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RESEARCH ARTICLE

Public Awareness and Stigmatizing Attitudes toward People Living with Human Immunodeficiency Virus Acquired Immune Deficiency Syndrome in Saudi Arabia

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Abstract:

Background:

Recently, there have been efforts to increase HIV/AIDS education and awareness programs to reduce the stigmatization and discrimination of people living with human immunodeficiency virus/acquired immune deficiency syndrome (PLWHA). However, it is essential to understand that these efforts must be ongoing and sustained to be effective.

Objective:

This study aimed to assess the Saudi population's awareness and stigmatizing attitudes toward PLWHA.

Methods:

This is a cross-sectional study on individuals (patients or families of patients) who attended "King Fahad Hospital of The University (KFHU)". The study was conducted between September 1st and December 31st, 2018. Each participant provided informed consent, and data were collected through an informative, validated, anonymous, self-administrated questionnaire. The questionnaire was designed by experts and included all the data regarding demographic information, assessment of knowledge of HIV transmission, general awareness of HIV, assessment of attitudes toward PLWHA, etc. The collected data were analyzed using the SPSS version 22.

Results:

The majority of the participants were aware that HIV might be spread by receiving blood from an infected person, sharing a needle or syringe, and receiving organs from an infected person. There is a strong correlation between HIV transmission knowledge with age ($p = 0.001$), marital status ($p = 0.001$), an education level ($p = 0.001$), and economic status ($p = 0.049$). The study indicated negative stigmatizing attitudes toward PLWHA.

Conclusion:

This study highlights significant public awareness gaps about HIV/AIDS and stigmatizing attitudes of the public toward HIV/AIDS.

Keywords: HIV, AIDS, Awareness, Attitude, Transmission, Stigmatization.

Article History

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1. INTRODUCTION

HIV was first identified in the early 1980s and has since spread around the globe. The most common routes of HIV transmission are via sexual contact or vertically from mother to child. There is still a long way to go before achieving the Joint United Nations Programme on HIV/AIDS (UNAIDS) goal of decreasing new HIV infections each year to less than 500,000

[1]. In 2018, the estimated number of PLWHA reached 37.9 million [2]. Furthermore, the eastern Mediterranean region has one of the fastest-growing HIV infection rates despite having a low HIV/AIDS prevalence [1, 3].

In the Kingdom of Saudi Arabia, young people between the ages of 14 and 24 years represent 20% of the population [3]. In 2020, the projected HIV prevalence was less than 0.1%, the incidence was 7/10000 among adults aged 15 to 49, and 79.1% of those living with HIV were men [4]. The frequency is greatest in the western province, followed by the central

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province and the eastern province [5]. It is important to note that these figures may not fully reflect the true extent of HIV in the population, as there are definitely undiagnosed cases. The reasons for the high percentage of HIV-infected men in Saudi Arabia are not well investigated. Suggested explanations include knowledge gaps among young men with risky behaviors and increased risk of exposure through travel to HIV-endemic countries [4, 6].

The Saudi National AIDS Program started various programs and provided treatment and assistance to PLWHA to lower the incidence rate and treat individuals infected with HIV [7]. However, the conservative nature of Saudi society, the rising number of injecting drug users, and the non-disclosure of risky practices that may transmit the virus are the greatest obstacles to HIV/AIDS awareness, along with the limited number of studies assessing public awareness and stigmatizing attitudes toward PLWHA [8]. These alarming statistics demonstrate the need to investigate the public knowledge gaps that play a significant role in HIV transmission in Saudi Arabia, as well as stigmatizing attitudes toward the rising number of PLWHA. This research aims to analyze the general Saudi population's knowledge of HIV/AIDS and their awareness and attitudes toward PLWHA.

2. MATERIALS AND METHODS

2.1. Study Design and Participants

This cross-sectional study was conducted among healthy or sick individuals visiting “KFHU”. All participants who were 16 years old or older and could read the Arabic questionnaire were included in the research, but those who had major communication and language barriers were excluded. This was done in consideration of Saudi culture and social norms.

