

Effectiveness Of Self-Instructional Module On Knowledge Of Prevention Of Maternal To Child Transmission (Pmtct) Of Hiv Among Staff Nurses In Selected Hospitals

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ABSTRACT - Human immunodeficiency virus (HIV) is a virus that weakens the immune system of an individual exposing the body to several opportunistic infections. Although the main mode of HIV transmission is through unprotected sexual intercourse, a significant number of vertical transmission also occurs from mother to child. Mother to child transmission (MTCT) is when HIV is transmitted from the mother to the child during pregnancy, childbirth, or breastfeeding. The research design adopted for this study was a pre-experimental one group pre-test post-test design and the research approach was an evaluative approach. The sample size consists of 60 Staff Nurses from selected hospitals. . The overall mean knowledge scores of respondents were found to be 14.73 (49.1%) with standard deviation 2.840 indicates that staff nurses had moderate knowledge regarding prevention of maternal to child transmission of HIV (PMTCT) in the pre test.. The overall post test knowledge scores of respondents were found to be 22.95 (76.5%) with standard deviation 3.552 shows improvement in the knowledge of staff nurses regarding the prevention of maternal to child transmission of HIV (PMTCT). This study has proved that the Staff Nurses have a remarkable increase in the Knowledge regarding Prevention of Maternal to child Transmission of HIV when compared to their previous Knowledge, prior to the implementation of the SIM. Thus, for the future outlook there is a need to improve their knowledge by conducting the teaching programmes and demonstration program on this topic.

KEYWORDS - Human immunodeficiency virus (HIV), Mother to child transmission (MTCT), Self-Instructional Module, Effectiveness & Staff Nurses

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INTRODUCTION - Human immunodeficiency virus (HIV) is a virus that weakens the immune system of an individual exposing the body to several opportunistic infections. Although the main mode of HIV transmission is through unprotected sexual intercourse, a significant number of vertical transmission also occurs from mother to child. Mother to child transmission (MTCT) is when HIV is transmitted from the mother to the child during pregnancy, childbirth, or breastfeeding. The prevention of Mother-To—Child-Transmission (MTCT) of HIV is dependent on the knowledge of the mothers of the timing of possible transmission periods. However, knowledge of women on transmission periods of HIV from mother to child varies from country to country and has not been measured in Ethiopia at community level. Studies conducted in southern and northwest Ethiopia reported that gravidity, parity, antenatal care (ANC) visits, and male partner discussion are factors associated with good knowledge of mothers on MTCT of HIV. Maternal knowledge on MTCT is a corner stone of effective implementation of the World Health Organization (WHO) recommendation of the four-pronged approach to reduce mother-to-child transmission of HIV. In India mother to child is by far the most significant route of

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transmission of HIV infection in children below 15 years. Without interventions the risks of transmission from infected mother to her child ranges from 15-25% in developed countries ,25-45% in developing countries. In India it is estimated that 202000 children are infected by HIV/AIDS. Approximately 30% of HIV infected pregnant women will transmit HIV to their babies. Based on HIV prevalence and pregnancy rate 56,700 new HIV infected babies will be born every year in India.

METHODOLOGY - The research design adopted for this study was a pre-experimental one group pre-test post-test design and the research approach was an evaluative approach. The sample size consists of 60 Staff Nurses from selected hospitals. The tool used for the data collection was structured knowledge questionnaire. It consist of socio-demographic profile of the subjects, of 30 objective types of multiple choice questions about Knowledge regarding Prevention of Maternal to child Transmission of HIV & SIM on Prevention of Maternal to child Transmission of HIV. The obtained data was analyzed and interpreted on the basis of the objectives of the study. The collected data was summarized and tabulated by utilizing descriptive

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statistics (percentage, mean and standard deviation) and inferential statistics (student independent ‘t’-test and ‘Chi- square’ test).

RESULT – The Findings of data has been finalized and organized in accordance with the plan for data analysis. These are presented under the following sections.

