

A STUDY ON AWARENESS OF SKIN INFECTION AMONG ADULTS IN PETALING DISTRICT, MALAYSIA

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ABSTRACT

Objective: The prevalence of skin infection is on the rise globally and there is a lack of published data pertaining to skin infection in Malaysia. Hence, the aim of this study is to determine the awareness of skin infection among adults and to study the effect of skin infection on quality of life (QoL).

Methods: A cross-sectional descriptive study was conducted among adults 18 y and above in Petaling district, Malaysia. Subjects were interviewed based on a validated questionnaire to elicit information on socio-demographic data, prevalence and level of awareness of skin infection. Whereas the impact of skin infection on quality of life was questioned using a validated questionnaire Dermatology Life Quality Index (DLQI). Data was analyzed using Microsoft Excel and SPSS version 18.0.

Results: Out of 384 participants, 230 (60%) of the subjects had a skin infection. Bacterial skin infection such as acne (54.8%) being most prevalent, followed on by a fungal infection (29.6%), viral infection (11.7%) and parasitic infection (3.9%). It was found that most of the subjects were aware of the risk factors of skin infection. Nevertheless, those with skin infection reported their quality of life was affected mainly due to the physical symptoms of skin infection and treatment of skin infection. A significant association was found between the awareness of risk factor of skin infection and QoL in those with a skin infection with a p-value<0.05.

Conclusion: Most of the respondents were found to be aware of skin infection. Nevertheless, respondents reported that their QoL was affected due to physical symptoms and treatment of skin infection. The study also shows that there is association found between level of awareness of skin infection and QoL in subjects with a skin infection. Hence, dermatological community programs should be encouraged to educate the public further.

Keywords: Skin infection, Awareness, Quality of life, Dermatology Life Quality Index.

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INTRODUCTION

Skin infection is affecting human population worldwide as approximately 300 million people are being infected with various types of skin infection yearly [1]. In the year 2010, a study by the Global Burden of Disease (GBD) found fungal and acne to be listed in the top 10 most prevalent diseases. Besides that, the study reported skin conditions to be ranging from 2nd to the 11th leading cause of years lived with disability and 4th leading cause of nonfatal disease burden [2]. Whereas, in developing countries the prevalence rate of skin infection was found to range between 20%-80% [3]. This is supported by studies in the developing countries such as Mauritius, which reported skin infection prevalence rate among adults to be 33% [4] whereas a study in Sierra Leone on African population reported skin infection prevalence of 42% [5].

The past few years, the measurement of quality of life (QoL) has become an important factor in the medical research as skin disorders affected the QoL of patients just like other chronic disorders [6]. Skin infection can be caused by factors such as climate, low socioeconomic status, overcrowding, poor skin condition, low hygienic level and lacking in awareness of skin infection [7-10]. One of the essential prevention factors is knowledge of skin infection [4], hence, lack of knowledge reduces the awareness level leading to a negative impact of skin infection on the QoL among the population [11].

Thus, this study has been designated to study the aim which is to determine the awareness of skin infection among adults in Petaling district and to assess the impact of skin infection on QoL among adults in Petaling district. While the null hypothesis is that there is no association between the level of awareness of skin infection and QoL and the alternate hypothesis is vice versa.

MATERIALS AND METHODS

A descriptive cross-sectional study design was used to explore and investigate the hypothesis of this study. This study was carried out

for 6 mo, July to December 2014 among the general community in the Petaling district. The study was conducted on adults of the three main races Malay, Chinese and Indian above 18 y of age. The sampling area where the study was carried out is in the Petaling district, which consists of cities such as Petaling Jaya, Subang Jaya, Shah Alam, Puchong, Damansara, Bandar Sunway and Seri Kembangan [12].

