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Effectiveness of planned health education on knowledge regarding HIV-TB co-infection among HIV patients

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Abstract:

BACKGROUND: In various parts of the world, mainly in developing nations, co-infection with HIV and tuberculosis (TB) is a significant public health concern. Commonly HIV-TB co-infection is related to a lack of knowledge on TB among people surviving with HIV. Hence, the particular research study is done to know the effectiveness of planned health education on HIV-TB co-infection among HIV patients.

MATERIALS AND METHODS: "Nonrandomized controlled trail design" (before and after trial) was used for the study. Written permission was granted from hospital authorities and written consent was obtained from HIV patients after explaining the study and its objectives. Data were collected from 80 HIV-positive patients using a purposive sampling technique. These patients were interviewed for their knowledge of HIV-TB co-infection, followed by health teaching was delivered. After 8 days of health education, a posttest was carried out using the same tool.

RESULTS: It was showed that pretest mean knowledge scores were 4.18 with a 1.97 standard deviation (SD), whereas posttest mean knowledge scores were 7.58 with a 2.12 SD. The obtained paired *t*-value was 10.31, which at the 0.05 level was statistically significant and revealed that health education was effective in improving HIV patients' knowledge scores.

CONCLUSION: The present research study concluded that the health teaching program was effective in improving knowledge scores regarding HIV-TB co-infection among HIV patients. Hence, there is an urgent need to educate HIV patients on the prevention of HIV-TB co-infection.

Keywords:

HIV, HIV-tuberculosis co-infection, knowledge, planned health education, tuberculosis

"Tuberculosis (TB)" is the most leading cause of death and morbidity in people who are HIV-infected patients.[1] As per the "World Health Organization," one-third of the 36.9 million HIV and AIDS patients also have TB infection around worldwide.[2,3] In India, there were 2100, 000 human beings are living with HIV among that, 80,000 people were with new HIV infection and 62,000 were AIDS-related deaths in 2016.[4]

Persons with HIV are more likely to get TB or contact TB again, or more likely to die with TB. Even after effective TB therapy, HIV-infected patients have a considerably increased chance of developing TB again. Hence, these persons need to be educated at the right time to prevent the recurrence of HIV-TB co-infection.[5]

A study conducted on "knowledge, attitude and practice regarding TB among HIV-infected patients at South East Region," India revealed that 31% had not heard of TB, 38% were receiving TB treatment or received it in the past and 70% of them were not aware spread of TB. Lack of awareness, female gender, and less exposure to television were associated with a lack of knowledge on

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TB. The study concluded that HIV-infected patients in Southeast India had less knowledge on TB and its spread. "Hence there is an urgent need conduct awareness programs among HIV patients in order to control TB in India."[6]

Hence, this study was carried out to determine the effectiveness of health education on knowledge regarding HIV-TB co-infection among HIV patients to prevent the occurrence of HIV-TB co-infection infection.

Materials and Methods

As per the study objectives, a questionnaire and planned teaching program on HIV-TB co-infection were made in English and converted to the local language as these patients were from local areas whose communication and understanding were in Kannada. This was validated by subject experts. Then, the Ethical Committee approved the research study, and a written consent was granted from the District Surgeon, SNR Hospital, Kolar.

The study was nonrandomized controlled trial design (before and after the trial). Based on the review of literature using the sample estimation formula the sample size was finalized. After obtaining an informed consent from the study subjects, through the purposive sampling technique, 80 HIV patients were included who fulfilled inclusion criteria such as HIV patients who were interested to engage in the research study, able to understand and respond in the Kannada language, not diagnosed as TB. Patients with HIV who were seriously ill were excluded. Then, these patients were interviewed individually for their knowledge on HIV/TB co-infection using a structured knowledge questionnaire, followed by an organized method of health education on meaning, incidence of HIV/TB co-infection, causes, changes in the body due to infection, investigation facilities, management, and preventative measures of HIV/TB co-infection delivered in groups using charts, flashcards, and PowerPoint presentations for 1 hour. After 8 days of health education, a posttest was conducted using the same questionnaires. The data were gathered from May 13th, 2019, to May 20th, 2019.

Results

Sociodemographic data of HIV patients

Table 1 shows sociodemographical variables of HIV patients.

Pretest knowledge on HIV-tuberculosis co-infection among HIV patients

With regard to overall knowledge score, HIV patients' overall knowledge scores were categorized into 3 categories: adequate knowledge (above 75%), moderately adequate knowledge (between 50% and 75%), and inadequate knowledge (below 50%).

The obtained pretest knowledge score on HIV-TB co-infection among HIV patients showed that the majority had inadequate knowledge and the same is presented in Figure 1.

