



# Knowledge, Attitude and Practices about Sexually Transmitted Infections/Sexually Transmitted Diseases (STIs/STDs) among Married Employee Ladies in Qassim Province, KSA

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## Author's contribution

The sole author designed, analyzed and interpreted and prepared the manuscript.

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## ABSTRACT

**Introduction:** Sexually transmitted diseases (STDs) are a worldwide growing health problem. Sexually transmitted infections (STIs) lead to several complications in women such as tubal blockade, pelvic inflammatory diseases, chronic pain syndromes, sexual dysfunction and many others.

**Aim of Study:** The study aimed to assess knowledge, attitude and practices about sexually transmitted infections and sexually transmitted diseases among married employee women in Qassim province, KSA.

**Subjects and Methods:** A cross sectional study was carried out on 184 Saudi married employee ladies in the child bearing period in Qassim province was designed to test their knowledge, attitude and practice (KAP) about STIs/STDs. A questionnaire was answered voluntarily by each studied participant.

**Results:** The results showed that the married ladies had low level of knowledge on STIs/STDs and

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their attitudes showed that they have many misconceptions regarding these issues. For the practice, seek treatment after having at least one manifestation of STI was significantly related to high education, high socioeconomic status and having one birth order.

**Conclusion:** Education and health care efforts should be implemented to improve married employee women's KAP about STIs/STDs. Further researches are needed on this topic to get broader perspective information in this area.

*Keywords: Married ladies; knowledge; attitude; practice; STIs/STDs; KSA.*

## 1. INTRODUCTION

Sexually Transmitted Infections/Sexually Transmitted Diseases (STI/STDs) are a common public health problem in developing countries, contributing to a huge economic burden among individuals and health systems [1]. According to the World Health Organization (WHO), each year around 499 million cases of curable STIs occur throughout the world in the age group of 15-49 years, of which 80% cases occur in developing countries annually [2].

STI (sexually transmitted infection), refers to the infection itself, whereas STD, refers to the disease caused by an infection [3]. STDs include many different sexually transmittable infectious diseases such as chlamydia, gonorrhoea, genital herpes, human papilloma virus (HPV), human immunodeficiency virus (HIV), and syphilis. Hepatitis B, genital herpes, HPV and HIV are still incurable infections [4].

More than 30 sexually transmissible viral, bacterial and parasitic pathogens have been identified. Sexual intercourse is the main mode of transmission for STDs, the other routes of spread being via blood products or tissue transfer, from mother to child during childbirth and pregnancy, and infrequently through other non-sexual means [5].

The average annual incidence of STDs per 100,000 population for Saudis and non-Saudis, respectively, was as follows: 5.2 and 4.2 for gonorrhoea, 1.7 and 6.4 for syphilis, 0.6 and 8.0 for HIV, 1.4 and 0.7 for genital warts, and 0.1 and 0.4 for genital herpes [6].

STIs and STDs lead to several complications in women such as tubal blockade, pelvic inflammatory diseases, chronic pain syndromes, sexual dysfunction and many others. They cause significant morbidity among males as well including strictures, sexual dysfunction, genital ulcers, and kidney and bladder problems. They also lead to complications in the neonate like chlamydial conjunctivitis, sepsis and other

morbidity. Most of these complications are preventable with early diagnosis and treatment, and prevention of infection [7].

The gynecology morbidity was high among the female because still keep secret about their gynecological problems [8]. Generally women with self-reported symptoms of sexual morbidity do not seek treatment due to existing taboos and inhibitions regarding sexual and reproductive health. They hesitate to discuss about the reproductive problem especially, due to shame and embarrassment [9]. Even if they seek treatment, a majority of women seek health care from quacks or unqualified for their health. Untreated infection can increase the risk of HIV infection. In addition to health consequences, women experience social consequences in terms of emotional distress related to gynecological morbidity.

While several researchers have reported knowledge about STDs amongst married ladies, information from KSA remains sketchy. Sexuality and sexual behavior is still, in many ways, a subject of taboo in KSA and discussing sex is against traditional Saudi culture, which complicates raising awareness in these questions. The aim of this study is to assess knowledge, attitude and practice regarding STI/STDs among married ladies in Qassim province, KSA.

