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Self-medication practices among health care professionals in a Private University, Malaysia

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ABSTRACT

The purpose of this study was to evaluate and analyze the prevalence of self-medication practice among healthcare professionals in a private university, Malaysia. Prospective, quantitative, cross-sectional design which attempts to measure the self-medication practices among the teaching healthcare personnel through questionnaire survey form, self-developed and pre-validated consisting of open and closed-ended questions. Among respondents, 77.6% were practicing self medication. The reasons were, familiar with treatment options (23.5%) and mild illness (20%) and the highest practicing respondents were 30-39 years (76.3%). The reason among those who did not practice self-medication was risk of adverse reactions (31.6%). Self-medication practice was more prevalent among medical professionals (86.5%) followed by pharmacy and dentistry (70%). Headache (15.7%), cough and cold (15%) among illness and analgesics (13.1%) and antipyretic (12.7%) among drugs induced most respondents to practice self-medication. This study reveals very high prevalence of self-medication practice among healthcare professionals in the local private university. Exposure to drugs, knowledge of their illness and treatment choice remains main contributors. The healthcare professionals must be encouraged to enter the patient role.

Key Words: Self-medication, health care professionals, University, prevalence.

INTRODUCTION

In recent years there has been an increasing trend in self-medication with non-prescription [over-the-counter (OTC)] drugs available in pharmacies and retail outlets. In current days, more drugs were changed from prescription-only medications (POM) to pharmacy medications (Bond, 2001). According to World Medical Association (WMA), POM refer to those drugs which are only available on prescription as they are not safe except under the supervision of a physician because of toxicity and potential harmful effects (Blenkinsopp *et al.*, 1996). The World Self-Medication Industry (WSMI) defines self-medication as the treatment of common health problems with medicines especially designed, labeled and approved for use without medical supervision (Self medication principles, WSMI).

Thus self-medication can be defined as obtaining and consuming drugs without the advice of a physician either for diagnosis, treatment or monitoring (Montastruc *et al.*, 1997). Although OTC drugs are meant for self-medication and are of proven efficacy and safety, improper use or abuse may lead to serious consequences, especially in pediatrics, geriatrics, pregnancy and lactation (Murray and Callahan, 2003; Choonara *et al.*, 1996). According to the self-medication hypothesis (SMH), the individual's choice of a particular drug is psychological as in condition when alcohol or other mind-altering drugs used to self-medicate depression (Kasten, 1999).

There is no sector in the healthcare community which is immune to drug abuse/misuse of which the worst offenders include physicians and pharmacists (Dabney, 2001). Most often, physicians find it difficult to enter the patient role due to various reasons such as restricted time, nature of illness, concerns about confidentiality, high ego, etc. Both, ease of access to medications and high drug knowledge, potentially contribute to self-medication among pharmacists (Balbisi *et al.*, 2005) Several

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studies indicated substantial levels of illegal drug use among practicing pharmacists (Gallegos, 1998 and McAuliffe *et al.*, 1987). The prevalence of self-medication practices is alarmingly high in healthcare professionals (HCP), despite knowing the consequences and potential risks (Rosen et al, 2000). The increased self-medication trend is not only observed in countries with advanced economies but also in developing countries (Shankar *et al.*, 2002).

Several tips have also been suggested by Tannyth and Jacqueline that all consumers should have some basic knowledge about medications in order to conduct self-medication more effectively and safely (Menton and Schoor, 2005). Some examples of conditions where self-medication is appropriate are colds, flu, sore throat, sunburn etc. On the other hand, circumstances that favor physicians' consultations are: symptoms that persist for more than seven days; pregnant, breast-feeding, geriatric or pediatric; the condition has become worse; patient who experience unwanted side effects; possible abuse of medicine; patient have concurrent health issues.

The impact of the problem of self-medication practices among HCP is severe. The consequences of inappropriate self-medication among HCP have been found to have severe implications including legal, ethical, health defects, negative impacts on patient and quality of health care delivery. Like any other person, HCP should also be encouraged through appropriate provision to enter the patient role. This is the only potential solution to decrease the high prevalence of self-medication among HCP. Various studies have shown significant statistics on the enormity of self-medication. In U.S., the prevalence of self-medication is 39% to 99% among doctors, in UK 90%, whereas in Australia 90%, though believed that it is acceptable to self-medicate for acute illness.

