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Knowledge and attitude of self-medication in acute pain among public in Cyberjaya, Selangor

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Abstract---Pain is among the reasons that people self-medicate. Improved knowledge and good attitude toward self-medication, may limits the risks of self-medication. This study aims to determine the level of knowledge and attitude and also aimed to determine the association between knowledge and attitude as well as to study the level of knowledge and attitude of self-medication in acute pain among different demographic profile. This cross-sectional study conducted in Cyberjaya, Selangor, included 272 respondents sampled via convenient sampling method. The overall public knowledge and attitude on self-medication for acute pain is poor. There is a significant difference between the level of knowledge with ethnicity, educational background, and marital status ($p < 0.05$). However, in the level of attitude, there is a significant difference with ethnicity, educational background; employment status and marital status ($p < 0.05$). There was a positive medium correlation between the level of knowledge and level of attitude in self-medication for acute pain ($r = 0.39$, $p < 0.001$). The public in Cyberjaya, Selangor has poor knowledge and attitude in self-medication for acute pain. Therefore, education can be given to the targeted group of the public regarding the proper way of treating acute pain in future.

Keywords---Knowledge; Attitude; Self-medication; Acute pain; Public; Cyberjaya.

Introduction

The pain usually labelled as a localized or generalized unpleasant sensation in the body or a complex of sensations that have the potential to cause physical

discomfort and emotional distress and it has resulted from bodily disorder [1]. Pain can be divided into two temporally distinct classifications: acute and chronic. Acute pain usually keeps going for less than 7 days but continually expands up to 30 days. For a some conditions, acute pain episodes may repeat occasionally. In a few patients, acute pain continues to become chronic [2]. Limited knowledge and unfavorable attitudes of the public toward pain management were reported as one of the major barriers to implementing effective pain management. Both pain control and treatment are vitally important because untreated pain will impede patient's response to treatment and may affect their quality of life. One of the challenges of pain lies in the ability to manage it. Pain is among the reasons that people self-medicate. People who experience pain seek relief through medical counseling, complementary therapies, and self-medication. Self-medication is widely practiced globally as a form of self-care to manage pain [3]. Self-medication is described as obtaining and consuming a drug without consulting a healthcare professional, whether it is for diagnosis, prescription, or surveillance treatment [4]. Self-medication is being practiced worldwide with high prevalence mostly in developing countries [5]. Self-medication has become common practice in Malaysia that has been increasing in the last 15 years, while seeking care from health care providers has declined from 42.5 % to 37.1 %. The WHO has also pointed out that responsible self-medication can help prevent and manage conditions that do not require consultation with a physician and provides a cheaper alternative for treating common illnesses. Furthermore, it allows rapid and convenient access to treatments and saves the time spent waiting to see a doctor can even save lives in acute conditions. Meanwhile, self-medication contributes to the public health system in the aspect of decreasing the burden for public health facilities [6]. However, inappropriate self-medication may cause harm to individuals because the possibility of not obtaining the appropriate medication for the condition, leading to a delay in the diagnosis and treatment of the condition [7]. In addition, a lack of adequate knowledge of the drug dosage and frequency of intake can potentially lead to adverse effects from the drugs. Improved knowledge and understanding of self-medication, as well as a good attitude toward self-medication, may result in rational use of self-medication, limiting the risks of self-medication. To practice responsible self-medication in acute pain in their daily lives, the general people must have a certain level of knowledge and attitude toward self-medication.

2. Methodology

This cross-sectional study was conducted from December 2020 to April 2021 in Cyberjaya, Selangor. A total 272 respondents were sampled via convenient sampling using a validated guided self-administered questionnaire. The questionnaire used in this study was adopted from previous study [8, 9]. Both Malay and English language were used in the questionnaire because it will be easier for the respondent to understand and to answer the questionnaire. The questionnaires were created using Google document and the web link was circulated around online social media.

