# Awareness of Staff Nurses on Prevention and Control of Nosocomial Infection at Tangail, Bangladesh

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**Abstract**

**Background:** Nursing is a profession, art and since that involves interaction with the client equipped with a touch of care. Unlike the other jobs, it opts to give care to those who are sick with a sense of desire to promote wellness and provide treatment. Healthcare-related infections have a considerable impact on the morbidity and mortality rates in the intra- and extra-hospital environment, resulting in an increase in the time spent and costs of hospitalization, and are thus recognized as a serious world public health problem. For example, Nosocomial infection is one of the leading causes of death.

**Objectives:** To assess the awareness level of staff nurses on prevention and control of nosocomial infection.

**Mehodology:**This was a cross sectional study and Study place was Kumudini Hospital, Mirzapur, Tangail,District.The sample size was 110.All interview questionnaires were checked for completeness and correctness before data entry. Data were checked, cleaned and edited properly before analysis. Data were entered into statistical software SPSS windows version 19 programs.

**Result:** Among the all participants of 110, the study reveals that, 85(77%) participants was take the training on prevention and control of nosocomial infection and 25(23%) participants was not take the training on prevention and control of nosocomial infection. In this study, found that the distribution the most common cause of infection, 51(46%) participants had caused by staphylococcus aureus, 38(35%) participants had caused by streptococcus, 15(14%) participants had caused by Escherichia coli and 6(5%) participants had caused by Klebsiella.

**Conclusion:** Infectious diseases cause serious disability both male and female. The study revealed that out of 110 respondents the staff nurses of Tangail District in Kumudini Hospital within the age group 18-30 years. Here 79% were female respondents and most of them were literate person. Most of them 86.4% were poor awareness of prevention and control of nosocomial infection. So, preventive program could be targeted among staff nurses to prevent infection.

**Keyword:** Awareness, Staff Nurses, Prevention, Causes, Control, Nosocomial Infection.

**Background**

Nursing is a profession, art and since that involves interaction with the client equipped with a touch of care. Unlike the other jobs, it opts to give care to those who are sick with a sense of desire to promote

wellness and provide treatment. As promoters of health, nurses teach, give care, and treat patients who are physically, emotionally, mentally and socially sick and ill. It is a profession that offers the individual the chance to touch other people's lives and be sensitive to them. Nurses are the heart and hands of the team and they are sensitive to the needs of the client that enables them to have a good nurse-client relationship by being more empathetic as well as rendering services in a hands-on-manner. Healthcare-related infections have a considerable impact on the morbidity and mortality rates in the intra- and extra-hospital environment, resulting in an increase in the time spent and costs of hospitalization, and are thus recognized as a serious world public health problem. For example, Nosocomial infection is one of the leading causes of death (**Salem, O.A., 2019**)

The record review showed that there was approximately 6.7% nosocomial infections rate among hospitalized patients. Barriers to IPPC compliance among the health care workers (HCWs) included frequent shortage of water, inadequate updates on IPPC through continuing professional education and inactive IPPC committee. (**Otieno-Ayayo, and Nyangena, E., 2015**).Prevention of health care-associated has become a major focused of quality and patient safety programs and rates are increasingly used by payers, consumers, and quality improvement organizations to rank a hospital's quality effort. (**Talbot. and Fishman, N.O., 2013**).

## Literature Review

Nosocomial infections (NIs), also known as a hospital-acquired infection, are defined as infections which are acquired after 48 h of patient admission. Such infections are neither present nor incubating prior to a patient's admission to a given hospital. NIs represent a universally serious health problem and a major concern for the safety of both patients and the health care providers Although the incidence rate for nosocomial infection vary from country to country, at any given time, almost seven patients from developed countries to ten patients from developing countries out of each 100 patients admitted to hospitals gain at least one kind of nosocomial infections (**Alrubaiee, G and H.O., 2017**). Hospital-based personnel and personnel who provide healthcare outside hospital may acquire infections from or transmit infections to patients, other personnel, household members, or other community contacts.( **Amoran, O.E. and Onwube., 2013**).

**Methods:** The study was conducted by cross sectional study design that was undertaken to Awareness of Staff Nurses on Prevention and Control of Nosocomial Infection with 110 samples included with the inclusion criteria. Data were collected by face to face interviewed method.

## Result and Discussion:

This study was conducted of hospital based selected Awareness of the Staff Nurses on Prevention and Control of Nosocomial Infection. In total 110 samples were selected purposively according to inclusion, exclusion criteria. They were interviewed with a specific pre-designed and pre-tested questionnaire and some information were gathered by document review. Collected data were cleaned edited and analysed with the help of software SPSS windows version 19.

