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Assessment of Socio-Demographic Factors with Knowledge and Attitiudes of Pakistani Married Women (15-49 Years) towards HIV/AIDS Transmission

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Abstract

Introduction: Despite of improvement in knowledge, diagnostics, prevention and treatment; HIV/AIDS is highly discriminated and stigmatized worldwide. **Objective:** To determine the association of various socio-demographic characteristics with knowledge and attitudes towards HIV/AIDS transmission among married women. **Study Design and Setting**: For this purpose, secondary analysis was done using data from Multiple Indicator Cluster Survey (MICS) 2014. **Materials and Methods:** Study design was cross-sectional. Only ever married women were included as participants of the study. **Result:** Significant associations were found between socio-demographic factors i.e., women age (p-value = 0.001), women education (p-value = 0.001), wealth index (p-value = 0.001), access to media (p-value = 0.001), type of place of residence (p-value = 0.01), marital status (p-value<0.05) with knowledge and attitudes of women towards HIV/AIDS. **Conclusion:** Despite of having high odds of appropriate knowledge of HIV/AIDS transmission; attitudes of Pakistani women towards HIV/AIDS transmission were still negative. Programs need to be designed in order to reverse the negative attitudes of community towards HIV/AIDS transmission.

Keywords: Knowledge, Attitude, Married Women, HIV/AIDS, MICS

1. Introduction

Despite remarkable improvement in information, diagnostics, treatment and prevention of the disease in past two decades, HIV/AIDS is still a serious threat to public health in particular and to society in general[1–4]. Over 1.1 million HIV positive individuals reside in United States and approximately 20% individuals were unaware of the infection[5]. Estimates reveal that at the end of 2013, almost 35 million people were living with HIV infection and 1.5 million HIV related deaths were recorded worldwide[6]. HIV infection is more concentrated in Sub-Saharan Africa, approximately one in twenty adults is HIV positive. Almost sixty nine percent of the HIV positive individuals were from the same region[7]. First HIV case in Pakistan was identified in 1987 and after that the infection had spread to a large extent[8]; approximately 98,000 people were living with HIV in 2009 and the main reasons for HIV/AIDS spread include unawareness, undiagnosed cases and unsafe sexual practices[9].

Alarmingly low level of knowledge regarding HIV/AIDS was the main key for spread of HIV/AIDS infection. A study by Faust, Yaya and Ekholuenetale[10] investigated that women who were poor, residing in rural areas and low literacy levels than women with highest wealth inequality ratios had less knowledge towards HIV/AIDS transmission; thus enables execution of future evidence-based interventions among women in order to reduce HIV/AIDS transmission. Age, education and mass media such as listening radio, watching television and reading newspaper or magazine can also play an important role in increasing knowledge towards HIV/AIDS transmission among both ever married men and women[9]. A research conducted by Subaeti and his co-associates[11] identified that married women were more vulnerable to HIV/AIDS infection because married people did not use condoms during sexual activities; therefore were at greater risk of getting HIV/AIDS infection. Though level of knowledge towards HIV/AIDS transmission was increased but still negative attitudes towards HIV/AIDS was observed[12–15].

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This was further supplemented by taboos surrounding discussions about sexuality which limit the implementation of preventive activities[16]. Moreover, certain misconceptions regarding spread of HIV/AIDS also exist in Pakistani society. However, the number of HIV/AIDS infected individuals was being increased and to deal with this health challenge, politically supported comprehensive programs are required[8]. The present study aimed to determine the association of various socio-demographic variables with knowledge and attitudes towards HIV/AIDS transmission among married women.

2. Methodology

The study design was cross-sectional. Data was derived from MICS Punjab, 2014 (Pakistan) and secondary analysis was done[17]. HIV/AIDS module was administered to ever married women 15-49 years of age. All the variables were derivatives of women's datasets of 2014 (N = 61286). As the research study hypothesized that socio-demographic factors determine the knowledge and attitude of women (15 to 49 years) towards HIV/AIDS transmission, therefore, sample was restricted to the variables who gave valid response to all the outcomes as well as independent variables. After removing records with missing data, the number of women included in the final analysis was 13390 women aged 15 to 45 years.

