RISK FACTOR OF SEXUALLY TRANSMITTED INFECTIONS AMONG PAKISTANI MALES

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ABSTRACT

OBJECTIVE: To examine the socio-demographic factors, associated with sexually transmitted infections (STIs) among Pakistani males.

METHODS: Bivariate and binary logistic regression analysis carried out by using the Pakistan Demographic and Health Survey (PDHS) data set 2012-13, conducted by National Institute of Population Studies, Pakistan.

RESULTS: Every 7 out of 10 ever-married men have heard about STIs and every 5 out of 10 believed that the risk of getting HIV/ADS can be reduced by always using condoms during sex. Bivariate analysis revealed that age, place of residence, education status, media access and wealth index were found to be significant i.e. ($p<0.0001$) with respect to STIs knowledge. Binary logistic regression model confirmed that younger participants had lack of knowledge [OR=0.127] compared to upper age-groups. Urban residents were more aware of STIs [OR=1.740] compared to rural residents. Illiterate participants had less knowledge regarding STIs [OR=.037] compared to people with higher education status. Media exposure was also positively associated with knowledge of STIs. The participants reading newspaper, listening to radio and watching television had more knowledge regarding STIs [OR= 2.082, 1.240 and 1.936] compared to people with no access to any sort of media.

CONCLUSION: Participants with no education, low socio economic status, profound lack of media exposure, those living in rural areas and early ages are on greater risk to be affected with STIs. These statistical outcomes about STIs knowledge and exploration of significant socio demographic factors of ever-married men can be an emerging for disease management and prevention.

KEY WORDS: Sexually Transmitted Diseases (MeSH), Sexually Transmitted Infections (MeSH), Pakistan (MeSH); Socio demographic determinants (Non-MeSH).

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INTRODUCTION

In Pakistan, the second most populous Muslim country after Indonesia in the world, the society has still not accepted the HIV/AIDS and other sexually transmitted diseases (STDs) due to old age stigma and taboos related to these diseases. These taboos are more prevalent in remote areas where these diseases are considered as very shameful, people hide their diseases and not seeking any sort of treatment due to low literacy, poverty and social norms. Pakistan has started experience the threat of HIV/AIDS and other sexually transmitted infections (STIs) and jumped from low prevalence to concentrated epidemic category.[1] The prevalence rate of STIs amongst the urban men in Pakistan, Karachi (8.5%) followed by Lahore (5.3%), Faisalabad (4.0%) Quetta (4.3%), Rawalpindi (2.5%) and Peshawar (2.0%).[2] Syphilis emerged as the most prevalent STI in Pakistan.[3] National AIDS Control Programme also designed a study in 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.[4] Higher rates of infections 60% among Hijras and 36% among male sex workers have been found among members of at-risk groups.[5] Low awareness in poor and middle-income countries about STIs prevalence rates and the number of incidence are higher that makes these diseases a major public health challenge,[6] 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.[7] STIs are known to facilitate the sexual transmission of HIV. The most serious transmission modes of HIV in Pakistan are people who inject drugs (PWID), transgender, male and female sex workers with prevalence rate are 27.2%, 5.2%, 1.6% and 0.6% respectively.[1]

As STIs are spread by means of sexual intercourse as a result both the partners on a risk of get STDs. But 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.[8] Nearly 1.3 million women die due to reproductive health problems each year that

are largely preventable and one out of twenty adolescents get a STDs, some of which causing all-time disabilities such as infertility, long term disability and death, with severe medical and psychological consequences for millions of men, women and infants.[9] 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%, while globally; up to 4000 new-born babies become blind every year because of eye infections attributable to untreated maternal gonococcal and chlamydial infections.[10]

The sexual and reproductive health issues of young people are major concern; the issues also have demographic and social dimension.[11-13] Socio-demographic factors influence youth sexual behaviour. So evaluations of these factors are helpful in seeking preventative measures. This study, therefore; aimed to investigate the significant socio-demographic factors (age, education, location and geographical area of residence, wealth index, media exposure and participants occupation) that should be targeted properly and more awareness regarding sexually transmitted diseases that also known to facilitate the sexual transmission of HIV so that the ill health and mortality related STIs can be minimized.