METHODS

The prospective, quantitative, cross-sectional study was designed in such a way that, it attempts to measure the self-medication practices among the teaching HCP in AIMST University through the use of a questionnaire survey form, self-developed, pre-validated consisting both open and closed-ended questions, and the data generated was analyzed using Statistical Package for Social Sciences (SPSS®) version 15.

Table 1: Demographic characteristics of the participants.

Variable	Frequency	Percentage
Age		
20-29	9	10.6
30-39	38	44.7
40-49	14	16.5
50-59	8	9.4
≥ 60	16	18.8
Sex		
Male	52	61.2
Female	33	38.8
Field of profession		
Medicine	37	43.5
Dentistry	10	11.8
Pharmacy	20	23.5
Others	18	21.2
Level of professional qualification		
Graduate	8	9.4
Post Graduate	61	71.8
Doctorate	16	18.8
Professional experience		
≤ 09 years	31	36.5
10-19 years	24	28.2
20-29 years	9	10.6
30-39 years	11	12.9
≥ 40 years	10	11.8

Potential respondents, included in the study were the academic staffs of AIMST University specialized in any healthcare fields. Temporary academic staff respondent, who lost contact during follow-up and incomplete data forms were excluded from this study. This study was conducted between February and April 2011 for a period of three months. About 100 questionnaires were distributed, out of which 85 were completed and retrieved from respondents.

Ethical Considerations

Careful consideration was given to ethical issues in the design of the study. The objective of the study was explained and confidentiality ensured to the participants along with a written informed consent form.

RESULTS

The questionnaire has been organized under the following five major sections:

Demographic characteristics of the respondents

The demographic variables include age, gender distribution, field of profession, level of qualification, and professional experience (Table 1). Out of the total 85 participants, 61.2% were male and the

Table 2: Basic conceptual understanding about the term of self-medication.

Understanding of self-medication	Frequency	Percentage
Use of drugs (including alcohol) for relief from any underlying disorder or condition that results in addiction	18	9.3
The consumption of drugs without physician's advice to compensate any medical or psychological condition	28	14.4
Medication of oneself without professional supervision so as to alleviate an illness or a condition	39	20.1
Medication of oneself without prescription for both prescription and non prescription medications	27	13.9
Use of medication by individuals to treat self recognized illness or symptoms	44	22.7
Consumption of OTC medications for underlying disease	18	9.3
Consumption of any alternative medicines (Herbal, Chinese etc.)	20	10.3
Total responses	**194**	**100.0**

rest, 38.8% were female. It was also found that 10.6% were between the age group of 20 - 29 years, 44.7% were between 30-39 years, 16.5% were between 40 - 59 years and 18.8 % were ≥ 60 years.

With regards to the field of profession, it was found that 43.5% were from medicine, 23.5% from pharmacy, 11.8% from dentistry and 21.2% were from other fields (nursing, physiotherapy, microbiology and biochemistry etc). It was further found that 9.4% were graduates, 71.8% were post-graduates, and 18.8% were doctorates. It was also observed that 36.5% of participants had less than 10 years, followed by 28.2% with 10 to 19 years, 10.6% with 20 to 29 years, 12.9% with 30 to 39 years and 11.8% had more than 40 years of professional experience.

Understanding and personal perception towards self-medication

Basic conceptual understanding about the concept of self-medication among the participants is important to assess the extent and predisposing factors for self-medication. A total of 194 responses were recorded out of which 22.7% perceived self-medication as use of medications to treat self-recognized illnesses/symptoms and 20.1% consi-

dered self-medication as medication of oneself without professional (Table 2).

Reasons for self medication practices

By knowing the extent of understanding and personal perception of HCP on self-medication practice, varied responses of health seeking behavior and self-medication practices observed among the respondents were further analyzed to investigate the self-medication practices among HCP. Among the total respondents, 77.6% admitted that they practice self-medication whereas only 22.4% denied. Predisposing factors for self-medication practices were also assessed. The respondents had the option to indicate more than one reason that predisposes them to self-medication (Table 3).