2.1 Description of Measures

2.1.1 Dependent Variables

The two dependent variables (knowledge and attitude) were used for this study:

2.1.1.1 Women's knowledge on HIV/AIDS transmission

MICS measure women knowledge about HIV/AIDS transmission by the following nine criteria:

- Knowing the two most common methods to prevent HIV/AIDS infection:
  a. Limiting the number of sexual partners to one un-infected partner who is faithful.
  b. Consistent condom use.

- Being able to reject the four common misconceptions about the disease in the region:
  c. People can get HIV/AIDS virus through supernatural means.
  d. Person can get HIV/AIDS from a mosquito bite.
  e. By sharing meal; person can get HIV/AIDS from an infected individual.
  f. Person looking in good health or healthy cannot have HIV/AIDS.

- Knowing the ways from which HIV/AIDS transmission occurs:
  g. Mother to child during pregnancy
  h. Mother to child during delivery
  i. Mother to child through breastfeeding

MICS measures the above indicator questions as yes, no and don't know. This research dichotomize knowledge scale scoring into 1 (yes/correct) and 0 (no/incorrect or don't know); thus compositing (higher) scores signified well knowledge about HIV/AIDS prevention. Missing responses were re-coded as 9 and were excluded from the analysis. Thus, knowledge score ranges from 0-9. Respondents who correctly answered five or more than five out of nine questions means they had good and appropriate knowledge about HIV/AIDS; whereas respondents who responded less than five questions had poor or inappropriate knowledge about HIV/AIDS.

2.1.1.2 Women's attitude towards HIV/AIDS transmission

The women's attitude toward HIV/AIDS transmission was measured by the following four MICS questions:

a. Would you want to keep undisclosed HIV/AIDS infection from family members?
b. Would you take care of a relative who is HIV/AIDS infected?
c. Would you buy vegetables from seller with an HIV/AIDS virus?
d. Should a female educator allowed to proceeds education in school with HIV/AIDS infection?

MICS categorizes above questions as yes, no and don't know. The research re-codes (i.e., dichotomizing each item) attitude scale scores into 1 (yes for positive answer) and 0 (no or don't know for negative answer); thus composite (higher) score reflects better attitude toward HIV/AIDS. Women with missing responses were excluded from the analysis. Thus, attitude score ranges from 0 to 4. Respondents who had two or more attitude scale score were characterized as positive attitude group whereas; respondents less than two attitude scale score as negative attitude group.

2.1.2 Independent Variables

Owing to the study objectives and to make the bivariate analysis possible; age was categorized as 15-30 years, 31-45 years and 45 and above years with the goal of determining the effect of

increase age has on the women's HIV/AIDS knowledge and attitudes; women education as no formal education (absence of schooling), primary education (1-5 class), secondary education (5-10 class) and higher education (above 10 classes); place of residence into urban and rural regions and only those couples who are residing at the same household were considered for this study[8]; marital status as being single (including widowed/divorced/separated) and married[18].

Household wealth status as conceptualized in MICS was divided into 5 categories i.e., poorest (lowest), poor, middle, rich and richest (highest) income groups. Family unit (households) who had lowest score on all the assets items i.e., no electricity and one sleeping room, poor or low floor material, toilet facility and water supply were mentioned as poorest. Whereas; households (family unit) who holds all the assets items i.e. availability of electricity, three or more sleeping rooms, good floor material, toilet facility and water supply were mentioned as richest. Rest of the categories is in between these two categories[19,20]. Respondent's access to media i.e., reading newspaper or magazine, listen to the radio and watch television was hypothesized by using three categories: not at all, sometimes and almost every day[21] having a score of 0, 1 and 2 respectively for each mass media type.

2.2 Data Analysis

Descriptive statistics was used to estimate the frequency distributions of socio-demographic characteristics with knowledge and attitude towards HIV/AIDS transmission among 15 to 49 years age women through IBM SPSS Statistics Version 21. Bivariate logistic regression and distributions of dependent variables across independent variables were tested by applying Chi-square (p-value) test of associations. Odd ratios were calculated with 95% Confidence Interval (CI) as well as p-value less than 0.05 (significant).

