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Original Article

Sexually Transmitted Diseases (STDs) among Gen Y in India

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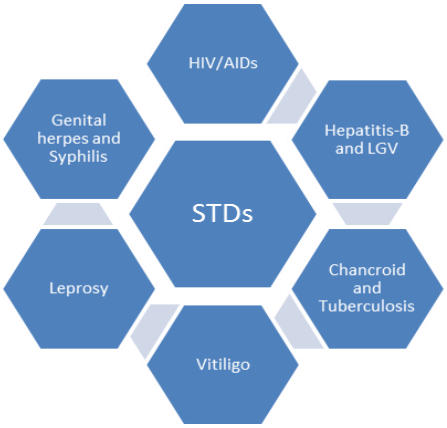
ABSTRACT

Infections transmitted by sexual contact are known as sexually transmitted diseases (STDs). A significantly higher risk of STDs is associated with young Gen Y individuals than older adults. Multiple sexual partners and unprotected sex are more common among Gen Y. If STDs are not adequately treated, they can lead to a variety of complications. Media and government programs have created awareness of HIV/AIDS, but people in developing countries like India are less aware of STDs other than HIV/AIDS. The present paper is an initiative to decode the awareness level of banking and healthcare sector employees. In banking, lower and middle level as well as the case of the health care sector paramedics were considered as the data approachability. The respondents includes public and private sector banks. Here for the purpose of research, Gen Y refers to the workforce who entered from 2000 to present and approximate current age to mid 30s. The work value normally for these group are confident, financially success, and self-reliant, but team oriented, loyalty to both self and relationships. The entire analysis was carried out on six parameters such as awareness of STDs, source of information, the transmission of STDs, awareness of complications related to STDs, symptoms, and attitude towards STDs. In total, 42 variables were considered under six parameters. A convenient and cluster sampling method was used for the collection of data in the study areas. It was found that the awareness level of Gen Y in the banking sector was lower than that of paramedic in the healthcare sector. Especially the banking sector respondents were not aware of various sexually transmitted diseases and had very less knowledge of symptoms of sexually transmitted diseases in the study areas.

GRAPHICAL ABSTRACT



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Introduction

Infections transmitted through sexual activity are known as sexually transmitted diseases (STDs). In daily practice, we encounter gonorrhea, chancroid, syphilis, and chlamydial infections. Other infections such as HIV, genital herpes, HPV, and hepatitis B cannot be cured, but can be modified using available treatments [1]. To pursue higher education, many young people stay away from their families for a long time. Their accommodation options range from hostels to guest houses, and they meet people from all over the world. It is more common for young people to practice unprotected sex and have multiple sexual partners. Furthermore, information and services needed to avoid STDs are not available to them. The information facilities where they can get information may also seem intimidating to them [2]. Unless STDs are treated promptly, they can result in various complications, including infertility, urethral stricture, abortion, malignancies, and perinatal complications [3, 4]. HIV/AIDS transmission is enhanced by ulcerative and nonulcerative STDs [5]. To plan preventive and treatment strategies, young people's knowledge of STDs and their complications is essential [6].

STDs have commonly transmitted illnesses spread by sexual contact between people [7, 8]. Nonetheless, occasionally the infections can be transmitted none sexually, for instance, through Mother-Child Transmission (MTCT) during pregnancy or childbirth, through blood transfusions (e.g., hepatitis B) or shared needles (e.g., hepatitis C). More than 30 different bacteria, viruses, and parasites cause these infections. Four of the eight pathogens causing STDs are curable, including syphilis, gonorrhea, chlamydia (caused by bacteria), and trichomoniasis (caused by parasites). HIV, hepatitis B, herpes simplex virus (HSV), and human papillomavirus are responsible for the remaining four diseases [9].

