



Stigmatization toward cancer among university students in Malaysia

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ABSTRACT

Introduction: Stigmatization towards cancer is a barrier to early cancer screening and treatment. This study was conducted to determine the level of cancer stigma among Malaysian university students in Malaysia with different sociodemographic backgrounds.

Methods: This cross-sectional study recruited 400 students (mean age, SD = 22.22 ± 1.67 years) from a selected university in Malaysia. Data were collected from October 2019 to February 2020 through an online survey. The Cancer Stigma Scale (CASS) was used in assessing the levels of cancer stigma among university students with different courses and social backgrounds. The CASS was used in assessing multiple aspects of cancer stigma, including severity, personal responsibility, awkwardness, avoidance, policy opposition, and financial discrimination.

Results: Data were analyzed using SPSS (version 23). Results showed that the stigmatization level toward cancer among university students varied across the six subscales. Items regarding the severity of a cancer diagnosis showed the highest level of agreement (32–52%; M = 3.05, SD = 0.96), whereas the item ‘avoiding someone with cancer’ showed the lowest agreement, 7–10% (Mean = 1.85, SD = 0.97). Stigma was significantly higher in young students, males, non-health science students, students in the junior year level, students without family histories of cancer, and the low-income group ($p < 0.05$).

Conclusion: These findings may provide a benchmark of stigmatization level among university students in Malaysia and may be a valuable basis for delivering information and education on cancer screening and treatment.

Keywords: Cancer stigma; cancer stigma scale; health sciences; non-patient population; stigmatization

INTRODUCTION

Stigma, experienced or anticipated, is a social process categorized according to blame, rejection, or exclusion outcomes from experience, perception, or reasonable anticipation of a social judgment about a person or group (1). Stigma is also defined as a “strong feeling in society in a particular situation or belief that having a particular illness is something to be ashamed of”, leading to distress (2). Health-related stigma refers to the stigmatization of an illness and can be applied to an individual or a group of people with the illness and the illness itself (3).

Despite the advancements in cancer treatment, cancer is still considered a stigmatized disease. Stigmatization toward cancer is one of the causes of delayed diagnosis and treatment (4) and is caused by the lack of knowledge of the medical procedures in cancer treatment (5). A study among cancer patients and health professionals found that lung

cancer attracts stigma because of its poor prognosis (3). Although a high disease awareness has been found (94% reported knowledge of lung cancer), 72.1% of people with lung cancer believe that stigma associated with the disease is present. A systematic review on cancer patients showed that stigma can delay cancer treatment (6). Cancer stigma not only affects cancer patients but also negatively affects public health efforts for reducing the burden of cancer in the community.

Socioeconomic factors are moderators that contribute to the stigmatization of cancer. A study on awareness and perception about cancer in Chennai, India, stated that people with no formal education, housewives, and people older than 60 years had low awareness of cancer (7). Education is an important factor contributing to awareness. Young patients have more information-seeking behaviour, and a high education level is linked to an increase in requests for additional information (8).

In Malaysia, a study among patients with breast cancer confirmed that delays in consultation and diagnosis are serious problems (9) that may lead to poor diagnosis and low survival rates. Educating the general population to be aware of the importance of early detection, diagnosis, and

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Submitted: 22 April 2021/Accepted: 09 September 2021

DOI: <https://doi.org/10.17532/jhsci.2021.1322>



control strategies is important. Given that Malaysia is one of the countries with the highest prevalence of cancer in the world and its uniqueness in terms of its different socio-cultural beliefs, this study aimed to investigate the level of stigmatization toward cancer among university students as members of a non-patient population.

METHODS

This cross-sectional study recruited 400 participants from the largest public-funded university in Malaysia that offers social and health science programs. The recruitment process was performed with social media, flyers, and verbal invitations. The participants were selected through purposive sampling according to predetermined selection criteria. The inclusion criteria for the study were non-cancer patients, full-time undergraduate students, and able to read and understand English. The purpose and procedure of the study were explained to the participants, and those who agreed to participate were required to sign informed consent forms.

Data were collected from October 2019 to February 2020. The characteristics of participants collected were age (years), gender (male/female), year of study (junior year; 1st and 2nd year and senior year; 3rd and 4th year), field of study (health sciences/social sciences), and family income (below RM3000 to RM6274 were classified into lower class [B40], RM6,275 to RM13,147 into the middle class [M40] and more than RM13148 into upper class [T20]) (9), current living area (urban/sub-urban/rural) and family history of cancer (yes/no).