3. Results

3.1 Knowledge of Respondents towards HIV/AIDS Transmission

To evaluate knowledge on HIV/AIDS transmission, respondents were asked list of questions (Table 1). Respondents with correct responses included as avoid HIV/AIDS cross-infection by limiting number of sexual partners to one uninfected partner (62%), condom use (64%); transmission from mother to child during pregnancy (76%); delivery (71%) and breastfeeding (68%) were graded as Appropriate Knowledge. Whereas, respondents with wrong responses had misconceptions about transmission through supernatural means (11%), mosquito bites (84%), sharing food (0.5%) and healthy looking person (37%) may have the infection were listed as Inappropriate Knowledge.

3.2 Attitude of Respondents towards HIV/AIDS Transmission

To evaluate attitude towards HIV/AIDS transmission, respondents were asked list of following questions (Table 2); representing low magnitudes of respondents (women) with positive attitude. Respondents with correct responses included as 1% should female educator be allowed to proceeds education in school, 0.5% stated that they would buy fresh vegetables from seller and 37% reported willing to care if their household member gets infected with HIV/AIDS were graded as Positive Attitude. Whereas, respondents with wrong response included as 38% remaining a secret if household member got infected with HIV/AIDS were listed as Negative Attitude.

Table 1. Respondents knowledge towards HIV/AIDS transmission (N = 13390)

Questions on respondents knowledge towards HIV/AIDS transmission	Frequency	Percentage
Do you have knowledge of HIV/AIDS cross-infection control by limiting the number of sexual partners to one un-infected partner (yes)	8302	62%
Do you think that HIV/AIDS virus can be caused by supernatural means (yes)	1473	11%
Do you think that HIV/AIDS infection can be avoided by consistent condom use (yes)	8570	64%
Do you think that HIV/AIDS infection transmitted from mosquito bite (no)	11248	84%
Do you think that HIV/AIDS infection can be transmitted by sharing meal of HIV/AIDS infected person (no)	67	0.5%
Belief that person looking in good health or healthy cannot have HIV/AIDS(no)	4954	37%
Knowledge of HIV/AIDS transmission from mother to child during pregnancy (yes)	10176	76%
Knowledge of HIV/AIDS transmission from mother to child during delivery (yes)	9507	71%
Knowledge of HIV/AIDS transmission from mother to child through breastfeeding (yes)	9105	68%

Table 2. Respondents attitude towards HIV/AIDS transmission (N = 13390)

Questions on respondents attitude towards HIV/AIDS transmission	Frequency	Percentage
Should female teacher with HIV/AIDS be allowed to teach in school (yes)	134	1%
Would you buy fresh vegetables from shopkeeper with HIV/AIDS (yes)	67	0.5%
If household member became infected with HIV/AIDS, would you want it to remain a secret (no)	5088	38%
Willing to care for person with HIV/AIDS in household (yes)	4954	37%

3.3 Characteristics of the Respondents (women) Selected for the Study

Descriptive analysis (Table 3) of research study presents the characteristics of 13390 (15-49 years old) women presented mean age and standard deviation as 32±10.2; defining knowledge as appropriate and inappropriate knowledge has percentages 41% and 59% respectively and attitudes as positive and negative having percentages 8% and 92% respectively.

Table 3. Characteristics of respondents (N=13390)

Variables	Frequency	Percentage
Age of Women (years)	**Mean ± Standard Deviation**	**32 ± 10.2**
15-30	3979	29.7%
31-45	4531	33.8%
46 and above	4880	36.5%
Type of Place of Residence		
Rural	6300	47%
Urban	7090	53%
Marital Status		
Married	6546	48.9%
Single **a**	6844	51.1%
Women Education		
No formal education	2262	16.9%
Primary	3511	26.2%
Secondary	3694	27.6%
Higher	3923	29.3%
Wealth Index		
Poorest	2453	18.3%
Poor	2351	17.6%
Middle	2431	18.2%
Rich	2763	20.6%
Richest	3392	25.3%
Access to media		
Not at all	3362	25.1%
Sometimes	4638	34.6%
Almost everyday	5390	40.3%
Comprehensive Knowledge		
Appropriate knowledge	5490	41%
Inappropriate knowledge	7900	59%
Attitude		
Positive attitude	1071	08%
Negative attitude	12319	92%