Sexually transmitted infections, previously known as sexually transmitted diseases, involve the transmission of an organism between sexual partners through different routes of sexual contact, either oral, anal, or vaginal [10]. STIs become a concern and burden on healthcare systems, as many infections go untreated and lead to potentially serious complications. The natural history and patterns of spread of the most common sexually transmitted infections will be discussed as well as disease prevention, evaluation, diagnosis, and treatment [11].

Chlamydia trachomatis and *Neisseria gonorrhoeae* are among the most commonly diagnosed bacterial sexually transmitted infections (STIs) in the United States and worldwide [12]. An estimated 2.9 million cases of chlamydia and 820,000 cases of gonorrhea occur each year in the United States, with untreated infections leading to negative reproductive health outcomes, such as pelvic inflammatory disease and infertility among women [13].

Sexually transmitted infection screening programs are critical in identifying infections that do not result in symptoms and ensuring timely treatment. When implemented effectively, STI screening programs can decrease the time between diagnosis and treatment, limiting the transmission of future infections [14].

Significance of the study

During interaction with Gen Y in different forums especially those who are working in the banking sector in public and private sector both and healthcare sector it was felt that there is a need for an empirical study specially to decode the awareness level of Sexually Transmitted Diseases (STDs). This is concerning the Covid-19 period and post-Covid period. The present study is contemporary and timely to understand the various dynamics associated with STDs. These groups of people were more active during the pandemic so the research concentrated on these groups.

Research questions

- What are various types of sexually transmitted diseases among Gen Y?
- What are various modes of transmission and information on STDs among Gen Y?
- What are different complications and symptoms of STDs among Gen Y?

- What is attitude towards STDs and sexual health among Gen Y?

Objectives of the study

- To study various types of sexually transmitted diseases among Gen Y?
- To understand different modes of transmission and information on STDs among Gen Y?
- To know complications and symptoms of STDs among Gen Y?
- To decode attitude toward STDs and sexual health among Gen Y?

Methodology of the study

The present study is based on both primary and secondary data. Secondary data were used for understating the concepts and identification of research gaps. Random and cluster sampling methods have been used. To collect the primary data, initially 53 variables were identified from the literature review and 9 core group discussions consisting 7 of members each. 56 respondents for the pilot study were considered. However, after the pilot study, 42 variables were retained. Five-point Likert-type scale method was used for the computation of data along with analysis of variances and this purpose weight of 5 for Completely Aware (CA), the weight of 4 for Aware (A), weight 3 for Neutral (N), weight 2 for Not aware (NA), and weight 1 for Completely Not Aware (CNA). Perception weight method being used for the computation of data under 6 different parameters such as awareness of various sexually transmitted diseases -9 variables, sources of information about STDs- 5 variables, awareness of the transmission of STDs -11 variables, awareness of complications of STDs-3 variables, awareness of symptoms of STDs -7 variables, and attitude towards STDs and sexual health -7 variables.

In Table 1, the sampling plan of various respondents was presented. Accordingly, 318 questions were distributed to males and 301 to the female employee of Gen Y of the banking sector. In contrast, 130 males and 125 females responded. Similarly, in the case of Gen Y employees in the healthcare sector, 67 males and 61 females responded consisting of paramedics. Overall, 42.92% of males and 45.32% of females responded from both sectors.

Sample size determination-for unknown population

$$N = \frac{Z^2(P)(1-P)}{C^2}$$

$$N = \frac{1.96^2(0.5)(1-0.5)}{0.5^2} = 384$$

Table 1: Sampling plan

Sector	Places	Questions were distributed to male	Questions distributed to female	Questions collected from male	Questions collected from female	The response rate for male	The response rate for female
Banking	Bhubaneswar	93	88	41	38	44.08	43.18
	Hyderabad	74	71	33	31	44.59	43.67
	Bengaluru	82	86	29	29	35.36	33.72
	Gurugram	69	56	27	27	39.13	48.21
Total from Banking sector		318	301	130	125	40.88	41.53
Health care sector	Bhubaneswar	78	62	37	29	47.44	46.77
	Visakhapatnam	63	54	30	35	47.62	64.81
Total from health care		141	116	67	61	47.52	52.59
Total		459	417	197	189	42.92	45.32

Source: *Own compilation*

Whereas,
Z= Standard normal deviation set at 95% confidence level is 1.96,
P= Percentage picking choice or response is 0.5, and
C= Confidence interval is 0.05.