A total of 384 adults were randomly selected for this study. This research was approved by Committee of the Research and the Ethics Committee, International Medical University, Malaysia. Prior to the interview, all participants were well informed regarding the study by providing them an insight of the study as written in the study information sheet. They were also explained on their voluntary involvement and hence, written consent was obtained from each participant. Whereas those participants who were terminally ill, had communication barrier, was unable to provide consent and premature termination of the interview that could not be continued due to any reason were excluded from the study.

The sample size needed to represent the population of the Petaling district for this study was calculated using the Morgan's formula. According to the Mukim Selangor 2010, the current Petaling district population are 1617004 [13]. Hence, the estimated sample size is 384 people based on the Morgan's formula and verified using RAOSOFT calculator. In this study, stratified sampling technique was used to cover all the three races in Petaling district. Besides that, the random sampling method was used for subject selection to prevent bias in the study.

The data collection instrument used was a validated English version questionnaire obtained from the original author Goonmatee *et al.* with his permission. Then the Malay version of the questionnaire was developed with the consent of the author. The questionnaire consisted of socio-demographic questions and questions to access level of awareness. Whereas the dermatology quality of life index

(DLQI) English and Malay version of the questionnaire was obtained directly from Cardiff School of Medicine to measure the impact of skin infection on QoL. It consists of nine questions which addressed daily activities, leisure, feelings, school, work treatment and also a personal relationship. A pilot study was done on 60 subjects prior to the study and Cronbach Alpha was calculated. The alpha (α) value of more than 0.7 indicates a satisfactory internal validity of the questionnaires.

The data obtained in the study were analyzed statistically using Microsoft Excel and Statistical Package for Social Science (SPSS) version 18.0 for Windows with 95% confidence interval (CI) and a significant level of 0.05. Descriptive statistic was used to show

prevalence rate, awareness level and the impact on QoL of skin infection among adults and multivariate analysis was used to test the association between the level of awareness of skin infection and QoL.

RESULTS

The socio-demographic characteristics of the respondents are represented in table 1. Out of 384 participants, 151 (39.3%) were male, and 233 (60.7%) were female and the majority of the respondent's (63.3%) belong to the age group of 18-25 y. The respondents were mostly from middle socioeconomic status with an average household income of RM10000-RM50000. In terms of education, the highest level of education was from tertiary education (62.2%) followed by secondary education (35.9%).

Table 1: Socio-demographical profile of the adults in Petaling district, Klang valley

Socio-demographic characteristics	Total participants n=384	Percentage (%)
Gender		
Male	151	39.3
Female	233	60.7
Age group (years)		
18-25	243	63.3
26-40	80	20.8
41-60	45	11.7
Above 60	16	4.2
Household income status		
Below RM10000	146	38.0
RM 10000-RM 50000	177	46.1
Above RM50000	61	15.9
Highest level of Education		
Primary	7	1.8
Secondary	138	35.9
Tertiary	239	62.2

Out of 384 participants, 230 participants reported having skin infection which gives a prevalence of 60% among adults of Petaling district. Bacterial skin infection which consists of acne (n=126) was most prevalent, followed by fungal skin infection consisting of tinea versicolor (n=55), athlete's foot (n=8), oncomycosis (n=5), viral skin infection consisting wart (n=12), cold sores (n=6), shingles (n=5), herpes (n=4) and parasitic skin infection of ringworm (n=9) as shown in fig. 1.

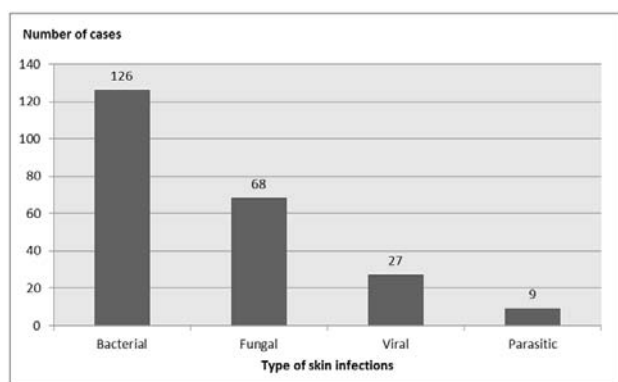


Fig. 1: The distribution of skin infection among adults with skin infection in petaling district