[a] **Single** (separated, widowed and divorced)

3.4 Socio-Demographic Characteristics of the Respondents with Respect to their Knowledge and Attitude towards HIV/AIDS Transmission

The research study aims to assess socio-demographic characteristics with respect to knowledge on HIV/AIDS and attitude towards HIV/AIDS (Table 4). Among 13390, 5490 (41%) had appropriate knowledge and 7900 (59%) had inappropriate knowledge towards HIV/AIDS transmission. Among 5490, highest appropriate knowledge i.e., 2531 (46.1%) were found among those who belonged to age group 46 and above; 1877 (34.1%) belonged to age group 31 to 45 years and lowest appropriate knowledge i.e., 661 (12%) were found among those who belonged to age group 15 to 30 years. Among 13390, positive attitude regarding towards HIV/AIDS was found among 1071 (8%) women and negative attitude was found among 12319 (92%) women. Among 12319 women, highest negative attitude was found among 46 and above age group i.e., 4559 (37%), 4188 (34%) negative attitude was found among 31 to 45 years age group and 3572 (29%) negative attitude was found among 15 to 30 years age group.

Women residing in urban settings had more appropriate knowledge i.e., 63.6% with more negative attitude towards HIV/AIDS i.e., 53.8%. Among marital status, single women had highest appropriate knowledge i.e., 57.6% and more negative attitude towards HIV/AIDS i.e., 51.9% than married women. Women with higher education had more appropriate knowledge i.e., 37.9% and more negative attitude i.e., 30% towards HIV/AIDS than women having no formal education; whereas, women with richest (highest) wealth quintile had more appropriate knowledge i.e., 37.4% and more negative attitude i.e., 26.5% towards HIV/AIDS. Appropriate knowledge towards HIV/AIDS transmission i.e., 56.3% and more negative attitude i.e., 42.1% towards HIV/AIDS was observed among women who had daily access to media than women who had no or sometimes access to mass media.

Table 4. Socio-demographic factors of respondents with respect to knowledge and attitude towards HIV/AIDS transmission(N=13390)

Socio-demographic variables	Respondents Knowledge Score (N=13390)		Respondents Attitude Score (N=13390)	
	Appropriate Knowledge 5490 (41%)	Inappropriate Knowledge 7900 (59%)	Positive Attitude 1071 (08%)	Negative Attitude 12319 (92%)
Age of Women (years)				
15-30	661 (12%)	3318 (42%)	407 (38%)	3572 (29%)
31-45	1877 (34.1%)	2654 (33.6%)	343 (32%)	4188 (34%)
46 and above	2531 (46.1%)	2349 (29.7%)	321 (30%)	4559 (37%)
Type of place of residence				
Rural	2000 (36.4%)	4300 (54.4%)	610 (57%)	5690 (46.2%)
Urban	3490 (63.6%)	3600 (45.6%)	461 (43%)	6629 (53.8%)
Marital Status				
Married	2327(42.4%)	4219 (53.4%)	620 (57.9%)	5926 (48.1%)
Single **a**	3163 (57.6%)	3681 (46.6%)	451 (42.1%)	6393 (51.9%)
Women Education				
No formal education	100 (2%)	2162 (27.3%)	332 (31%)	1930 (15.7%)
Primary	1471 (26.7%)	2040 (25.9%)	268 (25%)	3243 (26.3%)
Secondary	1839 (33.4%)	1855 (23.5%)	246 (23%)	3448 (28%)
Higher	2080 (37.9%)	1843 (23.3%)	225 (21%)	3698 (30%)
Wealth index				
Poorest	12 (0.2%)	2441 (30.9%)	420 (39.2%)	2033(16.5%)
Poor	971 (17.7%)	1380 (17.5%)	183 (17.1%)	2168 (17.6%)
Middle	1056 (19.2%)	1375 (17.4%)	177 (16.5%)	2254 (18.3%)
Rich	1397 (25.5%)	1366 (17.3%)	164 (15.3%)	2599 (21.1%)
Richest	2054 (37.4%)	1338 (16.9%)	127 (11.9%)	3265 (26.5%)
Access to media				
Not at all	368 (6.7%)	2994 (37.9%)	526 (49.1%)	2836 (23%)
Sometimes	2031 (37%)	2607 (33%)	345 (32.2%)	4293 (34.9%)
Almost every day	3091 (56.3%)	2299 (29.1%)	200 (18.7%)	5190 (42.1%)

aSingle (separated, widowed and divorced); **Mean Age**= 32 years; **Standard Deviation**=10.2

