

# **Develop and Evaluate a Distance Education Programme to improve Knowledge, Attitudes and Practices of ICU Nurses on Infection Control**

by

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## DECLARATION BY THE CANDIDATE

The work described in this thesis was carried out by me under the supervision of Professor M.T.M. Jiffry (Senior Professor of Physiology, Faculty of Medical Sciences, University of Sri Jayewardenepura) and Professor Sirimali Fernando (Professor of Microbiology, Faculty of Medical Sciences, University of Sri Jayewardenepura) and a report on this has not been submitted in whole or any part to any university or any other institution for another Degree/Diploma.

  
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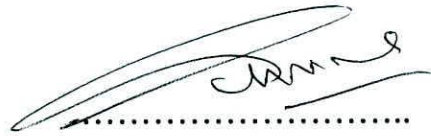
## DECLARATION OF THE SUPERVISORS

we certify that the above statement made by the candidate is true and that this thesis is suitable for submission to the University for the purpose of evaluation.



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## ABBREVIATIONS

|          |   |
|----------|---|
| CDC      | Centers for Disease Control and Prevention                      |
| CCU      | Coronary Care Unit  |
| HAI      | Hospital Acquired Infections                                    |
| HCAI     | Healthcare Associated Infection                                 |
| HIV/AIDS | Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome |
| ICC      | Infection Control Committee                                     |
| ICU      | Intensive Care Unit   |
| ICN      | Infection Control Nurse   |
| IV       | Intravenous   |
| JBI      | Joanna Briggs Institute of Nursing & Midwifery                  |
| MRSA     | Methicillin Resistant Staphylococcus aureus                     |
| NIHS     | National Institute of Health Sciences                           |
| NMC      | Nursing and Midwifery Council, United Kingdom                   |
| NHSL     | National Hospital of Sri Lanka                                  |
| PBS      | Post Basic School of Nursing                                    |
| PPE      | Personal Protective Equipment                                   |
| RN       | Registered Nurse  |
| OSCE     | Objective Structured Practical Examination                      |
| ODL      | Open and Distance Learning                                      |

|       |  |
|-------|--|
| OPD   | Out Patient Department                     |
| OT    | Operating Theatre                          |
| PPE   | Personal Protective Equipment              |
| TPN   | Total Parenteral Nutrition                 |
| UBBFP | Universal Blood and Body Fluid Precautions |
| UP    | Universal precautions                      |
| UTI   | Urinary Tract Infection.                   |
| VAP   | Ventilator Associated Pneumonia            |

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**DEVELOP AND EVALUATE A DISTANCE EDUCATION  
PROGRAMME TO IMPROVE KNOWLEDGE, ATTITUDES AND  
PRACTICES OF ICU NURSES ON INFECTION CONTROL.**

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**ABSTRACT**

The study was aimed at developing a distance education programme and evaluating its effectiveness in improving knowledge, attitudes and practices of ICU nurses with regard to infection control. The objectives were (1) to assess the existing knowledge, attitudes and practices of infection control among ICU nurses and (2) to develop and implement a distance education programme on infection control for ICU nurses (3) to determine to what extent the distance education programme will be effective to improve knowledge, attitudes and practices of ICU nurses related to infection control and (4) to assess the usefulness of the prepared distance education programme by means of student feedback.

A survey among 239 ICU nurses from 16 hospitals identified deficiencies of knowledge, attitudes and self – reported practices on infection control using a semi – structured questionnaire. A distance education programme consisting of 05 modules and 03 videos was developed. A pre – test post-test design was used to evaluate the effectiveness of the programme. A sample of 208 ICU nurses was recruited by stratifying nurses and randomly allocating 21 state and private hospitals in the Western Province of Sri Lanka to intervention (N=83) and control groups (N=125). The distance education programme was delivered for 07 months for the intervention

group. Knowledge of the core content areas, attitudes and practices related to infection control were assessed in both groups before commencement and after two weeks of completion of the programme through a pre and post test. The practices were assessed through direct observation using a check list. Feedback from the intervention group was obtained through self - reported questionnaires and qualitative data through focus group interviews. Pre and post test data from the intervention group (N=76) and control group (N=114) were analyzed.

A significant overall improvement of knowledge (intervention group mean =13.8 and control group mean =4.6), attitudes (intervention group mean =13.1 and control group mean = 4.6) and practices (intervention group mean =15.1 and control group mean =4.6) resulted which were significant at  $p=0.000$  level. Overall knowledge and practices improved significantly in the control group as well (pre test mean for knowledge=47.52, post test mean =51.66, pre test mean for practice=68.04, post test mean = 72.65). There was no significant improvement in attitudes between pre and post tests in the control group ( $p= 0.047$ ). The intervention group did not participate in any other related training during the period the distance programme was conducted.

The participants have expressed the usefulness of the course in updating and gaining new knowledge which could be readily used, identifying and correcting their own lapses. Feed back of participants on the course material were highly positive (98% -100%). The module on preventing specific infections in ICU was highly useful while the presentation and content of the module on sterilization and disinfection was less interesting compared to the other modules. The difficulties in adapting to the distance education method include organizing time with work and family commitments. Concerns related to enhancing motivation continuously, support from the management of the hospital, strategies to increase the availability of a facilitator/ tutor also were expressed. The distance education programme was found to be effective in providing continuing education for ICU nurses who intend to pursue training to improve their knowledge, attitudes and practices adopted for patient care.