Scope of the study

The present study is restricted to male and female healthcare paramedic staff and employees of banking sectors working in different parts of India. The cross-sectional study includes banking employees of Bhubaneswar, Bengaluru, Hyderabad, and Gurugram, and the healthcare sector includes Visakhapatnam and Bhubaneswar. Here for the purpose of research, Gen Y refers to the workforce who entered from 2000 to present and approximate current age to mid 30s. The work value normally for these group are confident, financially success, and self-reliant, but team oriented, loyalty to both self and relationships.

According to Table 2a, 51.44% were male, and the remaining were female. In the case of marital status, 45.95% were single, 42% married, and the rest were divorced. Given that staying with parents and family 31.85%, individually 47.52%, and the rest were living in relationships. In the total composition of respondents, Hindus consist of 32.11%, Muslims consist of 24.54%, Christians -23.24%, and others 20.11%. In the case of education, 34.73% were below graduation, 43.60% were graduates, and the remaining were post-graduates and above. Case of age 20-25 years old consists of 22.72%, 26-30 consists of 41.78%, and the rest were in their mid-30s.

With reference to Table 2b, whereas maximum possible weight = Maximum weight X number of variables X number of respondents,
Least possible weight = Least weight X number of variables X number of respondents.
Here, MBS represents Male respondents of Banking Sector.
FBS represents Female respondents of Banking Sector.
MHS represents Male respondents of Healthcare Sector.
FHS represents Female respondents of Healthcare Sector.

Table 2a: Demographic profile of the respondents

Characteristics	Details	Frequency	Percentage
Genders	Male	197	51.44
	Female	186	48.56
Marital status	Single	176	45.95
	Married	161	42
	Divorced	46	12.05
Staying with	Parents/family	122	31.85
	Individually	182	47.52
	Live in relationship	79	20.63
Religion	Hindu	123	32.11
	Muslim	94	24.54
	Christianity	89	23.24
	Others	77	20.11
Education	Below graduation	133	34.73
	Graduation	167	43.60
	Post-graduation and above	83	21.67
Age	20-25	87	22.72
	26-30	160	41.78
	31 plus (up to the mid-30s)	136	35.5

Source: *Author's compilation*

Table 2b: Computation of maximum and least possible weight

Category	Awareness about STDs	Sources of information about STDs	Transmission of STDs	Complications of STDs	Symptoms towards STDs	Attitude towards STDs
MBS						
Maximum possible weight	5850	3250	7150	1950	4550	4550
Least possible weight	1170	650	1430	390	910	910
FBS						
Maximum possible weight	5625	3125	6875	1875	4375	4375
Least possible weight	1125	625	1375	375	875	875
MHS						
Maximum possible weight	3015	1675	3685	1005	2345	2345
Least possible weight	603	335	737	201	469	469
FHS						
Maximum possible weight	2745	1525	3355	915	2135	2135
Least possible weight	549	305	671	183	427	427

***Source**: Author's compilation*

Results and Discussion

Awareness of various sexually transmitted diseases (STDs)

Accorting to Table 3, given that the percentage of total weight to maximum possible weight, for MBS, FBS, MHS, and FHS were 56.87%, 62.47%, 85%, and 94.54%, respectively, and the average percentage for all the groups taken to gather was 74.42%. It shows that the awareness level of MBS and FBS were very less as compared with MHS and FHS. Except for HIV/AIDS and Genital herpes, there is no knowledge of others. However, MHS and FHS were aware of various diseases.

Figure 1 shows that the FHS having total weight 94.54% of the total maximum possible weight and similarly for the MHS, FBS and MBS having 85%, 62.47% and 56.87% of the maximum possible weight.

