

RESEARCH ARTICLE

MAIEUTIC SENSITIZATION PROGRAM ON LEVEL OF KNOWLEDGE REGARDING HIV/AIDS AND PEOPLE LIVING WITH HIV AMONG HEALTH CARE STUDENTS

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Abstract

Background: Lack of health education could potentially become a crucial risk factor in preventing Human Immunodeficiency Virus (HIV)/Acquired Immunodeficiency Syndrome (AIDS). Globally it does not have any cure, and no effective vaccines are available. The study aimed to assess the effect of the maieutic sensitization Program on the Level of Knowledge Regarding HIV/AIDS and People Living with HIV (PLHIV) among Health Care Students (HCS) in India. **Materials and Methods:** A quantitative study with an evaluative approach of randomized controlled trial design with study group and control group of 600 students from first-year Bachelor of Dental Science (BDS) and Basic B.Sc. Nursing. HIV knowledge questionnaire 30 explored the level of knowledge regarding HIV/AIDS and PLHIV with the probability multistage cluster random sampling technique. The collected data were analysed using SPSS. **Results:** Comparing the level of knowledge of 600 health care students between the study and control groups during the pre-test had no statistically significant difference at $p=0.62$ level. In post-test I and II, the number of students who had adequate knowledge in the study group was more than that in the control group (51% vs. 34%) and (83.6% vs. 57%), respectively. **Conclusion:** Based on the present study's statistical evidence, the Maieutic Sensitization Program (MSP) was influential on HIV/AIDS and PLHIV among health care students in the study group than the control group who did not receive the study MSP. *ASEAN Journal of Psychiatry, Vol. 22(8) October, 2021; 1-10.*

Keywords: Healthcare, Level of Knowledge, Human Immunodeficiency Virus, Deficiency Syndrome, Maieutic Sensitization Program

Introduction

People get affected by the Human Immuno Deficiency Virus (HIV) infection knowingly or unknowingly. It is not only the high-risk people that are infected but also the unborn babies. The moral behind HIV is, everyone has an equal chance of getting contact with HIV [1]. In the late 1800s, the Chimpanzee version of the immuno-deficiency virus called Simian Immunodeficiency Virus (SIV) was most likely to have been transmitted to humans and mutated into HIV chimpanzees were hunted for meat and came into contact with their infected blood in Central Africa.

Over many decades, the virus slowly spread across Africa and later into other parts of the world. The virus has been in existence in the United States since at least the mid-1970s [2]. In June 1981, the first five known cases of HIV were identified in Los Angeles. Two healthy gay men had contracted pneumonia, and they died. Today, more than a million Americans have the virus. Being diagnosed with HIV was once a death sentence. But now, if treated early, a 20-year-old man with HIV can expect to live up to 77 years, which is the average lifespan of an American man with HIV [3].

Suppose the Anti-Retroviral Therapy (ART) is taken in the right way; one can dramatically prolong many people's lives with HIV, keep them healthy, and significantly lower their chances of transmitting the virus to others by 96% [4]. In Africa, AIDS was the number one cause of death among adolescents in 2015. The gender issue is the crucial factor driving the epidemic in sub-Saharan Africa, where women are powerless to protect themselves from infection due to male domination.

Women are subjected to neglect, rape, incest, domestic violence, child labour, prostitution, economic abuse, and even slavery [5]. India has the third-highest number of people living with HIV globally, with 2.1 million Indians accounting for four of every ten people infected

and 51% of AIDS-related deaths in 2013 in Asia 4. With 86,000 new infections, India had achieved a 32% decline in HIV Infections in 2015 [6].

It has been estimated that US\$ 31.1 and 29.3 billion will be required for the AIDS response in 2020 and 2030 respectively. There is still no cure for HIV, and it can take a huge financial toll on those living with it and may lead to an expenditure of almost \$30 billion annually on HIV/AIDS programs such as research, housing, treatment, and prevention [7]. 90% of the new infections could be prevented by early diagnosis of the people living with HIV and ensuring that they received prompt, on-going care and treatment [6].

