A STUDY ON PARENTS' (FATHERS') LEVEL OF KNOWLEDGE ON HEALTH EFFECTS OF ENVIRONMENT TOBACCO SMOKE AND THEIR PREVENTIVE PRACTICES TO PROTECT THEIR CHILDREN

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ABSTRACT

Objective of this study is to see the relationship between parents' (fathers') level of knowledge on health effects of exposure to environment tobacco smoke (ETS) and their preventive practices to protect their children against ETS.

This study is conducted using cross-sectional design on a convenience-sample of 80 fathers who have children from age one day to thirteen years old. The setting of this study was in Kampung Merindun. The data was collected by face-to-face interview guided by questionnaire and data analysis was done using SPSS version 11.5. Chi-Square tests were used to see the relationship between parent (father's) level of knowledge on health effects of exposure to ETS and their preventive practices to protect their children against ETS.

The main results of this study found that 83.8% (N=80) of fathers in Kampung Merindun were practicing preventive measures against ETS exposure in children at home in Kampung Merindun. This study also finds that higher educational level and the good level of knowledge on danger effects of smoking and ETS influence fathers' practice of preventive measures against ETS exposure at home. Fathers who smoke less than 20 sticks of cigarette per day were also found to practice more of the preventive measures at home.

Although the findings showed a good sign where by most of the fathers were practicing the preventive measures at home against ETS exposure, the effectiveness of the preventives, however is still in query. Therefore, more research is needed to study about the effectiveness of the preventive measures. More research also needed to identify the best predictors that influence an individual to practice preventive measures at home. The findings would therefore be useful to determine the best way to encourage the practice of the preventive measures against ETS at home to protect their children from the dangerous effects of ETS.
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CHAPTER I

INTRODUCTION

The International Consultation on Environmental Tobacco Smoke (ETS) and Child Health Reported (1999) estimates that nearly 700 million, or almost half of the world’s children, are exposed to tobacco smoke by the 1.2 billion adults who smoke. According to Indoor Environments Division (1993), environmental tobacco smoke (ETS) or second-hand smoke is a complex mixture of more than 4000 chemicals compound, including at least 40 known chemical such as carbon monoxide, DDT, and nicotine. Exposure to environment tobacco smoke is called involuntary smoking, or passive smoking.

Landau (1997) stated that tobacco smoke is the commonest indoor environmental pollutant to which children are exposed, affecting over one third of children at Western Australia. One national survey have been done in American indicated that 43% of children between 2 months to 11 years of age live in homes with at least one smoker (Pirkle, Flegal, Bernert, Brody, Ezzel, & Maurer, 1996). Parallel with this, Ferguson and Ferguson (2000) also stated that primary source of children’s exposure to environment tobacco smoke is in the home. This is because young children spend a large proportion of their time indoors or spend most of their life in the present of parents and household members, as supported by Crone, Sijmen, Burgmeijer, & Hirsching (2001). However, the increased risk of poor health of the children is influenced by the total number of smokers in the house and their smoking status such as smoking indoors and number of cigarettes taken per day (American Thorax Society, 1996). Therefore, the children may have significant exposure to environmental tobacco smoke, because of smoking parents and other household members.
There are lots of consequences due to ETS exposure in children. These are:

- ETS exposure is causally associated with increased risks of lower respiratory tract illnesses, including bronchitis and pneumonia, in the first years of life.
- ETS exposure is a cause of chronic respiratory symptoms in school-aged children.
- ETS exposure increases the severity and frequency of symptoms in children with asthma.
- ETS exposure is causally associated with increased risk of acute and chronic middle ear disease.
- Maternal smoking is a major cause of Sudden Infant death Syndrome (SIDS). The predominant effect is believed to be from in utero exposure. There is also some evidence that postnatal ETS exposure contributes to the risk of SIDS.
- Parental smoking is associated with learning difficulties, behavioural problems, and language impairment among children.
- ETS exposure is associated with physiological changes in children that may increase the risk of cardiovascular disease.
- There is suggestive evidence that parental smoking may increase the risk of some childhood cancers.

(The International Consultation on Environmental Tobacco Smoke (ETS) and Child Health Reported, 1999))

One study reported that children aged zero to five years old who are exposed to smoking parents are two times more likely to develop upper respiratory infection problems such as
dry cough, wheezy bronchitis and then develop asthma compared those free from exposure (Weitzam, Gortmaker, Walker, & Sobol 1990; Jedrychowski & Flak, 1997). Hospital admission rates for lower respiratory tract illness in infancy are increased by 23% to 50% for infants who live with smoking parents compare to non-smoking parents. Parental smoking also accounts for approximately 20 % of childhood asthma attack, as supported by Landau (1997).