3.5 Relationship of Socio-demographic Characteristics with Knowledge and Attitude towards HIV/AIDS Transmission

The predictors of the knowledge and attitude towards HIV/AIDS transmission (Table 5) Presented high odds of having appropriate knowledge among 46 and above years women (2.19 (1.97-2.96)); women with higher level of education (3.56 (2.95-4.29)); urban women (1.67 (1.22-2.65)); women belongs to richest (highest) wealth quintile ((2.24 (1.71-2.95)) and daily access to media (2.32 (1.99-2.86)) whereas, low odd ratio was observed among married women (0.53 (0.38-0.93)). Similarly, in attitude high odds ratio was observed among women 46 and above age (2.01 (1.94-2.59)); higher education (3.01 (2.46-3.69)); urban women (1.83 (1.30-2.86)); women in richest wealth quintile (2.19 (1.62-2.52)); everyday access to media (2.01 (1.63-2.48)) and low odds ratio among married women (0.76 (0.50-0.97)).

The results concluded significant associations with socio-demographic factors (Table 5) i.e., women age, women education, wealth index and access to media have p-values = 0.001 respectively, whereas, type of place of residence have p-value=0.01 while, marital status have p-value<0.05 with knowledge and attitudes of women towards HIV/AIDS.

4. Discussion

The studies based on assessing knowledge and attitudes researches were valuable prior to any experimental study[22]. This study examines the relationship of socio-demographic factors with the knowledge and attitude of ever married women regarding HIV/AIDS by using data of MICS 2014 of Punjab province of Pakistan. In the study under discussion cumulative percentage of appropriate knowledge among study participants is 41% while responses pertaining to inappropriate knowledge account for 59%. Precisely there was poor knowledge about

Table 5. Binary logistic regression of socio-demographic characteristics with knowledge and attitude towards HIV/AIDS transmission (N=13390)

Socio- demographic variables	Knowledge	Attitude
	Odd Ratio 95% CI b	**Odd Ratio 95% CI b**
Age of Women		
15-30	**1**	**1**
31-45	1.44 (1.81-2.30) ***	1.32 (1.12-1.82)***
46 and above	2.19 (1.97-2.96) ***	2.01 (1.94-2.59)***
Women Education		
No formal education	**1**	**1**
Primary	1.69 (1.42-2.01)***	1.13 (1.01-1.27)***
Secondary	2.02 (1.71-2.37)***	1.88 (1.58-2.24)***
Higher	3.56 (2.95-4.29)***	3.01 (2.46-3.69)***
Type of Place of Residence		
Rural	**1**	**1**
Urban	1.67 (1.22-2.65)**	1.83 (1.30-2.86)**
Marital Status		
Married	0.53 (0.38-0.93) *	0.76 (0.50-0.97) *
Single **a**	**1**	**1**
Wealth Index		
Poorest	**1**	**1**
Poor	1.44 (1.11-1.88)***	1.28 (1.01-1.53) ***
Middle	1.97 (1.52-2.55)***	1.60 (1.34-2.09) ***
Rich	2.22 (1.69-2.87)***	2.03 (1.56-2.49) ***
Richest	2.24 (1.71-2.95)***	2.19 (1.62-2.52) ***
Access to media		
Not at all	**1**	**1**
Sometimes	1.21 (1.06-1.37) ***	1.52 (1.22-1.63) ***
Almost everyday	2.32 (1.99-2.86) ***	2.01 (1.63-2.48) ***

a Single (separated, widowed and divorced); **b** CI (Confidence Interval); 1 (reference category).
*p-value <0.05;**p-value=0.01; ***p-value=0.001

HIV/AIDS, lack of right knowledge, places Pakistani women at great risk of HIV infection. In this study, as far as trend in attitude is concerned 08% women showed positive attitude toward HIV/AIDS while 92% showed negative attitude that can be portrayed due to poor knowledge.

