CHAPTER V

DISCUSSION, CONCLUSION AND RECOMMENDATION

5.1 Discussion

Collectively, findings indicated that knowledge acquired regarding standard and transmission-based precautions practice is lower than the attitude and practice. Majority of the participants (60.2%) had 'low' level of knowledge. The fact that knowledge was mainly in the 'low' category signifies that recent knowledge have not been gained by the participants, regarding infection control practices. This can be merely due to lack of individual interest or failure of concerned members of the institutions to disseminate the necessary information. Many staff expressed the feeling that the questionnaire was difficult. They are not aware of some of the things. For an example, about the high respiratory precaution barrier N95 mask mentioned in the questionnaire. The tendency that signified increase in level of knowledge may decrease performance of practice does not necessarily mean that knowledge does not play a role in practice. Reflecting back to several other studies, there are other factors at individual and organizational level that might disrupt compliance with infection control practices. Furthermore regular updating of knowledge regarding infection control practices is essential for any doctor or a nurse in any position. Although the association between training on infection control practices and standard and transmission-based precautions is marginally significant, this implies that performance of trained staff is

better than those who did not have any form of training on infection control practices, which is true. Updating knowledge with evidence based information is crucial to keep the standard and transmission-based precaution practices optimum.

Respondents who had better attitude towards standard and transmission based precautions reported better performance in their practices is plausible. The close association between attitude and practice is one of the most important aspects found in this study. Performance of better practice with elevated attitude is a sound natural law. The attitude shown towards standard and transmission-based precautions is in the category of 'negative to neutral while the practice is 'moderate to high'. The highest level of attitude (97.0%) was reported by the ADK Hospital with a significant association (p value 0.05). This indicates the attitude shown by the staff of this hospital towards standard and transmission based precautions was better than the other two institutions. The staff in this hospital might be better oriented to infection control practices than the other two hospitals. All doctors and nurses learn basic principles of infection control practices such as hand hygiene, transmission based precautions at medical and nursing schools. And all their routine behaviors are based on those fundamental infection control practices. In light of these elements respondents can demonstrate better attitude and practice, although, recent knowledge is deficient.

Marital status showed a significant affect on standard and transmission based –precautions proving that the performances of those who stay single are better than married people. According to a study conducted by Vanagas et al. (2004) to assess the job strain development for general practitioner due to age, gender, and marital status

found that the magnitude of job strain varies based on these socio-demographic characteristics. In this study highest rates of job strain were found in married females, and younger and older practitioners. Another study conducted by Sehlen et al. (2005) found that physicians and nurses had highest level of stress than radiographers and physicists. Therefore it is evidential that high level of stress can affect work practices. Furthermore, job stresses are high among married individuals. It is important for the health care providers to reduce their levels of stress in accordance with life style pattern.

Focusing on observational more emphasis on infection control was observed in the government tertiary hospital (IGMH). The working environment and standard and transmission-based precautions observed were better in this hospital with an infection control team. Infection control team, infection control protocols and guidelines along with better facilities were available in this hospital. The most distinguishing feature observed was more frequent hand disinfection by doctors and nurses in this hospital. Several bottles of hand rubs were kept in easily accessible locations. This facility was lacking in the other two hospitals. Since long time back infection control guidelines have been adopted in this hospital. One of the reasons for this advancement could be because this is the only government tertiary care referral hospital. In consequence management of any crisis such as SARS or any other such epidemics would definitely be and have been targeted to this institution.

However, the available facilities were not adequately used by staff and not all elements of standard and transmission-based precautions were adequately practiced.

Recent development of 'patient safety' program would provide additional strength to promote infection control practices.

Standard and transmission-based practices observed at the ADK hospital (tertiary care, private) were not adequate. Even the available facilities were not properly and adequately used. Some the modern facilities available in this hospital were a sign of the focus on infection control practices by the institution. According to the administration of this hospital the whole pattern of working environment would be changed focusing on patient safety including infection control measures. Development of protocols and procedures are in process. Also planed have been made to change the infrastructures of places such as laundry and inpatient units accordingly. Based on the self-reported questionnaire, the scores of attitude and practice of transmission-based precautions are highest by the respondents of this hospital.

Adequate facilities required for an ideal working environment to maintain standards of standard and transmission-based precaution practices were lacking in the government, secondary health care organization (Thinadhoo R. Hospital). As well observed practices were neither up to the level of the recent guidelines on infection control practices. According to the senior nursing staff activities has not been planned to improve infection control practices. Adequate resources and technical support is required to develop and sustain standard and transmission-based precaution practices.

All elements of standard and transmission-based precautions have not been adopted in the three hospitals surveyed. Reflecting back to the various studies that have been conducted, numerous issues were reported by researchers that affect infection control practices. Some of the issues that have shown include inadequate

administrative support, lack of facilities, inconvenience to use PPE, and due to busy working environment.

