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Research Article

Practices of Nursing Students regarding the Prevention and Control of Multidrug-resistant Tuberculosis at the University of Namibia (UNAM) Southern Campus

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A B S T R A C T

Background: Tuberculosis infection is one of the major public health concerns. An estimated 480,000 new cases of multidrug-resistant tuberculosis (MDR-TB) and 190,000 deaths were seen in 2014 globally. Despite interventions, Namibia is among the countries with the highest per capita burden of tuberculosis, which is one of the top 10 causes of death in Namibia. To minimise the new cases, all health professionals, including nursing students, must exercise good practices in the prevention and control of MDR-TB.

Aim: The main objective was to determine the practices of nursing students regarding the prevention and control of multidrug-resistant tuberculosis at the University of Namibia (UNAM), Southern Campus.

Methods: A quantitative, descriptive study was conducted on the nursing students at UNAM, Southern Campus, Namibia. A sample size of 58 students was calculated. Data were collected using a structured questionnaire, and collected data were analysed using the SPSS version 25.

Results: Many of the respondents were female (81%) and 19% of the participants were male. Most of the respondents showed good practices towards the prevention and control of MDR-TB.

Conclusion: UNAM School of Nursing should continue to emphasise good practices among nursing students regarding the prevention and control of MDR-TB. It was also recommended that the School of Nursing, in collaboration with the Ministry of Health and Social Services (MoHSS), must ensure that the wards have enough N95 masks in stock and that nursing students have an opportunity to attend short courses on tuberculosis to acquire the necessary knowledge and skills regarding the prevention and control of MDR-TB.

Keywords: MDR-TB, Practices, Nursing Students

Introduction

Multidrug-resistant tuberculosis (MDR-TB) is an emerging public health threat and an area of serious concern in global efforts of tuberculosis (TB) control initiatives Progress has been made to reduce the global incidence of MDR-TB. However, the emergence of MDR-TB and extensively drug-resistant tuberculosis (XDR-TB) during the past years threatens to undermine these advances. The Global Tuberculosis Report 2014 estimated that 4% of newly diagnosed and 20% of previously treated TB cases were of MDR-TB.[1] An author alluded that as per the estimation, 480,000 cases emerged, and 210,000 deaths occurred due to MDR-TB globally in 2013.[2] As per Falzon et al., although progress had been noted in the expansion of MDR-TB care, urgent efforts were required to provide wider access to diagnosis and treatment in most countries with the highest burden of MDR-TB.[3]

The extent and burden of MDR-TB varies significantly from country to country.[4] New approaches to the treatment of MDR-TB are badly needed; not only are the success rate of current treatment regimens suboptimal but existing regimens require multiple drugs and lengthy courses which may lead to significant toxicities.[5] According to the Ministry of Health and Social Services (MoHSS), Namibia has been treating cases of MDR-TB, though the National TB Control Programme (NTCP) only started with MDR-TB programmatic activities after 2005 when MDR-TB was included in the TB guidelines. A study conducted in Namibia in 2008 reported that there were fewer cases of XDR-TB. However, cases escalated to 23 XDR-TB cases in 2012. This showed that the programmes aimed to combat XDR-TB were not well implemented which brought about 23 deaths and 69 cases.

Although there are guidelines and programmes in place to manage MDR-TB cases in Namibia, the knowledge of third and fourth-year nursing students regarding the control and prevention of MDR-TB is not adequate or not up to standard. Amakali stated in 2013 that there are guidelines on MDR-TB to address HIV transmission and the preventative measures thereof.[6] However, the guidelines exclude the content regarding the prevention and control of MDR-TB.[6] According to the Department of Health of South Africa, some nurses had poor knowledge of MDR-TB. In 2010, 7,386 laboratory-confirmed cases of MDR-TB and 741 confirmed cases of XDR-TB were observed in Namibia.[6] It has been observed that some staff do wear N95 respirators to prevent MDR-TB. MDR-TB prevention focuses on both the infectious patient and the healthcare provider, according to the Department of Health.[7]

