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SEXUALLY TRANSMITTED INFECTIONS;
TRENDS AND DIFFERENTIALS

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ABSTRACT…Objectives: This study aimed to uncover the trend regarding knowledge about sexually transmitted infections (STIs) among Pakistani women of reproductive age 15-49 as well as evaluating the socio demographic differentials associated with STIs knowledge. **Design:** The secondary data sets are used of Pakistan demographic and health survey (PDHS) of ever married women with sample size 10023and 13558.**Period:** PDHS 2006-07 and PDHS 2012-13. **Setting**: The national institute of population studies done this survey with the technical support from ICF International and Pakistan bureau of statistics and the USAID supported the financially. **Methods:** Descriptive frame work along withbivariate analysis was performed to understand the trend regarding STIs knowledge and evaluate the significant socio demographic factors respectively. **Results:** The awareness regarding STIs and knowledge to use always condom during sex to reduce the risk of getting HIV/AIDSafter equating the two PDHS has improved over time just by 3.85% and 6.50% respectively in PDHS-2012-13 compared to PDHS 2006-07. Early age group (15-19) women have sufficient lack of knowledge about STIs. Urban has more knowledge regarding STIs compared to rural**.** Education, wealth index and media awareness have positive association with STIs knowledge**. Conclusions:** Socio demographic differentials such as age, education, location and geographical area of residence, media access, wealth index and women occupation are found to be statistically highly significant with respect to sexually transmitted infections knowledge. These statistical outcomes will enhance the capability in disease management and control.

Key words: Pakistan; reproductive age; sexually transmitted infections; socio demographic factors

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INTRODUCTION

Sexually transmitted infections (STIs) are spread by meansof sexual intercourseit can be transformed by the use of contaminated blood and mother to baby through pregnancy and child birth. There are almost thirty different sexually transmissible bacteria, viruses and parasites. Female adolescents are likely to have a higher risk of getting STIs compared to male as their partners are generally older and hence more likely to be infected.[1] Due to low awareness in poor and middle income countries about STDs prevalence rates and the number of incidence are higher that makes these diseases a major public health challenge[2], more than one million people affected every day with STIs and annually more than five hundred million humans become ill with one of four STIs namely chlamydia, gonorrhoea, syphilis and trichomoniasis, whereas nearly five hundred and thirty million people has the virus that causes genital herpes (HSV2) and nearlytwo hundred and ninety million women have a human papillomavirus.[3] STIs are known to facilitate the sexual transmission of HIV. HIV/AIDS and STIs have a disproportionate impact on developing countries and are major preventions to social and economic development.[4] Nearly 1.3 million women die due to reproductive health problems each year that are largely preventable andone out of twentyadolescentsget a STDs, some of which causing all-time disabilities such as infertility, long term disability & death, with severe medical & psychological consequences for millions of men, women & infants.[5] In pregnancy, untreated early

syphilis will result in a stillbirth rate of 25% and be responsible for 14% of neonatal deaths an overall perinatal mortality of about 40%,whileglobally; up to 4000 new-born babies become blind every year because of eye infections attributable to untreated maternal gonococcal and chlamydial infections.[6] From Pakistan prospective females are neglected and sufficient lack of research work regarding STIs and HIV/AIDS. A study conductedin six urban cities of Pakistan found a prevalence of 4.4% for at least one of the five STIs among men from the general population.[7] Higher rates of infections 60% among Hijras and 36% among male sex workers have been found among members of at-risk groups.[8]

The sexual and reproductive health issues of young people are major concern,the issues also have demographic and social dimension.Socio-demographic factors influence youth sexual behaviour.So evaluations of these factors are helpful in seeking preventative measures. This study aimed to measure the change in awareness about STIs over time as well as addressing the socio-demographics factors such as age, education, Location and geographical area of residence, wealth index, media exposure and respondents occupation and evaluating the statistically significant factors associated with STIs.

METHODS AND MATERIALS

Data source: So far three demographic health surveyshave been conducted as part of the MEASURE DHS international series. The national institute of population studies done these survey with the technical support from ICF International and Pakistan bureau of statistics and the USAID supported the financially. The most recent data sets PDHS 2006-07 and PDHS 202-13 for ever married women with sample size 10023 and 13558 respectively used for present study.

Bivariate analysis is performed for both respondents with the object to determine the socioeconomic characteristics that have potential influence in STIs knowledge of ever married women. Pearson's chi- square test of independence was performed to evaluate the association between dependent and independent variable. The explanatory variables were age (15-49), place of residence (urban rural), place of residence by province (Punjab, Sindh, KPK, Baluchistan and Gilgit Baltistan), educational level (Illiterate, primary, secondary and higher), media exposure (read newspaper, listen radio and watch TV), wealth index (poor, middle and rich) and respondents occupation (working and not working).