NACO released Mass Media Campaigns on stigma and discrimination amongst healthcare providers and Prevention of Parent-To-Child Transmission (PPTCT). There are many aspects of living positively with HIV/AIDS, such as good nutrition, regular exercise, quitting smoking and alcohol, oral and dental hygiene, sleep and rest, not spreading HIV, and routine medical follow-up. Starting ART and complying with the treatment joining a support group to get economic and emotional support also paramount [8].

The health care workers (nurse, dentist, and other paramedical) should help them in all these efforts by enhancing their spiritual well-being, assisting the People Living with HIV and AIDS (PLHAs) to accept the diagnosis and the treatment. Adhering to the treatment, diet, and nutritional plan, maintaining hygiene, safe sex practices, and coping with side effects of ART therapy should not be ignored [9].

In this view, healthcare personnel's role is inevitable to strategize, streamline and synergize treating HIV and motivate them to avail health care services. The health care personnel have to provide bolder, more direct, more efficient

support to comply with HIV Drug Resistance (HIVDR). In addition, adolescents who know more about HIV/AIDS are more likely to get tested for HIV infection. Education also reduces the discrimination against HIV-positive children and adolescents, which can help them stop school drop 8. Studies reveal that the level of knowledge and awareness regarding HIV/AIDS among the nursing students and found the common misconceptions about HIV/AIDS were HIV transmission through hugging, sharing toilet seats, towels, utensils shaking hands, and even mosquito bites. In the study among ninety-five nursing students, 60% revealed the importance of being faithful to one's life partner. 70% knew that blood transfusion-related infection could be reduced by receiving screened blood [9].

The absence of organized institutions for imparting sex education leads them to learn about sexual and reproductive health from unreliable sources, perpetuating myths regarding safe sex and reproductive health. The health care students are falling in this group, and most among, are female who is more vulnerable to contact HIV.

The universal precaution like cap, gloves, mask, shoe cover needs to be used by all the healthcare students while taking care of all the patients irrespective of their HIV status, considering that every person coming in contact is potentially positive [10].

Many factors that hindered the health care students from following universal precautions and using personal protective equipment in the clinical area hindered the health care students.

The majority of the health care students reported fear of contracting HIV through clinical practice and felt that health care workers had the right to know the patients' HIV status for their safety. They opined that they would wear gloves to touch a patient suspected of HIV, which displayed negative attitudes and unacceptable scientific practices due to fear.

Training institutions need to ensure that students gain accurate knowledge of HIV, especially on transmission routes, to alleviate the anxiety of caring for PLHIV [11]. Quality teaching has a positive effect on students' level of expertise. The different learning styles like a lecture, exhibition, debate, and discussion around the critical aspects of lesson ends with effective teaching and impact students' knowledge [12]. The researcher prepared the health care students, established a comfortable environment for learning, and enhanced learning through various teaching methods. A booklet on HIV information helped the students to refer at any time.

Methodology

The target population for this study was the students studying in the first year BDS and Basic B.Sc. Nursing in selected 4 Dental and 6 Nursing Colleges in XXX India (300 in each group and 600 in total). Quantitative research with the randomized controlled trial (Probability multistage cluster randomization) was adopted.

The data collection tools are comprised of two sections.

- Section A: Socio-Demographic data related to age, sex, level of education, place of education of the students.
- Section B: A standardized HIV/AIDS knowledge questionnaire formulated by Michael et al. and restructure by Chinnasamy et al.

It consisted of 30 items, based on various aspects of HIV/AIDS and its prevention, which included an introduction to HIV/AIDS 4 (13%), causative organism 2 (7%), signs and symptoms 5 (17%), diagnosis 2 (7%), transmission 5 (17%) management 4 (13%), prevention 4 (13%) and positive living with HIV 4 (13%).

Most of these questions were close-ended. Each correct answer scored one, and each wrong answer scored zero, a total of 0 to 30 with three subscales 0-10: Inadequate knowledge, 11-20:

Moderately Adequate knowledge, and 21-30: Adequate knowledge. [13-16]

Content validity of the tool was established by the experts comprising clinical microbiologists, psychiatrists, dentists, nurse educators, and the counselling expert to the people living with HIV.

The ethical approval for the study was obtained from the Institutional Ethical Committee (Reg. No: MADC/IEC/003/2016). The data were collected from January to September 2016. The students were made into 12 batches consisting of 50 students and six clusters in each group.