Section-I: Demographic characteristics of staff nurses.

Socio demographic variables data showed that, In the age 33.3% belongs to the age group of 20-30 years, 53.3% belonged to the age group of 31-40 years and remaining 25% of the subjects were in the age group of 41-50 years. 26.7% of the subjects were males and remaining 73.3% were females. Majority 60% of the subjects belong to Hindu religion, 20% were Muslims and remaining 20% were Christians. 66.7% of the subjects has

completed diploma in general nursing, 20% has completed post basic B.Sc Nursing and remaining 13.3% of them had studied Basic B.Sc Nursing. 13.3% of the samples had monthly income less than Rs. 15000, 40% had income between Rs. 15001-25000 and remaining 46.7% had income more than Rs. 25001. 26.7% of the subjects had less than 5 years of experience, 26.7% had 5-10 years of experience, 26.7% had 11-15 years of experience and 20% had More than 15 years of experience in clinical setting. Majority 60% of the staff nurses had inadequate knowledge and 40% had moderate knowledge in the pretest. After administration of the self instructional module 61.7% of the subjects had adequate knowledge, 38.3% had moderate knowledge regarding prevention of maternal to child transmission of HIV (PMTCT) in the post test.

Section-II: Knowledge level of staff nurses regarding prevention of maternal to child transmission of HIV (PMTCT) through pre and post test

Table 1: Pretest and post test knowledge level of the staff nurses.

N = 60

| Knowledge level | Pre test | | Post test | |
|-------------------------|-----------|------|-----------|------|
| | Frequency | % | Frequency | % |
| a. Inadequate knowledge | 36 | 60.0 | 0 | 0 |
| b. Moderate knowledge | 24 | 40.0 | 23 | 38.3 |
| c. Adequate knowledge | 0 | 0 | 37 | 61.7 |

Table 1 depicts that majority 60% of the staff nurses had inadequate knowledge and 40% had moderate knowledge in the pretest. After administration of the self instructional module 61.7% of the subjects had adequate knowledge, 38.3% had moderate knowledge regarding prevention of maternal to child transmission of HIV (PMTCT) in the post test.

Table – 2: Overall and area wise analysis of pretest knowledge scores of staff nurses N = 60

| Sl. No. | Knowledge aspects | No. of Items | Max Score | Mean | Mean % | SD |
|---------|---|--------------|-----------|------|--------|-------|
| 1 | General information | 10 | 10 | 5.47 | 54.7 | 1.157 |
| 2 | Routes of transmission | 4 | 4 | 2.93 | 73.25 | 0.861 |
| 3 | Symptoms, diagnosis and prevention of HIV | 6 | 6 | 2.27 | 37.83 | 1.351 |

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|-------------------|---|----|----|-------|------|-------|
| 4 | Mother to child Transmission and its prevention | 10 | 10 | 4.07 | 40.7 | 1.351 |
| Overall Knowledge | | 30 | 30 | 14.73 | 49.1 | 2.840 |

Table 2 depicts that the maximum mean percentage obtained by the subjects in pretest is in the aspect of routes of transmission (73.25), followed by Knowledge regarding general information (54.7%), mother to child transmission and its prevention (40.7%) and least mean knowledge score (37.83%) found in the aspect of

symptoms, diagnosis and prevention of HIV. The overall mean knowledge scores of respondents were found to be 14.73 (49.1%) with standard deviation 2.840 indicates that staff nurses had moderate knowledge regarding prevention of maternal to child transmission of HIV (PMTCT) in the pre test.