2.2. Sample and Recruitment

Out of 700 distributed questionnaires, 691 (98.6%) were completed and analyzed. Nine questionnaires were excluded as they were incomplete or did not fulfill the study's inclusion criteria.

2.3. Procedure

After demonstrating the study's goals, participants gave their written or oral informed consent. No personal identification was collected during this study. Basic data

security was ensured. The autonomous questionnaire was designed to collect the data from September 1st, 2018, to December 31st, 2018. The questionnaire was reviewed by a team of experts consisting of biotechnicians and physicians with a particular interest in treating PLWHA, having no participation in authorship.

This questionnaire was divided into five sections: (a) Demographic data: age and gender, (b) Assessment of knowledge of HIV transmission, (c) General awareness, (d) Assessment of attitudes toward PLWHA, (e) Inquire how to collect HIV/AIDS information. A pilot study was conducted with 42 participants; certain items were rephrased to enhance the questionnaire's reliability and content validity. The sample from the pilot study was not included later in the statistical analysis of the study. 5- point Likert scale was used to measure the respondents' attitudes towards PLWHA.

2.4. Ethical Approval

The study proposal was validated and approved by the Research Ethics Committee of “KFHU”.

2.5. Statistical Analysis

The statistical analysis was performed using SPSS 22.0. Descriptive statistics were adopted as a simple percentage technique to describe the patients' demographic characteristics. Categorical variables are summarized and presented in tables. Numerical variables are presented as means and standard deviations and were assessed with unpaired Student's t-test, linear correlation coefficients, analysis of variance (ANOVA), chi-square test, and logistic regression. The results were considered significant if the calculated P-values were less than 0.05.

3. RESULTS

A total of 691 out of 700 participants filled out the questionnaire, and 325 of the respondents (47%) were between 31 and 50 years of age. Most of them were married (n = 462, 66.9%) and graduates (n = 416, 60.2%) with good economic status (Table 1).

The majority of the participants were aware that HIV might be spread by receiving blood from an infected person (n = 640, 92.6%, p = 0.000), sharing a needle or syringe (n = 594, 86%, p = 0.000), followed by receiving organs from an infected person (n = 426, 61.6%, p = 0.000) (Table 2).

Table 1. Demographic profile of the respondents.

		N	%
Gender	Male	395	57.2
	Female	296	42.8
Age (years)	16 - 20.	52	7.5
	21 - 30.	190	27.5
	31 - 40.	209	30.2
	41 - 50.	116	16.8
	60 - 51.	95	13.7
	More than 60	29	4.2

(Table 1) contd.....

-	-	N	%
Nationality	Saudi	606	87.7
	Non-Saudi	85	12.3
Marital status	Single	195	28.2
	Married	462	66.9
	Widowed	14	2.0
	Divorcee	20	2.9
Education level	Illiterate	7	1.0
	Reads and writes	10	1.4
	Primary	18	2.6
	Intermediate	35	5.1
	High school	205	29.7
Economic status	University	416	60.2
	Weak	52	7.5
	Average	217	31.4
	Good	296	42.8
	High	126	18.2

Table 2. Awareness of respondents about HIV/AIDS transmission.

-	Correct answer	Yes N (%)	No N (%)	Do not know N (%)	p-value
Well-established Mode of Transmission					
Receiving blood from an infected person	Yes	640 (92.6)	25 (3.6)	26 (3.8)	0.000
Receiving organs from an infected person	Yes	426 (61.6)	85 (12.3)	180 (26.0)	0.000
Sharing needle or syringe	Yes	594 (86.0)	48 (6.9)	49 (7.1)	0.000
During pregnancy	Yes	417 (60.3)	131 (19.0)	143 (20.7)	0.030
During delivery	Yes	356 (51.5)	139 (20.1)	196 (28.4)	0.040
Breastfeeding	Yes	248 (35.9)	218 (31.5)	225 (32.6)	0.062
Tattoos	Yes (rare)	349 (50.5)	142 (20.5)	200 (28.9)	0.050
Wrongly Perceived Mode of Transmission					
Coughing and sneezing	No	235 (34.0)	348 (50.4)	108 (15.6)	0.050
Bites of insects/mosquitoes	No	230 (33.3)	306 (44.3)	155 (22.4)	0.042
Sharing food or drinks	No	147 (21.3)	402 (58.2)	142 (20.5)	0.050
Sharing toothbrushes	No (not established)	541 (78.3)	65 (9.4)	85 (12.3)	0.070

Table 3. Respondents' attitudes toward HIV/AIDS people.