1. **Age range:** The study is conducted on 110 participants, Among the 110 participants, 12(11%) participants were range of (18-20) years, 86(78%) participants were range of (21-25) years and 12 (11%) participants were range of (25-30).
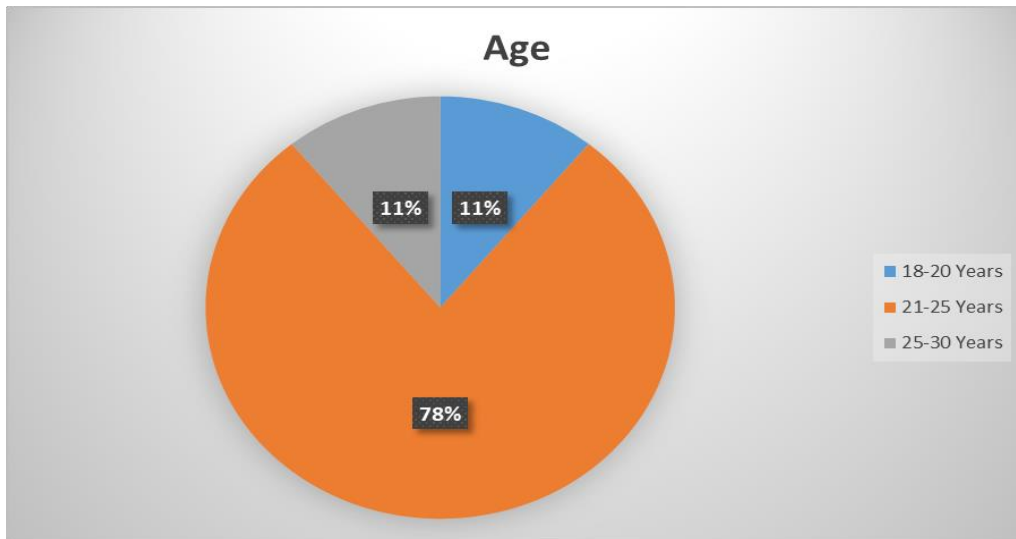


**Figure-1: Age ranges of the participants**

**2. General Educational Qualification:** Among the 110 participants, 39(35%) participants were SSC and 71(65%) participants were HSC.
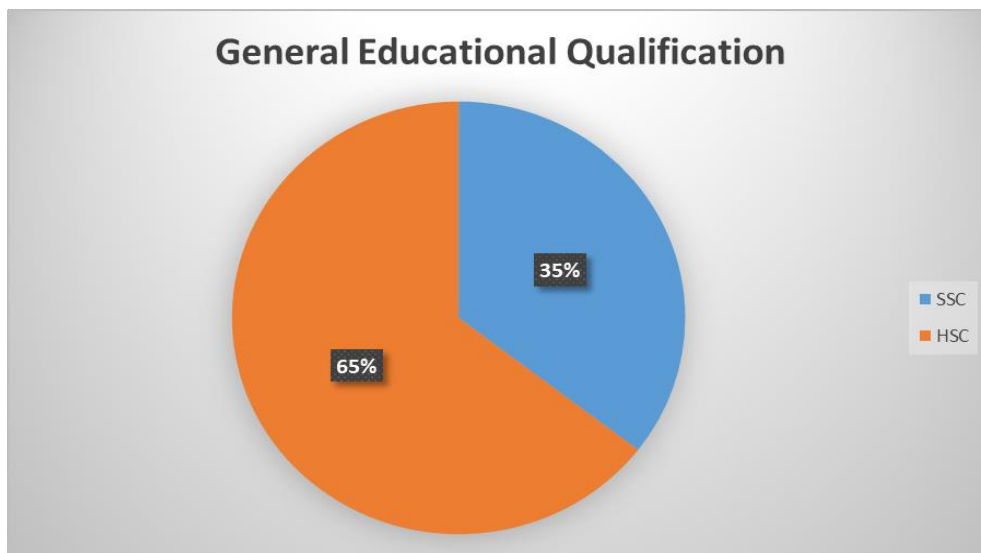