## 2. SUBJECTS AND METHODS

This was a descriptive cross-sectional study carried out between January and February 2016 over 184 married Saudi administrative female employees in Qassim University. Criteria for selection were that the participants were married and willing to participate voluntarily and that they were Saudi, and not any other nationality.

A questionnaire which consisted of four parts: Socio-demographic characteristics, Knowledge, Attitude; and Practice about STIs/STDs was distributed to each participant. Part one of the

questionnaire concerns information about the participants' age, education level, duration of employment, socioeconomic status, age at marriage and birth order. Part two gives information about the participants' knowledge on STIs/STDs. The questions test the participants' knowledge on names, routes, causes, ways of contracting an STD, common symptoms and complications of STDs as well as the source of their information about STDs.

The third part of the questionnaire examines the participants' attitudes towards STIs/STDs. The questions are based on statements, which discuss the severity and curability of STDs, attitudes towards people carrying STDs, should they receive treatment, should young people get information about STIs, if the participant is worried about contracting an STD and lastly, the best ways to prevent STIs. The final part of the questionnaire deals with participant's practice when getting any symptom of STIs, sought for treatment and if the husband advised treatment also.

The questionnaire was written in Arabic language. In order to increase validity and reliability of the questions, the questionnaire was piloted with 15 women before using. The questionnaires were distributed to the married ladies during 3 hours mid-day in the University's lobby. An oral presentation was given in Arabic before handing out the survey. Information was given about the study and its aim, together with information about participation being voluntary and that all material would be handled with confidentiality. The questionnaire took approximately 10 minutes to fill in.

### **2.1 Data Management**

The collected data were analyzed with the statistical program Statistical Package for Social Sciences (SPSS) version 20. Qualitative data were expressed as number and percentage (No & %) and analyzed by using Chi-square test ( $\chi^2$ ) while quantitative data were expressed as mean and standard deviation (Mean $\pm$ SD). P-value  $\leq$  0.05 indicated significant differences.

### **2.2 Ethical Consideration**

The study was approved by the Ethical Committee in Unaizah College of Medicine. All data were handled confidentially and the questionnaires were anonymous.

## **3. RESULTS**

The participants were aged from 22-46 years with a mean of 34.6 $\pm$ 3.4. Secondary education represented 53.8%, and working for more than 10 years was 50.1%. Middle and high socioeconomic status were nearly equal; the age at marriage between 18-25 years was the highest percentage 36.9% and the commonest birth order was the first one (39.7%) (Table 1).

About all of the participants had heard about STIs/STDs (95.7%). When being asked to identify a number of STDs, most of the married ladies knew HIV/AIDS (94%), followed by herpes (38.6) then hepatitis B (31%) and syphilis (19.6%). Almost all the studied group knew that sexual intercourse is a route of transmission (95.7). More than two thirds of the married ladies replied that vaginal and penile discharge is a manifestation of STIs/STDs (67.4%) followed by itching in the genitalia (50%). Cervical cancer was reported as the commonest complication (41.8%). Concerning the treatability of STIs/STDs, 77.7% of the participants knew that they are curable ones. Mass media like television, radio and magazines were the main source of information about STIs/STDs among the studied group (66.3%) (Table 2).

For the attitude of the studied group 77.2% believed that STIs/STDs are not dangerous as they can be cured. When being asked whether a couple who is infected with an STD should get treatment, 71.7% of the participants agreed. More than one third of the married ladies (35.3%) think that if the wife is infected, the husband required treatment, also. On the question if youth should get information/knowledge about STIs/STDs to protect themselves against them, 75.5% answered yes. Half of the studied group (49.5%) stated that they are worried a little if contracting an STI/STD, where 21.2% answered that they are worried a lot and the rest (29.3%) are not worried at all. When replying to the best ways to prevent STIs/STDs, the commonest response is maintaining hygiene of the genitalia (71.2%) then creating health education programs (60.9%). On the other hand, one fifth believes that using condoms is helpful (Table 3).

When asked whether they had ever sought for treatment for STIs, after getting any manifestation, 46.2% agreed. The husband also advised treatment in 14.7% (Table 4).

