49	3.1
Age at sterilized***	<30	5.1
	30-39	5.0
	40-49	11.8
Age at first birth***	<21	5.0
	21-30	3.2
	<30	3.0
Insurance***	No	2.7
	Yes	4.9
Total		(22053) 3.2

(Significant Level If (P<0.1=*), (P<0.05=**), (P<0.01=***))

Table 6 explains percentage of women (15-49) who had done hysterectomy by their reproductive health characteristics in India, 2015-16. The prevalence of hysterectomy is 6.8 percent among women who had cohabitation before age 15 years, which is much higher, compared to others. The prevalence rate is 3.4 percent among women who had cohabitation, between 15 to 20 years. Women who had cohabitation between 21 to 35 years had prevalence of 2.6 percent and among women who had cohabitation after 35 years, 3 percent had hysterectomy. Prevalence of hysterectomy among sterilized women is 5 percent which is higher than women who are not sterilized (3.4%). According to age at sterilization, prevalence of hysterectomy is higher among women who had sterilized in the age group 40 to 49 (12 %) than the other age groups. In the case of age at menarche the prevalence hysterectomy is not significant. The prevalence of hysterectomy is more among women who had first birth before age of 20 (5.3 percent).The prevalence of hysterectomy among women who had first birth between (20 to 30) years is 3.3 percent and the prevalence of hysterectomy among women who had first birth after age 30 years is 3 percent. Women who had first birth in the early ages showed a higher prevalence of hysterectomy. Parity is found to be strongly associated with the prevalence of hysterectomy. Among women who had no children prevalence of hysterectomy is 0.2 percent, Women who had only one child is 2 percent. Among women who had two children prevalence of hysterectomy are 4 percent and Women who had three or more children prevalence of hysterectomy is 6 percent. The prevalence of hysterectomy is more among pregnancy terminated women (4 percent) than women who had no pregnancy termination (3 %).
The prevalence of hysterectomy is more among insured women (4.9 %).

Table 10: Percentage of Hysterectomy Among Women According to Various Reasons.

Reasons	Percentage
Excessive menstrual bleeding	55.3
Fibroids or Cysts	19.5

Uterine disorder	13.9
Cancer	5.6
Uterine prolapse	7.8
Hoemorrhage	3.5
Others	7.4

Table 10 shows that percentage of hysterectomy among women according to various reasons, the most frequent cause of hysterectomy is excessive bleeding (55 %). Approximately more than half of the total hysterectomy done because of the excessive menstrual bleeding. The second most prevalent cause is fibroids/cysts (19.5%) followed by uterine disorder (14%), uterine prolapse (8%), cancer (5.6%), hemorrhage (3.5%) and other reasons (7.4%).

Table 11: Logistic Regression Examining the Effect of Background Characteristics of Women (15-49) who had Hysterectomy in India.

Characteristics	
Age* **	
15-30®	
30-39	5.548
40-49	1.617
Type of residence* **	
Urban®	
Rural	1.267
Education	
No Education®	
Primary	0.928
Secondary	0.827

	Higher	0.729
	Religion	
	Hindu®	
	Muslim	1.180
	Christian	0.959
	Others	0.959
	Caste/Tribe* **	
	SC/ST®	
	OBC	1.377
	OTHERS	1.387
	Employment	
	No®	
	Yes	1.090
	Wealth Index* **	
	Poor®	
	Middle	1.480
	Rich	1.934
	Age at Cohabitation	
	<15®	
	15-20	1.098
	21-35	1.236
	>35	0.000
	Sterilization* **	
	No®	
	Yes	11.005
	Age at Sterilization* **	
	<30®	

	30-39**	0.818
	40-49*	1.548
	Age at First Birth* **	
	<20®	
	20-30	0.865
	>30***	0.159
	Total Children Ever Born* **	
	No Children®	
	One child	0.699
	Two Children	0.600
	Ever Pregnancy Terminated	
	No®	
	Yes	0.930
	Insurance	
	No®	
	Yes	0.921