**Figure-2: General Educational Qualification of the participants**

2. **Professional Educational Qualification:** Among the 110 participants, 56(51%) participants were Diploma in Nursing, 39(35%) participants were B.Sc. in Nursing, and 15(14%) participants were others.
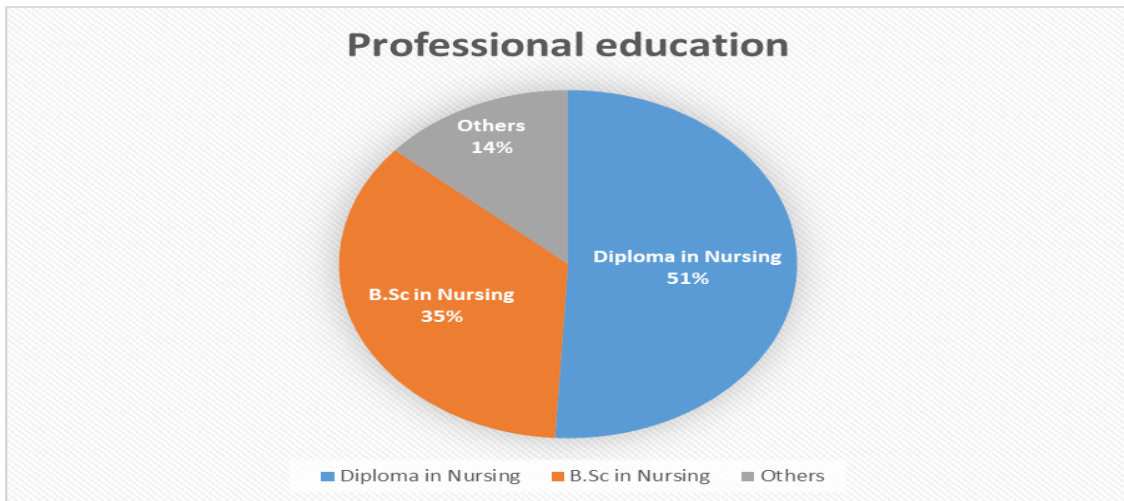


**Figure-3: Professional Educational Qualification of the participants**

**4. Duration of service:** Among the 110 participants, One year duration of service were 20(18%) of the participants, Two year duration of service were 65(59%) of the participants, Three year duration of service were 15(14%) of the participants and Four year duration of service were 10(09%) of the participants.
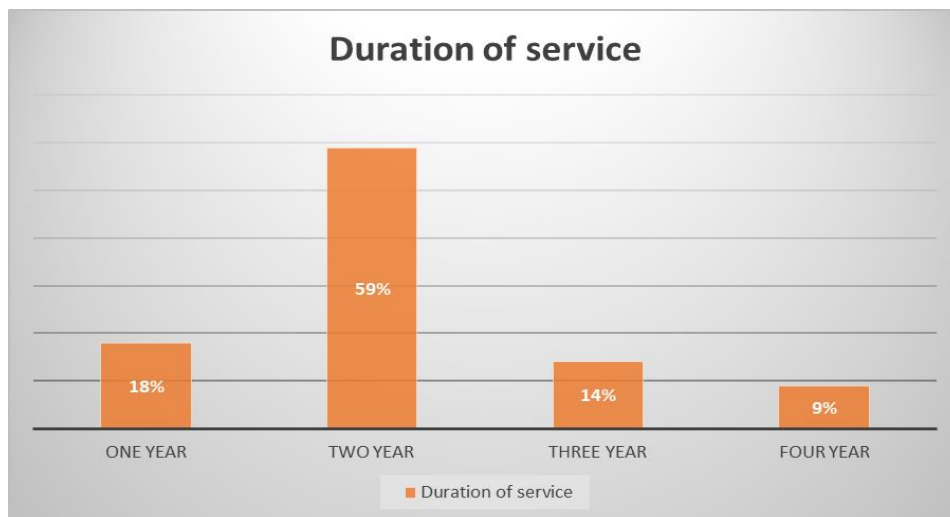


**Figure-4: Duration of service of the participants**

**5. Training on prevention and control of nosocomial infection:** Among the 110 participants, 85(77%) participants was take the training on prevention and control of nosocomial infection and 25(23%) participants was not take the training on prevention and control of nosocomial infection.