Table – 3: Overall and area wise analysis of post test knowledge scores of staff nurses N = 60

| Sl. No. | Knowledge aspects | No. of Items | Max Score | Mean | Mean % | SD |
|-------------------|---|--------------|-----------|-------|--------|-------|
| 1 | General information | 10 | 10 | 7.9 | 79 | 1.003 |
| 2 | Routes of transmission | 4 | 4 | 3.58 | 89.5 | 0.619 |
| 3 | Symptoms, diagnosis and prevention of HIV | 6 | 6 | 4.12 | 68.66 | 1.010 |
| 4 | Mother to child Transmission and its prevention | 10 | 10 | 7.35 | 73.5 | 1.176 |
| Overall Knowledge | | 30 | 30 | 22.95 | 76.5 | 2.696 |

Table 3 depicts that the maximum mean percentage obtained by the subjects in post test is in the aspect of Knowledge regarding routes of transmission (89.5%), followed by general information (79%), mother to child transmission and its prevention (73.5%) and least mean knowledge score (68.66%) found in the aspect of

symptoms, diagnosis and prevention of HIV. The overall knowledge scores of respondents were found to be 22.95 (76.5%) with standard deviation 3.552 shows improvement in the knowledge of staff nurses regarding the prevention of maternal to child transmission of HIV (PMTCT).

Section–III: Comparison of pre test and post test knowledge regarding prevention of maternal to child transmission of HIV (PMTCT)

Table 4: Overall and area-wise comparison of knowledge scores of staff nurses N = 60

| Sl. No. | Knowledge aspects | Pre test | | Post test | | Mean Enhancement | t Value | Df | Inference |
|---------|-------------------|----------|-----|-----------|-----|------------------|---------|----|-----------|
| | | Mean | S D | Mean | S D | | | | |

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|----------------|---|-------|-------|-------|-------|------|--------|----|---|
| 1 | General information | 5.47 | 1.157 | 7.9 | 1.003 | 2.43 | 12.662 | 59 | S |
| 2 | Routes of transmission | 2.93 | 0.861 | 3.58 | 0.619 | 0.65 | 4.925 | 59 | S |
| 3 | Symptoms, diagnosis and prevention of HIV | 2.27 | 1.351 | 4.12 | 1.010 | 1.85 | 9.314 | 59 | S |
| 4 | Mother to child Transmission and its prevention | 4.07 | 1.351 | 7.35 | 1.176 | 3.28 | 13.475 | 59 | S |
| Overall | | 14.73 | 2.840 | 22.95 | 2.696 | 8.22 | 17.525 | 59 | S |

From the table 4 it is evident that the mean enhancement of the knowledge score was 8.22 and the “t” value 17.525 is greater than the table value both at 0.01 level of significance. Therefore, "t" value is found to be

significant. Hence it is inferred that there is significant difference between the pre test and post test knowledge level of staff nurses regarding the prevention of maternal to child transmission of HIV (PMTCT).