(Significant Level If (P<0.1=*), (P<0.05=**), (P<0.01=***))

The table 11 shows the odds ratio of logistic regression analysis explaining the effect of background characteristic on hysterectomy among women (15-49) in India 2015-16. The dependent variable is hysterectomy (no=0, yes=1). The independent variables selected are age, type of residence, education, religion, caste/tribe, employment, wealth index, age at cohabitation, sterilization, age at sterilization, age at first birth, total children ever born, ever pregnancy terminated and Insurance. Considering the age of respondent women belonging to (30-39) age group have 5 times higher chance of hysterectomy compared to reference category and women belonging to age group (40-49) have 62 percent higher chance of hysterectomy as compared to reference category. According to type of residence women in rural region have 27 percent higher chance of hysterectomy compared to

reference category. In the case of education of women; primary education have 7 percent of lesser chance, secondary education have 17 percent of lesser chance and higher education have 27 percent of lesser chance to had hysterectomy compared to reference category. According to religion; Muslims have 18 percent of higher chances, Christians and the other categories have 4 percent of lesser chance to had hysterectomy compared to the reference category. In the case of caste/tribe; OBC have 38 percent higher chance and others have 39 percent higher chance to have hysterectomy compared to reference category. Employed women have 9 percent of higher chance of hysterectomy compared to unemployed women. According to wealth index; women in middle category has 48 percent of higher chance and richer women have 93 percent of higher chance of hysterectomy compared to reference category. In the case of cohabitation women belonging to (15-20) age group have 10 percent of higher chance, (21-30) age group have 24 percent of higher chance and more than 35 years have same chance of hysterectomy compared to the reference category. Sterilized women have 11 times higher chance of hysterectomy compared to the non-sterilized women. According to the age at sterilization women belonging to age group (30-39) have 18 percent lesser chance and (40-49) age group have 55 percent of higher chance to have hysterectomy compared to the reference category. In the case of age at first birth women belonging age group (20-30) have 13 percent of lesser chance and more than 30 years have 84 percent of lesser chance to have hysterectomy compared to the reference category. According to total children ever born; women who had one child have 30 percent of lesser chance and women who had two children have 40 percent of lesser chance to have hysterectomy compared to the reference category. Women who had Pregnancy termination have 7 percent lesser chance of hysterectomy compared to the reference category. Insured women have 8 percent lesser chance of hysterectomy compared to the uninsured women.

The variables age, place of residence, caste, wealth, sterilization, age at sterilization, age at first birth and parity had strong association with women(15-49) who had hysterectomy.

Discussion

Rising number of hysterectomies is a matter of public health concern. Hysterectomies at young age have serious long term health implications for women. All women, regardless of the circumstances that lead to the hysterectomy and the type of surgery, reported facing varying degrees of physical, sexual and psychological problems. Several studies conducted by independent researchers show that the number of unnecessary hysterectomy operation is large in various parts of India. It has established that if a woman undergoes hysterectomy operation conducted in the early ages, the chances of the women suffering from various types of ailments increases may folds. Managements of these problems are easy but not widely known. All these suggest that, high number of hysterectomies and hysterectomies at young age are not isolated cases but deeply imbedded in the system. It is a potential public health concern affecting the health of the women and needs to be addressed. In India, before NFHS-4 data release, there was no national-level (like community level, specific group level or particular area level) data available to inform policy. In such a scenario, it is essential to understand the distribution of hysterectomies women across the region of India and by various characteristics.

Conclusions and Recommentation

Variation in hysterectomy rates have been associated with women's demographic characteristics such as race, education and socio-economic status, as well as their geographical location, suggesting that the procedure is related to the broader social and health system environment as well as biological risk. With increasing life expectancy, this morbidity burden will have high impact on the quality of life and aging process of women which is a public health concern. Providing comprehensive health care support, to address the health issues of women in all age groups should be the priority

of governments. And also, governments should rise to the situation and take corrective measure to prevent such hysterectomies and there by protecting the health of women.

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