Besides that, table 2 represents the level of awareness of skin infection among adults in the Petaling district. As it can be seen from the results obtained, most of the respondents are aware of the term skin infection (61.5%). Only a minority of the respondents reported not being aware of skin infection (38.5%). The data also collected also that most of the respondents who reported having known about skin infection had good hygiene practices and were highly aware of the risk factors associated to skin infection as the percentage of awareness were all more than 50%. For instance, 84.9% respondents knew that sharing their belongings are a risk factor while 76.8% were aware of heavy perspiration being a risk factor of skin infection. In addition, 72.9% of respondents knew that sharing of cosmetics are a risk factor and 71.4% of them were aware that tattoo and piercing as being a risk factor.

As shown in fig. 2, the respondents with skin infection reported that their QoL is affected because of skin infection mainly due to physical symptoms (72.6%) caused, by skin infection such as itch, sore, painful or stinging. Besides that, they also described the treatment of skin infection (53.5%) to be affecting their QoL.

Multivariate analysis data tabulated in table 3 are all the data which are statistically significant (p -value<0.05). The findings show a significant association between awareness of tattoo and piercing as risk of skin infection with QoL in terms of skin, interfering with social or leisure activity, sports activity and work or studies and sharing of cosmetic as risk of skin infection with QoL affected in terms skin being a problem with friends, relatives and partner.

Table 2: Level of awareness of skin infection among adults in petaling district

Awareness variable	Percentage of respondents (%)
Familiar with the term skin infection	61.5
Awareness of risk of sharing personal belongings	84.9
Awareness of risk of wearing tight, non-cotton clothes	54.7
Awareness of risk of sharing cosmetics	72.9
Awareness of risk of tattoo and piercing	71.4
Awareness of risk associated with heavy perspiration	76.8

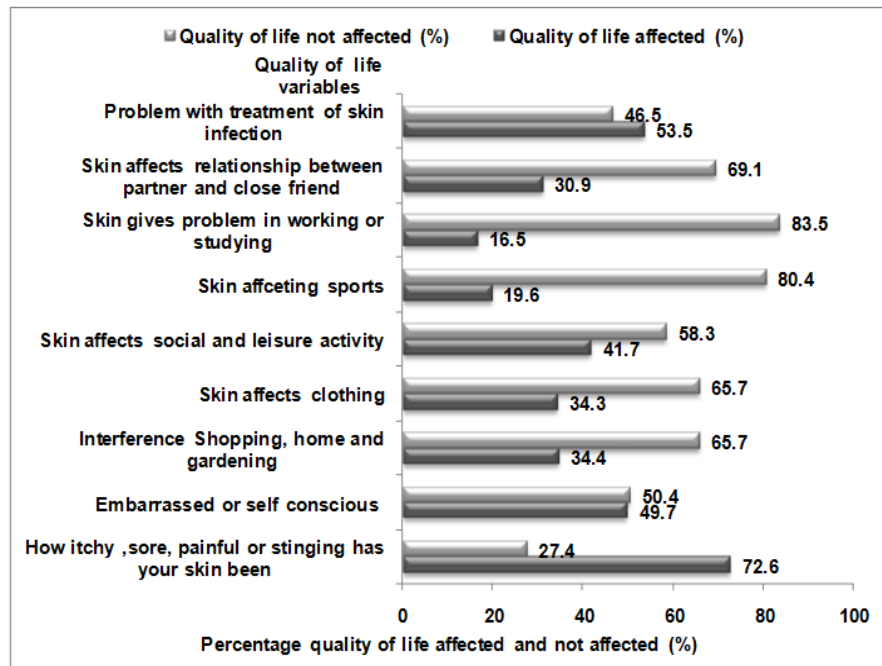


Fig. 2: Impact of skin infection on quality of life among adults with skin infection in petaling district

