**WILLINGNESS TO TREAT COVID-19 DISEASE: WHAT DO MEDICAL & NURSING STUDENTS PERCEIVE?**

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**Abstract**

This study aims to determine the commitment and willingness of medical and nursing students in Sarawak in treating patients with COVID- 19. This cross-sectional study was carried out using online questionnaire. Majority of the respondents were most willing to take a medical history, do a physical examination, throat swabbing, draw blood and perform IV drip insertion. There was a high commitment among respondents to treat COVID-19 patients regardless of personal risks. Majority of the respondents also agreed that medical staff who are involved in treating COVID-19 patients should be receiving a salary increase and compensation should be given to affected healthcare families, and all non-medical staff should be involved in treating COVID-19 patients. About 71% agreed about a law mandating medical staffs to treat patient. Despite the high willingness and commitment of medical and nursing student to perform their duties, knowledge on self-protection should be imparted during their clinical training.

**Keywords:** Medical students, nursing students, willingness, commitment, COVID-19

**Introduction**

In healthcare setting, willingness to cure certain diseases regardless knowing the personal risk has been a debatable issue over the years (1). Past histories showed that in treating infectious diseases such as AIDS, SARS or currently COVID-19, the reluctance of some healthcare workers to care for patients is not new and uncommon. Nevertheless, many healthcare workers would remain behind to care for their patients. Such differences in medical practices cannot be solely derived from patients’ right to healthcare but rather a virtuous act of a medical profession in carrying out their role in providing health care (2). In such, dilemmas arise when the risks increase significantly during an epidemics or pandemic. According to Medical Dictionary for the Health Professions and Nursing (3), willingness is defined as an openness to risk opportunity where a person would be prepared to do under some circumstances. Many studies have been conducted to look into the healthcare workers’ willingness to heal patients with infectious disease (4). The outcome of these studies showed that one of the main contributing factors is the fear of safety to oneself as well as the health care personnel’s families (5). Social stigma on the other hand also play an important role to the reason for willingness of healthcare workers to carry out their duty. Social stigma as explained by William et al., (6) can undermine the entire health care system and the effectiveness of delivering health care services from treatment to prevention. Stigma not only affect the society but the healthcare workers who undergo tremendous work pressures, harassment and physical violence that resulted many of them suffered from mental stress and psychological suffering (7). Such situations arise because lack of public education and awareness about the disease.

COVID-19, the most recently discovered infectious disease was first reported in Wuhan, China in December 2019 (8,9). It is a disease under the family of coronavirus that caused illness in humans, and possibly in animals. In general, COVID-19 is an acute disease that can be deadly, with a 2% case fatality case. However, despite the lower fatality rate, COVID-19 has resulted in more deaths (1871) than both SARS and MERS (1632) ((10). In Malaysia, as of the 5 August 2020, there were 9002 COVID-19 cases including 125 deaths and 8,684 cases of recovery reported by the Ministry of Health (MOH) in Malaysia. To date, there is no vaccine or specific antiviral therapy confirmed by the WHO to be effective against COVID-19.

As cases increased healthcare workers are recognized as another high-risk group to acquire this infection (11). Despite established guidelines in managing COVID-19 patients, deaths among healthcare workers (HCW) from all around the world (12) amidst working fuelled concerns about the health risks posed to contacts of infected patients (13).

Issues regarding willingness to treat infectious disease for medical and nursing students are crucial because after they have completed their study and obtained their practice license, will they able to perform their roles and responsibilities during epidemics or outbreaks of virulent diseases. Many students perceived medical and nursing career as unique and noble where they are given the opportunity to serve fellow human beings more than any other career, but such commitment requires longer hours of working, potential job demand and assignments outside one’s normal area of practice (14).

While reports regarding physicians’ opinions on such dilemmas is available, research on students’ opinions is much more limited and has not been explored, particularly in COVID-19 and Malaysia context. This study explores the commitment and willingness of medical and nursing students in one of the university in Malaysia to treat infectious disease specifically COVID-19.

**Materials and Method**

This cross-sectional study was conducted in Faculty of Medicine and Health Sciences (FMHS), Universiti Malaysia Sarawak, involving medical students and nursing students. Data was collected using online based questionnaire (google form) from April until September 2020.