According to Table 4, given that the percentage of total weight to maximum possible weight, for MBS, FBS, MHS, and FHS were 81.78%, 86.56%, 84.96%, and 92.92%, respectively. The overall average percentage is 86.56%. The results show that all the groups have a very good awareness of sources of information for STDs.

In Figure 2, the total actual weight to the maximum possible weight are for FHS 92.92%, for MHS it is 84.96%, for FBS it is 86.56% and for the MBS is 81.78%.

Awareness of transmission of sexually transmitted diseases (STDs)

Concerning Table 5, the percentage of total weight to maximum possible weight by the FHS, MHS, FBS, and MBS were 93.35%, 90.39%, 87.32%, and 75.97%, respectively, and the average weight was 86.75%. Except for MBS, the awareness level is good for the rest. This was due to less awareness of the transmission of STDs from mother to child during pregnancy, shaking hands with an infected person, and sharing clothing/things or food.

Table 3: Awareness of various sexually transmitted diseases (STDs)

Aggregate weight				
Variables	MBS	FBS	MHS	FHS
HIV/AIDS	537	563	283	283
Genital herpes	508	512	297	286
Syphilis	316	346	275	297
Hepatitis B	352	337	275	292
Lymphogranuloma venereum (LGV)	345	346	285	289
Leprosy	334	351	286	277
Vitiligo / Leukoderma	298	361	300	288
Chancroid	329	356	290	292
Tuberculosis	308	342	272	291
Total weight	3327	3514	2563	2595
Maximum possible weight	5850	5625	3015	2745
Least possible weight	1170	1125	603	549
% of total weight to maximum possible weight	56.87	62.47	85	94.54
Average weight	74.42			

Source: *Annexure A, B, C, and D*

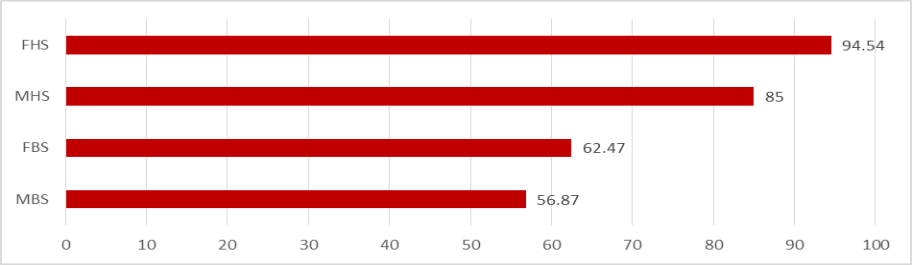

Figure 1: % of total weight to the maximum weight for awareness of various sexually transmitted diseases (STDs) (Source: Table 3)

Table 4: Sources of information on Sexually transmitted diseases (STDs)

Aggregate Score				
Variables	MBS	FBS	MHS	FHS
Internet	560	556	286	290
Newspaper/ magazine /TV/ Radio	526	541	286	289
Friends/relatives	546	558	294	270
Doctors	502	507	281	280
Workplace	524	543	276	288
Total weight	2658	2705	1423	1417
Maximum possible weight	3250	3125	1675	1525
Least possible weight	650	625	335	305
% of total weight to maximum possible weight	81.78	86.56	84.96	92.92
Average weight	86.56			