The students were seated comfortably with their friends. Before addressing the students, the researcher placed the banner on "HIV/AIDS awareness campaign." The researcher faced many interesting questions from the students due to the visual effect of the flag.

After the pre-test with both the groups, the Maieutic Sensitization Program on HIV/AIDS and PLHIV (75 min) was carried out as an LCD-assisted PowerPoint presentation only for the study group.

A booklet on general awareness, disease condition, transmission, treatment, prevention of HIV/AIDS, and positive living for people living with HIV was issued to the students. Students were motivated to study the booklet and clear their doubts.

The question and answer session was very much appreciated by the students (20 min). The session was handled very carefully, and decorum was maintained since the students questioned sensitive issues like sexual patterns.

Results

The randomized control trial study implanted an intervention among the sample size 600 (study group 300 and control group 300) revealed that the majority (88% and 90%) of the study and control group were 18-19 years. Regarding

The male students asked more questions during the session than the female students. The female students played an excellent observers role. The researcher encouraged and motivated the students to the maximum to participate in the discussion.

The author demonstrated the methods of using Personal Protective Equipment (PPE). The things used for having protected sex are kept in the classroom for witnessing and knowing, infrequent material exposure for the students in this age group in India. On the 30th and 90th days, the post-test I and II were conducted.

After the answers were discussed, the researcher reinforced and motivated them to study the booklet and clear their doubts. After the pre-test, the students in the control group underwent the routine education process.

The post-test I on the 30th day and the post-test II on the 90th day was conducted. After the post-test II, the students were given MSP on HIV/AIDS and PLHIV and motivated to participate in active discussion and clear their doubts.

The data obtained were analysed in terms of the objectives of the study. Descriptive (frequency, percentage, mean, standard deviation) and Inferential statistics of paired 't' test, independent 't' test, repeated measures of ANOVA, Chi-Square) were used for analysing data by statistical package for social sciences (SPSS version 22). The p-value of <0.05 was considered to be significant.

gender, 69% and 65% of the students were female in the study and control group. 54% and 53% of the study and control groups had completed their higher secondary schooling in rural areas regarding their education.

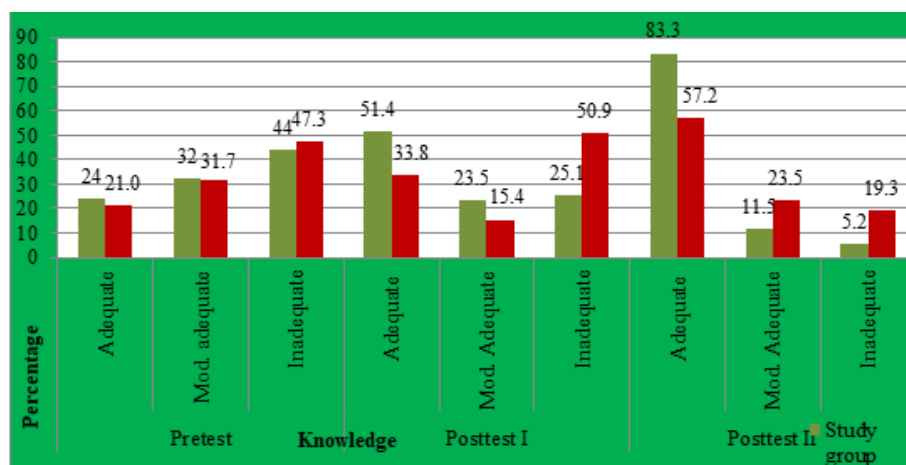


Figure 1. Demographic variables among health care students

Table 1. Demographic variables among health care students

Demographic variables	Study group (n=300)	Control group (n=300)	χ^2 p-value
	No (%)	No (%)	
Age (in years)			
a) 18-19	264(88)	271(90.3)	1.09
b) 20-21	24(8)	21(7)	0.57(NS)
c) 22-23	12(4)	8(2.7)	-
Gender			
a) Male	92(30.7)	104(34.7)	1.09
b) Female	208(69.3)	196(65.3)	0.29(NS)
Educational status			
a) HSS	290(96.7)	291(97)	0.74
b) Degree	4(1.3)	2(0.7)	0.68(NS)
c) Diploma	6(2)	7(2.3)	
Place of education			
a) Rural	162(54)	158(52.7)	0.10
b) Urban	138(46)	142(47.3)	0.74(NS)