The validity and reliability of the questionnaire were evaluated in a pilot study. The pilot study was conducted on 10 public before the commencement of the study. The questionnaire consisted of 3 sections assessing the demographic data

of the respondents, knowledge and attitude towards self-medication in acute pain among public. The knowledge of the respondents on self-medication in acute pain was assessed by 8 questions while the attitude was assessed by 7 questions. The level of knowledge was divided into poor, moderate and good, if the respondents were responded more than 75%. The level of attitude was divided into poor and good, if the respondents were responded more than 50%.

2.1 Study population

The sample populations were public residing in Cyberjaya, aged 18 years old and above.

2.2 Study criteria

The inclusion criteria was adults residing in Cyberjaya and respondents who provide consent to complete the questionnaire. The exclusion criteria were residents aged below 18 years old and respondents who submitted incomplete submission of questionnaire.

2.3 Data analysis

The data collected from respondents was analysed by using Statistical Package for Social Sciences (SPSS), version 25.0 for Windows. The level of significance was set as $p < 0.05$. In this study, the descriptive statistic was used to present demographic information. Throughout data analyses, the normality of continuous data was determined. Appropriate inferential tests were used to determine the level of knowledge and attitude of self-medication in acute pain among the public in Cyberjaya, Selangor. Continuous data (knowledge and attitude) with normal distribution were analyzed by using independent t-test and one-way ANOVA. Lastly, Pearson Correlation Coefficient was used to determine the correlation between knowledge and attitudes of self-medication in acute pain among public.

3. Results

3.1 Demographic data

Table 3.1 Distribution of Demographic Data

| Characteristics | Frequency (%), n= 272 |
|------------------------|------------------------------|
| Age | |
| 18 - 27 | 119 (43.8) |
| 28 – 37 | 40 (14.7) |
| 38 – 47 | 66 (24.3) |
| 48 – 57 | 32 (11.3) |
| > 57 | 15 (5.5) |
| Gender | |
| Male | 117 (43) |
| Female | 155 (57) |

| | |
|-----------------------------|------------|
| Ethnicity | |
| Malay | 116 (42.6) |
| Chinese | 59 (21.7) |
| Indian | 53 (19.5) |
| Others | 44 (16.2) |
| Education Background | |
| Not attended | 7 (2.6) |
| Primary | 12 (4.4) |
| Secondary | 53 (19.5) |
| Tertiary | 200 (73.5) |
| Employment status | |
| Employed | 179(65.8) |
| Not employed | 93 (34.2) |
| Marital status | |
| Divorced | 4 (1.5) |
| Single | 117(43.0) |
| Married | 151(55.5) |

3.2 The Level of Knowledge towards Self-Medication

Table 3.2.1 Respondents Responses to Knowledge of Self-Medication in Acute Pain

| Question | | Answers | |
|----------|--|-------------|-------------|
| | | Yes | No |
| 1 | Are you aware of the side effects of self-medication in acute pain? | 76 (27.9%) | 196 (72.1%) |
| 2 | Do you know whether the medicine you purchased for acute pain needs a prescription or not? | 115 (42.3%) | 157 (57.7%) |
| 3 | Do you know the route of administration of self-medication you purchased without a prescription? | 67 (24.6%) | 205 (75.4%) |
| 4 | Do you know the dosage of medications for acute pain you purchased without a prescription? | 151 (55.5%) | 121 (44.5%) |
| 5 | Do you know that self-medication for acute pain can cause addiction? | 119 (43.8%) | 153 (56.3%) |
| 6 | Do you know that self-medication can delay one to seek for hospital intervention? | 84 (30.9%) | 188 (69.1%) |

| 7. | Question: What type of acute pain we can self-medicate? | Responses |
|----|---|-------------|
| | Acute lower back pain | 135 (49.6%) |
| | Acute toothache | 112 (41.1%) |
| | Acute tension headache | 140 (51.4%) |
| | Menstrual pain | 100 (36.8%) |
| | Post-operative pain | 55 (20.2%) |

| | | |
|----|--|------------------|
| | Musculoskeletal pain | 114 (41.9%) |
| 8. | Question: Which type of medicines is usually used in self-medication for acute pain? | Responses |
| | Paracetamol - Panadol® , Uphamol 650 | 220 (80.8%) |
| | Non-selective NSAIDs: Oral- Brufen® (ibuprofen), Ponstan® (Mefenamic acid), Voren® (Diclofenac) | 85 (31.2%) |
| | Non-selective NSAIDs: Topical Patch (Salonpas®, Acustop®), Ointment (Voltaren® gel, Counter pain®) | 105 (38.6%) |
| | Selective NSAIDs - Celebrex (celecoxib) | 49 (18%) |
| | Opioids - Acugesic® (Tramadol), Panadeine® (codeine) | 48 (17.6%) |
| | Herbs | 66 (24.3%) |