Attitudes	Strongly Disagree N (%)	Disagree N (%)	Do Not Know N (%)	Agree N (%)	Strongly Agree N (%)
PLWHA should be isolated from public places	103 (14.9)	205 (29.7)	99 (14.3)	175 (25.3)	109 (15.8)
PLWHA should inform others about their disease	56 (8.1)	120 (17.4)	86 (12.4)	250 (36.2)	179 (25.9)
I will end my relationship with my friend if he/she gets infected with HIV	201 (29.1)	234 (33.9)	132 (19.1)	75 (10.9)	49 (7.1)
I do not mind sharing a meal with PLWHA	127 (18.4)	145 (21.0)	156 (22.6)	203 (29.4)	60 (8.7)
I do not mind buying from PLWHA	146 (21.1)	148 (21.4)	122 (17.7)	206 (29.8)	69 (10.0)
I do not mind hosting PLWHA in my house	131 (19.0)	141 (20.4)	141 (20.4)	209 (30.2)	69 (10.0)
I do not mind being treated by a doctor with HIV/AIDS	224 (32.4)	180 (26.0)	107 (15.5)	134 (19.4)	46 (6.7)
I do not mind a surgeon with HIV/AIDS doing my surgery	337 (48.8)	173 (25.0)	109 (15.8)	48 (6.9)	24 (3.5)
I do not mind marrying a person with HIV/AIDS	490 (70.9)	113 (16.4)	45 (6.5)	18 (2.6)	25 (3.6)
I do not mind living with PLWHA	279 (40.4)	190 (27.5)	104 (15.1)	89 (12.9)	29 (4.2)
PLWHA are careless regarding the dangers of spreading their illness	92 (13.3)	117 (16.9)	323 (46.7)	122 (17.7)	37 (5.4)
PLWHA should be ashamed of their illness	215 (31.1)	240 (34.7)	113 (16.4)	72 (10.4)	51 (7.4)

(Table 3) contd....

Attitudes	Strongly Disagree N (%)	Disagree N (%)	Do Not Know N (%)	Agree N (%)	Strongly Agree N (%)
All people with HIV/AIDS have multiple illegal sexual relations	208 (30.1)	194 (28.1)	172 (24.9)	65 (9.4)	52 (7.5)
PLWHA gets it as a consequence of wrong behaviors	91 (13.2)	138 (20.0)	161 (23.3)	213 (30.8)	88 (12.7)
Women with HIV/AIDS have the right to get pregnant	192 (27.8)	139 (20.1)	234 (33.9)	91 (13.2)	35 (5.1)
PLWHA has the capability and right to work in the society	54 (7.8)	86 (12.4)	145 (21.0)	294 (42.5)	112 (16.2)
PLWHA must disclose its status to the public	109 (15.8)	202 (29.2)	137 (19.8)	164 (23.7)	79 (11.4)
I will not allow my children to play with PLWHA	76 (11.0)	116 (16.8)	150 (21.7)	200 (28.9)	149 (21.6)
PLWHA causes danger for those around them	67 (9.7)	175 (25.3)	143 (20.7)	184 (26.6)	122 (17.7)

Table 4. Level of knowledge about transmission of HIV based on demographic characteristics.