METHODS

This study was based on the data set of Pakistan Demographic and Health Survey 2012-13, conducted by National Institute of Population Studies (NIPS) [Pakistan] and ICF International.[14]

Data source: So far three demographic health surveys (DHS) have been conducted as part of the measure DHS international series. The national institute of population studies had conducted this survey with the technical support from ICF International and Pakistan bureau of statistics and the USAID supported them financially. The most recent data sets PDHS 202-13 for ever married men with sample size 3134 used for present study.[14] Bivariate and binary logistic regression analyses[15,16] were performed with the objective to determine the socioeconomic characteristics that have had substantial effect about STIs knowledge of ever married Pakistani male. Pearson's chi-square test of independence was performed to evaluate the association between dependent and independent variable. Binary dependent variable was ever heard about STIs (yes, no). The explanatory variables were age (15-49), place of residence (urban rural), place of residence by province (Punjab, Sindh, KPK, Baluchistan, Gilgit-Baltistan and Islamabad), educational level (Illiterate, primary, secondary and higher), media exposure (read newspaper, listen radio and watch TV), wealth index (poor, middle and rich) and participants occupation (working and not working).

RESULTS

The maximum (20.3%) and the minimum (1%) respondent fall in age

TABLE I: DEMOGRAPHIC CHARACTERISTICS OF PARTICIPANTS (N=3134)

Covariate	Response	Frequency	%
Age	15-19	29	0.9
	20-24	223	7.1
	25-29	498	15.9
	30-34	635	20.3
	35-39	589	18.8
	40-44	574	18.3
	45-49	586	18.7
Place of residence	Urban	1521	48.5
	Rural	1613	51.5
Residence by province	Punjab	800	34.5
	Sindh	758	24.2
	KPK	497	15.9
	Baluchistan	551	17.6
	GB	246	7.8
	Islamabad	282	9.0
Education status	No education	849	27.1
	Primary	536	17.1
	Secondary	1000	31.9
	Higher	749	23.9
Wealth index	Poor	1165	37.2
	Middle	548	17.5
	Rich	1421	45.3
Access to media	No Read newspaper	1418	45.2
	Read newspaper	1716	54.8
	No Access to radio	2012	64.2
	Access to radio	1122	35.8
	No access to TV	577	18.4
	Access to television	2557	81.6
Occupation	Not Working	97	3.1
	Working	3037	96.9

TABLE II: RESPONDENT'S KNOWLEDGE ABOUT SEXUALLY TRANSMITTED INFECTION

Covariate	Response	Frequency	%
Ever heard of a Sexually Transmitted Infection	No	862	27.5
	Yes	2269	72.5
Ever heard of AIDS	No	928	29.6
	Yes	2205	70.4
Reduce risk of getting HIV: always use condoms during sex	No	459	20.8
	Yes	1284	58.3
	Don't know	459	20.8

