

Knowledge, attitude and practices on secondhand smoking among women who are exposed to secondhand smoking at home and at workplace

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ABSTRACT:

Introduction: Second-hand smoking (SHS) is involuntary smoking of exhaled smoke from smokers. SHS is dangerous to health as there is no safe level of exposure. Knowledge, attitude and practice towards SHS are important prevention measures especially among working women whose husbands are smokers.

Methods: A cross-sectional study was conducted among staff members of a public university. Respondents were the wives of smokers and recruited using simple random sampling. Data was collected using a self-administered questionnaire. Chi-square test was used to determine the associations between variables.

Results: Majority (66.2%) of the respondents have appropriate practices towards SHS and there was no significant differences within the socio-demographic characteristics. Correspondingly, 53.7% have good knowledge but only 46.3% have good attitude towards SHS and 74.6% showed lack of confidence in reprimanding smokers in no-smoking zone.

Conclusion: The appropriate practices towards SHS among the wives of smokers in this study was good. However the self-efficacy to avoid SHS could be improved.

Key words: Second-hand Smoking; Knowledge, Attitude and Practice

1.0 Introduction

Second hand smoking (SHS) is involuntary passive smoking. SHS has been shown to cause and the risk of many diseases; and there is no safe level of exposure (U.S. Department of Health and Human Services, 2006). It is estimated that 40% of children are exposed to SHS globally because their parents or the caregivers smoke at home (Oberg et al., 2011). The Surgeon General's Report revealed that about 2.5 million adults who were non-smokers died secondary to complications related to SHS. It is estimated that living with a smoker increases a non-smoker's chances of developing lung cancer by 20 to 30 percent. Some research also suggests that SHS may increase the risk of breast cancer, nasal sinus cavity cancer, and nasopharyngeal cancer in adults. Additionally, SHS also increases the risk of heart diseases. Studies have shown that exposure to SHS can cause coronary heart disease and stroke. Babies of pregnant women exposed to SHS has increased risk of Sudden Infant Death Syndrome (SIDS) while exposure of children to SHS has been linked to asthma, exacerbations of respiratory ill-health, otitis media and poor cognitive skills (NCCDPHP, 2010).

In Malaysia, the prevalence of smoking among adult males was 46.5% (95% CI: 45.5–47.4%) (Lim et al., 2013), thus SHS could be a big threat to the smokers' wives and children in this country. A study among housewives who live with at least one smoking family member showed that 69.3% were exposed to smoker who smoked 10 or less cigarette per day; where 15.8% were exposed for more than 30 minutes per day, 35.1% for 10 to 30 minutes and 49.1% for less than 10 minutes. In term of location of exposure 59.6% was predominantly inside the house (Suriani et al., 2015).

Personal appropriate practices to avoid exposure are crucial especially among the smokers' wives and children. Although the practices to avoid SHS in public places are made possible by laws and policies such as gazetted smoke-free zones, the practices to avoid SHS at home are mostly individual-driven. A study conducted in Taiwan revealed that 78.3% of the participants adopted avoidance behaviour toward SHS, including immediately leaving smoke-filled environments or asking their family members not to smoke near them. The remaining 21.7% participants did nothing when their partners or live-in relatives smoked near them (Lai et al, 2013). Another study in Jordan showed that most women (74.1%) thought that distancing themselves from smokers within the same area was effective enough in reducing SHS exposure. Also, despite having a high level of educational level and good knowledge of SHS risks, the SHS exposure among their children was about 92.2% (Gharaibeh et al., 2011). This study aimed to describe the practice towards SHS among female staff members in a public university, who are also married to smokers. The factors studied were sociodemographic characteristics (age, race, educational level, occupation and household income), knowledge and attitude towards SHS.

2.0 Methodology

A cross-sectional study was carried out in 12 faculties of a public university in Malaysia in 2016. Female staff members who were married to smokers were randomly sampled. Female staff members who were themselves smokers, were excluded.