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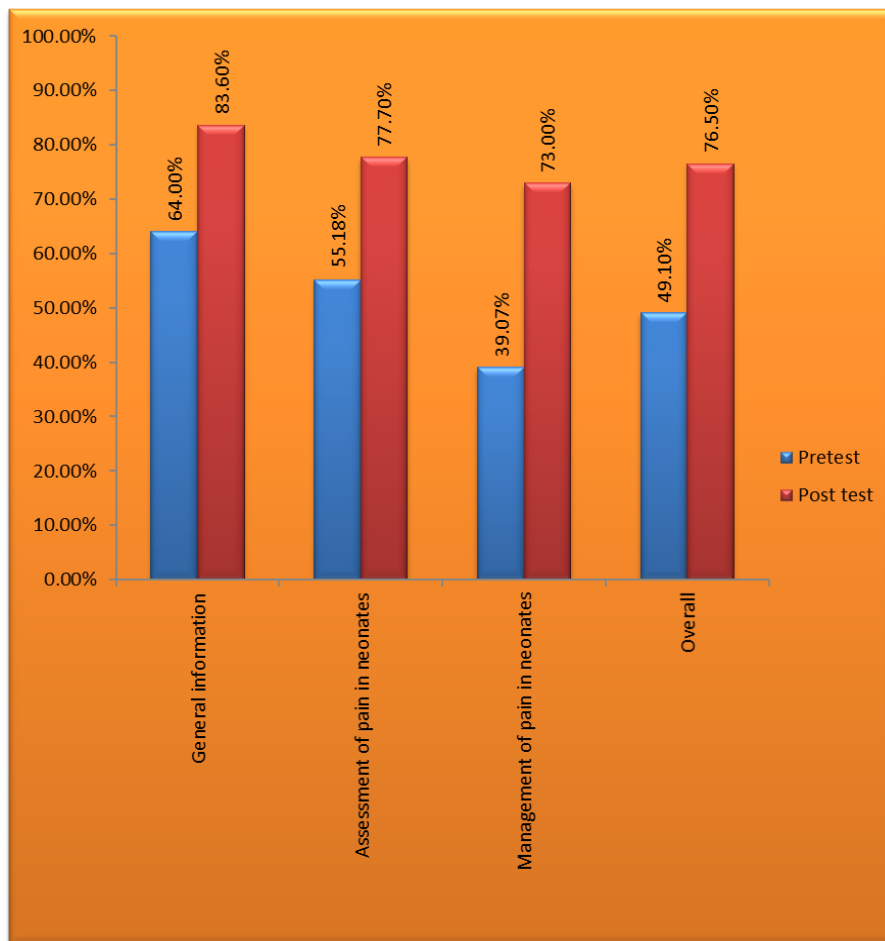


Figure 1: Comparison of mean percentage of pre-test and post-test scores

Section-IV: Association of the pre test knowledge scores with the demographic variables of staff nurses

Table 5: Association between pre test knowledge of staff nurses and the selected demographic variables

N = 60

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| Variables | Below Median | Median and above | Chi square | Df | P value (0.05) | Inference |
|-------------------------------|--------------|------------------|------------|----|----------------|-----------|
| 1. Age in years | | | | | | |
| a. 20-30 years | 8 | 12 | 10.580 | 2 | 0.005 | S |
| b. 31-40 years | 20 | 12 | | | | |
| c. 41-50 years | 0 | 8 | | | | |
| 2. Gender | | | | | | |
| a. Male | 4 | 12 | 4.115 | 1 | 0.042 | S |
| b. Female | 24 | 20 | | | | |
| 3. Religion | | | | | | |
| a. Hindu | 8 | 28 | 24.286 | 2 | 0.000 | S |
| b. Muslim | 8 | 4 | | | | |
| c. Christian | 12 | 0 | | | | |
| 4. Education | | | | | | |
| a. Diploma in General Nursing | 12 | 28 | 15.536 | 2 | 0.000 | S |
| b. PC B.Sc Nursing | 8 | 4 | | | | |
| c. B.Sc Nursing | 8 | 0 | | | | |
| 5. Family Income | | | | | | |
| a. Less than Rs. 15000 | 0 | 8 | 11.020 | 2 | 0.004 | S |
| b. Rs. 15001-25000 | 16 | 8 | | | | |
| c. More than Rs. 25001 | 12 | 16 | | | | |
| 6. Experience | | | | | | |
| a. Less than 5 years | 8 | 8 | | | | |

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| | | | | | | |
|-----------------------|----|----|-------|---|-------|---|
| b. 5-10 years | 12 | 4 | 9.107 | 3 | 0.028 | S |
| c. 11-15 years | 4 | 12 | | | | |
| d. More than 15 years | 4 | 8 | | | | |

Table 5 shows X² value computed between the knowledge level of staff nurses and selected demographic variables. Variables such as age, gender, religion, educational qualification, family income and experience were significant at 0.05 level of significance. Thus it is inferred that there is significant association between the knowledge of staff nurses regarding prevention of maternal to child transmission of HIV (PMTCT) and selected demographic variables.

DISCUSSION - Objective 1:- To determine the pre-test knowledge of staff nurses regarding PMTCT.