The sample size was calculated using OpenEpi Version 3.01 (15). Using sampling frame of 990, confidence interval of 95%, hypothesized % of frequency of outcome factor of 50%, design effect of 1, anticipated rejected sample size of 10%, estimated sample size was 304 respondents. No sampling was done. All the eligible students were invited to participate.

The questionnaire was adopted from Milikovsky et al. (1) and Khalil (16). The survey explores the commitment and willingness of medical and nursing students to treat patients with COVID-19. The questionnaire consists of Part A: To assess the socio-demographic background of the respondents: age, gender, religion, programme, and year of study; Part B: To assess the willingness to perform medical procedures on patients with COVID-19. It consists of 6 items on a 5-point Likert scale ranging from 1 (Absolutely not) to 5 (Definitely agree). Rating of 4 and 5 were measured as ‘high willingness’, a rating of 3 ‘medium willingness’ while for rating of 1 and 2 were measured as ‘low willingness’; Part C: The third section of the questionnaire assessed the commitment to treat patients with COVID-19. In addition, the respondents were asked several questions: “Medical staff treating patients with infectious diseases should receive a salary increase” with choices of “yes” or “no”. For the risk acknowledgement that affects the commitment of students to treat COVID-19, the respondents were required to select only 1 answer from the choices given such as “risk of infection”, “no protection facilities” and “others”.

A pre-test was carried out among 30 respondents from Year 3 medical students with the aim to improve the questionnaire. Respondents were asked to give feedback on the questions if there were any difficulties in reading and understanding. Feedback from the respondents that they were able to understand the questions asked and it took them about 2 to 3 minutes to complete the questionnaire. The pilot test analysis results showed that the Willingness to perform medical procedures on patients with COVID-19 had a Cronbach’s alpha of 0.85 (high reliability) while the Commitment to treat patients with COVID-19 had a Cronbach’s alpha of 0.5 (moderate reliability) (17).

The collected data was recorded, entered, and analysed using Statistical Package for Social Sciences (SPSS) version 22. A data cleaning had been done beforehand to avoid any abandoned questions or invalid response. Statistical analysis such as descriptive and inferential statistics was carried out.

The study was approved by the Medical Ethical Committee of UNIMAS (Reference number: UNIMAS/ NC-21.02/ 03-02 Jld.4 (100)). Before obtaining their consent online, the respondents were briefed regarding the research. They were also informed about procedure and the advantages of the research, the confidential of their personal information and their rights to take part or withdraw from this research.

**RESULTS**

The socio-demographic profile of the study is presented in Table 1. A total of 304 respondents have participated with 100% response rate, with 81.6% were females. The mean age of the studied sample was 21.5 years (SD 1.62). More than half of the respondents were Muslim. Majority of the respondents were medical students (69.34%) and from year 1 group (41.4%).

**Table 1. Socio-demographic profile of the respondents (N=304)**

|  |  |  |  |
| --- | --- | --- | --- |
|  | | **Mean (SD)** | **n (%)** |
| **Age** | | 21.5 (1.62); Min: 18, Max:29 |  |
| **Gender** | | | |
|  | Male |  | 56 (18.4) |
| Female |  | 248 (81.6) |
| **Religion** | | | |
|  | Islam |  | 159 (52.3) |
|  | Christian |  | 102 (33.6) |
|  | Buddhist |  | 27 (8.9) |
|  | Hindu |  | 16 (5.3) |
| **Program of Study** | | | |
|  | Medicine |  | 211 (69.4) |
|  | Nursing |  | 93 (30.6) |
| **Year of Study** | | | |
|  | Year 1 |  | 126 (41.4) |
|  | Year 2 |  | 68 (22.4) |
|  | Year 3 |  | 37 (12.2) |
|  | Year 4 |  | 48 (15.8) |
|  | Year 5 |  | 25 (8.2) |

Table 2 summarised the willingness of the respondents to perform medical procedures on patients with COVID-19. Most of the respondents (91.1%) were most willing to take a medical history and do a physical examination on patients on COVID-19 patients, as well as do throat swabbing (83.6%). When comparing respondents’ willingness to draw blood on patients with COVID-19, 82.2% (n=250) were more willing to draw blood. However, there is diverse pattern on performing mouth to mouth resuscitation without protection, where only 8.6% were willing to do it. Most of the respondents (76.6%) were willing to perform IV drip insertion, but less than half of the respondents (46.4%) were more willing to perform surgery on patients with COVID-19.