RESULTS

Ever married women PDHS-2012: The maximum (20.1%) and the minimum (4.2%) respondent fall in age group 25-29 and 15-19 respectively. The percentage of rural (53.2%) respondents is higher compared to urban (46.8%). Punjab and Sindh has higher percentage of ever married women followed by KPK, Baluchistan and GB. More than half (56.2%) of the ever married women are illiterate. 43.5% ever married women are wealthier followed by poor (37.4%) and middle (19.1%) families. Television is accessed by higher proportion of women compared to other media sources.

Ever married women PDHS-2006: The maximum (20.1%) and the minimum (5.80%) respondentfall in age group 25-29 and 15-19 respectively. The percentages of rural (61.8%) respondents are higher compared to urban (38.2%). Punjab and Sindh has higher percentage of ever married women followed by KPK and Baluchistan. More than half (66.5%) of the ever married women are illiterate. 40.8% ever married women are wealthier followed by poor (39.8%) and middle (19.4%) families. Television is accessed by higher proportion of women compared to other media sources.

The knowledge of reproductive age respondents regarding STI after equating the two PDHS has improved slightly over time just by 3.85%. Ever married women knowledge regarding HIV/AIDS in two Pakistan demographic and health surveys 2006-07 and 2012-13 are shown in Table-II along with percent change over time.

Covariate	Response	Ever Married Women	
		PDHS-2006	PDHS-2012
Age	15-19	5.80	4.20
	20-24	15.6	15.1
	25-29	20.1	20.1
	30-34	17.1	18.0
	35-39	16.5	17.0
	40-44	12.8	13.3
	45-49	12.3	12.3
Place of residence	Urban	38.2	46.8
	Rural	61.8	53.2
Residence by province	Punjab	41.5	35.1
	Sindh	27.1	21.7
	KPK	18.6	19.9
	Baluchistan	11.8	14.4
	GB	--	9.0
Education status	No education	66.5	56.2
	Primary	13.4	13.5
	Secondary	13.4	17.8
	Higher	6.6	12.4
Wealth index	Poor	39.8	37.4
	Middle	19.4	19.1
	Rich	40.8	43.5
Access to media	No Access to radio	62.7	81.7
	Access to radio	37.3	18.3
	No access to TV	42.3	35.6
	Access to television	57.7	64.4

Table-I. Socio demographic characteristics of ever married women

Alarmingly the knowledge about HIV/AIDS remains almost same after equating the two survey slight decrement (0.70%) in PDHS-2012-13 as compared to PDHS 2006-07. While on the other hand the knowledge to reduce therisk of getting HIV/AIDS always use condoms during sex have been improved over time by 6.50% in PDHS-2012-13 compared to PDHS 2006-07.

Bivariate analysis

The finding showed that the early age groups (15-19) in both the surveys have lack of knowledge about STI .i.e. more than two third respondents do not know about STI. The proportion of respondents grown up age 20-25 and onward and then slightly decrease in age group 45-49. Location and geographical area of residents are statistically highly significant about STI knowledge. Urban has edge over rural in both the model regarding STI awareness. Similarly ever married women residences of Punjab province have higher proportion of respondents who know about STI followed by Sindh, KPK and Baluchistan in both the model. Direct relationship has been observed in educational attainment and STI knowledge in both the model. Media access and wealth quintile are positively associated with STI knowledge. Occupation of ever married women is found to be statistically significant regarding STI knowledge. The detail description of outcome variable versus explanatory variables are depicts in table III.

DISCUSSIONS AND CONCLUSION

The generally findings revealed that the respondent's knowledge about STIs has improved over time by 3.85%.

Covariate	Response	PDHS 2006-07	PDHS 2012-13	%change/Trend
Ever heard of a Sexually Transmitted Infection	No	53.3	51.5	-3.37
	Yes	46.7	48.5	3.85
Ever heard of AIDS	No	56.1	56.4	0.50
	Yes	43.9	43.6	-0.70
Reduce risk of getting HIV: always use condoms during sex	No	19.3	14.0	-27.5
	Yes	51.1	54.4	6.50
	Don't know	29.6	31.6	6.80