The English version of the 25-item Cancer Stigma Scale (CASS) was administered through an online survey for the assessment of multiple aspects of cancer stigma. Six subdomains, namely, awkwardness (five items), severity (five items), avoidance (five items), policy opposition (five items), personal responsibility (five items), and financial discrimination (three items) (3). Answers were documented using six-point Likert scale from “disagree strongly” to “agree strongly” and reversed scored for four items. All scores ranged from 1 to 6, and a high score indicated a high level of stigma. The CASS has adequate to good level of internal validity (Cronbach's $\alpha = 0.73-0.87$) and test-retest reliability ($r = 0.72-0.82$, all $p < 0.001$) (10). In the current study, the Cronbach's alpha for each scale was satisfactory, ranging from 0.60 to 0.81.

The study protocol was approved by the Research Ethics Committee of Universiti Teknologi MARA (Approval number: REC/383/19).

Data were analyzed using the SPSS software (version 23; IBM Corp, Chicago, Illinois). Descriptive statistics of the participants' sociodemographic data and total agreements for CASS items were reported in frequency and percentages whereas scores for cancer stigma were reported in mean. Normality test was conducted, and we found the data was not normally distributed. Thus, we used the Mann-Whitney U test for analyzing cancer stigma among socio-demographic factors to compare differences between two independent groups for age, gender, year of study, field of study, and family history of cancer. A level of $p < 0.05$ indicates statistical significance.

RESULTS

The characteristics of the participants and comparisons of cancer stigma levels across sociodemographic variables are presented in Table 1. The mean age of the participants was 22.22 years (SD = 1.67), and the range was 19–30 years. Most of the participants were females ($n = 237$, 59.3%), Malays ($n = 376$, 94%), junior students ($n = 153$, 38.3%), health science students ($n = 203$, 50.7%), students in the lower-income group (B40; $n = 308$, 77.0%) and students living in a suburban area ($n = 174$, 43.5%).

On total CASS scores (Table 1), significant differences were found among age groups, between genders, and among students with different years of study, fields of study, family income levels, and family histories of cancer (All, $p < 0.05$). A higher level of cancer stigma was found in students aged 18–22 years, males, students in the junior year, social science students, students with B40 family income, and students with no family histories of cancer.

In general, the level of cancer stigma was found varied among the participants across the six subscales. The highest mean score was obtained from the “Severity” subscale, followed by scores of “Financial Discrimination” and “Personal Responsibility”. The subscale “Avoidance” had the lowest mean score. The percentages of the agreement for each item in each domain are shown in Table 2.

DISCUSSION

To the best of our knowledge, this study is the first to use the CASS in assessing the level of stigmatization towards cancer among a non-cancer population in Malaysia. The

TABLE 1. The sociodemographic variables and cancer stigma ($n=400$)

| Variables | n (%) | Cancer Stigma | |
|-------------------------------------|------------|---------------|---------|
| | | Mean (SD) | p-value |
| Age (years), Mean (SD)=22.22 (1.67) | | | |
| 19–22 | 211 (52.8) | 2.62 (0.70) | 0.001** |
| 23–30 | 189 (47.3) | 2.32 (0.63) | |
| Gender | | | |
| Male | 163 (40.8) | 2.72 (0.65) | 0.001** |
| Female | 237 (59.3) | 2.31 (0.62) | |
| Year of study | | | |
| Junior (year 1–2) | 170 (42.5) | 2.68 (0.63) | 0.001** |
| Senior (year 3 and above) | 230 (57.5) | 2.33 (0.65) | |
| Field of study | | | |
| Health sciences | 203 (50.8) | 2.32 (0.62) | 0.001** |
| Social sciences | 197 (49.3) | 2.64 (0.68) | |
| Family income level | | | |
| Lower income (B40) | 308 (77.0) | 2.53 (0.67) | 0.003# |
| Middle income (M40) | 67 (16.8) | 2.34 (0.64) | |
| High income (T20) | 25 (6.3) | 2.17 (0.54) | |
| Current living area | | | |
| Rural | 121 (30.3) | 2.61 (0.72) | 0.075 |
| Sub-urban | 174 (43.5) | 2.40 (0.58) | |
| Urban | 105 (6.3) | 2.46 (0.71) | |
| Family history of cancer | | | |
| Yes | 84 (21.0) | 2.26 (0.59) | 0.001** |
| No | 316 (79.0) | 2.53 (0.67) | |