Demographics	N	Total knowledge			F or T	ANOVA or t-test	
		Mean	±	SD		Test value	P-value
Age	16 – 20	52	11.096	± 4.131	F	8.069	<0.001*
	21 – 30	190	13.195	± 4.003			
	31 – 40	209	13.751	± 3.844			
	41 – 50	116	15.095	± 3.863			
	51 – 60	95	13.368	± 4.024			
More than 60	29	13.586	± 3.822				
Gender	Male	395	13.643	± 4.112	T	0.591	0.555
	Female	296	13.459	± 3.939			
Marital status	Single	195	12.651	± 4.048	F	5.882	<0.001*
	Married	462	14.004	± 3.984			
	Widowed	14	13.500	± 3.006			
	Divorced	20	12.350	± 4.283			
Education level	Illiterate	7	11.857	± 2.795	F	11.904	<0.001*
	Read and write	10	11.500	± 4.743			
	Primary	18	10.333	± 4.498			
	Intermediate	35	11.286	± 4.004			
	High school	205	12.668	± 3.757			
University	416	14.416	± 3.905				
Economic status	Weak	52	12.231	± 4.282	F	2.636	0.049*
	Average	217	13.562	± 3.873			
	Good	296	13.885	± 3.910			
	High	126	13.365	± 4.410			

Note: T: test value for T-test, F: Test values for ANOVA
 * indicates P-value =0.05 is significant.

The 5-Point Likert Scale was used to measure the respondents' attitudes toward PLWHA. Table 3 illustrates the study participants' responses to 19 items. It indicates negative stigmatizing attitudes toward PLWHA; people with HIV should inform others about their disease, and knowledge about PLWHA must be disclosed to the public so that people can avoid them. In addition, 42.5% (n = 294) of the respondents expressed that they would not buy from PLWHA, and 39.4% (n = 272) responded that they would not let PLWHA into their homes. The majority (n = 510, 73.8%) opposed having HIV-positive surgeons perform surgery, and a majority (n=404, 58.4%) will not seek medical care and advice from HIV-positive specialists. On the contrary, the majority expressed positive attitudes toward specific items; 65.8% (n=455) believed that PLWHA should not be ashamed of themselves because they contracted the virus, and 63% (n=435) responded that they would maintain a friendship if they were infected with

HIV.

Specifically, Table 4 shows a strong correlation between HIV transmission knowledge with age (p = 0.001), marital status (p =0.001), an education level (p = 0.001), and economic status (p = 0.049). In contrast, gender showed no significant correlation with knowledge about HIV transmission (p = 0.555).

4. DISCUSSION

This study provides descriptive information about awareness of HIV/AIDS and attitudes towards PLWHA in selective participants of Saudi Arabia. All respondents were of reproductive age; the majority were married and were men. In contrast to the majority of previous studies conducted in Saudi Arabia, this study was carried out to investigate the gaps in broad, general public awareness about HIV/AIDS compared to

awareness of selected groups, such as students or health workers, that usually do not reflect the general public awareness. Furthermore, this study describes in detail the stigmatizing attitudes toward PLWHA.

The study findings on HIV/AIDS knowledge revealed that participants had a good level of overall understanding, with 60.34% of the knowledge questions answered correctly. Our results are consistent with those of previous research. For example, a recent meta-analysis indicated that overall HIV/AIDS awareness in the Arabian Peninsula was good (74.4%) [9]. Moreover, a recent study conducted at Qassim University showed an average HIV knowledge of 64.5% [5]. A study conducted in Bahrain showed general awareness in 63% of participants [8]. The majority of respondents were aware that HIV might be spread via sexual contact, sharing infected needles, obtaining contaminated blood, and PLWHA organ donation. Furthermore, sharing toothbrushes means sharing oral bacteria and viruses. The transmission of HIV in such a way is rare but not totally excluded. In this study, the majority had a misconception that HIV can be transmitted through sharing toothbrushes. In addition, significant information gaps were detected in terms of HIV transmission from an HIV-positive mother to her child, such as respondents being unaware or denying the potential of transmission during pregnancy, birth, or nursing. Similar results were seen in an Iraqi study [10] as well. On the other hand, important misconceptions were observed; a significant number of respondents were unsure or gave incorrect answers regarding the transmission of HIV through coughing and sneezing, insect or mosquito bites, handshakes, sharing towels or utensils, sharing the same toilet or sharing the same meals with PLWHA. These results are comparable to other studies conducted in Bahrain, Egypt, Iran, Yemen, and Turkey [8, 11 - 14]. Therefore, awareness campaigns were planned to reduce misunderstandings about HIV/AIDS.