Table 2. Comparison of knowledge level among health care students regarding HIV/AIDS and PLHIV

Knowledge Level	Study group No (%)	Control group No (%)	χ^2 p-value
Pre-test			
Adequate	72(24)	63(21)	0.97
Mod. Adequate	96(32)	95(31.7)	0.616(NS)
Inadequate	132(44)	142(47.3)	
Post-test I			

Adequate	151(51.4)	99(33.8)	41.09
Mod. Adequate	69(23.5)	45(15.4)	0.0001***
Inadequate	74(25.1)	149(50.9)	
Post-test II			
Adequate	239(83.3)	163(57.2)	48.78
Mod. Adequate	33(11.5)	67(23.5)	0.0001***
Inadequate	15(5.2)	55(19.3)	

NS: Not Significant, ***: $p < 0.001$

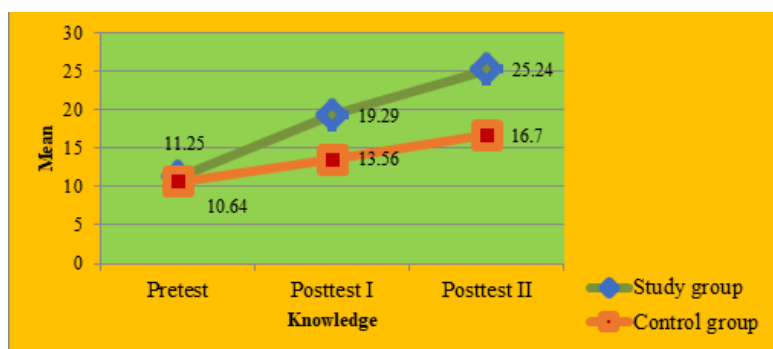


Figure 2. Comparison of mean score of knowledge over a period of time from pre-test to post-test II among the health care students regarding HIV / AIDS and PLHIV

Comparing the level of knowledge of health care students between the study and control group participants Table 2 during the pre-test had not shown any statistically significant difference at $p=0.62$ level, and the homogeneity between the

groups was maintained. Comparing the level of knowledge of health care students in study and control groups Table 2 between the pre-test and post-test II showed a statistically significant difference at $p < 0.001$.

Table 3. Repeated measures ANOVA of knowledge over a period of time from pre-test to post-test II among the health care students regarding HIV/AIDS and PLHIV

Test	Study group		Control group		Mean Difference	t-value	p-value	F value p-value
	Mean	SD	Mean	SD				
Pretest	11.25	6.50	10.64	6.30	0.61	1.16	0.24(NS)	5.28
Posttest I	19.29	8.08	13.56	7.21	4.82	9.06	0.0001***	0.04*
Posttest II	25.24	4.99	16.70	6.41	8.50	17.77	0.0001***	

NS: Not Significant, *: $p < 0.05$, ***: $p < 0.0001$

The mean difference between the study and control group showed Table 3 a continuous

increase at $p < .0001$. The RM ANOVA results further strengthened the independent's' test findings.

Table 4. Association of the level of knowledge with selected demographic variables in the post-test II

Demographic variables	Study group				Control group			
	Inadequate	Moderate adequate	Adequate	χ^2 p-value	Inadequate	Moderate adequate	Adequate	χ^2 p-value
Age (in years)								
a)18-19	15	28	207	4	46	58	142	9.23
b)20-21	-	4	23	0.4	9	9	13	0.05(NS)
c)22-23	-	-	10	(NS)	-	-	8	
Gender								
a)Male	2	15	75	5.71	18	24	55	0.14
b)Female	13	17	165	0.05(NS)	37	43	108	0.93(NS)
Completed Educational Status of the students								
a) HSS	11	32	234	27.17	51	67	158	8.75
b) Degree	2	-	2	0.0001**	-	-	2	0.06(NS)
c) Diploma/certificate course	2	-	4	*	4	-	3	
Place of education								
a) Rural (village)	10	30	110	27.3	35	40	78	5.39
b) Urban (city/town)	5	2	130	0.0001***	20	27	85	0.06(NS)