Family income: B40: income below RM3,000 to RM6,274; M40: RM6,275 to RM13,148; T20: >RM13,148

TABLE 2. Agreement with each of the cancer stigma items in the study participants (n=400)

| Cancer Stigma | Agreement n (%) | M (SD) |
|---|-----------------|-------------|
| Severity | | |
| Once you've had cancer you're never "normal" again | 129 (32.3) | 3.05 (0.96) |
| Getting cancer means having to mentally prepare oneself for death | 207 (51.8) | |
| Having cancer usually ruins a person's career | 173 (43.3) | |
| Cancer usually ruins close personal relationships | 136 (34.0) | |
| Cancer devastates the lives of those it touches | 136 (34.0) | |
| Personal Responsibility | | |
| A person with cancer is to blame for their condition | 64 (16.0) | 2.68 (0.91) |
| A person with cancer is accountable for their condition | 181 (45.3) | |
| A person with cancer is liable for their condition | 189 (47.3) | |
| If a person has cancer it's probably their fault | 54 (13.5) | |
| Awkwardness | | |
| I would feel at ease around someone with cancer. (R) | 336 (84.0) | 2.35 (0.88) |
| I would feel comfortable around someone with cancer. (R) | 352 (88.0) | |
| I would find it difficult being around someone with cancer | 60 (15.0) | |
| I would find it hard to talk to someone with cancer | 86 (21.0) | |
| I would feel embarrassed discussing cancer with someone who had it | 98 (24.5) | |
| Avoidance | | |
| I would try to avoid a person with cancer | 39 (9.8) | 1.85 (0.97) |
| I would feel angered by someone with cancer | 38 (9.5) | |
| I would feel irritated by someone with cancer | 30 (7.5) | |
| I would distance myself physically from someone with cancer | 28 (7.0) | |
| If a colleague had cancer, I would try to avoid them | 28 (7.0) | |
| Policy Opposition | | |
| The needs of people with cancer should be given top priority. (R) | 345 (86.3) | 2.05 (1.11) |
| More government funding should be spent on the care and treatment of those with cancer. (R) | 358 (89.5) | |
| We have a responsibility to provide the best possible care for people with cancer. (R) | 358 (89.5) | |
| Financial Discrimination | | |
| It is acceptable for banks to refuse to make loans to people with cancer | 68 (17.0) | 2.89 (1.24) |
| Banks should be allowed to refuse mortgage applications for cancer-related reasons | 157 (39.3) | |
| It is acceptable for insurance companies to reconsider a policy if someone has cancer | 213 (53.3) | |

(R) denotes items that were reverse coded for calculation of the mean scores

highest agreements were found for perceived severity, followed those for policy opposition and personal responsibility. Conversely, the lowest agreements were found for awkwardness, avoidance, and financial discrimination. The highest mean score was obtained from perceived severity, followed by the scores for financial discrimination and personal responsibility. The subscale "avoidance" had the lowest mean score. This result showed that the non-patient population is unlikely to have avoidance attitudes towards people with cancer.

A previous study showed the responses on the subscales may differ between people who have more contact with a person with cancer and those who have less or no contact (10). In India, cancer-related stigma is common in patients (85%) and caregivers (75%), and perceived stigma within the community is frequent. Fear of casual transmission of cancer through daily interaction is linked to the social and physical isolation of patients (11). Other factors, such as beliefs (e.g. belief that cancer is a curse or a result of past sins) also contributed to stigmatization in India.

Overall, our findings showed that the level of stigmatization towards cancer is generally low in the population. This result can be explained by the fact that university students have positive attitudes towards cancer and are knowledgeable in cancer, as shown in a previous study that investigated their attitudes and knowledge towards cancer (12). The knowledge that cancer is a non-communicable disease (NCD) contributes to the low level of cancer stigma among students. In addition, people with a high level of education have a lower level of stigma than those with a low level of education (13). The low level of stigmatization towards cancer among the university students in this study suggested that they have a positive attitude that motivates them to seek advice for medical treatment and that they are likely willing to help people with cancers.