Source: *Annexure A, B, C, and D*

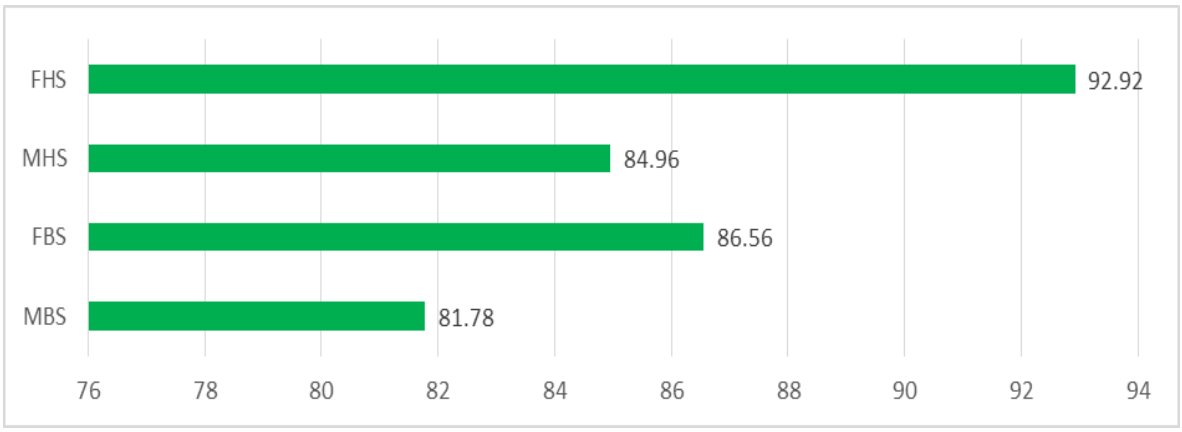

Figure 2: % of total weight to the maximum weight for sources of information about Sexually transmitted diseases (STDs) (Source: Table 4)

Table 5: Awareness of the transmission of sexually transmitted diseases (STDs)

Aggregate Score				
Variables	MBS	FBS	MHS	FHS
Sex with multiple partners/ prostitutes	557	537	300	283
Infected needles/ drug abuse	529	560	308	288
Blood transfusion	545	559	305	282
Avoiding condom	563	540	293	284
Mother to child during pregnancy	317	553	298	292
Poor hygiene	559	561	309	288
Kissing	524	533	310	282
Using public toilets/ pools	575	553	298	283
Mosquito bite	576	557	304	280
Shaking hands with an infected person	344	530	301	284
Sharing clothing/ things/ food	344	520	305	286
Total weight	5432	6003	3331	3132
Maximum possible weight	7150	6875	3685	3355
Least possible weight	1430	1375	737	671
% of total weight to maximum possible weight	75.97	87.32	90.39	93.35
Average weight	86.75			

Source: *Annexure A, B, C, and D*

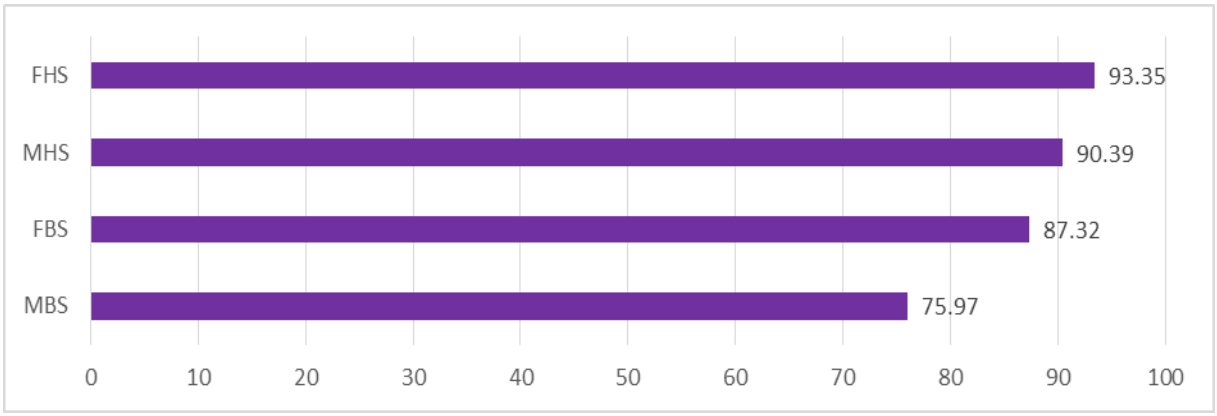

Figure 3: % of total weight to the maximum weight for awareness of the transmission of sexually transmitted diseases (STDs) (Source: Table 5)

With reference to Figure 3, it shows that FHS having 93.35% of total weight to the maximum possible weight. Similarly, for the MHS, FBS and MBS are 90.39%, 87.32% and 75.97% respectively.