**Figure-5: Training on prevention and control of nosocomial infection of the participants**

**6. Most common cause of infection:** Among the 110 participants, 51(46%) participants had caused by staphylococcus aureus, 38(35%) participants had caused by streptococcus, 15(14%) participants had caused by Escherichia coli and 6(5%) participants had caused by Klebsiella.
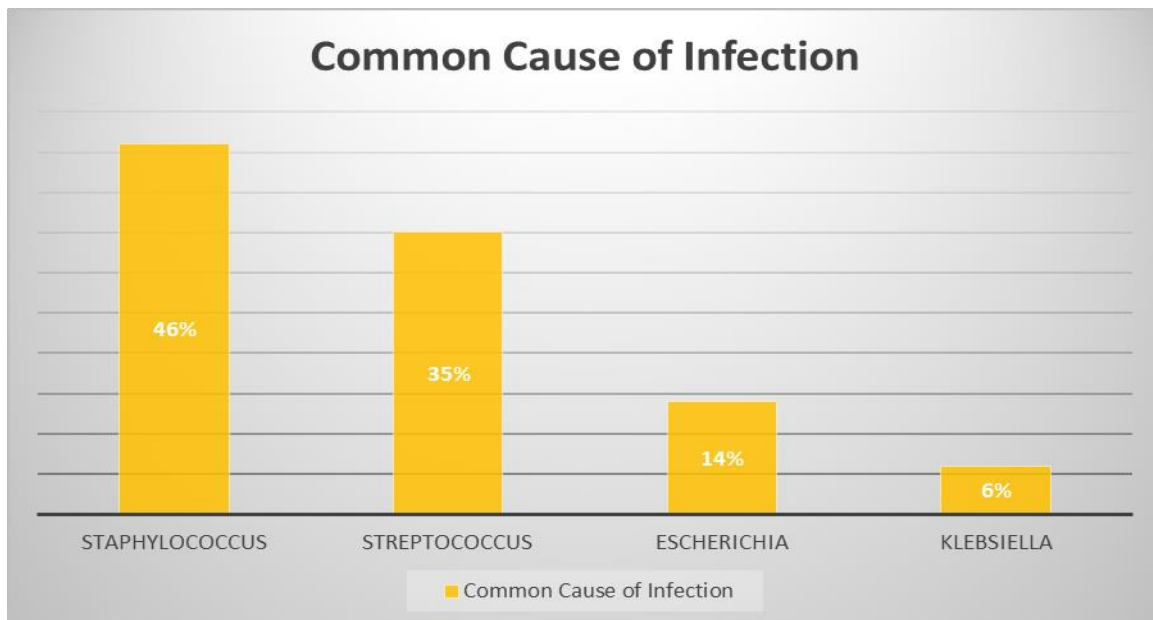


**Figure-6: Most common cause of infection of the participants**

**7. Maintain aseptic technique to prevent infection:** Among the 110 participants, 84(76%) participants had maintained aseptic technique to prevent infection, 26(24%) participants had not maintained aseptic technique to prevent infection.
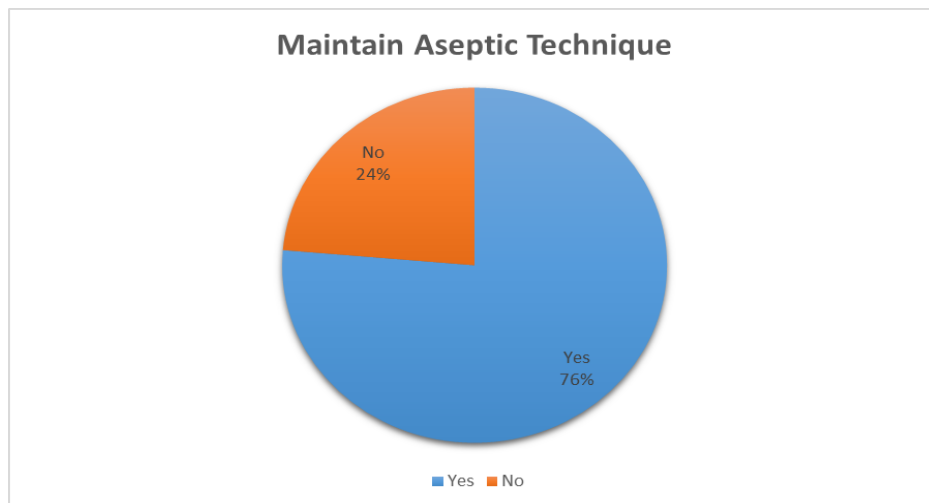