Males had a higher stigma level toward cancer (mean = 2.72, SD 0.65 vs. mean = 2.31 SD 0.62; $p < 0.001$). This finding was similar to that of a population-based study in England that explored the association between cancer stigma and cancer screening; this study showed that stigma was significantly higher in men and in people from ethnic minority background, and cancer stigma was negatively associated with cancer screening (11,14). Males had a higher stigma. A study on stigma toward mental illness showed that the lower stigma in women might be due to their sensitivity towards the horrifying effect of stigma because of prejudice and high level of empathy (15). In addition, exposure to cancer campaign, involvement in cancer screening, and cancer campaigns that are more oriented towards women contribute to the lower stigma among women (12). By contrast, a study in Senegal showed that the stigma level toward cancer was higher among females (13). These differences may be influenced by differences in culture, religion, and lifestyle.

In terms of year of study, the current findings showed that students in the junior level had a higher level of stigmatization toward cancer probably because senior students had more exposure to cancer awareness campaigns and studied longer and thus had enhanced knowledge of cancer and health. This explanation may apply to comparisons between young and old students, that is, the young ones showed a higher level of stigmatization.

In the field of study, the students of the social sciences had higher levels of stigmatization. A previous study that investigated knowledge, attitudes, and awareness towards cancer reported a similar result (12,16). Students of health sciences showed a lower level of stigma as they were more exposed to health information as cancer topic is incorporated in the curriculum. The result was similar to that of a study that assessed how the demographic of perceivers influence their stigma of people with mental illness. They stated that education and familiarity with mental health are inversely associated with stigmatizing attitudes towards mental illness (17). Thus, we suggested that university institutions must incorporate cancer subjects in the curriculum and implement programs of anti-stigma on cancer to lower the level of stigma and increase the knowledge about cancer screening and treatment among students regardless of their field of study.

Our finding showed a difference in the level of cancer stigma among students with different family income levels. The respondents with low family incomes showed the highest stigma level, followed by those with middle and high family incomes. To the best of our knowledge, no study reported a relationship between economic status and cancer stigma. However, according to the mental health and chronic disease comorbidity model, chronic conditions, such as cardiovascular disease, cancer, and diabetes NCDs, often coexist with mental health disorders (MHDs) owing to the shared risk factors, such as economic factors (e.g. poverty) (17). The high occurrence of MHD among low-income populations leads to physical comorbidities and stigmatization, which can either be interpersonal stigma, such as self-stigma, interpersonal, such as prejudice, or structural stigma (18). Contradicting our findings, a review among a non-cancer adult population in high-income countries found that people often actively avoid talking about or acknowledging cancer. Cancer is rarely addressed in day-to-day life by healthy and unaffected people because doing so is uncomfortable and anxiety-provoking for many people (19).

People living in a rural area had a higher level of stigma than those who lived in suburban and urban areas. The current finding was inconsistent with that of a previous study in Korea (14). The differences in these findings may be due to differences in cultures and religion. People who had a family history of cancer had a lower level of stigma. This result was supported by a previous study in England that investigated stigma with the same tools (16). Another study reported the same finding, which showed that people who had a family history of cancer had a positive attitude towards people with cancer (20,21). The consistency among these findings suggested that people will have a lower-level stigma if they have experience in dealing with people with cancer, specifically their family members, and thus they may be more knowledgeable and supportive toward cancer treatment.

Study limitations

Given that study is a cross-sectional one, it cannot establish causal relationships among variables. The participants' education level was limited to university students undertaking bachelor's degrees, and multi-ethnicity groups were

not considered. Thus, this study did not represent the general student population of Malaysia. Future studies recruiting samples from different ethnic backgrounds are recommended.

CONCLUSION

The stigmatization level of the selected population is generally low, and high level is found in the subscale "Severity", and lowest, in the subscale "Avoidance". Stigmatization level is higher in the age range 19–22, males, students in the junior year level, social science students, students with B40 family income, students living in rural areas, students with no family histories of cancer, underweight students, and physically active students. Studies that investigate the stigmatization level between ethnicities in Malaysia are still lacking. This study provides a benchmark of the stigmatization level of university students in Malaysia. Further study is needed to explore stigmatization level toward cancer among groups with different ethnicities and religious and cultural backgrounds. The causes of stigmatization also need to be explored. This study provides a valuable basis for information for government policies that will lower stigma and provide education on cancer occurrence and management in communities, especially among university students.

ACKNOWLEDGMENTS

The authors would like to acknowledge and thank all the individuals who took part in this study. The authors also thanked the Faculty of Health Sciences, University Teknologi MARA Selangor Branch, Puncak Alam Campus for supporting the publication of this paper.

DECLARATION OF INTERESTS

Nothing to declare.

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