**Table 1. Socio-demographic characteristics of the studied participants (Total No=184)**

Socio-demographic characteristics	No	%
<b>Age (in years):</b>		
20-30	66	35.9
30-40	56	30.4
>40	62	33.7
<b>Education level:</b>		
Secondary	99	53.8
University and above	85	46.2
<b>Duration of employment (in years):</b>		
≤10	90	49.9
>10	94	50.1
<b>Socio-economic status:</b>		
Middle	95	51.6
High	89	48.4
<b>Age at marriage (in years)</b>		
<18	66	35.9
18-25	68	36.9
>25	50	27.2
<b>Birth order:</b>		
First	73	39.7
2-4	45	24.5
>4	66	35.9

On comparing those who seek treatment after having at least one manifestation of STIs and those who didn't regarding their socioeconomic characteristics it was observed that who's with higher education level and higher socioeconomic status as well as had only one birth order were significantly more keen to seek for treatment than others ( $P < 0.05$ ) (Table 5).

#### 4. DISCUSSION

This study shows that the studied married ladies had lack of knowledge concerning STIs/STDs. This finding goes with Fageeh [10] in KSA who noticed that as Saudi Arabia is considered one conservative country, the level of awareness regarding STDs is quite deficient among adolescents, especially in the female population. This result is, also, in agreement with Ravi and Kulasekaran, [11] in a study regarding comprehensive knowledge and practice about STIs among married rural women in South India that the awareness level was low (37.9%). Moreover, Rai et al. [12] on studying adolescence knowledge about STDs reported the same observation of lack of knowledge (51.2%). This, also, is in accordance with other community based studies that revealed awareness levels ranging from 35.8%-64.8% [13,14,15,16].

In this study, almost all participants knew HIV/AIDS as an STD (94%), however, few knew about gonorrhea (1.6%), HPV (3.3%) or chlamydia (2.2%). This result is similar to those reported by Awang et al. [17], Sevensoon and Waern [18] and Trajman et al. 2003 [19]. The study also revealed that most of the participants didn't know the complications of STIs/STDs especially infertility (17.4%). This is supported by Sevensoon and Waern [18]. Moreover, Paz-Bailey et al. [20] and Kerchaw et al. [21] concluded that as long as the participants do not consider STDs as a great health risk, they will not change their behavior. In the current study, the studied group knew that STIs/STDs were preventable and treatable (77.2%) and were aware about the methods of prevention. This finding goes with a recent study by Rizwan et al. [22] when studying KAP about STIs among married women in a rural setting in India, found that their knowledge was poor, they didn't know the effects of STIs on women's health although they knew that STIs were preventable (82%) and were aware about the correct methods of prevention.

This study showed that the majority of the participants didn't believe that treatment of husbands was also essential (64.7%). This is in contrast with Rizwan et al. [22] where 81.5% stated that treatment of the husbands is also required if the wife is suffering. It may be revealed to wrong traditional believe that the disease is related to the female couple. For the knowledge regarding manifestations of STIs/STDs, vaginal and penile discharges (67.4%) then itching in the genital area (50%) were the most frequent. This is in agreement with community base studies conducted among married women by Parashar et al. [23], Samanta et al. [24] Sangeetha et al. [25] and Rizwan et al. [22].

Regarding the source of information, the majority received information from mass media (66.3%) or internet (52.2%) and the minority from their parents (19.6%) or school/college (15.8%). This might have to do with the fact that STDs are not a part of the school curricula and that teachers are often reluctant to teach it [26]. This finding is accord with Sridawruang et al. [27] who investigated the parental route as a source of sexual education and reported that parents have difficulties discussing sex with their children and consider discussing sexual matter to be a delicate issue. Sex is, in Eastern countries, considered a sensitive and controversial issue,

which complicates the discussion and education of it. Fageeh [10] and Sevensoon and Waern [18] found that mass media (television and internet) were the commonest source of information among their studied female Saudi (56.6%) and Thai university students (68%); respectively.