Table 3.2.2 Overall Level of Knowledge towards Self-Medication for Acute Pain

| Characteristic | Frequency (%), n=272 |
|---------------------------|----------------------|
| Level of Knowledge | |
| Good | 4 (1.5) |
| Moderate | 112 (41.2) |
| Poor | 156 (57.4) |

Table 3.2.3 The Level of Knowledge based on Demographic Profile

| Demographic profile | Mean | p-value |
|---------------------|-------|--------------------|
| Age group | | |
| 18 – 27 | 16.03 | 0.084 _a |
| 28 – 37 | 15.25 | |
| 38 – 47 | 17.36 | |
| 48 – 57 | 17.73 | |
| >57 | 17.75 | |
| Gender | | |
| Male | 16.41 | 0.721 b |
| Female | 16.63 | |

| | | |
|-------------------------------|-------|--------------------|
| Ethnicity | | |
| Malay | 17.24 | 0.002 ^a |
| Chinese | 17.42 | |
| Indian | 15.96 | |
| Other (please specify) | 14.18 | |
| | | |
| Educational background | 14.29 | 0.000 ^a |
| Not attended | 12.67 | |
| Primary | 14.79 | |
| Secondary | 17.31 | |
| Tertiary | | |
| | | |
| Employment status | | |
| Employed | 16.50 | 0.878 b |
| Unemployed | 16.60 | |
| | | |
| Marital status | | |
| Single | 15.78 | 0.002 ^a |
| Married | 17.30 | |
| Divorced | 10.00 | |

^aOne-Way ANOVA Test

^bIndependent t-test

*p<0.05 is statistically significant

3.3 The Level of Attitude towards Self-Medication

Table 3.3.1 Respondents Responses to attitude of Self-Medication in Acute Pain

| Questions | | Answers | | | | |
|-----------|--|-------------------|-------------|-------------|------------|----------------|
| | | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| 1 | Should self-medication in acute pain be encouraged? | 30 (11.0%) | 50 (18.4%) | 72 (26.5%) | 94 (34.6%) | 26 (9.6%) |
| 2 | Is it right to use drugs without prescription for acute pain? | 39 (14.3%) | 95 (34.9%) | 86 (31.6%) | 44 (16.2%) | 8 (2.9%) |
| 3 | Is self-medication for acute pain hazardous to the community? | 14 (5.1%) | 46 (16.9%) | 139 (51.1%) | 57 (21.0%) | 16 (5.9%) |
| 4 | Self-medication for acute pain can be practiced on all the drugs. | 76 (27.9%) | 105 (38.6%) | 57 (21.0%) | 24 (8.8%) | 10 (3.7%) |
| 5 | Whenever one is in acute pain, should always take medication at home before going to the hospital. | 53 (19.5%) | 78 (28.7%) | 77 (28.3%) | 54 (19.9%) | 10 (3.7%) |
| 6 | Self-medication is better than going to the hospital | 77 (28.3%) | 81 (29.8) | 53 (19.5%) | 50 (18.4%) | 11 (4.0%) |
| 7 | Medicine can be shared between two people having different acute pain | 133 (48.9%) | 62 (22.8%) | 39 (14.3%) | 27 (9.9%) | 11 (4.0%) |

Table 3.3.2 Overall Level of Attitude in Self-Medication for Acute Pain

| Characteristic | Frequency (%), n=272 |
|--------------------------|----------------------|
| Level of attitude | |
| Good | 57 (21%) |
| Poor | 215(79%) |