Table 3: Association between level of awareness of skin infection and quality of life

Level of awareness of skin infection correlates	p-value	95% CI
Skin infection affecting social or leisure activity	0.022	1.096-3.389
Skin infection causing difficulty in sports activity	0.034	1.047-3.997
Skin interferes with working or studying	0.003	1.440-7.051
Skin causing problem with friends, relatives and partner	0.0027	1.074-3.630

DISCUSSION

Prevalence of skin infection

In this study, the prevalence of skin infection among the adults in the Petaling district was found to be 60% with bacterial skin infection such as acne (54.8%) being most prevalent followed by fungal infection (23.9%). This is consistent with studies done in Mauritius with a prevalence of 33% where acne was most prevalent, followed by fungal infection [4] and study in Africa reported skin infection prevalence to be 42% with acne and fungal infection being most prevalent [5]. Acne and fungal skin infection are most prevalent in these studies since being in the equatorial belt this countries experience tropical climate which is marked with hot and humid weather throughout the year [14]. Thus, provides an optimal environment for the growth of bacteria such as *propriobacterium* leading to acne and growth of fungi causing fungal infection [15].

Level of awareness of skin infection

This study revealed that a high number of participants are aware of the term skin infection and risk factors causing skin infection. This is in line with the study by Goonmatee *et al.* who reported 85% of the respondents have good knowledge and awareness on skin infection [4]. This is due to the majority of the respondents having tertiary education and middle socioeconomic status, such as the study by Goonmatee *et al.* According to Ministry of Health, Selangor has a high level of urbanization (91.4%) and lowest poverty incidence (0.7%) [16]. Hence, proper education and healthcare system highlights the significance of firm awareness of health information.

Impact of skin infection on quality of life

Scholified *et al.* observed skin infection to have a great negative effect towards the quality of life [11]. Most respondents of this study reported their QoL is affected due to physical symptoms and treatment of skin infection. A study by Goonmatee *et al.* reported

physical symptoms causing psychological distress [4] while Tasoula *et al.* reported acne had effected their emotions mainly followed by physical symptoms causing annoyance and treatment causing daily discomfort [17]. This is because the itch is a common concomitant symptom of skin infection, especially acne [17-8]. Whereas treatment of skin infection causes a problem in terms of the messiness of the topical application and time-constrain causing discomfort and annoyance [17].

Association of level of awareness on quality of life

According to this study, a significant association between the level of awareness of skin infection and QoL has been found. The majority of the respondents are aware of the risk factors. Hence, their QoL was found not to be affected. This has been proven by studies which shows that acne patients who were emotionally more affected were more likely to adhere to treatment as they are more aware of the condition which leads to a better outcome and improved QoL [19] whereas study conducted by Renzi C *et al.* on psoriasis patients proves that insufficient knowledge undermine their decision-making in daily life affecting their QoL [20].

Nevertheless, The limitation of this study is that this study did not cover the healthcare settings population as ethical approval could not be obtained due to time constraint. Besides that, bias regarding the self-report of skin infection may occur.

CONCLUSION

The study shows that the adults in the Petaling district were mostly aware of skin infection and its associated risk factors. Nevertheless, it was found that their QoL is affected in term of physical symptoms caused by skin infection and treatment of skin infection. Here, the alternate hypothesis is accepted as there is a significant association between the awareness level of skin infection and QoL. Hence, dermatology community programs need to be carried out to educate

the public to bring awareness on the most common skin infections for a better QoL. As the prevalence of skin infection is on the rise globally, this study shows that increasing the level of awareness of skin infection will help prevent the spreading and worsening of skin infection and have a better QoL as the people become more aware of the factors causing the skin infection.

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CONFLICT OF INTERESTS

Conflict of interest declared to be none.

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