Awareness of complications of sexually transmitted diseases (STDs)

Concerning Table 6, the percentage of total weight to maximum possible weight by the FHS, MHS, FBS, and MBS were 92.57%, 92.34%, 78.45%, and 76.05%, respectively. The average score was 84.85%. It shows that the awareness level of complications was less for FBS and MBS as compared with the other two groups. Both groups are not aware of complications related to cervical cancer risks.

With reference to Figure 4, 92.57% is the percentage of actual weight to maximum possible weight. Similarly, for the MHS, FBS and MBS are 92.34%, 78.45% and 76.05% respectively.

Awareness about symptoms related to sexually transmitted diseases (STDs)

According to Table 7, given that the percentage of total weight to maximum possible weight, for MBS, FBS, MHS, and FHS were 65.80%, 66.29%, 90.41%, and 93.02%, respectively. The average weight was 78.88%. This shows that the awareness level is low for the symptoms of STDs for MBS and FBS. Except for genital ulcer and genital swelling other symptoms were not familiar to this group. However, the other groups have a very good awareness level of this matter.

With reference to Figure 5, the total weight to the actual weight are 93.02%. Similarly, for the MHS, FBS and MBS are 90.41%, 66.29% and 65.8% respectively.

Sources of information about Sexually transmitted diseases (STDs)

Attitude toward sexually transmitted diseases (STDs) and sexual health

According to Table 8, given that the percentage of total weight to maximum possible weight, for MBS, FBS, MHS and FHS were 70.20%, 77.03%, 86.70%, and 94.38%, respectively, and the overall average was 82.08%. It shows that the attitude level was low for the MBS and FBS. In the case of MBS except for 3 variables out of 7 rest were not aware and similarly for FBS 4 variables out of 7 were not encouraging.

With reference to Figure 6, the percentage of total weight to maximum possible weight are 94.38% and for other categories are 86.07%, 77.03% and 70.02% respectively.

Table 6: Awareness of complications of sexually transmitted diseases (STDs)

Aggregate Score				
Variables	MBS	FBS	MHS	FHS
Cervical cancer	365	351	302	285
Infertility	565	548	311	281
Abortion	553	572	315	281
Total weight	1483	1471	928	847
Maximum possible weight	1950	1875	1005	915
Least possible weight	390	375	201	183
% of total weight to maximum possible weight	76.05	78.45	92.34	92.57
Average weight	84.85			