23.5% responses registered for 'familiarity with treatment options'. Next in order was 20.0% due to 'mild illness'. The respondents who stated that they 'do not have a primary physician nearby' were 3.0%. A few respondents stated that they do not practice self-medication and their reasons were also assessed. The results show 31.6% of the respondents stated that the 'risk of adverse drug reactions' as the main reason, 23.7% stated 'risk of wrong diagnosis' and 2.6% cited other reasons. In line with further investigation, the first line of action they take when fallen ill was also assessed. Among them, 68.4% responded as consulting a physician nearby, 21.1% responded as consult a specialist and 10.5% responded as no action taken. The frequency of seeking medical advice in non self-medicating respondents was found to be 63.2%.

Comparison of self-medication practice using the demographic factors

The study found it relevant to establish a comparison between demographic variables and self-medication practices among respondents. The results in table 4 show that 76.3% in the age group of 30 – 39 years recorded the highest frequency for self-medication whereas 23.7% indicated they do not practice. In the age group ≥ 60 years, 81.3% indicated of self-medication practices while 18.7% indicated that they do not practice. Among the least frequency recorded in the age group of 50 – 59 years, 87.5% recorded self-medication practice but 12.5% indicated that they do not practice. On the whole it was observed from the entire sample size, 77.6% indicated self-medication

Table 3: Practice of self medication.

Variable	Frequency	Percentage
Responses for self medication practice		
Yes	66	77.6
No	19	22.4
Reasons for practicing self medication		
Economical cost	20	10.0
Time saving	29	14.5
Mind illness	40	20.0
Privacy	9	4.5
Familiar with treatment options	47	23.5
Quick relief	22	11.0
No primary physician near by	6	3.0
Condition do not merit seeing physician	22	11.0
Others	5	2.5
Reasons for **NOT** practicing self medication		
Risk of using wrong drugs	8	21.1
Risk of adverse drug reactions	12	31.6
Risk of wrong diagnosis	9	23.7
Risk of wrong use of drugs	8	21.1
Others	1	2.6
First action when ill (non-practicing respondents)		
Consult a GP nearby	13	68.4
Consult a specialist	4	21.1
No action	2	10.5
Medical advice received in the past 3 years		
Yes	12	63.2
No	7	36.8

practices whereas only 22.4% said they do not practice self-medication. There was no significant difference between the self-medication practices and the age group of respondents (p = 0.609). The gender distribution of self-medication practices among respondents was established and the results show that 77.6% practice self-medication whereas 22.4% do not practice. Of those who self-medicate, 60.67% were found to be males and 30.34% were females. Even though there were more male respondents who practice self-medication when compared to females, the difference in the rate of self-medication among male and female was not statistically significant (p = 0.841) (Table 4).

An establishment of self-medication practices by field of profession was also investigated and the results indicated that, 86.5% of respondents in medical profession, 70.0% of dentists and 70.0% of pharmacists predominantly practice self-medication. Among the others, 72.2% indicated self-medication practices. Though the rate of self-medication recorded by respondents in medicine field is slightly higher (86.5%) than the rest of the fields, the figures appear rather very close (p = 0.394). There was no statistical difference in the rate of self-medication practices among respondents with different field of healthcare profession (Table 4).

The study also accessed the practices of self-medication by level of qualification among the respondents. The highest frequencies of practicing respondents who indicated self-medication was of post-graduate qualification which recorded 80.3%, 68.8% respondents with doctorate qualification, and 75.0% were graduates. There is no significance between self-medication practices among respondents with level of qualification (p = 0.602) (Table 4).

The study was also interested in finding out whether the length of professional experience has an influence on self-medication practice among respondents. Among the respondents who practiced self-medication, 80.6% had professional experience less than 10 years, 75.0% were 10 – 19 years, and 66.7% were in 20 – 29 years experience. There is no significant establishment between the years of professional experience and self-medication practices among respondents (p = 0.751) (Table 4).