In general knowledge questions, the majority of respondents were aware that HIV/AIDS could lead to death or affect any age group. In addition, 53.0% of respondents agreed that healthy-looking individuals could be living with HIV and knew that there is no cure for HIV yet, while only 38.4% were aware that there is no immunization against HIV. These findings were consistent with other studies revealing confusion regarding HIV/AIDS curability and vaccine availability [8, 11, 15]. The above-mentioned misconceptions and gaps can contribute to the stigmatization and discrimination of PLWHA, as well as make it more difficult for public health officials to educate the public about the disease effectively.

It is important to raise public awareness about the role and efficacy of antiretroviral therapy and pre-exposure prophylaxis as key treatments in fighting HIV/AIDS. This information should be raised in any campaign related to HIV, which could encourage PLWHA to seek early medical advice and help reduce the risk of HIV transmission [16]. Education and awareness campaigns can be targeted to specific groups, such as illiterates, students of middle and high schools, and undergraduates, to correct these misconceptions and provide accurate information about HIV transmission. Additionally, it is essential to address the root causes of these misconceptions,

such as lack of access to accurate information, and to involve the community in developing and implementing education and awareness campaigns.

Across the world, PLWHA is facing predicaments regarding their rights as a result of the lack of knowledge, bad attitude, and wrong stigma [17]; however, this topic was rarely discussed in previous studies conducted in Saudi Arabia. Previous studies from the Arabian Peninsula and the Middle East indicated negative attitudes toward PLWHA [8, 18, 19]. The long list of negative attitudes in this study includes, but is not limited to, isolation of PLWHA, disclosure of HIV/AIDS status to the public to avoid PLWHA, refusal to live with PLWHA, and avoiding buying from PLWHA. These findings are consistent with other studies that evaluated public attitudes toward PLWHA [12, 17, 18, 20]. In the literature, the stigmatization and discrimination of PLWHA were linked to the lack of knowledge about HIV/AIDS [13, 20, 21]. In contrast, some studies have shown no correlation between knowledge about HIV/AIDS and negative attitudes toward PLWHA [8, 20].

When people lack accurate information about how the virus is transmitted and the realities of living with HIV, they are more likely to hold stigmatizing and discriminatory attitudes toward PLWHA [22]. However, it is worth noting that lack of knowledge is not the only factor that contributes to HIV-related stigma and discrimination. Other factors, such as cultural attitudes, religious beliefs, and social norms, can also play a role [23]. In recent years, there have been efforts to increase HIV/AIDS education and awareness programs to reduce the stigmatization and discrimination of PLWHA. However, it is important to note that these efforts need to be ongoing and sustained in order to be effective.

Freedom to conceive is vital for women. However, this topic has seldom been addressed in past research on the Arabian Peninsula. In the present study, the majority did not recognize the right of women with HIV/AIDS to become pregnant, which is consistent with a previous study conducted in Yemen but contradicts the findings of a study conducted in Nigeria, in which the majority supported the right of women with HIV/AIDS to become pregnant [3, 24]. This difference in attitudes towards the right of HIV-infected women to become pregnant highlights the complex and varied nature of societal attitudes towards HIV/AIDS, as well as the importance of understanding and addressing the cultural, societal, and economic factors that contribute to these attitudes. It is important to note that with the availability of antiretroviral therapy (ART) and other medical advancements, it is now possible for women living with HIV to have healthy pregnancies and prevent mother-to-child transmission of HIV. Nonetheless, the lack of recognition of the right of women with HIV/AIDS to become pregnant can lead to discrimination and stigmatization, which can further marginalize PLWHA and make it more difficult for them to access the care and support they need.