TABLE III: CROSS TABULATION OF OUTCOME VARIABLE VERSUS EXPLANATORY VARIABLES

Ever heard about STIs				
Covariate	**Response**	**No**	**Yes**	**P-value**
Age	15-19	69.0%	31.0%	0.0001
	20-24	35.0%	65.0%	
	25-29	29.8%	70.2%	
	30-34	26.0%	74.0%	
	35-39	21.2%	78.8%	
	40-44	28.8%	71.2%	
	45-49	27.5%	72.5%	
Place of residence by region	Punjab	22.2%	77.8%	0.0001
	Sindh	32.2%	67.8%	
	KPK	26.6%	73.4%	
	Baluchistan	32.5%	67.5%	
	GB	41.1%	58.9%	
	Islamabad (ICT)	10.3%	89.7%	
Residence	Urban	15.0%	85.0%	0.0001
	Rural	39.4%	60.6%	
	Educational level	60.1%	39.9%	
	Primary	31.3%	68.7%	
	Secondary	16.9%	83.1%	
	Higher	2.0%	98.0%	
Read newspaper	No	48.6%	51.4%	0.0001
	Yes	10.1%	89.9%	
Listen to radio	No	30.0%	70.0%	0.0001
	Yes	23.1%	76.9%	
Watch TV	No	56.4%	43.6%	0.0001
	Yes	21.0%	79.0%	
Wealth quintile	Poor	51.8%	48.2%	0.0001
	Middle	24.7%	75.3%	
	Rich	8.7%	91.3%	
Respondent occupation	No working	32.0%	68.0%	0.321
	Working	27.4%	72.6%	

group 30-34 and 15-19 respectively, while almost same proportion (18%) of respondent lie in 35-39 and upper age groups. The percentage of rural participants (51.5%) was higher compared to urban (48.5%). Punjab had a higher proportion of participants and about quarter (24.2%) of the participants was from Sindh. Participants with secondary level of education were in a greater proportion (32%), while slightly more than a quarter (27.1) of the participants were illiterate. The percentage of wealthy participants was about 45.3%. Whereas the majority of the participants had access to television and radio compared to newspaper. While 97 out of 100 ever married male were working; the detail description of data (frequency distribution and percentage distribution) is illustrated in Table I.

The knowledge of reproductive age participants regarding STIs HIV/AIDS and use of condom during sex to reduce the probability of getting HIV/AIDS is illustrated in Table II. More than two third participants have heard about STIs and the almost same proportion of participants heard about HIV/AIDS. While on the other hand more than half of the participants agreed that the risk of getting HIV/AIDS can be reduced by always using the condoms during sex.

BIVARIATE ANALYSIS

By incorporating the bivariate analysis participants age and knowledge about STIs were found to be statistically significant ($p<0.0001$), the early age groups of participants have sufficient lack of knowledge regarding STIs i.e. more than two third of the participants with age group 15-19 years old never heard about STIs. As age increased the awareness level also increased. Place of residence are associated in our study with STIs knowledge. Urban population has more knowledge about STIs. Participants belong to Islamabad (capital) are more likely to have knowledge about STIs followed by Punjab, KPK, Sindh, Baluchistan and

TABLE IV: BINARY LOGISTIC REGRESSION ANALYSIS ABOUT KNOWLEDGE OF STIS

Covariate	Response	Ever married men
Age (ref 45-49)	15-19	.127***
	20-24	.518**
	25-29	0.686
	30-34	.688*
	35-39	0.974
	40-44	.651**
Place of Residence (ref rural)	Urban	1.740***
	No education	.037***
Education (ref higher)	Primary	.090***
	Secondary	.146***
Read newspaper (ref no)	Yes	2.082***
Listen radio (ref no)	Yes	1.240*
Watching TV (ref no)	TV yes	1.936***
Wealth index (ref rich)	Poor	.363***
	Middle	.558***
Place of Residence by province (ref Islamabad)	Punjab	1.643*
	Sindh	0.821
	KPK	1.44
	Balochistan	1.261
	GB	0.401**

Key: values represent odds ratio; ref implies reference category; ***p<0.001, **p<0.01, *p<0.05 and GB= Gilgit Baltistan

GB. Direct association exist between educational attachments and STIs knowledge in our findings. Participants with no education lack the knowledge of STIs as compared to those who with higher educational. Media exposure are positively associated; i.e. (p<0.0001) for all media mode (newspaper, radio and TV). Knowledge about STIs and participants socio economic status (SES) are significant i.e. (p<0.0001). Participants with lower SES have least knowledge regarding STIs. The knowledge of STIs and occupation of ever married men are independent. The detail explanations of bivariate analysis for both participants are illustrated in Table III.