**Table 2. Willingness to perform medical procedures on patients with COVID-19 (N=304)**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Willingness (n, %)** | | |
| Low | Medium | High |
| Taking a medical history and performing a physical examination | 4 (1.3) | 23 (7.6) | 277 (91.1) |
| Throat swabbing | 8 (2.6) | 42 (13.8) | 254 (83.6) |
| Drawing blood | 9 (3.0) | 45 (14.8) | 250 (82.2) |
| Mouth to mouth resuscitation (without protection) | 202 (66.4) | 76 (25.0) | 26 (8.6) |
| IV drip insertion | 15 (4.9) | 56 (18.4) | 233 (76.6) |
| Performing surgery | 68 (22.4) | 95 (31.3) | 141 (46.4) |

Table 3 represent the commitment among the respondents to treat patients with COVID-19. It shows 94.4% (n=287) respondents agree with medical staff who is handling COVID-19 patients should receive a salary increase. Overall, 88.2% (n=268) of respondents agreed healthcare provider’s family should receive compensation from the state if he/she passed away due to illness contracted from a patient. Interestingly, 92.4% (n=281) agreed that the hospital worker who is not a part of the medical team should have responsibility in combatting this pandemic. Out of 304 respondents, 94.1% (n=286) felt that an individual who decided to grow to be a medical doctor should have a normal commitment to treat patients in spite of of personal risks. Only 71.1% (n=216) agree with there should be a law mandating medical team to handle patients irrespective of disease.

**Table 3. Commitment among the respondents to treat patients with COVID-19 (N=304)**

|  |  |  |
| --- | --- | --- |
|  |  | **n (%)** |
| 1. | The medical staff who is treating patients with COVID-19 should receive a salary increase. | 287 (94.4) |
| 2. | The healthcare provider’s family should receive compensation from the state if the he/she dies due to illness contracted from a patient. | 268 (88.2) |
| 3. | The hospital employee who is not a part of the medical staff should have responsibility in combatting this pandemic. | 281 (92.4) |
| 4. | A person who decided to become physician should have a moral commitment to treat patients regardless of personal risks. | 286 (94.1) |
| 5. | There should be a law mandating medical staff to treat patients regardless of disease. | 216 (71.1) |

Table 4 shows the reasons why it might be legitimate to break such a law based on question 5 of the above. The result shows 79.9% of the respondents believed certain situations should not be applied by the law, such as lack pf appropriate protective (56.9%), pregnancy (48.7%), parenthood (18.4%) and marriage (12.5%).

**Table 4. Reasons why it might be legitimate to break such a law based on question 5 (N=243)**

|  |  |
| --- | --- |
|  | **n (%)** |
| Lack of appropriate protective equipment | 173 (56.9) |
| Pregnancy | 148 (48.7) |
| Parenthood | 56 (18.4) |
| Marriage | 38 (12.5) |

**Discussion**

The present study, as far as our knowledge, is the first attempt in understanding the perception of medical and nursing students towards their exposure to risks of COVID-19. Based on the results, 98.7% of the respondents expressed medium to high willingness to take medical history and performing physical examination. This result was found to be parallel to the study done by Milikovsky et al (1) where more than 90% of their respondents (medical students) exhibit medium to high willingness to take clinical history and performing physical assessment on patients with swine flu and HIV. One of the possible explanation is the students may not see themselves as taking a functioning part in patient treatment, rather as a student who is learning new skills. Furthermore, during pandemic, students are not allowed to enter any of the hospital setting that relates to COVID-19 for clinical training. As such they may not feel the risk involves in treating these highly infectious patients.

