UNIVERSITI TEKNOLOGI MARA

THE HEALTH CARE WASTE MANAGEMENT PRACTICES DURING COVID-19 PANDEMIC AT HEALTH CLINICS IN LARUT, MATANG, AND SELAMA (LMS) DISTRICT, PERAK

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ABSTRACT

Since the outbreak of coronavirus infectious disease 2019 (COVID-19) in Malaysia in the year 2020, there has been a noticeable rise in health care waste (HCW) production from hospitals, clinics, and other health care facilities. This pandemic has significantly strained HCW management systems globally, posing human and environmental well-being risks. It underscores the urgent need to improve waste management protocols in health care settings. This study focuses on the evaluation of the association between socio-demographic factors and knowledge, attitudes, and practices (KAP) on HCW management. A mixed-method study has used a questionnaire to collect data on waste management among 265 health care personnel and a focus group discussion (FGD) was also conducted involving 10 participants from medical and non-medical personnel of health clinics and concession companies in Larut, Matang, and Selama (LMS) district, Perak. The findings of the questionnaire indicated that the respondents in the study achieved satisfactory scores for knowledge (1.58 ± 0.31), attitudes (3.57 ± 0.54), and practices (2.66 ± 0.32). The results of Kruskal-Wallis found that some socio-demographic characteristics were significantly associated with KAP of HCW management, with a p-value <0.05. The characteristics such as gender, age, education level, designation, work experience, training, vaccination, guideline accessibility, committee, and gloves quantity sufficiency were the most statistically significant effects on KAP. Then, Pearson correlation revealed that all the KAPs have significant relationships with each other. Furthermore, the overall model of multiple linear regression was significantly useful for knowledge (34.0%), $F(15, 249)=8.702$, $p<0.05$, attitudes (35.0%), $F(15, 249)=9.004$, $p<0.05$, and practices (30.0%) $F(15, 249)=7.415$, $p<0.05$. Whereas, through an FGD, two major themes emerged. The first theme focuses on challenges in HCW management practices, highlighting several barriers that hinder effective HCW management. The second theme revolves around interventions that could improve HCW management practices, emphasizing educational and organizational strategies. It is advisable to propose and implement initiatives and strategies for the appropriate handling and disposal of HCW at health clinics to enhance and achieve more effective management, particularly during the pandemic. This study provides important insights into HCW management practices in government health clinics during the COVID-19 pandemic. The findings highlight that while health care workers generally demonstrated good knowledge, attitudes, and practices, gaps remained in compliance, training, and policy enforcement. The study emphasizes the influence of socio-demographic factors on waste management effectiveness and reveals key challenges such as inconsistent segregation and limited infrastructure. By identifying these issues, the research contributes to improving HCW management strategies through enhanced training, stronger regulations, and technological innovation, supporting safer and more sustainable health care environments.

Keywords: COVID-19, waste management, awareness, practices, health care facility

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INTRODUCTION

1.1 Background of Study

Health care waste (HCW) is waste generated from activities related to medical care and health services. It can originate from various sources such as hospitals, clinics, laboratories, pharmacies, and other health facilities. The HCW generation from these facilities is typically non-hazardous and hazardous. The hazardous HCW requires special attention from segregation to disposal. This is because it can be harmful or infectious and must be handled with care. In recent years, the amount of HCW has increased due to the growing demand for health services. This includes items like used syringes, dressings, blood-contaminated materials, chemicals, medicines, and other medical items produced during daily health care activities.

Additionally, the HCW volume dramatically increased with the outbreak of the coronavirus infectious disease 2019 (COVID-19) pandemic in late 2019. The COVID-19 pandemic definitely placed extraordinary pressure on global health care systems. Hospitals, quarantine centers, laboratories, and vaccination sites were inundated with patients and were required to significantly scale up the use of personal protective equipment (PPE), such as masks, gloves, gowns, face shields, and sanitizing materials. Additionally, mass testing and vaccination programs also led to an exponential rise in the use of disposable items like swabs, syringes, vials, and packaging materials. World Health Organization (WHO) analysis stated that tens of thousands of tonnes of excess HCW from the COVID-19 pandemic have put a massive strain on HCW management systems throughout the world, potentially endangering human and environmental health and highlighted a serious need to enhance waste management standards (WHO, 2022).

Even under normal conditions, HCW may pose significant risks and long-lasting impacts if not managed properly. HCW is usually considered unsafe and dangerous as it may contain infectious agents such as bacteria, viruses, fungi and protozoans, hazardous chemicals or pharmaceuticals, radioactive, and even it containing used and contaminated sharps (Meleko & Adane, 2018). The individuals become infected by direct or indirect contact with contaminated waste. The waste generated from health care activities can pose long-term risks to human health which affecting both those who