Illness or indications for self-medication among respondents

The indications for which the respondents used to self-medicate and the medications used commonly were also assessed. The most common illness for self-medication was headache (15.7%); followed by cough and common cold (15.0%); fever and chill and common flu (10.6%); gastric pain and diarrhea (10.1%); Allergy (8.0%); pains (6.8%); constipation (6.1%); fungal or microbial infections (4.9%) and other diseases (2.1%). The types of medications (drugs) used in self-medication practice among the respondents were also recorded. The most common class of drugs used was found to be analgesics (13.1%); anti-pyretic (12.7%); anti-inflammatory (9.9%); anti-histamines (9.7%); antacids (9.6%); energy supplements such as vitamins and minerals (8.6%); topical applications which include anti-fungal, anti-microbial and analgesics (7.9%); antibiotics (6.7%); nasal or ear/eye drops(5.2%); laxatives (4.1%); traditional medicines (2.1%);

Table 4: Comparison of self medication Practice.

Variables	Self Medication			
	Yes		No	
	Frequency	Percentage	Frequency	Percentage
Age				
20-29	8	88.9	1	11.1
30-39	29	76.3	9	23.7
40-49	9	64.3	5	35.7
50-59	7	87.5	1	12.5
≥ 60	13	81.3	3	18.7
Sex				
Male	40	76.9	12	23.1
Female	26	78.8	7	21.2
Field of profession				
Medicine	32	86.5	5	13.5
Dentistry	7	70.0	3	30.0
Pharmacy	14	70.0	6	30.0
Others	13	72.8	5	31.3
Level of qualification				
Graduate	6	75.0	2	25.0
Post Graduate	49	80.3	12	19.7
Doctorate	11	68.8	5	31.3
Professional experience				
≤ 09years	25	80.6	6	19.4
10-19 years	18	75.0	6	25.0
20-29 years	6	66.7	3	33.3
30-39 years	8	72.7	3	27.3
≥ 40 years	9	90.0	1	10.0

corticosteroids such as anti-asthmatics (7.0%); and oral contraceptives (1.9%) (Table 5).

Opinions and feedbacks about self-medication practices among the participants

The study also included a major section to investigate the respondent's personal opinion in the factors preventing them from seeking health care from physicians as first line of action during illness. The opinions that are reported by the respondents include familiarity of common ailments; economical cost of self-medication; lack of time due to busy working schedule preventing physician visits; easy access to medications; mild illness that does not merit seeing a physician; no physician nearby and over-confidence in drug knowledge and treatment options possessed by the HCP.

DISCUSSION

In this study, the prevalence of self-medication among 85 HCP (medicine, dentistry, pharmacy, etc.) in AIMST University, Malaysia was investigated. Among the respondents who practiced self-medication, the highest (76.3%) were aged between 30-39 years and the least (8.2%) were aged between 50 – 59 years. From the irregularity between the age distribution of respondents and the prevalence rate of self-medication, shows clearly that there is no significant association between the age of respondents and prevalence of self-medication.

Gender distribution of respondents showed that 61.2% were males while the rest, 38.8% were females. Shankar *et al.* (2002) and Parimi *et al.* (2002) also supported the findings in this study that gender was not significantly associated with self-medication. However, the results contradict with findings observed by Rosen *et al.*, and Sexton that female HCP were more susceptible to self-medication due to strenuous job requirement (Shankar *et al.*, 2002 and Sexton, 2003). Figueiras and Caamano (2000) reported different results that more frequent self-medication among female was due to

Table 5: Illness (indications) and medications for self-medication.

Variable	Frequency	Percentage
Illness (indications) for self-medication		
Headache	67	15.7
Cough and common cold	64	15.0
Fever and chills	45	10.6
Common flu	45	10.6
Gastric pain	43	10.1
Allergy	34	8.0
Diarrhea	43	10.1
Constipation	26	6.1
Pain	29	6.8
Fungal/Microbial infections	21	4.9
Others	9	2.1
Total responses	**426**	**100**
Medications (drugs) used for self-medication		
Analgesics	70	13.1
Anti-inflammatory	53	9.9
Anti-pyretics	68	12.7
Anti-histamines	52	9.7
Antacids	51	9.6
Laxatives	22	4.1
Oral contraceptives	10	1.9
Antibiotics	36	6.7
Corticosteroids	4	7.0
Nasal/Ear/Eye drops	28	5.2
Topical applications (antifungals/analgesics etc.)	42	7.9
Nutritional supplements	39	7.3
Energy supplements (Vitamins/Minerals etc.)	46	8.6
Traditional medicines	11	2.1
Others	2	4.0
Total responses	**534**	**100**

the fact that they usually seek health services more frequently and take better care of them.