More than 95% of the respondents expressed moderate to high willingness to perform throat swabbing, drawing blood and IV drip insertion (97.4%, 97.0%, 95.0%). One of the possible reasons that such procedures pose little risk of self-injury that expose the performer to high risk of transmission (1). Unlike mouth to mouth resuscitation where performers can expose themselves to close contact, blood and airborne routes, the percentage of respondents with high willingness to perform was low (8.6%). Similarly, for performing surgical procedures on patients, only 46.4% of the respondents expressed high willingness to perform the procedure. COVID-19 is a highly contagious disease with an incubation period up to 14 days that can be transmitted human-to-human through direct contacts or beads spread by coughing or sneezing from a contaminated person, without proper protection, surgical procedure can expose the performers the risk of infection (18,19).

The results indicated 92.4% of the respondents agreed that during a pandemic, as part of team spirit, non-medical hospital employee should be together with the rest of medical team to combat COVID-19 hand-in-hand. These findings were consistent with Balicer et al., (20). Hospitals are relied upon to withstand extensive difficulties during COVID-19 pandemic, including tolerant triage, contamination control, deferring non-emergent surgeries, and growing ICU limits, extra working hours. Withstanding these difficulties, particularly during the pandemic pinnacle, is an "all involved deck" imperative. In certain pandemic such as flu, specialist non-attendance is relied upon to be one of the most critical difficulties for emergency clinics (20).

The findings also reported 94.4% of the respondents agreed to treat patients with COVID-19 with an increment of monthly salary and 88.2% agreed that healthcare provider’s family should also receive compensation if they contracted the disease. Our study is consistent with study by Milikovsky et al. (2012) as appropriate financing enables them to work efficiently in clinical settings. Financial reward has always been used as motivational lever as it grants workers’ satisfaction and may lead them towards a distinct types of work outputs however should be integrated with other incentives and interventions to balance work approach and qualities (21).

Majority of the respondents also expressed their support that anyone who decided to become physicians should have a moral commitment to treat patients regardless of personal risks and there should be a law mandating medical staff to treat patients regardless of disease. In term of moral issue in numerous grounds, all healthcare workers have a duty to treat all types of diseases. However, unlike any other disease, COVID-19 can spread very fast and is highly contagious, and has the potential to overwhelm and even handicapped a health healthcare delivery system in a way that other infectious disease never did, such situation is debatable. As the respondents of this study were medical and nursing students, they might not aware of the risk in the real situation when they practice as physicians and nurses. The response of this two statement was found to be higher than Milikovsky et al. (1) although in their study, the reason given for their high responses was due to majority of their respondents were students who have undergone compulsory military service that portray high solidarity of the Israeli society.

The study also showed that among the reasons for breaking the mandatory law for not treating the COVID-19 patients was lack of appropriate protective equipment and pregnancy. Daily updated news on deaths of medical and non-medical staffs all around the world in treating COVID-19 patients is increasing. Some medical staffs even resigned from their duty as they are facing scarce of variant resources in regards of the drastic increase of cases causing high risk of getting infected is high, particularly such exposure can lead to potential transmission to their families and relatives. There is speculation that COVID-19 can be passed from mother to fetus while in utero, such conclusion is still unknown. But the known risk from similar viruses and influenza warrants caution.

The future of our country healthcare professionals is medical and nursing programmes students. Therefore, students’ willingness and commitment should be evaluated for improvements if required. Our study concluded that the willingness and commitment of medical and nursing students with respect to COVID-19 were high. Although the study showed a great result, many students neglected the importance of taking risk as a future healthcare worker. Thus, students should learn about self-responsibility and be ready in case new disease emerges in near future. Universities also should expose the students to hospital setting by bringing in more clinical teachings for future preparation.

However, some limitations had gained from this study. The studied sample was limited because the survey was carried out in a single university. Therefore, the findings may not be generalized to the whole Sarawak settings. Apart from that, a question-based questionnaire was used and thus may be bias responded. Despite its limitation, this study has given a preliminary understanding about students’ willingness and commitment to treat patients with COVID-19 disease.

**Ethics Committee Approval:** The study was approved by the Universiti Malaysia Sarawak Medical Ethics Committee.

**Informed Consent:** Respondents were informed about the study, and a written signed consent was obtained from those who participated.

**Conflict of interests:** The authors declared no conflict of interest

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