Source: *Annexure A, B, C, and D*

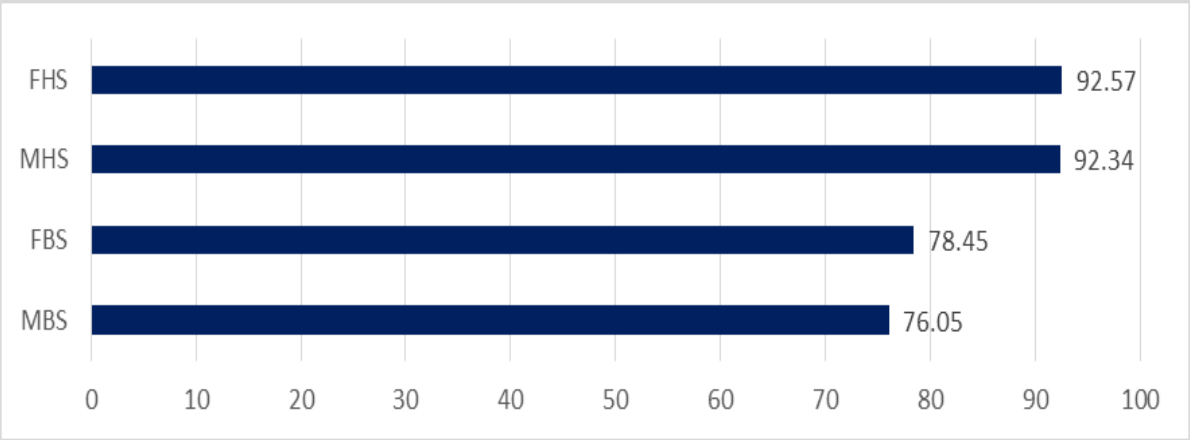

Figure 4: % of total weight to the maximum weight for awareness of complications of sexually transmitted diseases (STDs) (Source: Table 6)

Table 7: Awareness of symptoms related to sexually transmitted diseases (STDs)

Aggregate Score				
Variables	MBS	FBS	MHS	FHS
Weight loss	329	374	320	274
Painful micturition	358	339	314	282
Genital ulcer	622	549	310	290
Genital swelling	552	535	301	293
Body rash	374	342	299	289
Genital discharge	390	388	288	279
Others	369	373	288	279
Total weight	2994	2900	2120	1986
Maximum possible weight	4550	4375	2345	2135
Least possible weight	910	875	469	427
% of total weight to maximum possible weight	65.80	66.29	90.41	93.02
Average weight	78.88			

Source: *Annexure A, B, C, and D*

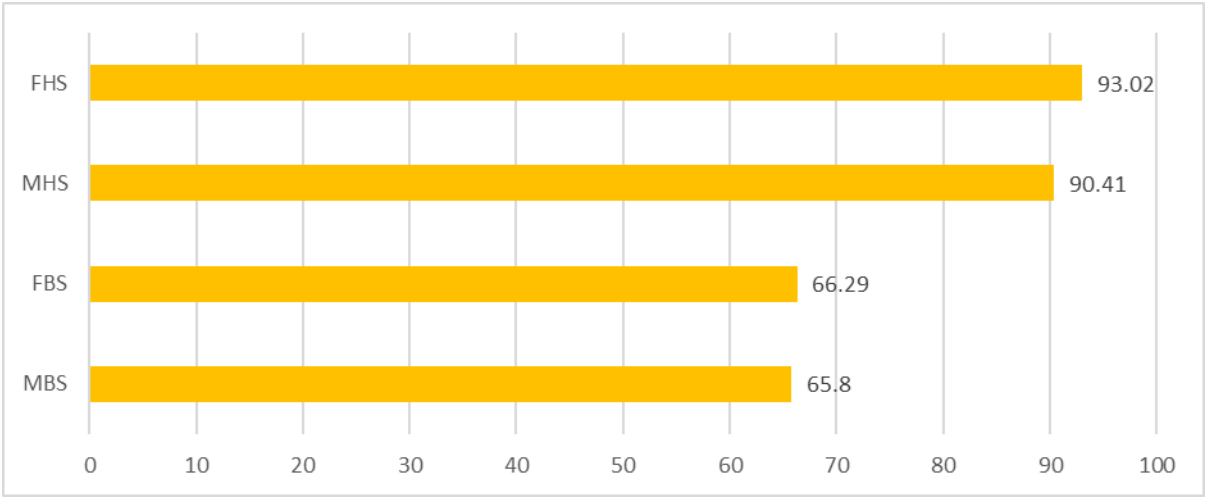

Figure 5: % of total weight to the maximum weight for awareness about symptoms related to sexually transmitted diseases (STDs) (Source: Table 7)

Table 8: Attitude toward sexually transmitted diseases (STDs) and sexual health

Aggregate Score				
Variables	MBS	FBS	MHS	FHS
Masturbation is harmful to the health	578	555	292	286
Sex education should be mandatory	550	556	290	285
One should wait until marriage to have sex	360	375	281	286
Marrying a person who has sex before marriage	373	552	290	289
Isolating the patients of STDs for the safety of others.	361	375	303	287
Banning prostitution to control STDs spread	389	386	288	289
Use of contraceptive pills	583	571	289	293
Total weight	3194	3370	2033	2015
Maximum possible weight	4550	4375	2345	2135
Least possible weight	910	875	469	427
% of total weight to maximum possible weight	70.20	77.03	86.70	94.38
Average weight	82.08			