The study recorded a very high rate of self-medication practices among HCP which accounted to 86.5% in medicine, followed by 70.0% from pharmacy and dentistry. The studies of Kriegler *et al.*, Dabney and Hollinger provide empirical evidence in support of this claim (Dabney *et al.*, 1999 and Kriegler *et al.*, 1994). However there are study outcomes reported which favor pharmacists as the prime runners for self medication practices. These variations may have been the result of methodological differences. This finding is in consonance with what has been generally observed in the self-medication among HCP literature.

It was observed from this study that physicians recorded a slightly higher prevalence rate of self-medication practices (86.5%) compared to the other HCP. However, Dorcas noted that the self-medication rates among pharmacists (88%) and physicians (86%) were not statistically different. Whereas, Kenna and Wood recorded a prevalence rate of 58.7% among pharmacists, McAuliffe noted a similar rate 59% among physicians and Christie *et al.*, observed a 52% rate among physicians (McAuliffe *et al.*, 1987, Kenna *et al.*, 2004 and Christie *et al.*, 1998). High prevalence rate of self-medication among physicians is commonly due to their personal perception and mindset. Based on Davidson *et al.*, high numbers of physicians think that it was acceptable to self-medicate for acute or chronic illnesses (Davidson *et al.*, 2003). Furthermore, Chamber also noted that physicians are more likely to treat themselves (Chamber, 1993).

Impressive knowledge about drugs and treatment options also strongly contribute to the fact that physicians and pharmacists are among the highest respondents who practice self-medication in this study. Balbisi and Ambiza revealed that pharmacists and physicians are among the HCP with the greatest access to medications and have impressive knowledge of prescription drugs and their use in the treatment of various drug therapies which increase the potential of self-medication (Balbisi *et al.*, 2005).

In this study, among level of qualification, the highest prevalence of self-medication was recorded among respondents with post-graduate qualification (71.8%) while doctorate qualification (12.9%) recorded a significantly lower self-medication practice. From this, it is obvious that the level of qualification does not play a significant role in the prevalence rate of self-medication practices among respondents. Unlike the findings from this study, Figueiras *et al.*, and Barros *et al.*, observed that people with higher levels of education tend to self-medicate more frequently (Figueiras *et al.*, 2000 and Barros *et al.*, 2009). The reasons could be, higher the knowledge about medications, the greater is the feeling of personal autonomy in the face of decisions about their own health. Also the level of qualification is directly associated with the drug knowledge possessed and the familiarity of treatment options, as observed in this study. Parimi *et al.*, also observed

that levels of educational qualification was significantly associated with adequate knowledge of treatment options and are likely to self-medicate (Parimi *et al.*, 2002).

This study further indicated that the respondents with more than 40 years of professional experience have the highest prevalence rate of self-medication (90%). However, this does not indicate that the prevalence rate of self-medication increases with the increase in the professional experience of respondents. The prevalence rate of respondents with less than 10 years of professional experience recorded 80.6% and varies in different age group which indicates that there is no significance associated between professional experience and prevalence rate of self-medication practices. Professional experience can also be directly associated with the drug knowledge and familiarity of treatment options. Dorcas and Henry James *et al.*, suggested that higher professional experience will be more likely to contribute to the knowledge of appropriate medication and familiarity of treatments options by the respondents and hence, increase the rate of self-medication (James *et al.*, 2006). Although professional experience contributes to the likelihood of self-medication, it is not observed in this study. Though the exact rate of self-medication practices is yet to be concluded in different regions, even the most conservative estimates are that at least 8% to 12% of physicians will self-prescribe at some point of their career (Brewste, 1986). Talbot *et al.*, also noted that there is no group of HCP that is immune to the risk of self-medication practices (Talbot *et al.*, 1998). The impact of self-medication among HCP will be severe if safety measurements are not taken. Medication misuses associated with self-medication by health care professionals had been shown to be a major risk factor for medical malpractice and negligence, lawsuits along with the development of physical and psychological illnesses (Rivers *et al.*, 1998).