BINARY LOGISTIC REGRESSION ANALYSIS

Factors along with odds ratio are depicting in Table IV. The model revealed that the early age groups (15-19 and 20-24) had lack of knowledge about STIs [OR=0.127, OR=0.518] as compared to upper age groups of married men. Urban had more knowledge about STIs [OR=1.740] compared to their counterpart lived in rural areas. The place of residence by region were found to be significant, the model brought out that the participants resident of Punjab knew about HIV/AIDS 1.643 times more than their counterparts who lived in Islamabad. Illiterate participants had profound lack of knowledge regarding STIs [OR=.037] compared to their counterpart with higher education status. Media exposure is also positively associated with knowledge of STIs. The participants reading newspaper, listening to radio and watching television had more knowledge regarding STIs [OR= 2.082, 1.240 and 1.936] as compared to those who had no access to any sort of media mode.

DISCUSSION

The general findings revealed that more than two third participants had heard about STIs and the almost same proportion of participants heard about HIV/AIDS. While on the other hand more than half of the participants agreed that the risk of getting HIV/AIDS can be reduced by always using the condoms during sex. 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 were found to be significant with respect to STIs knowledge. The early age groups (15-19) had profound lack of knowledge about STIs i.e. The model revealed that the early age groups (15-19 and 20-24) had lack of knowledge about STIs [OR=0.127, OR=0.518] as compared to upper age groups of married men.[11-13,15-17] It is well established globally that the knowledge about diseases varies by area of residence. Pakistan is geographically divided in to five provinces and capital Islamabad, these provinces varies by health, education gender equality indicators, economic development and physical status. Socio economic status in Punjab and Sindh and in capital is better compared to other provinces. In our findings location and geographical area of residents found were associated about STI knowledge.[3] Urban had more knowledge than rural regarding STI awareness. In Pakistan more than half of the population lived in rural areas and lacking many basic facilities for instance, low awareness about diseases, prevention as well as poor health care settings. The study exhibited that the prevalence of STIs among married male of reproductive age was quite high; with rural counterpart being worse sufferers.[11-13] A community based cross-sectional study in Sindh province

revealed that rural adolescents had low degree of knowledge and awareness regarding HIV/AIDS and STIs.[18] Ever married men residences of Punjab province have higher proportion of participants who knew about STIs. The importance of education is acknowledged globally, better educated individuals indeed have a better health and a lower risk of mortality.[19] In our findings positive association exist between education and STIs. Similar findings were observed in another study.[20] Media can play an important role in changing sexual behaviours, transforming negative beliefs and increasing knowledge.[21-25] STIs knowledge and access to media associated in our finding. Socio economic status (SES) as measured by family income educational struts is associated with many measure of health status.[26] Pakistan is a developing country where 12.4% of the population lives below the national poverty line[27] and 6.1% of people were living on < $1.90 a day in 2013.[28] Ever married men with better socio economic status has more awareness about STIs in our findings.

Finally it is concluded that participants with no education, low socio economic status, profound lack of media exposure, those living in rural areas and early ages are on greater risk to be affected with sexually transmitted diseases or infections. Education is an important indicator in any society particularly from health prospective. Potential struggles are needed where there is low literacy rate and media coverage is insufficient particularly in remote areas; so that morbidity and mortality burden due to STDs among reproductive age men can be reduced. While on the other hand there is good evidence that the control of STIs can be helpful in controlling the HIV transmission.[29]

Study limitations: This study based on secondary data set taken from PDHS, in which a few limited questions were asked about sexually transmitted infectious from a small proportion of ever married women. The data lacked other important variables like sexually transmitted infectious related several kind of diseases, 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 knowing mechanism of transmission of STIs and then taking measures to control it.

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CONFLICT OF INTEREST

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JAN: Concept & study design, Drafting the manuscript, final approval of the version to be published

MI: Analysis and interpretation of data, final approval of the version to be published

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Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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