**Table 2. Knowledge of the studied group regarding STIs/STDs (Total=184)**

<b>Variable</b>	<b>No</b>	<b>%</b>
<b>Did you hear about STIs/STDs?</b>	176	95.7
<b>Which of the following is an STD?</b>		
• Gonorrhoea	3	1.6
• Syphilis	36	19.6
• HIV/AIDS	173	94
• Chlamydia	4	2.2
• HPV	6	3.3
• Hepatitis B	57	31
• Herpes	71	38.6
• TB*	32	17.4
<b>What are their routes of transmission?</b>		
• Sexual intercourse	176	95.7
• Blood transfusion	119	64.7
• Sharing needle	108	58.7
• Mother to child	66	35.9
• Sharing clothes/things*	21	11.4
• Sharing food*	14	7.6
• Don't know	3	1.6
<b>What are the manifestations of STIs/STDs?</b>		
• Lower abdominal pain	19	10.3
• Vaginal or penile discharge	124	67.4
• Itching in the genital area	92	50
• Pain during intercourse	33	17.9
• Genital ulcers or sores	46	25
• Burning pain on urination	39	21.2
• Swelling in the genital area	27	14.7
• Loss of weight	48	26.1
• Weakness	42	22.8
• Don't know	18	9.8
<b>What are the complications of STIs/STDs?</b>		
• Infertility	32	17.4
• Premature birth	29	15.8
• Still birth	31	16.8
• Ectopic pregnancy	12	6.5
• Cervical cancer	77	41.8
• Don't know	58	31.5
<b>What is the treatability of STIs/STDs?</b>		
• Treatable	143	77.7
• Untreatable	19	10.3
• Don't know	22	12.0
<b>What is your source of information about STIs/STDs?</b>		
• Parents	36	19.6
• Friends	68	37
• School/college	29	15.8
• Mass media (television, radio, magazine)	122	66.3
• Internet	96	52.2
• Hospital/clinic	62	33.7

\*Incorrect answer

**Table 3. Attitude of the studied participants about STIs/STDs (Total=184)**

Attitude of STIs/STDs (Do you think that:)	No	%
STIs/STDs are not dangerous and can be preventable and treatable.	142	77.2
Anyone who is infected with STIs/STDs should get treatment.	132	71.7
If the wife is infected, the husband required treatment also.	65	35.3
Youth should get information/knowledge about STIs/STDs to protect themselves against them.	139	75.5
<b>You should be worried about catching STIs/STDs:</b>		
• Not worried at all	54	29.3
• Worried a little	91	49.5
• Worried a lot	39	21.2
<b>Best ways to prevent STIs/STDs are:</b>		
• Establishing sophisticated labs	73	39.7
• Screening for all married couples	97	52.7
• Using condoms	46	25.0
• Creating health education programs	112	60.9
• Maintaining hygiene of the genitalia.	131	71.2

**Table 4. Practice of the married Saudi ladies towards STIs/STDs**

Practice towards STIs/STDs	No	%
Did you ever seek for treatment for STIs after getting any manifestation? Yes	85	46.2
Did you husband advice treatment? Yes	27	14.7

**Table 5. Distribution of ladies by treatment seeking and socio-demographic characteristics**

Socio-demographic characteristics	Treatment seeking				Total (No=184)		P-value
	Yes (No=85)		No (No=99)		No	%	
	No	%	No	%			
<b>Age (in years):</b>							
• 20-30	36	42.4	30	30.3	66	35.9	0.17
• 30-40	21	24.7	35	35.4	56	30.4	
• >40	28	32.9	34	34.3	62	33.7	
<b>Education level:</b>							
• Secondary	38	44.7	61	61.6	99	53.8	<b>0.02*</b>
• University and above	47	55.3	38	38.4	85	46.2	
<b>Years of employment:</b>							
• ≤10	46	54.1	44	44.4	90	49.9	0.19
• >10	39	45.9	55	55.6	94	50.1	
<b>Socioeconomic status:</b>							
• Middle	36	42.4	59	59.6	95	51.6	<b>0.01*</b>
• High	49	57.6	40	40.4	89	48.4	
<b>Age at marriage (in years):</b>							
• <18	29	34.1	37	37.4	66	35.9	0.87
• 18-25	33	38.8	35	35.4	68	36.9	
• >25	23	27.1	27	27.3	50	27.2	
<b>Birth order:</b>							
• First	42	49.4	31	31.3	73	39.7	<b>0.03*</b>
• 2-4	16	18.8	29	29.3	45	24.5	
• >4	27	31.8	39	39.4	66	35.9	