**Figure-7: Maintain aseptic technique of the participants**

**8. Best methods of sterilization:** Among the 110 participants, 101(92%) participants had used by autoclave, 5(4%) participants had used by boiling and 4(4%) participants had used by disinfectant.
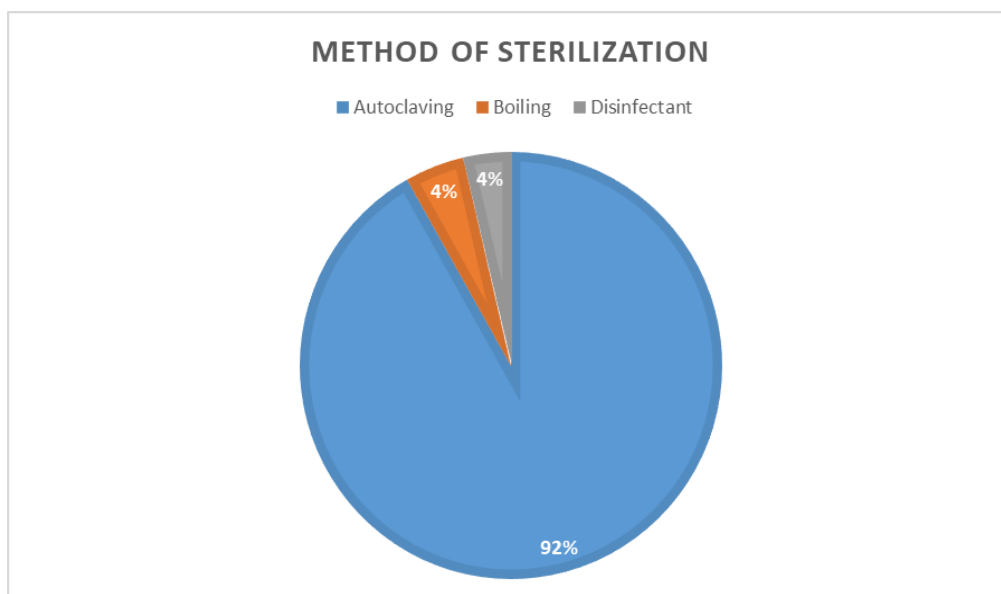


**Figure-8: Best methods of sterilization of the participants**

**9. Knowledge about prevention of infection:** Among the 110 participants, 71(65%) participants had knowledge about prevention of infection and 39(35%) participants had no knowledge about prevention of infection.
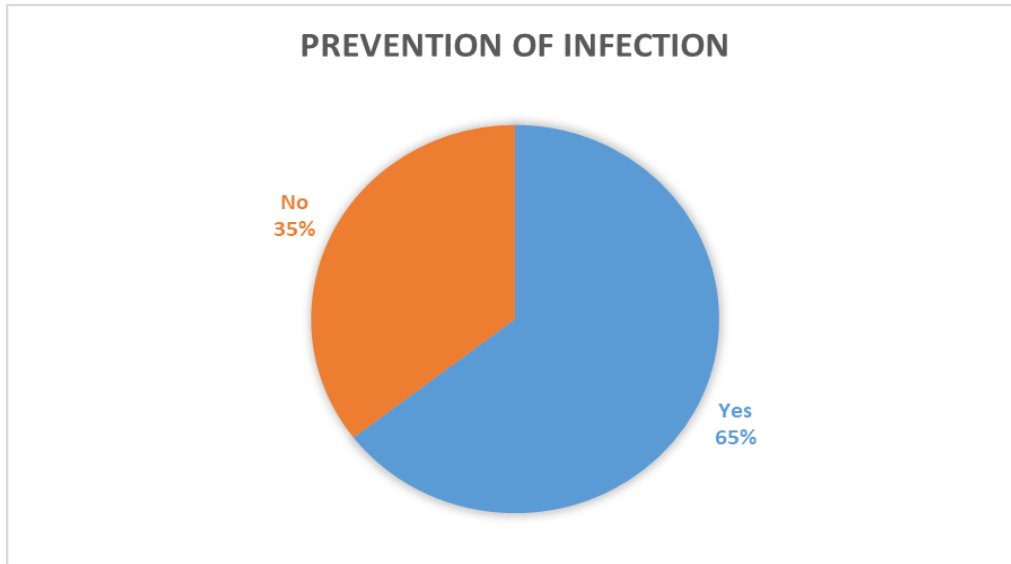