5.2 Conclusion

This was a cross sectional descriptive survey conducted to assess the level of knowledge, attitude, and practice of standard and transmission-based precautions practiced by doctors and nurses employed in tertiary and secondary health care settings of Maldives. The study was conducted from 27th February to 20th March 2008 in three different health care facilities of Maldives. Health care settings included IGMH (tertiary government), ADK Hospital (tertiary private) and Thinadhoo R. Hospital (secondary). A pilot study was conducted on 19th and 20th of February in Hithadhoo regional Hospital to test the reliability and validity of the questionnaire. The results of Cronbach's Alpha coeffient for knowledge part were 0.46, attitude part 0.94, and practice part 0.93. The questionnaire on knowledge was revised before introducing to the participants due to the low value of Cronbach's Alpha. Expert opinion was obtained from 2 leaders of infection control team of IGMH to confirm the validity of the questionnaire.

A Self administered, anonymous 330 questionnaires were distributed and the return rate was 84.2%. Observation of standard and transmission-based practice was done in each health care facility for 2-3 days prior introducing the questionnaire to the participants.

The sampled population of IGMH, ADK hospital and Thinadhoo R. hospital include doctors (58.6%, 28.6%, and 12.9% respectively) and nurses (67.4%, 20.5%, and 12.1% respectively). Findings have shown that the age group of most doctors and nurses working in these hospitals were below 40 years of age, and majority of them were married. Among respondents positions of doctors included medical officers, registrars and consultants (8.8%, 8.5% and 6.5% respectively). Positions held by nurses were staff nurses, senior staff nurses, clinical nurses/ward sisters and supervisors (61.9%, 10.2%, and 4.1% respectively). Percentage of doctors and nurses who did not have any kind of training on infection control practices included 36.2% and 47.5% respectively.

Frequency distribution and Chi-Square was used to analyze the socio demographic data. And correlation was done to analyze the relationship between factors of knowledge, attitude, and practice of standard and transmission-based precautions.

The only socio demographic characteristic, showed a very high significant association between standard and transmission-based precautions practice was 'marital status' with p value of 0.02. Training on infection control practices showed just a marginally significant association with standard and transmission based precaution practice with p value of 0.09.

Majority of the participants had 'low to moderate level of knowledge' 'Neutral attitude' and 'moderate to high level of practice'. Overall the level of practice were been reported highest, and the level of knowledge has been in the low category. One of the most important areas that demonstrated poor knowledge was about the situation

required to apply transmission – based precautions with correct and incorrect answers 27.9% and 71.4% respectively. The analysis of correlation between knowledge, attitude, and practice discovered a significant relationship at the 0.01 level. An inverse relationship between knowledge and practice was found though insignificant .Overall respondents who had better attitude towards standard and transmission based precautions had reported better performance in their practices. The highest level of attitude (97.0%) was reported by the ADK Hospital with a significant association ($p = 0.05$). This notifies that the attitude shown by the staff of this hospital towards standard and transmission based precautions was better than the other two institutions.

5.3 Limitations

Analysis of other factors associated with implementation of standard and transmission-based precautions practice. There are several factors within hospital premises that may influence infection control practices practiced in a particular set up. E.g. Active role played by the administration to create a safe work environment, availability of equipments, staff education etc.

Some of the questionnaires were not returned both by doctors and nurses. Instead of self reporting questionnaires, a strong design such as in-depth qualitative study would be more accurate and informative.

5.4 Suggestions to improve standard and transmission – based precautions practice in tertiary and secondary health care settings of Maldives.

5.4.1 IGMH

Strengthening the existing policies should be done to improve current standard of infection control measures adhered by staff of this hospital. Infection control committee needs to give more time or play a more productive role to uplift the compliance of infection control practices. Establishment of a regular auditing of infection control practices and development of a surveillance program for nosocomial infections along with laboratory support should be incorporated as this should be a vital element of any facility which renders health care services.

Improper utilization of the physical environment and facilities shaped, focusing on infection control measures is an issue which needs to be addressed. Quality supervision can be incorporated as this would be guide for monitoring, evaluation and provide regular feed back to staff regarding their practices. Studies relevant to components on standard and transmission-based precautions can be conducted. Looking into different individual practice such as hand hygiene, utilization of glove for venepuncture etc. may provide a more clear view to identify the weakest areas. In general the existing infection control program and patient safety program can be reinforced with more clinical activities.

5.4.2 ADK Hospital

They are in the path of developing infection control guidelines and policies, getting equipments, and planning infrastructure. According to the information provided by the administration, the policies and protocols will be developed according to the standard guidelines.

Focusing on the current status of the infection control practices observed, improvements are required in the current set up and establishment of an infection control focal point is recommended. In addition recommendations stated for the above hospital regarding infection control auditing, supervision, and studies relevant to standard and transmission-based precaution can be carried out.

5.4.3 Thinadhoo R. Hospital

Necessitate commence from the development of policies, and programs. Development of policies and protocols, improvement in the physical set up, and organization of working environment is required. A high magnitude of support is required to implement infection control practices of this hospital.

Further studies to assess factors associated with optimum compliance of standard and transmission-based precautions.