Additionally, there is a lack of written evidence regarding the assessment of knowledge, attitudes and practices regarding the prevention and control of MDR-TB at the University of Namibia (UNAM) Southern Campus. Furthermore, the Department of Health (2013) stated that nurses should monitor the patients during the intensive phase of TB treatment during which the bacterial load is being reduced, which is crucial in the prevention of MDR-TB. Therefore, the researcher conducted the study to explore the knowledge, attitudes, and practices of the third and fourth-year nursing students regarding the prevention and control of MDR-TB at UNAM, Southern Campus. There are studies documenting the knowledge of student nurses regarding MDR-TB globally. A study conducted in three major public sector universities in Lahore, Pakistan showed that only 36.40% of the university students knew about MDR-TB, with 63.60% of students not knowing the term MDR-TB. Among the 1137 students, only 93 (8.90%) had fair knowledge about the duration of MDR-TB which is 24 months while others considered it to be the same as normal TB. About 11.08% of students believed that the treatment duration for MDR-TB was 18 months, 29.80% believed it was 12 months, 34.80% believed it was 8 months, 8.90% believed it was 4 months, and 7.10% did not know the treatment duration.[8] In support of the previous author, a survey conducted by the Italian Study Group on Hospital Hygiene of the Italian Society of Hygiene, Preventive Medicine, and Public Health, to evaluate undergraduate healthcare students' knowledge and control measures of TB in Italy revealed a better knowledge on TB amongst the medical students than among nursing students.[9] A similar study conducted by Alene et al. in 2019 revealed poor knowledge and practice of health workers about MDR-TB prevention and control in Amhara region referral hospitals in Ethiopia.[10] The same author alluded that the higher educational level, provision of training and history of TB were significantly associated with good knowledge of health workers. These findings highlighted the importance of providing infection prevention training for health workers to increase their knowledge about MDR-TB.

A related study carried out to find the knowledge of nurses on MDR-TB at Primary Health Care facilities in the Nelson Mandela Metropolitan, South Africa revealed that respondents possessed varying degrees of knowledge regarding MDR-TB, with about 84% of the respondents being knowledgeable regarding the cause of MDR-TB.[11] Furthermore, participants agreed that the patients who were not adherent to their TB medication were more susceptible to contracting MDR-TB. However, the same study further showed that only 53% of the respondents believed that people who came from areas of the world where drug-resistant tuberculosis was common were at high risk of contracting MDR-TB.[11] A study conducted by Mahaye regarding the practice of nurses in the prevention of MDR-TB at King Cetshwayo District, South Africa, revealed that 59% of the participants always wore the N95 respirator masks that cover both the mouth and the

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nose to prevent TB infection.[12] The same study further stated that the healthcare workers traced patients if they failed to return for treatment follow-ups and counselled the patients on issues hindering them from returning for follow-ups to continue treatment.

However, a similar study that was conducted on healthcare workers from 13 hospitals during the 2016 Hajj in Saudi Arabia regarding the practices associated with TB showed several poor practices prevalent among them. Numerous reports worldwide found that healthcare workers have important knowledge gaps in relation to TB diagnosis, treatment, and infection control and prevention; have some negative attitudes and stigma connected with the disease; and engage in poor practices, all of which contribute to their increased risk of infection and negative impacts on patients and the community. Alotaibi et al. stated in 2019 that poor practices included commencing anti-TB treatment on suspected TB cases before laboratory confirmation and not opening the windows in patients' rooms to increase natural ventilation which influences the prevention and control of MDR-TB transmission.[13] Healthcare workers reported good practices regarding TB management and infection prevention. Most reported performing hand hygiene, using appropriate Personal Protective Equipment (PPE) when dealing with pulmonary tuberculosis (PTB) patients or handling TB samples, not using soiled N95 respirators, isolating TB cases from other patients and separating TB patients from those with HIV.

Materials and Methods

In this study, a quantitative-descriptive design was employed to analyse the practices associated with the prevention and control of MDR-TB among nursing students at UNAM, Southern Campus, Namibia. The study was conducted in February 2023. The target population was 71 nursing students. A random sampling method was used to select the respondents. In this study, the sample size was calculated using the Sample Size Calculator by Raosoft, Inc.; the calculated sample size was 58. A self-administered, closed-ended questionnaire was used to collect data. Ethical approval was obtained both from the University of Namibia and MoHSS. All participants consented to the study before being given the questionnaire. The questionnaire consisted of section A, which focused on sociodemographic data and section B, which focused on practices regarding the prevention and control of MDR-TB. Data were analysed using SPSS version 24.