Table-II. Knowledge about HIV/AIDS

Ever heard about STIs							
		PDHS 2006-07			PDHS 2012-13		
Covariate	Response	No	Yes	p-value	No	Yes	p-value
Age	15-19	67.0%	33.0%	0.000	68.6%	31.4%	0.000
	20-24	51.9%	48.1%		56.0%	44.0%	
	25-29	50.0%	50.0%		48.2%	51.8%	
	30-34	51.3%	48.7%		47.3%	52.7%	
	35-39	53.6%	46.4%		48.0%	52.0%	
	40-44	52.7%	47.3%		51.4%	48.6%	
	45-49	57.0%	43.0%		56.2%	43.8%	
Place of residence by region	Punjab	46.6%	53.4%	0.000	39.5%	60.5%	0.000
	Sindh	57.2%	42.8%		49.9%	50.1%	
	KPK	50.3%	49.7%		48.4%	51.6%	
	Baluchistan	73.2%	26.8%		69.8%	30.2%	
	GB	--	--		79.7%	20.3%	
Residence	Urban	32.0%	68.0%	0.000	34.1%	65.9%	0.000
	Rural	53.3%	46.7%		66.7%	33.3%	
Educational level	Illiterate	69.4%	30.6%	0.000	73.7%	26.3%	0.000
	Primary	37.3%	62.7%		43.0%	57.0%	
	Secondary	14.5%	85.5%		20.6%	79.4%	
	Higher	3.0%	97.0%		4.6%	95.4%	
Read newspaper	No	70.5%	29.5%	0.000	64.4%	35.6%	0.000
	Yes	15.6%	84.4%		14.3%	85.7%	
Listen radio	No	59.1%	40.9%	0.000	53.7%	46.3%	0.000
	Yes	43.6%	56.4%		41.1%	58.9%	
Watch TV	No	84.9%	15.1%	0.000	76.9%	23.1%	0.000
	Yes	43.1%	56.9%		39.7%	60.3%	
Wealth quintile	Poor	80.9%	19.1%	0.000	80.9%	19.1%	0.000
	Middle	57.4%	42.6%		55.0%	45.0%	
	Rich	24.4%	75.6%		24.6%	75.4%	
Respondent occupation	No working	50.6%	49.4%	0.000	50.0%	50.0%	0.000
	Working	59.9%	40.1%		56.7%	43.3%	

Table-III. Cross tabulation of outcome variable versus explanatory variables

Similarly knowledge to reduce the risk of getting HIV/AIDS always use condoms during sex also have been improved over time by 6.50% in PDHS-2012-13 compared to PDHS 2006-07. On the other hand the awareness regarding HIV/AIDS remains almost same after equating the two surveys. By incorporating the bivariate analysis age, education, place of residence by province (Punjab, Sindh, KPK, Baluchistan, GB) and by urban rural, media access, wealth index and respondents occupation are found to be significant in both the surveys with respect to STIs.The early age groups (15-19) in both the surveys have lack of knowledge about STI .i.e. more than two third respondents do not know about STI. Identical finding yielded a study conducted in Bangladesh.[9]It is well established globally the knowledge about diseases varies by area of residence. Pakistan geographically divided in five provinces, these provinces varies by health, education gender

equality indicators, economic development and physical status. Socio economic status in Punjab and Sindh are better compared to other provinces.In our findings location and geographical area of residents foundto be significant ($p<0.000$) about STI knowledge.[9] Urban women has edge over rural in both the model regarding STI awareness.The study reveals that the prevalence of STI among married women of reproductive age was quite high; with rural women being worse sufferers.[10] A community based cross-sectional in Sindh province revealed that rural adolescents had low degree of knowledge and awareness regarding HIV/AIDS and STIs.[11]Ever married women residences of Punjab province have higher proportion of respondents who know about STI in both the model, While Baluchistan's women had sufficient lack of knowledge about that disease. The importance of education is acknowledged globally, better educated individuals indeed to have a better health and a lower risk of mortality.[12] In our findings positive association exist between education and STIs in both the models. Similar findings were observed in many studies.[9,10,13,14] Media can play an important role in changing sexual behaviours, transforming negative beliefs and increasing knowledge.[15,19] STIs knowledge and access to media associated in our finding ($p<0.000$). Ever married women with better socio economic status has more prone to aware about STIs. Community based interventional study revealed that The younger women, women of lower socio-economic group, those with more number of children & those using reused clothes during menstruation, have a particularly higher prevalence.[10] Women occupation was also found to be influential factor towards STDs in our study.

Finally it is concluded that women with no education, low socio economic status, profound lack of media exposure, those belong to rural areas, early ages and those not working are on greater risk to be affected with sexually transmitted diseases or infections.Women education is an important indicator in any society particularly from health prospective. Potential struggles are needed where the low literacy rate and insufficient media coverage particularly in remote areas so that morbidity and mortality burden due to STDs in new born babies as well as the reproductive women can be declined.

Study limitation

This study based from secondary data set taken from PDHS, in which a few limited question asked about sexually transmitted infectious to a small proportion of ever married women. The data lacked other important variables like sexually transmitted infectious related several kind of dieses, treatment and prevention which does not allow establishing temporal relationship on the basis of these findings. This study goal was to only pinpoint the socio demographic factors that might be helpful in disease seeking measures and mechanism.

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