Effectiveness of planned health education program between pre- and post-test

With regard to the effectiveness of the planned health education program on knowledge-related HIV-TB Co-infection, the posttest knowledge score (7.58) was more than the pretest knowledge score (4.18), which was significant at the 0.05 level. The results of the planned health education program were effective in increasing HIV patient knowledge which is shown in Table 2.

Association of knowledge score with selected sociodemographic variables

The association of knowledge score with selected sociodemographical variables is presented Table 3.

Table 1: Sociodemographical variables of HIV patients (*n*=80)

Variables	HIV patients (%)
Age (41–50 years)	35
Married	98.7
Urban	73.8
Illiterates	50
Self-employed	70
Monthly income (Rs. 9249–13,873/-)	73.8
Previous knowledge on HIV infection	0

Table 2: "Comparison of mean knowledge score between pre- and post-test" (*n*=80)

Variables	Mean	SD	df	Paired (*t*)	*P*
Pretest knowledge	4.18	1.97	79	10.31 SS	0.00
Posttest knowledge	7.58	2.12			

SS=Statistically significant at 0.05 level, (*t*=1.98). SD=Standard deviation

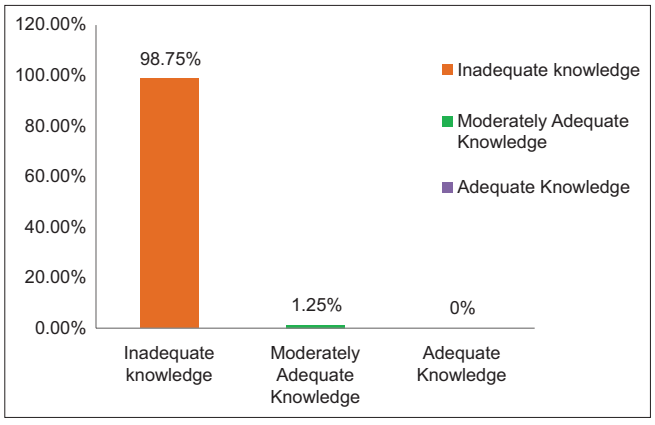

Figure 1: Overall pretest knowledge score of HIV patients

Table 3: Association of knowledge score with selected sociodemographic variables

Variables	Posttest knowledge		χ^2	Df	*P*	Inference
	Below median ≤7.5	Above median >7.5				
Age						
≤40	10	16	4.95	1	0.02*	SS
>40	35	19				
Gender						
Male	14	14	0.68	1	0.40*	NS
Female	31	21				
Marital status						
Unmarried	-	1	1.30	1	0.25*	NS
Married	45	34				
Residence						
Rural	39	20	8.86	1	0.002*	SS
Urban	6	15				
Education						
Literate	15	25	11.4	1	0.0007*	SS
Illiterate	30	10				
Occupation						
Private and government	12	12	0.54	1	0.46*	NS
Self-employed	33	23				
Income						
<5547	12	6	1.02	1	0.31*	NS
>5548	33	29				

SS=Statistically significant at *P<0.05 level, NS=Not significant

There was a significant association of post-test knowledge score among HIV patients with selected socio-demographic factors for age (χ^2 = 4.95), residence (χ^2 = 8.86) and education (χ^2 = 11.4) at p<0.05 level, except gender (χ^2=0.68), occupation (χ^2=0.54), marital status (χ^2=1.30), annual income (χ^2=1.02) and previous exposure to knowledge on HIV-TB at P<0.05 level. Hence it is evident that the knowledge score is higher among above 45 years of age group, Literates and who are residing in urban areas.

Discussion

This study showed that 35% of HIV patients were among the age group of 41–50 years, residing in urban area, laborers, low educational status, and belonging to poor socioeconomic background. This indicates that, the productive age group people are more vulnerable. This was supported by the study title on "live experiences on quality of life among HIV-positive patients."[7]

With regard to overall knowledge score, HIV patients were able to acquire more knowledge score (3.4) in posttest (mean 7.58) when compared to pretest score (mean 4.18) this is because researcher used one-to-one sharing information and educating the patients on HIV-TB co-infection, which helped them to take steps to prevent the occurrence of HIV-TB co-infection in future. This present study was supported by the study on the effectiveness of health education intervention in enhancing knowledge, attitude, and behaviors regarding TB among HIV patients in General Hospital Minna, Nigeria – A Randomized Control Trial.[8]

Conclusion

The intention of this research study was an attempt to know the effectiveness of a planned health education program on HIV-TB co-infection among HIV patients admitted to the SNR District Hospital in Kolar. The findings showed that the health education program is successful in enhancing the knowledge scores among HIV patients.

Acknowledgment

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Nil.

Conflicts of interest

There are no conflicts of interest.

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