Data was collected using a self-administered questionnaire. This validated and pre-tested questionnaire assessed the knowledge, attitude and practices towards SHS. There are four sections in this questionnaire – socio-demographic characteristics, knowledge, attitude, and practices towards second hand smoke. The knowledge towards SHS was assessed using 12 questions. For each correct response, 1 point was awarded. Thus the knowledge score ranged from 0 -12. The cut-off point to categorize respondent as having good knowledge was determined as > 6 points.

The attitude towards SHS was assessed using 12 questions with 5-point Likert scale. The scales were ‘strongly agree’ = 5, ‘agree’ = 4, ‘not sure’ = 3, ‘disagree’ = 2 and ‘strongly disagree’ = 1. For positive statements the points was given as the scale, while for negative statements points was given reverse to the scale. The attitude score ranged from 12-60, and score > 43 was considered as having good attitude.

The practice towards SHS was assessed by 10 questions by using 4-point Likert scale. The scales were ‘all the time’ = 4, ‘always’ = 3, ‘sometimes’ = 2 and ‘never’ = 1. For positive practices the points were given as the scale, while for negative practices, points were reversed. The score range from 10-40. The score that was below than 20 was considered as good practice. The Statistical Package for the Social Science (SPSS) version 23 was used for data analysis. Chi-square test or Fisher’s exact test were used to determine the differences between variables.

3.0 Results

A total of 67 female staff members agreed to participate in this study. Table 1 shows the sociodemographic characteristics of the respondents, while Table 2 shows the mean knowledge, attitude and practice scores among categories. Table 3, 4 and 5 show the percentage of responses to the actual knowledge, attitude and practice questions. Lastly Table 6 shows the association between practices towards SHS and the respondent’s sociodemographic characteristics, knowledge and attitude towards SHS.

Table 1: Socio- demographic characteristics of the respondent (N=67)

Variable	Frequency (n)	Percentage (%)
Ethnic		
Malay	58	86.6
Others	9	13.4
Religion		
Islam	58	86.6
Others	9	13.4
Age (years)		
21-30	12	17.9
31-40	33	49.3
41-50	11	16.4
51-60	11	16.4
Household income (RM)		
< 1500	4	6.0

1500 – 3000	18	26.9
3001– 4500	20	29.9
4501- 6000	11	16.4
≥ 6001	14	20.9
Educational level		
Primary school	3	4.5
Secondary school	21	31.3
Diploma	21	31.3
Degree	15	22.4
Master/ PhD	7	10.4
Occupation		
Lecturer	8	11.9
Officer	8	11.9
Assistant officer	9	13.4
Supporting staff	42	62.7

Table 2: The mean score and the category of knowledge, attitude and practice among the respondents (N=67)

Variable	Mean ± SD	n (%)
Knowledge	8.43 ± 2.23	
Good knowledge		36(53.7)
Poor knowledge		31 (46.3)
Attitude	44.09 ± 3.68	
Good attitude		31 (46.3)
Poor attitude		36(53.7)
Practice	24.98 ± 5.06	
Good practice		43 (64.2)
Poor practice		24 (35.8)

Table 3: The distribution of responses according to knowledge questions (N=67)

Action statement	Yes	No	Unsure
	Frequency n (%)	Frequency n (%)	Frequency n (%)
1. <i>Second hand smoking can increase risk of lung cancer</i>	64 (95.5)	-	3 (4.5)
2. <i>Second hand smoking can increase risk of heart disease</i>	52 (77.6)	4 (6.0)	11 (16.4)
3. <i>* Second hand smoking doesn't increase risk of sudden infant death</i>	15 (22.4)	37 (55.2)	15 (22.4)
4. <i>Prolong exposure to second hand smoking among pregnant women can cause premature delivery</i>	53 (79.1)	-	14 (20.9)