Some significant findings concluded from the secondary analysis of some socio-demographic including age of women, type of place of residence, marital status, educational status, wealth index and access to media with knowledge and attitude regarding HIV/AIDS among ever married women. Among age group, the odds of having good knowledge towards HIV/AIDS transmission were higher among 46 and above than 15 to 30 years age women. These findings were found congruent with the study findings of Ankunda and his coauthors[1]. The older women ages, the more negative their prejudiced attitudes towards HIV/AIDS. These finding were found congruent with Masoudnia[23] results which showed that people's negative attitudes toward HIV/AIDS was associated with their knowledge and age.

Level of education signified improved knowledge towards HIV/AIDS transmission. Respondents with higher education showed high odds of appropriate knowledge than respondents with no formal education. This coincides with the study findings of Ankunda and his coauthors[1]. Negative attitude towards HIV/AIDS coincides with the study findings of Masoudnia[23]. Respondents improved knowledge for HIV/AIDS transmission and discriminatory attitude towards people with HIV/AIDS was due to the fact that firstly education enhanced knowledge of a person in general; secondly educated person had more exposure to modern media and modern health facilities.

Current study identified that there was significant difference in knowledge and attitudes regarding HIV/AIDS among urban and rural resident women. Women residing in urban areas had high odds of having good knowledge towards HIV/AIDS

transmission than rural areas. This result coincides with study findings by Ankunda and his coauthors[1], Huy and others[18] and Latif[8] reported that urban women had greater knowledge for HIV/AIDS transmission than rural women. Whereas, in attitude domain, HIV/AIDS being a spreadable disease (fear of infection); individual who had better knowledge towards HIV/AIDS transmission were expected to hold more negative, stigmatizing and discriminatory attitudes towards people living with HIV/AIDS[24].

As far as the results pertaining to marital status were concerned, it showed variance in the level of knowledge and attitude between single and married women. Married women had low odds of having good knowledge towards HIV/AIDS transmission than single (widowed, divorced or separated) women. The findings were found consistent with the study carried by Ankunda and his coauthors[1] among Vietnamese women who described that married women had less appropriate knowledge towards HIV/AIDS transmission compared to single women. Positive attitude were found by married women towards HIV/AIDS than single women. These study findings coincides with the study findings of Huy and others[18]. It can be the reason married women believe that marriage was a safety to precarious sexual behaviors.

Wealth index was also found positively associated with HIV/AIDS knowledge level. Women in richest wealth quintile showed significant high odds of having good and appropriate knowledge towards HIV/AIDS transmission than women in poorest wealth quintile. Similar results were found in the study conducted by Yaya and his co-associates[20] and Ankunda and Asiimwe[1]. It can be due to the reason that being more economically strong was linked with education, more access to resources, employment and better access to information. Higher the wealth index, the more negative discriminatory attitude towards HIV/AIDS coincides with the study findings of Alaba[24] and Mutahar and his co-associates[25]. This was due to the fact that people with higher economic background had more good appropriate knowledge, educated, more access to media, over protective and over conscious about their health issues.

Lastly, daily access to mass media i.e., reading newspaper or magazine, listen to the radio and watch television showed significant high odds of having good and appropriate knowledge towards HIV/AIDS transmission than those who sometimes or had no access to media. Similar findings were found in the study carried out by Ankunda and Asiimwe[1] who said that people visiting social networking sites had more knowledge towards HIV/AIDS transmission; it could be due to the reason that mass media is source of information and awareness campaigns regarding HIV/AIDS were usually going on. Additionally, daily access to media yields more negative discriminatory attitude towards HIV/AIDS[26]. This argument may be explained by the fact that despite of having high odds of good knowledge about HIV/AIDS transmission; HIV/AIDS remains dreaded and had not wane out the beliefs and perceptions about the disease transmission.

5. Conclusion

Despite of having high odds of appropriate knowledge among Pakistani married women towards HIV/AIDS transmission had not still wade out the misconceptions, social stigmas and discriminatory (negative) attitude of community towards people with HIV/AIDS. Programs need to be designed in order to reverse the negative attitude towards HIV/AIDS transmission which may be straightaway mandatory in this concern among Pakistani women who are vulnerable to HIV/AIDS transmission.

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