Most of the HCP were hypocrite and self-biased in the practices of self-medication. They believed that they are immune to prescription drug misuses since they had competent knowledge about prescription drugs and their treatment options (Balbisi *et al.*, 2005 and Dabney *et al.*, 1999). The results from this study further supports that as little as 18.0% of the health

care professionals understand that self-medication includes the use of drugs (including alcohol) for relief from any underlying disorder or condition that results in addiction. Brown *et al.*, concluded that the inability of physicians to recognize the signs and symptoms of substance abuse also contributes to adverse risks in self-medication (Brown *et al.*, 1998).

The single most cited factor or reason for the high rate of self-medication among respondents is their knowledge of drugs. This study has equally confirmed this when respondents indicated their familiarity with treatments options (23.5%), that has been cited among others as the common reason. Indeed, it has been observed that HCP especially physicians and pharmacists have great access to medication as well as their impressive knowledge of drug use as fundamental pointers to the high prevalence rate (Balbisi *et al.*, 2005).

Prior experience and non-seriousness of the illness were the two major reasons of self-medication in this study and both associated with each other. The low severity of symptoms of illness is also frequently reported in literatures and different surveys. As a result of knowledge, the study recorded in its ratings of reason for self medication, which a significant number of respondents, said that their illness is mild (20.0%), and 11.0% stated that their condition does not merit seeing a physician. This means that the respondents have imposed their subjective judgment in determining both their own diagnosis and treatment (Dabney *et al.*, 1999). Issues pertaining to time saving, though the lesser factor recorded in this study (14.5%) has also received extensive observation in previous studies. Stoudemire and Rhoades, Allibone *et al.*, Rosen *et al.*, all noted that long working hours are among other factors that predispose these HCP to self-medication (Shankar *et al.*, 2002, Stoudemire *et al.*, 1993 and Allibone *et al.*, 1981).

As observed in this study, headache recorded 15.7% as the major indication for self-medication followed by 15.0% cough and common cold, and 10.6% was fever and chills. Sallam *et al.*, confirmed this by reporting that the most used self-medicating drugs were those drugs for pain relief and respiratory system (Sallam *et al.*, 2009). Association of the European Self-Medication Industry has listed common diseases in self-medication as pain, allergy,

colds, sore throats, coughs and diarrhea (Guiding Principles in Self-Medication, 1999). OTC drugs such as antacids (9.6%) and energy supplements (8.6%) which include vitamins and minerals both recorded high rates in self-medication. Dabney in his study supported this finding by observing a high rate of OTC drugs (60%) in self-medication due to easy availability (Dabney *et al.*, 1999).

This study also observed the involvement of prescription drugs in self-medication practices among HCP although the rate is slightly lower compared to non-prescription drugs. Prescription drug like anti-histamine recorded 9.7% while antibiotics 6.7%. In concordance to this, Shankar also noted that prescription drugs such as antibiotics were not commonly used in self-medication (Shankar *et al.*, 2002). On the other hand, Dorcas, Hem *et al.*, and Tenaw reported a high rate of antibiotics (84%) in self-medication practices (Hem *et al.*, 2005 and Tenaw *et al.*, 2004). Sarahroodi *et al.*, and Richman *et al.*, reported the main indication with antibiotics (73.3%) was respiratory problems such as common cold and sore throat (Sarahroodi *et al.*, 2009 and Richman *et al.*, 2001). Antibiotics are susceptible to the risks of misuse and yet they are often exposed to the high rate of self-medication practices (Richman *et al.*, 2001). The involvements of antibiotics in self-medication practices among HCP, other than physicians are due to the fact they are the commonly sold medications (Gore *et al.*, 1994). Traditional medicines also represent a mild contribution (2.1%) in self-medication among HCP. This further indicates that traditional medicines are starting to make their way into self-medication practices.

CONCLUSION

The prevalence of self-medication practice among HCP in the local private university is very high. The HCP like physicians and pharmacists are no exception. The professional exposure to drugs, knowledge of their illness and treatment choice remains as the fundamental contributor to self-medication practice among HCP. The three main categories of drugs used in self-medication practices include analgesics, antipyretics and anti-inflammatory drugs, which are indicated in headache, common cold, fever and chills. In order to curb

the spate of self-medication practices among HCP, fundamental policy initiatives are required. Like any other person, the HCP must accept and be encouraged to enter the patient role.

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