5.	<i>Second hand smoking can cause ear infection (otitis media) among children</i>	15 (22.4)	8 (11.9)	44 (65.7)
6.	<i>Second hand smoking can cause asthma among children</i>	60 (89.6)	1 (1.5)	6 (9.0)
7.	<i>Second hand smoking can cause asthma in adult</i>	53(79.1)	3 (4.5)	11 (16.4)
8.	<i>There are more than 3000 chemical hazardous ton health in cigarette</i>	48 (71.6)	2 (3.0)	17 (25.4)
9.	<i>*Ministry of Health did not gazet all rest station in the highway.</i>	12 (17.90)	34 (50.7)	21 (31.3)
10	<i>Smoking in a gazetted non-smoking area is a compoundable offence in Malaysia.</i>	59 (88.1)	2 (3.0)	6 (9.0)
11	<i>In Malaysia, 4 out of every 10 children are exposed to the risk of disease related to second hand smoking.</i>	46 (68.7)	1 (1.5)	20 (29.9)
12	<i>Smoking is haram (forbidden) in Islam</i>	44 (65.7)	7 (10.4)	16 (23.9)

Table 4: The distribution of responses according to attitude statements. (N=67)

Action statement	Strongly disagree n (%)	Disagree n (%)	Not sure n (%)	Agree n (%)	Strongly agree n (%)
1. <i>I feel frustrated when I see smoker smokes in non-smoking areas</i>	-	2 (3.0)	1 (1.5)	18 (26.9)	46(68.7)
2. <i>I feel angry when smoker smokes near me</i>	-	1 (1.5)	4 (6.0)	25 (37.3)	37 (55.2)
3. <i>Malaysian law manage to protect the public from the harm of second hand smoking</i>	4 (6.0)	18 (26.9)	21 (31.3)	18 (26.9)	6 (9.0)
4. <i>*Smoking in open space such as playground and recreational part can be allowed</i>	27 (40.3)	17 (25.4)	5 (7.5)	13 (19.4)	5 (7.5)
5. <i>Government should be strict in enforcing non smoking policy in public places</i>	4 (6.0)	-	4 (6.0)	19 (28.4)	40 (59.7)
6. <i>Anti smoking campaign is not enough to adress the problem of smoking in workplace</i>	2 (3.0)	-	3 (4.5)	27 (40.3)	35 (52.2)
7. <i>Reprimanding a co-worker who smokes could cause friction at works</i>	1 (1.5)	11 (16.4))	11 (16.4)	28 (41.8)	16 (23.9)

8.	<i>Reprimanding your husband who smokes could cause friction at home</i>	5 (7.5)	14 (20.9)	8 (11.9)	28 (41.8)	12 (17.9)
9.	<i>I love to attend anti smoking campaign at work</i>	2 (3.0)	2 (3.0)	10 (14.9)	37 (55.2)	16 (23.9)
10	<i>*The display of smoking related diseases pictures on the cigarette boxes have no impact on smokers</i>	2 (3.0)	3 (4.5)	8 (11.9)	24 (35.8)	30 (44.8)
11	<i>*I am not confident to reprimand smokers who smokes in no smoking zones</i>	-	1 (1.5)	16 (23.9)	37 (55.2)	13 (19.4)
12	<i>I fel angry at smokers who threw their cigarette butts without putting it off first</i>	1 (1.5)	-	3 (4.5)	22 (32.8)	41 (61.2)

Table 5: The distribution of responses according to practices statements. (N=67)

Action statement	Never n (%)	Sometimes n (%)	Always n (%)	All the time n (%)
1. <i>*When I meet with a relative who smokes, I will still talk to him while he is smoking</i>	13 (19.4)	45 (67.2)	7 (10.4)	2 (3.0)
2. <i>When eat outside, I will choose to sit in the no smoking zone</i>	4 (6.0)	18 (26.9)	25 (37.3)	20 (29.9)
3. <i>I feel uncomfortable mixing with a colleague who smokes</i>	9 (13.4)	27 (40.3)	20 (29.9)	11 (16.4)
4. <i>I do not allow my relative to smoke inside my house</i>	15 (22.4)	16 (23.9)	17 (25.4)	19 (28.4)
5. <i>I try to distance myself from those who smokes</i>	4 (6.0)	21 (31.3)	21 (31.3)	21 (31.3)
6. <i>*I allow smoking in my car</i>	39 (58.2)	18 (26.9)	6 (9.0)	4 (6.0)
7. <i>I reprimanded my family members if they smoke in the house</i>	9 (13.4)	6 (9.0)	23 (34.3)	29 (43.3)
8. <i>I make sure my family members adhere to the no smoking zone which is enforced by the government</i>	6 (9.0)	15 (22.4)	27 (40.3)	19 (28.4)
9. <i>I advise my family members about the</i>	7 (10.4)	13 (19.4)	28 (41.8)	19 (28.4)