Based on the objective of the study, the findings of the Pre-Test knowledge score of the Staff Nurses regarding Prevention of Maternal to child Transmission of HIV shows that they were able to answer the questions to some extent. The maximum mean percentage obtained by the subjects in pretest is in the aspect of routes of transmission (73.25), followed by Knowledge regarding general information (54.7%), mother to child transmission and its prevention (40.7%) and least mean knowledge score (37.83%) found in the aspect of symptoms, diagnosis and prevention of HIV. The overall mean knowledge scores of respondents were found to be 14.73 (49.1%) with standard deviation 2.840 indicates that staff nurses had moderate knowledge regarding prevention of maternal to child transmission of HIV (PMTCT) in the pre test. The above findings of the first objective is supported by a study conducted to assess the Knowledge about mother to child transmission of HIV/AIDS and its prevention and associated factors among reproductive-age women in Sub-Saharan Africa. Researchers appended 33 countries' DHS data for the analysis. A total weighted sample of 350,888 reproductive-age women was used. Due to the hierarchical nature of the DHS data, we conducted a multilevel analysis. Finally, the adjusted odds ratio with its 95% confidence interval was reported, and variables with p-value ≤ 0.05 were considered as significant predictors of knowledge of MTCT of HIV/AIDS and its prevention. Results revealed that 56.21% (95% CI: 56.05–56.38) of respondents had correct knowledge about MTCT of HIV/AIDS and its prevention among reproductive-age women in SSA. In the multilevel logistic regression analysis: being in the older age group, better education level, being from a rich household, having mass media exposure, having parity of one and above were associated with higher odds of knowledge about MTCT of HIV/AIDS and its prevention. However,

being perceiving distance from the health facility as a big problem was associated with lower odds of knowledge about MTCT of HIV/AIDS and its prevention. This study concludes that Knowledge about MTCT of HIV/AIDS and its prevention among reproductive-age women in SSA was low. Therefore, it is better to consider the high-risk groups during the intervention to increase awareness about this essential public health issue and to tackle its devastating outcome.

Objective 2:- To determine the post-test knowledge of staff nurses regarding PMTCT.

Based on the above objective of the study the findings of the post-test Knowledge score of the Staff Nurses regarding Prevention of Maternal to child Transmission of HIV after the administration of SIM shows that the maximum mean percentage obtained by the subjects in post test is in the aspect of Knowledge regarding routes of transmission (89.5%), followed by general information (79%), mother to child transmission and its prevention (73.5%) and least mean knowledge score (68.66%) found in the aspect of symptoms, diagnosis and prevention of HIV. The overall knowledge scores of respondents were found to be 22.95 (76.5%) with standard deviation 3.552 shows improvement in the knowledge of staff nurses regarding the prevention of maternal to child transmission of HIV (PMTCT). The above findings of the third objective was supported by a study conducted to assess the effectiveness of structured teaching programme on knowledge regarding role of integrated counseling and testing center (ICTC) in prevention of parent to child transmission (PPTCT) of HIV among junior health assistant female students in selected training centers at Bengaluru. One group pre-test and post-test without a control group using pre-experimental design was used, with purposive sampling technique. Information was collected from 50 junior health assistant female students using structured knowledge questionnaire. SIM was implemented and post-test was conducted after 7 days using same questionnaire. Results showed that the overall pretest knowledge scores of role of ICTC in PPTCT of HIV was found to be 48.5% and the overall post test knowledge score was found to 86.0% and enhancement in the mean percentage knowledge score was found to be significant at 5% level for all the aspects under study. There was a significant association between posttest knowledge scores and selected demographic variables with age (x² 5.11), marital status (x² 5.94), education (x² 5.09), type

of training center (χ^2 5.09), father's education (χ^2 6.27) and mother's education (χ^2 6.63). Interpretation & Conclusion: Overall findings showed that there is knowledge deficit among junior health assistant female students regarding Role of ICTC in PPTCT of HIV and SIM was effective in improving their knowledge.