Table 3.3.3 The Level of Attitude based on Demographic Profile

| Demographic profile | Mean | P-value |
|-------------------------------|-------------|--------------------|
| Age group | | |
| 18-27 | 9.67 | 0.069 ^a |
| 28-37 | 12.13 | |
| 38 – 47 | 11.34 | |
| 48 – 57 | 10.38 | |
| >57 | 11.80 | |
| Gender | | |
| Male | 10.37 | 0.080 ^a |
| Female | 11.41 | |
| Ethnicity | | |
| Malay | 13.34 | 0.001 b |
| Chinese | 9.76 | |
| Indian | 10.23 | |
| Others (please specify) | 11.00 | |
| Educational background | | |
| Not attended | 11.00 | 0.004 ^a |
| Primary | 10.48 | |
| Secondary | 11.77 | |
| Tertiary | 15.33 | |
| Employment status | | |
| Employed | 10.31 | 0.002 b |
| Unemployed | 12.22 | |
| Marital status | | |
| Single | 12.34 | 0.000 ^a |
| Married | 9.79 | |
| Divorced | 14.50 | |

^aOne-Way ANOVA Test

^bIndependent t-test

*p<0.05 is statistically significant

3.4 Association between Knowledge and Attitude

Table 3.4 Association between Knowledge and Attitude

| Variables | Attitude towards self-medication n=272 |
|-----------------------------------|---|
| Knowledge Towards self-medication | 0.39 ^a |
| | p<0.001 ^b |

^a Pearson correlation value, r

^b p-value

Discussion

Demographic data

A total of 272 respondents responded to this survey. The majority of them, 119 (43.8%), were between 18 to 27 years of age. The results were similar to previous research [10]. According to the Community of Innovators Cyberjaya Malaysia, Cyberjaya Malaysia has a population of 56% of who are between the ages of 20-44 age groups, with only 8% of the population older than 45 years. This demonstrated the highest percentage of age groups was between 18-27 years old in this study. The sample was highly skewed towards females, with 57% of females. Women are overrepresented in surveys since they are more willing to participate [11]. Thus, there were more female respondents in this survey than male ones.

Most respondents were Malay 116 (42.6%), followed by Chinese 59 (21.7%), and Indian 53 (19.5%). The findings were comparable to those of a prior study done in Selangor [12], which stated that 91.5% of respondents of their survey were Malay. This could be due to the higher number of Malay ethnics living in Cyberjaya, Selangor. Most of the respondents completed their tertiary education, making up 200 (73.5%) of the total respondents. According to United Nations Educational, Scientific and Cultural Organization (UNESCO) data, Malaysians aged 15 and over in 2018 had a literacy rate of 94.85 %.So, it is reasonable to see more educated people responding to the survey.

Respondents who are employed make up most of the sample, which are 179 responses at a rate of 65.8%. According to Setia Haruman (2018) Information Memorandum Cyberjaya, Malaysia reported that there were 40,637 workers in Cyberjaya. Also, they mentioned that Cyberjaya has a total of 1815 companies and other business entities. Therefore, this concludes the reason behind the highest number of employed respondents for this survey. The highest proportion of respondents were married, making up 151 (55.5%).A similar survey done in Selangor by Ain et al.[13] stated that Selangor has a higher number of married people than singles. This is because according to Malaysia's department of statistics, the marriage rate in Selangor increased in 2020 and this might be one of the reasons why most of the respondents were married.

4.2 The Level of Knowledge towards Self-Medication in Acute Pain

This research found that most of the public had a poor level of knowledge towards self-medication in acute pain. In contrast, the study conducted among Malaysia's urban population revealed that their level of knowledge about self-medication was moderate to poor [6]. This is because more than a third of them were confused about the self-medication's adverse effects and drug interactions [6].

According to the current study, most of the public understood the dose of medications for acute pain that were purchased without a prescription. It may contribute to limit the risk of self-medication such as over dosage [14]. However, most of the public are unaware that the drugs they buy require a prescription, do not know the route of administration and are also unaware of the side effects of

self-medication. This result is contraindicated by study conducted in Hong Kong that found that most respondents were thoroughly aware of the side effect [15]. As a consequence, public had incorrect knowledge that self-medication does not promote addiction, and believed that self-medication did not postpone seeking medical care. It can conclude that Cyberjaya residents had inadequate knowledge about the adverse effects of self-medication.