An inadequate understanding of HIV transmission and the availability of preventive measures may also contribute to the discrepancy in the findings, coupled with demographic and cultural disparities. The majority of respondents in this survey

disagreed with undergoing surgery done by HIV-positive surgeons or receiving medical care and advice from HIV-positive specialists. In general, the probability of HIV transmission from an infected health professional to a patient is very low [25, 26]. Nevertheless, this attitude cannot be attributed only to stigmatization; other variables may also play a role, such as the fear of being infected or the perspective on safety problems. Regarding marrying a person with HIV/AIDS, the majority of participants refused and disagreed with living with PLWHA. These findings are in agreement with those of the findings reported in a study conducted by Alwafi et al. [6], which found that fewer than 20% support marrying an HIV/AIDS patient.

On the other hand, our study revealed that the majority of respondents had positive attitudes regarding the continuation of their relationships with friends if they were infected with HIV, acknowledged the right of PLWHA to work within society, denied that all PLWHA engage in multiple illegal sexual relations, agreed that PLWHA should not be ashamed of their illness, and reported that PLWHA is not careless regarding the risks of spreading the infection. These findings are positive, as they indicate that the majority of respondents understand and support the rights and dignity of PLWHA. This positivity in attitudes is a good indication that there is a shift in societal attitudes towards PLWHA, and it can be seen as a sign of a more inclusive and equitable society. The findings are consistent with prior research addressing the employment rights of PLWHA [27].

The Internet began to detach conventional mass media (television, radio, and newspapers) as the primary public information source about HIV/AIDS. Successful HIV/AIDS campaigns and eradication initiatives will rely heavily on interactive national websites that provide HIV/AIDS health education materials and direct counseling in addition to medical care.

One of the limitations of this study is that it is based on a questionnaire, which may be subjected to response bias. Respondents may be reluctant to report stigmatizing attitudes or lack of knowledge about HIV/AIDS, leading to an underestimation of these issues. Additionally, the questionnaire has not captured all aspects of knowledge and attitudes toward PLWHA; more comprehensive measures may be needed to fully understand these issues. Another limitation is that this study focuses on HIV/AIDS knowledge and attitudes toward PLWHA in the Eastern Province of the Kingdom of Saudi Arabia. Therefore, these findings may not be generalizable to other regions or populations. To design HIV/AIDS education programs based on evidence and to have a better understanding of negative stigmatizing attitudes towards PLWHA, it is necessary to conduct further studies on this topic in different regions and populations in Saudi Arabia.

CONCLUSION

This study concludes significant public awareness gaps about HIV/AIDS and stigmatizing attitudes of the public toward HIV/AIDS. Further efforts and implementation are required from decision-makers to bridge these gaps and improve community attitudes toward such a disease. This can

be done by implementing further outreach campaigns, creating creative media content, and publishing it to the community. Additionally, incorporating awareness programs into schooling will improve public knowledge about HIV/AIDS, reduce the incidence of the disease, and improve attitudes toward PLWHA. Finally, the reasons behind the stigmatizing attitudes should also be investigated to resolve related misconceptions.

LIST OF ABBREVIATIONS

HIV	=	Human Immunodeficiency Virus
PLWHA	=	People Living with HIV/AIDS
AIDS	=	Acquired immune deficiency syndrome

ETHICALS APPROVAL AND CONSENT TO PARTICIPATE

The study proposal was validated and approved by the Research Ethics Committee at Imam Abdulrahman bin Faisal University (Ethical Approval # IRB-UGS-2018-01-173).

HUMAN AND ANIMAL RIGHTS

No animals were used in the studies that are the basis of this research. This research was conducted on humans and in accordance with the Helsinki Declaration of 1975, as revised in 2013.

CONSENT FOR PUBLICATION

Informed consent was obtained from all the participants.

AVAILABILITY OF DATA AND MATERIALS

The datasets used and analyzed during the current study are available from the corresponding author [M.A] upon reasonable request.

STANDARDS OF REPORTING

STROBE guidelines were followed in this study.

FUNDING

None.

CONFLICT OF INTEREST

The author declares no conflict of interest, financial or otherwise.

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