Results

Figure 1 shows the various age groups to which the participants belonged.

Figure 2.Distribution of Respondents as per their Gender

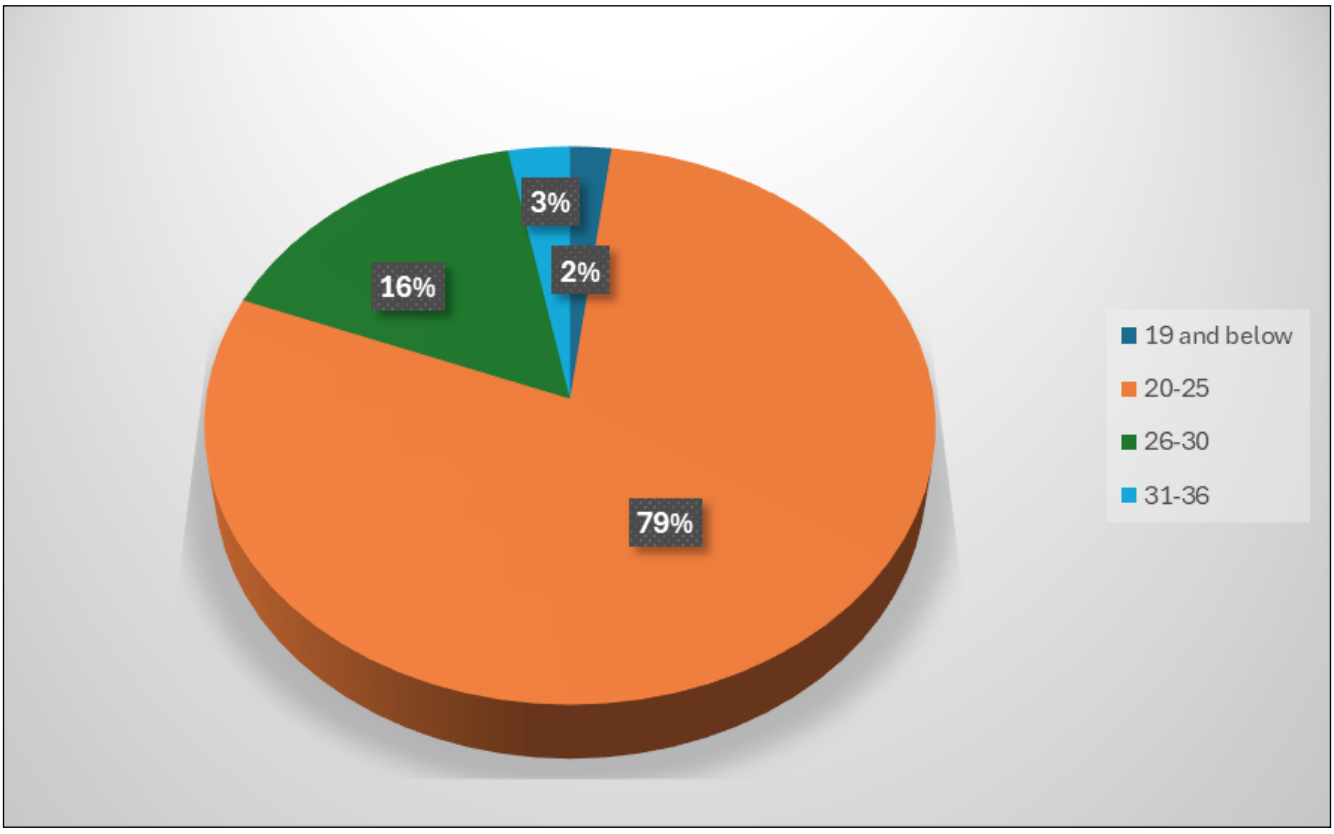

Figure 1.Distribution of Respondents as per their Ages (in Years)