Source: *Annexure A, B, C and D*

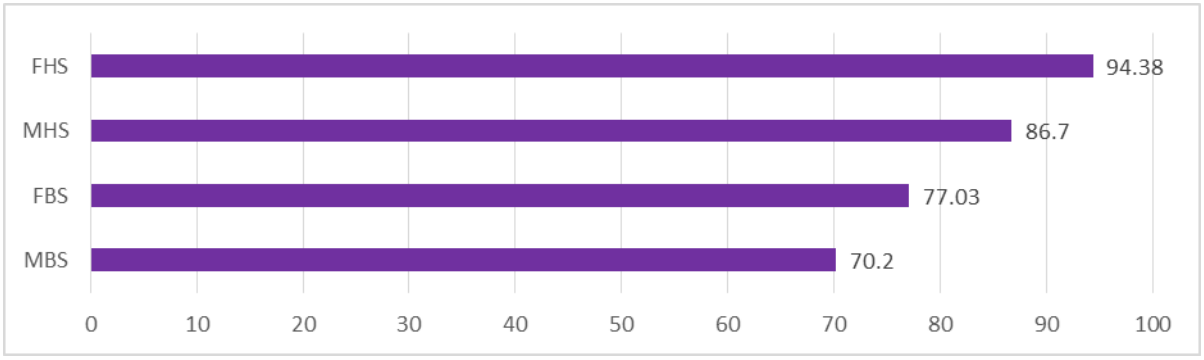

Figure 6: % of total weight to the maximum weight for attitude toward sexually transmitted diseases (STDs) and sexual health (Source: Table 8)

Future scope for the study

Further study can be undertaken in other areas mentioned as follow:

- Awareness of sexually transmitted diseases among school children.
- Awareness of sexually transmitted diseases among rural, urban, and semi-urban areas in India.
- Awareness of sexually transmitted diseases among college and university students.
- Awareness among sexually transmitted diseases among working people in other sectors such as education and Information sector etc. along with others.

Limitations of the study

The present study limited to 384 responses of banking and health care sector. Therefore, this cannot be generalized. If the number of respondents increases and more demographic will be added, the results may differ.

Suggestions

- Awareness campaign for understanding various sexually transmitted diseases and its symptoms.
- The issues should be focused as social problem rather than person centric.
- Family and social support should be extended for affected person to come out of that situation.

- If any such symptoms are felt, the issue should be discussed wirh the physicians for immediate treatment without any reluctant or delay and this will reduce the affect of STDs
- Issues should be discussed in open forum to spread the awareness level.
- Sex education should be mandatory in the school syllabus.
- Use condom during sex.
- Avoid visiting prostitution areas.

Avoid sex with people those who are having multiple sex partners.

Conclusion

In general, the study concludes that a lower level of awareness of STDs among the FBS and MBS are a major concern. It was concluded that the majority are not aware of syphilis, Hepatitis B, LGV, leprosy, vitiligo/ leukoderma, chancroid, and tuberculosis. Regarding the symptoms, the same group is not much aware of weight loss, painful micturition, body rash, genital discharge, and others. The complication of cervical cancer is not at all known to both these banking sector Gen Y groups. Similarly, the attitude towards STDs is also not so encouraging except few variables. However, the awareness level is very good for all the parameters in the case of MHS and FHS. This indicates that there is a need for more awareness levels for the banking sector Gen Y group that only can help the fight against STDs.

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Authors' contributions

All authors contributed to data analysis, drafting, and revising of the paper and agreed to be responsible for all the aspects of this work.

Conflict of Interest

We have no conflicts of interest to disclose.

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