Most of public self-medicated for acute headaches, followed by acute lower back pain and acute musculoskeletal pain. This is due to fact headache are the most often reported acute pain experienced by majority of people [16]. In another similar study conducted by Flaiti et al. [17] stated that headaches were the most common illness that could prompt self-medication. This because headaches are considered mild illnesses and are believed to be treated by self-medication.

The most common medication used to treat acute pain was paracetamol followed by NSAIDS topical. This because of paracetamol was shown to be effective analgesic for acute pain [18]. Similar results were obtained in another study [19] stated that paracetamol is used in self-medication for acute pain. In addition, another study stated that paracetamol is highly considered for self-medicine in acute pain because of its effectiveness, low prevalence of side effects, and better patient tolerance [20].

4.2.1 The Level of Knowledge Based on Demographic Profile

People above the age of 57 had a greater level of knowledge than other age groups and findings revealed an insignificant difference between knowledge and age. This finding is in direct opposition to a previous study which resulted that the age group of 35- 44 years had a higher score of knowledge compared to other age groups [21]. This is because elderly people had more lifetime experience and past knowledge of illnesses and drug use [22].

Moreover, females were shown to have a higher level of knowledge about self-medication than males. This finding is consistent with a research done in Kedah [23]. This is because women are more inclined to self-medicate particularly during menstruation and headaches. Females have greater exposure; therefore they have a better understanding of self-medication. However, there is no significant difference between the level of knowledge and the gender group. This is parallel with the study done in Lagos, Nigeria among residents [24].

The current study demonstrates a significant difference in knowledge based on ethnicity among the public. Evidence of this finding comes from [21]; the level of knowledge in self- medication is higher in Chinese ethnicities. Chinese ethnic groups were more likely than those from other ethnic groups to utilize self-medication as a first action to treat illness compared to other ethnicities [21]. This may be because Chinese spend more money in obtaining medicines from private pharmacies as compared to other ethnic groups and different cultural beliefs about the disease may encourage the Chinese to be more involved in self-care. This finding was corroborated with the previous research [25].

Public with tertiary education had a greater level of knowledge and educational qualification was statistically significant between knowledge. Study was same view that higher educated persons have high level of knowledge regarding self-medication [26]. This is due to the fact that people who attained tertiary education claimed to always read the leaflets of drugs before using drugs, and they are aware of the medication dose and its side effects [27]

Apart from that, respondents who were unemployed had a slightly higher level of knowledge compared to employed individuals. This study shows that there are no significant differences between the knowledge of self-medication and employment status. This was in line with study conducted previously which reported the level of knowledge is not affected by the employment status of the respondents [28].

Based on a current study, knowledge of self-medication was found to be significantly higher among married individuals. This may be due to the fact that the larger the family size, the greater the probability of self-medication. This is consistent with previous research [29].

4.3 The Level of Attitude towards Self-Medication in Acute Pain

According to the outcome of this study, majority of the respondents have a poor attitude toward self-medication in acute pain at a rate of 215(79%) respondents. This research's findings differed from those of a previous study performed in Dammam which reported that public had positive attitudes regarding self-medication [9].

As a result, most respondents (34.6%) agreed and 9.6% strongly agree with encouraging self-medication in acute pain. This result assumes that the majority of the public prefer self-medication due to convenience, time-saving, cost-effectiveness, and ailment judged as minor illness. This outcome is parallel with a previous study [24]. While 34.9% of respondents disagreed with the use of medicine without a prescription for acute pain. This may reflect the fact that the public had a good attitude towards the use of medicine in self-medication and the public may have consulted healthcare professionals before self-medication. This may limit the side effects of self-medication like over dosage and drug interactions. However, most of the respondents (51.1%) were neutral on whether self-medication is hazardous to the community. This data was consistent with pervious study [9]. Although self-medication has a benefit in reliving acute pain, the public believes that self-medication too can be a potential risk to society. Only 3.7% of the public strongly agree that self-medication for acute pain can be done on all drugs. This could be because respondents judged their last self-medication use to be successful, and this may further encourage them to practice. 18.4% agreed that self-medication is better than going to the hospital. This is because the public has confidence in managing their acute pain, and it can save time spent waiting for a doctor and save money [30]. These overall outcomes highlight that most of the public have a negative attitude towards self-medication.