health effect of second hand smoking

10	<i>I actively participate in anti-smoking program at my workplace</i>	39 (58.2)	14 (20.9)	11 (16.4)	3 (4.5)
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Table 6: The differences within sociodemographic characteristics, knowledge and attitude with practices towards SHS (N=67).

Variable	Practice towards SHS		P value
	Good practice n(%)	Poor practice n(%)	
Sociodemographic			
*Ethnic			
Malay	37(63.8)	21(36.2)	0.332
Non-Malay	6 (66.7)	3(33.3)	
Age (years)			
21-30	7(58.3)	5(41.7)	0.473
31-40	23(69.7)	10(30.3)	
41-50	7(63.6)	4(36.4)	
51-60	6(54.5)	5(45.5)	
Income (RM)			
< 1500	3(7.5.0)	1(35.0)	0.505
1500 – 3000	14(77.8)	4(22.2)	
3001– 4500	13(65.5)	7(35.5)	
4501- 6000	6(54.5)	5(45.5)	
≥ 6001	7(50.0)	7(50.0)	
Educational level			
Primary school	3(100.0)	0(0)	0.667
Secondary school	12(57.1)	9(42.9)	
Diploma	14(66.7)	7(33.3)	
Degree	10(66.7)	5(33.3)	
Master/ PhD	4(57.1)	3(42.9)	
Occupation			
Lecturer	4(50.0)	4(50.0)	0.698
Officer	5(62.5)	3(37.5)	
Assistant officer	5(55.6)	4(44.4)	
Supporting staff	29 (69.0)	13 (31.0)	
Knowledge			
Good knowledge	26(72.2)	10(27.8)	0.110
Poor knowledge	17(54.8)	14(45.2)	
Attitude			
Good attitude	21(67.7)	10(32.3)	0.380
Poor attitude	22(61.1)	14(38.9)	

*Chi squared test / Fisher's exact test,
significant if $P < 0.05$

4.0 Discussion

Knowledge, attitude and practices regarding SHS among women who are exposed to SHS vary as they were influenced by many factors such as the cultural norms, the legal provisions of the country and more importantly the status of husbands' smoking status. The percentage of respondents who have good knowledge on SHS in this study was 53.7% which is similar to a study among housewives in a rural community living with one family member smoking which reported 55.3% of them have satisfactory level of knowledge toward SHS (Suriani et al., 2016). In general, most of the respondents knew that second hand smoking was harmful to adults and children. However, they were not sure of some specific effects of SHS such as ear infection (otitis media) among children. A question on knowledge regarding Islamic religious ruling of smoking was purposely inserted as it could influence the attitude and practices towards SHS, and surprisingly although 86.6% of the respondent were Muslims only 65.7% knew that the Islamic ruling is haram (forbidden). This is comparable to a study among Malay male students who smokes, only 57.4% knew that the religious ruling for smoking is haram (Suriani et al., 2015).

The overall good attitude towards SHS in this study was only 46.3%. This is worrying because studies have shown that positive attitude significantly influence the self-efficacy to avoid SHS (Lin et al, 2010). Low level of good attitude in this study may explain why 74.6% of the respondent were not confident to reprimand a smoker who was smoking in a no-smoking zone. Not reprimanding a smoker could also be because the woman wanted to avoid conflict since 75.7% of the respondents agreed that such an action will cause conflict with co-worker and 59.7 % feel that it will cause conflict with husband. Similar findings were noted in a research conducted among the Hispanic community living in multiunit housing despite promising practises regarding SHS to protect their families from SHS, they still hesitated to voice out against their neighbours who smoke because of the fear of the retaliation (Baezconde-Garbanati et al., 2011).