Nearly all participants (95.7%) knew that sexual intercourse is a route of STDs. Although they knew that, only one fourth of them (25%) thought

that using condoms is a perfect way of prevention. Seventy nine percentages are not worried at all or little worried if would get an STD,

only 21% were worried a lot in getting an STD. Sevensoon and Waern [18] found that 96% of their studied group knew that sexual intercourse is a route of STDs. In contrast to the finding regarding worry of catching an STD, a large Scandinavian study 2011 focused on people aged 20-35 years showed that one fifth of the studied group were not worried about contracting STDs like HIV or chlamydia when having unprotected sex [28]. As regard to using condoms as a way of protection against STDs, the result of this study is in contrast with many studies. Sevensoon and Waern [18], Haque and Soonthorndhada [29] and Vardguiden [5] found that almost all of the studied participants thought that using condom when having unprotected sex is the only way to protect oneself from contracting an STD. Moreover, Rai et al. [12] and Muzaffar and Bashir [14] reported that three fourth and 81.3%; respectively of their studied groups were aware that the use of condom is the commonest mode of prevention of STDs spread. This controversy in the results may be revealed to that all of the married ladies in this study are Muslims where they have only one partner, who is the husband. So, awareness regarding condom use didn't concern them. However, studied groups in other researches are having multi-partners and always speaking about unprotected sex with a new partner. For instance, the concept of "Safe Sex" to prevent STI in non-Islamic countries basically promotes the use of condoms for non-marital sexual relations, considered in Islamic countries a way of promoting non-marital sex which is absolutely prohibited in Islam. The concept of safe sex in Islam implies monogamous sexual relationship through legal marriage. There was another positive attitude among the studied married ladies towards getting help and ask for treatment once the manifestations of STIs is a fact (71.7%). This result is in agreement with Sevensoon and Waern [18] as they reported a percentage of 95.6.

Regarding practice, it was clear that 46.2% of the studied group sought for treatment when having any manifestation of STIs. Also, 14.7% of the husbands advised treatment when their wives were suffering. This low rate of seeking treatment may be due to lack of awareness about the effects of STIs on the woman's health. Health providers also seemed to have deficiencies in the management of STIs and giving information about them. This finding goes with the reported frequency of seeking treatment by Rizwan et al. [22] of being 40% and Samanta et al. [24] of

being 50%. Rizwan et al. [22] found that 26% of the husbands of affected women were offered treatment. Ravi and Kulasekaran [11] suggested that if women retain their infection for long durations, which could mean they suffer more sequelae, and their partners are at greater risk of infection. Stigma and embracement, lack of privacy, lack of female doctors at health facilities and treatment cost are the main reasons given in other studies for not seeking care [11,7,30-32].

In this study, it was observed that ladies with higher education and higher socioeconomic status and with the first birth order were the seekers for treatment if having any STI manifestation. The role of socio-economic status in development of STIs has been highlighted in a number of studies [31,33]. Low socioeconomic status is associated with greater high risk of sexual behavior [34] and this would lead to a higher incidence of STIs. In an Ethiopian study, it was shown that 51% of women who came to STI clinic with symptoms had a confirmed clinical diagnosis [35]. Another study in India reported that 72% of women with STI symptoms had a clinically confirmed diagnosis. Despite these results it needs to be stressed that the presence of STI symptoms is not indicative of an STI diagnosis [36]. Educated women are more capable to seek the source of treatment, use health care facilities more efficiently and process health related information from mass media (Radio/Television) [11].

## **5. CONCLUSION**

This study showed that Saudi married employee ladies have a low level of knowledge on STIs/STDs. More information about the common symptoms, common methods of transmission, complications and preventive measures may be of help. Their attitudes showed that they had some misconceptions regarding these issues. There is, also, a need to alleviate the stigma associated with STIs/STDs and favorably modify the treatment seeking behavior of the patients. Further research is needed on this topic to get a broader perspective of Saudi ladies' KAP in STIs/STDs.

## **6. RECOMMENDATIONS**

The responsibility for raising awareness on STDs is dependent on multiple factors, such as; socially, at school, at home and especially in health care. Education about STDs should be addressed early on in schools to encourage

premarital screenings and hence help reduce the risk of the possible expansion of infection in the Kingdom. Effective treatment can be increased by integrating the STIs treatment services with the primary healthcare services. Reinforcement of the syndromic management of the STIs and regular training of the healthcare personnel, especially female ones, to become counselor at each health facility to discuss the STIs problem among women are also required.

## 7. LIMITATION OF THE STUDY

The main limitation is that all questions in this study were close ended; information in depth could not be acquired from the respondents.

## CONSENT

A written informed consent was signed by each lady before participation and after full explanation of the study aim.

## COMPETING INTERESTS

Author has declared that no competing interests exist.

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