**Figure-9: Knowledge about prevention of infection of the participants**

**10. Knowledge about communicable disease:** Among the 110 participants, 69(63%) participants had knowledge about communicable disease and 41(37%) participants had no knowledge about communicable disease.
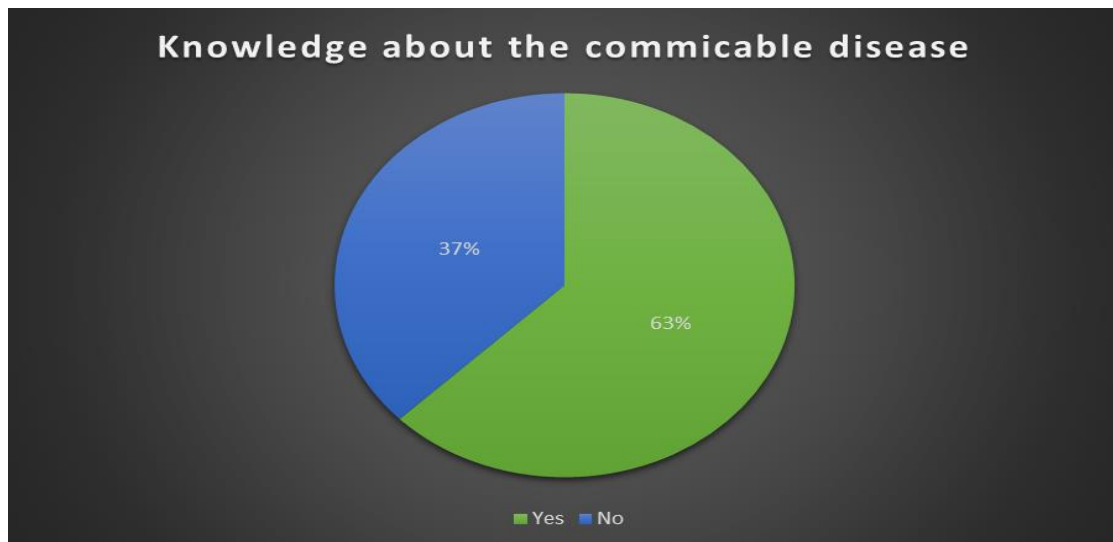


**Figure-10: Knowledge about communicable disease of the participants**

**Table-1.** Found that, the relationship between the professional education and level of awareness on prevention & control of nosocomial infection was compared by Pearson's Chi square test in which the 'P' value is 0.001 which is lower than the expected value that is 0.05. So the relationship is statistically significant.

**Table-1. Relationship between the professional education of the respondents and level of awareness on prevention & control of nosocomial infection.**

| Educational qualification | Level of awareness on prevention & control of infection | | | | Total (%) | X2 | P-value |
| --- | --- | --- | --- | --- | --- | --- | --- |
| | Poor Awareness | | Good Awareness | | | | |
| | No | % | No | % | | | |
| Diploma in nursing science & midwifery | 91 | 95.8 | 4 | 4.2 | 95(100.0) | 38.69 | 0.001 |
| B.Sc in nursing | 6 | 40.0 | 9 | 60.0 | 15(100.0) | | |
| Total | 97 | 88.2 | 13 | 11.8 | 110(100.0) | | |

**Table-2.** Reveals that, the relationship between the duration of service and level of awareness on prevention & control of infection was compared by Pearson's Chi square test in which the 'P' value is 0.33, which is higher than the expected value that is 0.05. So the relationship is not statistically significant.

**Table-2.Relationship between duration of service of the respondents and level of awareness on prevention and control of infection**.

| Duration of service | Level of awareness on prevention & control of infection | | | | Total (%) | X2 | P-value |
| --- | --- | --- | --- | --- | --- | --- | --- |
| | Poor Awareness | | Good Awareness | | | | |
| | No | % | No | % | | | |
| <3 years | 70 | 86.4 | 11 | 13.6 | 81(100.0) | 0.915 | 0.33 |
| ≥ 3 years | 27 | 93.1 | 2 | 6.9 | 29(100.0) | | |
| Total | 97 | 88.2 | 13 | 11.8 | 110(100.0) | | |

## Conclusion

Infectious diseases cause serious disability both male and female. The study revealed that out of 110 respondents the staff nurses of Tangail District in Kumudini Hospital within the age group 18-30 years. Here 79% were female respondents and most of them were literate person. Most of them 86.4% were poor awareness of prevention and control of nosocomial infection. So, preventive program could be targeted among staff nurses to prevent infection. Further research could be done for risk assessment among prevention and control of infection. Most of them 77% have their special training and only 23% have no special training on prevention and control of nosocomial infection. The relationship between the general educational qualification and level of awareness on prevention & control nosocomial infection was compared Pearson's Chi square test in which the 'P' value is 0.32 which is higher than the expected value that is 0.05. So the relationship is not statistically significant.

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