NS: Not Significant, ***: $p < 0.0001$

Discussion

Mohan supported the significance of selecting the students in this age group for the study [17]. He explained that 23% of the total population was under the risk of HIV infection in India, with the age group between 10-19 years, which consensus with UNAIDS Report 2013 [18]. This study result was again substantiated by Swendeman [19], who revealed that young adults in the age group of 15-24 were exposed to the risk of being victims of HIV/AIDS, thus retarding the economic growth of the country, which was consensus with Praveen et al. [20], Fiona et al. [21] and Lathamangeswari et al. [22]. This age group is curious to know and experience sexuality. The majority of the female students opted for the health care profession such as dentistry and nursing departments than male, in consensus with few researchers findings

[23,24]. The results are also supported by Kalra et al. [25]. They stated that females were more vulnerable to HIV infection biologically due to socio-cultural factors such as male domination, domestic violence, child labour, prostitution, and economic abuse, substantiated by national aids control organization report [26].

Regarding their education, study findings are allied with the research highlighting a low level of HIV awareness in urban and rural parts of India [27,28]. It assumes that the students from urban-area were enriched with media and awareness programs on HIV/AIDS than from rural areas. Therefore, the students from urban may have better awareness than the students from rural areas. On the contrary, Anish et al. [29] explained that in many developing countries

like Cameroon, HIV prevalence was higher in urban than in rural areas, contributing to increased prevalence. The study findings by Neeraj et al. [30] declared that only 28% of health care students had adequate knowledge regarding HIV/AIDS, and certain misconceptions were prevalent regarding the mode of transmission before the Sensitization Program. Half of the students in both groups had inadequate knowledge, supported by Neriman et al. [31]. They found that 83% of the health care students had insufficient knowledge before introducing AIDS education.

In our study, the statistically significant increase in the knowledge of health care students in the study group than in the control group Table 3 demonstrated the student's curiosity to learn more about HIV infection. Students could have collected more information about HIV/AIDS and increased the level of knowledge in the control group due to curiosity. The students might have received information through media, newspapers, and other books.

The Current study results in the knowledge aspect were consensus with ADEA Annual Session Abstract [32], which revealed that the training program on HIV for pre-doctoral dental students was effective with pre and post-session mean difference at 0.07. There was a 24% positive change in general knowledge about HIV infection. Present study results were substantiated by the study findings of Adeline Nyamathi [33], who proved that the total AIDS knowledge score among nurses was improved significantly after the unique training program on HIV ($t=9.20$, $p<0.001$) with the pre-test score mean of 12.8 ± 4.0 and a post-test score of 16.4 ± 4.15 . The study results were consistent with Eman, who revealed a significant improvement in the general knowledge score about HIV ($p<0.001$) among undergraduate and post-graduate nurses. Another study of intervention on HIV learning and consensus with Rose A. and Haverstock et al. [34], highlighted that the mean knowledge score of the

participants significantly increased by 0.48 from pre- to post-clinical rotation training on care of people infected with HIV among dental students and professionals.

Moreover, the mean difference between the study and control group Table 3 highlights MSP's influence on students' knowledge in a period. But the study results differed from the study done among nurses by Adeline et al. [35]. She demonstrated that the ANOVA statistics did not show any significance between the changes in any knowledge assessments over time. There was a statistically significant association Table 4 between the level of knowledge and the completed educational status of the students, the place of education among the study group at $p<0.0001$ level.

Conclusion

Based on the statistical evidence, it is demonstrated that the Maieutic Sensitization Program (MSP) was influential on knowledge regarding HIV/AIDS and PLHIV among health care students in the study group than the control group who did not receive the MSP. The health care people are the core members to prevent HIV infection, treat AIDS patients, and support people living with HIV for an extended period of life, which will lead to a significant negative strategy for the health care system itself.

This study findings evidence that structured multi-strategic teaching and training increase the knowledge level of the Health Care Students who will be the inevitable part of the future health care system. Knowledge has a definite influence on a change in the attitude of the students.

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Conflicts of Interest

The authors do not have any conflict of interest.

Ethics Approval

The ethical permission for the study was obtained from the Institutional Ethical Committee (Reg. No: MADC/IEC/003/2016).

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