It is sad to highlight that 64.2 % of the respondents were not confident with the Malaysian law in protecting the public from the harm of SHS, and an alarming 92.5% felt that smoke-free promotion in their workplaces were not enough. This could be from their observation that many smokers were still smoking at workplaces even though their institutions have been gazetted as no-smoking zones. A study among 112 male government servants who smoke showed that although 89.3 % knew that their office was gazetted as a no-smoking zone 83 % of them continued to smoke in the office (Ahmad Farhan et al., 2015). In relation to this, even though the overall appropriate practice towards SHS was good in this study, the practices in participating anti-smoking program at workplace was very poor. There is not much data on SHS exposure at workplace in Malaysia however in the United States it was estimated that the prevalence of exposure to workplace SHS among currently working non-smokers was 10.0% in 2015 which involves 12.6 million working non-smoker workers (Dai & Hao, 2016.) It is important to ensure that workplace is smoke free because studies had showed that the percentage of respondents employed in smoke-free environments who lived in a smoke-free home was higher compared with those who worked where smoking occurred (Lee et al., 2012).

Despite studies showing that the SHS avoidance were lower among women whose current partner smokes (Blake et al., 2009), this study showed encouraging results where 64.2 % respondents have appropriate practices towards SHS. This finding was similar to a study

among housewife in a rural community in Malaysia showed 66.7% of the respondents had appropriate practices towards secondary smoking. In this study also, 94% will distance themselves from those who smoke while in the study among housewife in rural community reports a slightly lower percentage that is 88.6% of the respondent stated that they would leave the area when someone smokes near them while another study among working adult in urban Malaysia which reported only 68.2% will leave (Ooi et al., 2014).

In this study 91% of the respondents claimed that they made sure their family members adhered to the no-smoking zone regulation (at home). This is the highest percentage compared to two other studies in Malaysia that is only 68.4% among rural housewives and only 70% among urban working adults (Suriani et al, 2015; Ooi et al, 2014). Similarly, a study in Taiwan among pregnant women reported only about 78.3% of the participants immediately leave smoke-filled environments or ask their family members not to smoke near them (Lai et al. 2013). However, the tolerance to SHS differs from one culture to another. A study in Jordan reported that only about 17.7% of women expressed that they will not let their “visitors” smoke in their house. (Gharaibeh et al., 2011) as compared to 79.7% respondent in this study who did not allow their relatives to smoke inside their houses.

In this study there were no differences between practices toward SHS and sociodemographic characteristics or level of knowledge and attitude. This is similar to the previously mentioned study among housewife in a rural community in Malaysia, except that in that study it was significantly associated the level of knowledge about secondary smoking (Suriani et al, 2015). The different finding could be because of the different study population - this study population comprised of women who were working while the other study was among housewives. However there are other studies which reported some association. A study in Jordan reported that staff with high education level have higher avoidance practices compared to staffs with lower education level (Gharaibeh et al., 2011). Another study among mothers of pre-school students in Taiwan indicated that there is a significant association between age and the avoidance behaviour and longer time of exposed to SHS associate with less stronger avoidance behaviour (Lin et al, 2010).

5.0 Conclusion and recommendation

Women in this study were exposed to SHS at home and at their work place. The appropriate practices towards SHS among women in this study was good and were not associated with their sociodemographic characteristic, level of knowledge and attitude. However, it is worrying that there is a lack of confidence in reprimanding smokers especially at workplace, in addition to a sense of inadequate smoke-free promotion at work. As this study was conducted among a group of women who work in a public univeristy and whose husbands were smokers, the findings are limited to this population only. Nonetheless, it is recommended that practical and effective programs to increase self-efficacy and empowerment of non-smoker in avoiding SHS, be established especially at the workplace.

Ethical

Ethical approval was obtained from The Ethical Committee for Human Study of Universiti Putra Malaysia (Ref: FPSK(EXP16-Medic)U039).

Declaration of conflict of interest

The authors of the article declare that there is no conflict of interest regarding publication of this article.

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