4.3.1 The Level of Attitude based on Demographic Profile

Age was shown to be insignificant in determining their level of attitude towards self-medication in acute pain. A similar study done in Western Nepal [5] mentioned that the age group showed no difference in attitudes. People aged between 18-27 years old had a poor attitude towards self-medication. This is because people aged between 18-27 years are mostly students. They were more likely to share medicine between friends to treat their acute pain. This is due to the lack of availability of transport, knowledge from previous experience, money saving, and the ability to self-manage the pain with guidance from friends [31].

Females had good attitudes towards self-medication, but it was not statistically significant. This finding is contradictory with previous research revealed that women were more likely than males to have a poor attitude towards self-medication. Despite the fact that women have a better health-seeking attitude than men, their frequent hospital visits may have an impact on their familiarity with medications, leading them to self-medicate more often [32]. It can be concluded that, since women use self-medicine more often, they have a more positive attitude towards self-medication.

Ethnicity is a key factor that can influence levels of attitude concerning self-medication among Malaysians [33], This current study showed Malay had a more positive attitude compared to other ethnicities. These results differ from previous studies [23].

There was a significant difference between the levels of attitude between ethnic groups. it can be hypothesized that attitudes and practices of self-medication may differ among individuals belonging to various cultures and ethnicities.

Education makes a significant impact on self-medication attitudes. This current study showed that respondents who attained tertiary level had good attitude towards self-medication in acute pain compared to others. This is because educated respondents were more likely to seek preventative and curative care, as well as to be worried about health-related issues that may harm or disadvantage their health. This is consistent with research conducted in Kuwait, which showed that respondents with a higher level of education had a more positive attitude towards self-medication [34].

The results of this research revealed that employed individuals had a poor level of attitude compared to unemployed individuals. There were statistically significant differences between attitudes and employment status. Thus, this data is consistent with the findings of a previous study, which revealed that respondents who were employed were more likely than those who were unemployed to have a poor attitude toward self-medication [18]. It might be because people who are working, especially those who are busier, may not have the time to speak with healthcare specialists, especially if they are suffering from minor diseases. This behavior can influence encouraging self-medication. This finding was further supported by a previous study concerned with attitude on self-medication among the public [23].

There is a significant difference between marital status and attitude on self-medication., married individuals had a poor attitude compared to the single and divorced individual. This is because married respondents may have claimed time limitations and a lack of financial resources to pay for all of their children's medical costs, and other expenses that they faced in their everyday lives; this may not have been the case for single respondents. Consequently, married people preferred self-medication better than going to the hospital and are more inclined to encourage self-medication in acute conditions. This may result in a poor attitude toward self-medication. This outcome is similar to a previous study done in Ethiopia [35].

4.4 The Association between Level of Knowledge and Level of Attitude in Self-Medication

This study showed that there is a medium, positive significant correlation between knowledge and attitude. Previous research has shown a correlation between drug knowledge and a positive attitude toward self-medication [36]. It has been revealed that if the public had more knowledge about drugs in terms of its indication, dosage, route of administration and side effects, they would have more positive attitude on self-medication. Consequently, it is concluded that appropriate understanding might lead to a positive attitude toward self-medication [37].

It is suggested that future research can consider practices of self-medication as well as the factors that influence public to engage in self-medication in acute pain. A high prevalence of self-medication practice has been observed among medical students. Further studies should also be done to assess practices, knowledge and attitude of self-medication for acute pain among medical students.

Conclusions

Generally, this study demonstrated poor level of knowledge and poor level of attitude towards self-medication in acute pain among public in Cyberjaya. As consequence, there is a high likelihood of public engaging in irresponsible and ineffective self-medication due to their lack of knowledge and attitudes. Hence, it is essential to reinforce the importance of public knowledge on self-medication and the public should be educated and made aware of the implications of self-medication.

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