Objective 3: To find out the effectiveness of self-instructional module in terms of gain in knowledge.

The finding of the third objective shows that the mean enhancement of the knowledge score was 8.22 and the "t" value 17.525 is greater than the table value both at 0.01 level of significance. Therefore, "t" value is found to be significant. Hence it is inferred that there is significant difference between the pre test and post test knowledge level of staff nurses regarding the prevention of maternal to child transmission of HIV (PMTCT). The above findings of the third objective was supported by a study conducted to evaluate the effectiveness of a structured teaching programme on transmission and prevention of HIV/acquired immune deficiency syndrome (HIV/AIDS) among adolescent girls. An evaluative research approach was adopted, in which a pre experimental, one group pre- and post-test research design was used to evaluate the effectiveness of the structured teaching programme on transmission and prevention of HIV/AIDS among adolescent girls studying at Lowry Memorial High School, Bengaluru. A self-administered structured questionnaire was used for data collection. Results revealed that the mean percentage difference in the pre- and post-test knowledge scores was statistically significant at 5% level ($P < 0.05$). The overall mean post-test knowledge score of adolescent girls on transmission and prevention of HIV/AIDS was 88.83%. It is apparently higher compared to the pretest knowledge score, which was 67.67% with enhancement of 21.16%. This implies that the structured teaching programme was effective in gaining knowledge of

adolescent girls regarding transmission and prevention of HIV/AIDS. This study concludes that structured teaching programme enhanced the knowledge of the adolescent girls on transmission and prevention of HIV/AIDS. We, therefore, recommend that structured teaching programmes on transmission and prevention of HIV/AIDS should be encouraged among adolescents and youths to reduce the spread of HIV infection.

Objective 4: To find out the association between knowledge scores and selected demographic variables. The findings of the fourth objective show that the Variables such as age, gender, religion, educational qualification, family income and experience were significant at 0.05 level of significance. Thus, it is inferred that there is significant association between the knowledge of staff nurses regarding prevention of maternal to child transmission of HIV (PMTCT) and selected demographic variables. The above findings of the fourth objective was supported by a study conducted

to assess the effectiveness of structured teaching programme on knowledge regarding role of integrated counseling and testing center (ICTC) in prevention of parent to child transmission (PPTCT) of HIV among junior health assistant female students in selected training centers at Bengaluru. One group pre-test and post-test without a control group using pre-experimental design was used, with purposive sampling technique. Information was collected from 50 junior health assistant female students using structured knowledge questionnaire. SIM was implemented and post-test was conducted after 7 days using same questionnaire. Results showed that the overall pretest knowledge scores of role of ICTC in PPTCT of HIV was found to be 48.5% and the overall post test knowledge score was found to 86.0% and enhancement in the mean percentage knowledge score was found to be significant at 5% level for all the aspects under study. There was a significant association between posttest knowledge scores and selected demographic variables with age (χ^2 5.11), marital status (χ^2 5.94), education (χ^2 5.09), type of training center (χ^2 5.09), father's education (χ^2 6.27) and mother's education (χ^2 6.63). Interpretation & Conclusion: Overall findings showed that there is knowledge deficit among junior health assistant female students regarding Role of ICTC in PPTCT of HIV and SIM was effective in improving their knowledge.

CONCLUSION - The findings of this study support the need for Staff Nurses to understand regarding the various aspects of Prevention of Maternal to child Transmission of HIV to spread this knowledge to other staff nurses, student nurses, family, colleagues, clients, public and community at large. This study has proved that the Staff Nurses have a remarkable increase in the Knowledge regarding Prevention of Maternal to child Transmission of HIV when compared to their previous Knowledge, prior to the implementation of the SIM. Thus, for the future outlook there is a need to improve their knowledge by conducting the teaching programmes and demonstration program on this topic .

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