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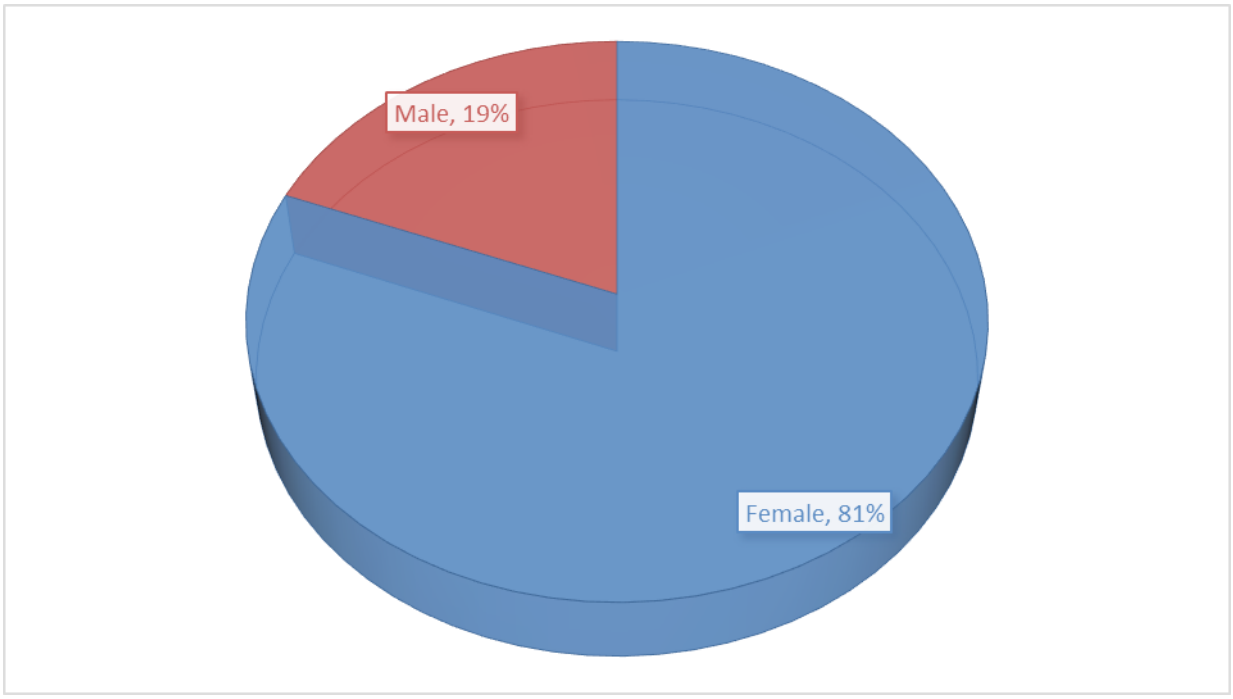

Figure 2.Distribution of Respondents as per their Gender

Figure 3 indicates that 95% (n = 55) of the respondents answered that they wore N95 masks when attending to MDR-TB patients, and 5% (n = 3) answered that they did not wear their N95 masks when attending to MDR-TB patients.

The findings of the study showed that all (58, 100%) respondents agreed that they gave health education to patients regarding the importance of treatment, whereas none of the respondents disagreed with the statement. A majority (56, 97%) of the respondents agreed that they washed their hands when administering MDR-TB medication and handling or attending to a patient, while 3% (2) of the respondents confirmed that they did not wash their hands when administering treatment.

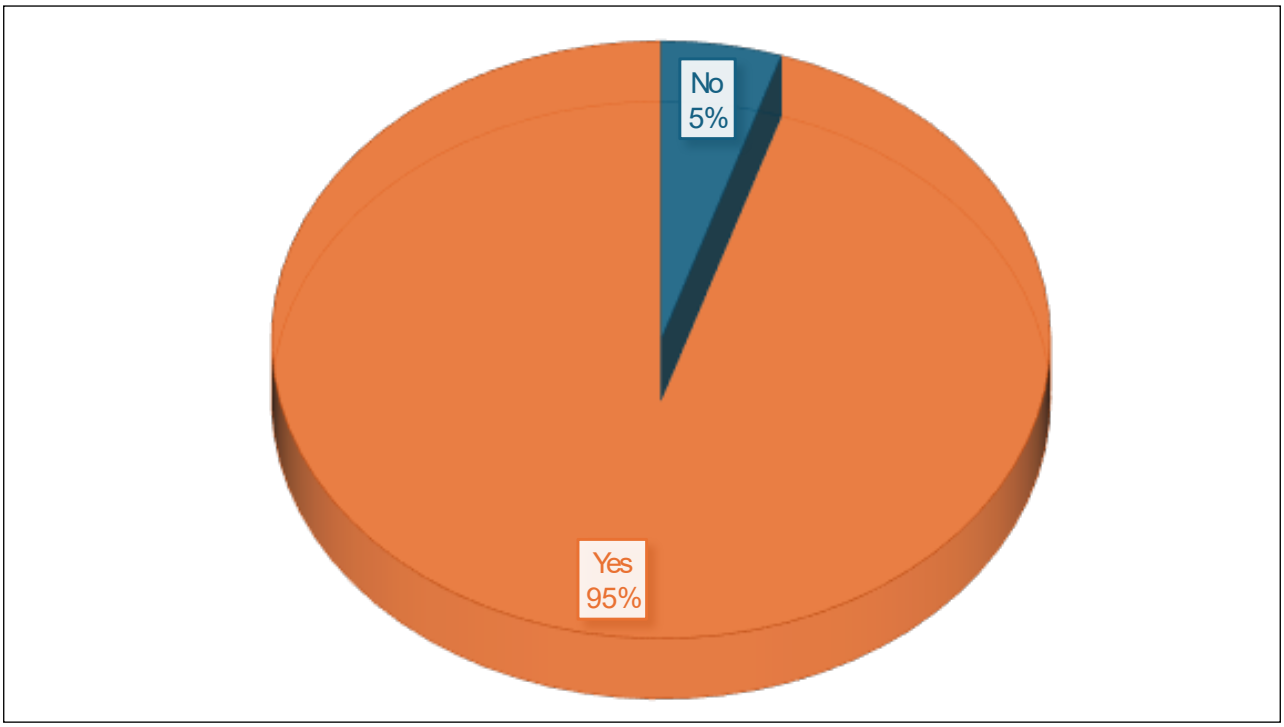

Figure 3.Respondents' Practices regarding Wearing N95 Masks

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Discussion

It was seen in the study that most (46, 79%) of the respondents belonged to the age group of 20–25 years, 16% (9) belonged to the age group of 26–30 years, 3% (2) belonged to the age group of 31–35 years, and 2% (1) were more than 36 years of age. Since the respondents of the study were third and fourth-year nursing students, the majority of them fell in the age range of 20–25 years. This study showed that 47% (27) of the respondents were third-year honours degree nursing students and 53% (31) were fourth-year honours degree nursing students. The findings of the study indicated that the majority (55, 95%) of the respondents confirmed that they wore their N95 masks while 5% (3) of the respondents mentioned that they did not wear their N95 masks while attending to MDR-TB patients. These results showed that most of the respondents had good practice regarding wearing their N95 masks while attending to MDR-TB patients. These results are similar to a study conducted by Mahaye, which showed that 59% of the respondents always wore N95 respirator masks that covered both the mouth and the nose to prevent TB infection.[12]

The results of the present study indicated that all respondents had good practice regarding providing health education to MDR-TB patients about the prevention and control of MDR-TB. This corresponds with the findings of a study conducted by Mahaye, which revealed that 91.8% of the respondents gave health education to patients suffering from TB about the importance of taking TB treatment at home.[12] According to Alotaibi et al., nurses should give health education to patients while waiting in the waiting areas about TB treatment to prevent treatment interruption and to promote compliance with treatment.[13]

The study also showed that a large proportion of the respondents had good practice, whereas a small number had bad practice regarding washing their hands when administering MDR-TB medication and handling or attending to a patient. According to a study conducted by Alotaibi et al., the hygiene of healthcare workers, such as correct hand washing technique before and after administering the drugs to the patient to prevent the introduction of opportunistic infections to the patient, is important when treating MDR-TB patients.[13]

Conclusion

The study showed that nursing students were implementing measures to prevent and control MDR-TB. Good practices were identified among the third and fourth-year nursing students regarding the prevention and control of MDR-TB among patients such as giving health education, and practising hand washing when administering MDR-TB medication and handling or attending to a patient. However, some gaps were also identified. MoHSS should provide in-service training to the nurses working in TB wards and clinics on preventing and controlling MDR-TB. Nursing students should be allowed to attend short courses quarterly on TB to acquire the knowledge and skills to prevent and control MDR-TB.

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