Children’s exposure to environmental tobacco smoke (ETS) is already a well-known public health problem (World health Organization, 1999). However there was still poor improvement in adults' attitudes and practices regarding children’s ETS prevention in year 2000-2001 as mentioned by Robert, Jonathan, Jonathan & Michael (2003). In 1998, only 72% of parents in Nordic countries reported to have taken some actions to limit ETS in their homes (Lund, Vertio, Helgason, & Skrondal, 1998). One study about smoking bans in home and car the percentage of adults was reported to ban home smoking and to ban car smoking in California is 76% and 66% respectively (Norman, Ribi, Howard- Pitney, and Horward, 1999). Study in Oregon found that 85% of the non-smoking had practiced full ban on smoking inside the house, whereas it is only 26% for the smoking parents (Pizacani, Martin, Stark, Koepsell, Thompson, & Diehr, 2003). Another study in 2002 at Northeasten found that the prevalence of complete smoking ban was 49.1% in Native American homes and 42.7% in White homes (Kelger & Maleoc, 2002). Recent findings from 314 households in Coventry and Birmingham showed that 65% of parents reported using two or more measures to protect the children from ETS but only 18% reported not allowing smoking in the homes (Blackburn, Spencer, Bonas, Coe, & Booth, 2003). Obviously, more information is needed about smoke-free households to identify the factors associated with not having a
home smoking ban. Understanding these factors is the first step toward developing strategies to increase the prevalence of personal smoking bans.

According to Johansson, Hermansson, & Ludvigsson (2004), the knowledge on how effect of ETS exposure influences the health of children and how they can be protected is important for how smoking practice is perform. The parents did not have a good knowledge on how health could be improved by practice of preventive measures against ETS exposure in children (Johansson et al. 2004). Therefore, essential for health care staff to aware of the needs to increase the parents' level of knowledge about dangers of ETS and promote certain preventive measures that can be use at home to protect their children.

Two studies have been conducted at USA and Canada to know the effectiveness of counselling sessions about dangers of ETS among few groups of parents and low-income families. The results show that these counselling sessions were helping the smoking parents to reduce their number of cigarettes. From 27.3 cigarettes sticks per week before the counselling session it decrease to 4.47 cigarette sticks per week three month after the counselling. These counselling sessions showed a positive outcome where by the the smoking parents keep in decrease their number of cigarette consumption to 3.66 sticks per week and they also have shown effort to restrict or banning smoking in their houses after one year had undergone of the counselling sessions (Hovell et al. 2000; Emmons et al. 2001). This showed that health promotion is essential and should be stresed among the smoking parents.
Summary

Almost half of the world’s children were exposed to ETS. There are lots of adverse effects of ETS such as lower respiratory tract illness, middle ear disease, and mental retardation. Even though these problems are already well known by the public, however there is still poor in adults’s attitude to practice preventive measures against ETS at home. Several studies have been done about the home smoking ban issues. Most of these studies findings showed the practicing of preventive actions against ETS and smoking home ban among the parents are still low especially the smoking parents. Therefore lots things need to be implemented in order to prevent the children from becoming passive smokers.

Operational definition

a. Environment Tobacco Smoke (ETS) - a complex mixture of more than 4000 chemical compounds, including at least 40 known chemicals such as carbon monoxide, DDT, and nicotine.

b. Exposure to ETS - is the involuntary breathing of other people's tobacco smoke.

c. Smoking status- divided to smoking and non-smoking parents
   - Smoking refer to a person who smoke regularly
   - Non-smoking refers to a person who never smokes in his life time or who ever smoked but have quitteed smoking

d. Educational level - a person's last grade completed in school

e. Practice of preventive measures against ETS - divided to ever practice and never practice
   - Ever practice means a person ever practice preventive measure at home before the study and currently
Research questions
What are the factors influencing parents’ practice of preventive measures towards ETS?

Objectives of the study
Specific objectives of this study are:
1) To determine any association between demographic characteristics and fathers’ preventive practices to protect their children
2) To determine any possible association between parents’ (fathers’) level of knowledge on general knowledge about smoking and their preventive practices to protect their children
3) To determine any possible association between parents’ (fathers’) level of knowledge on health effects of exposure to ETS and their preventive practices to protect their children.
4) To determine association between parents’ (fathers’) smoking status and their preventive practices to protect their children.
5) To determine the association between parents’ (fathers’) contact and their preventive practices to protect their children.
CHAPTER II
LITERATURE REVIEW

Introduction

I had chosen a few articles, accessed from free online journals and one unpublished book. Most of the studies were done overseas and only one unpublished study was done in Sarawak. The purposes of these studies were to assess the parents' knowledge and attitudes on smoking and their practice on prevention ETS. Most of the studies were done using cross-sectional study design.

The association between parents' level of knowledge on dangers of smoking and ETS and the educational level

According to Johansson et al. (2004), a shorter or less theoretical education was correlated to a lower awareness and knowledge on the risk of environmental tobacco smoke exposure as well as more positive attitudes toward smoking. Studies has done by Crone et al. (2001), Helgason et al. (2001); Kurtz, Kutz, Conteras, and Booth (2003) also reported the similar findings.

A study has been done in Sarawak which also found almost the similar findings, whereby most of the respondents that have adequate knowledge about danger of smoking and positive attitudes toward the negative statement about smoking are those who have finish secondary school education, non-smokers, and ex-smokers (Al-Jannah, Lim, Loh, Felix Yap, Tee, Haslinda, Yew, Sarmiza, Mohd Sharil, & Mohd Saifullah Alhany, 1999). In this study, participants who had adequate knowledge on dangers of smoking and passive
smoking (N= 137), 32.8% are those who are attained education till secondary school level, followed by those with no formal education (31.6%) and 29.9% with primary school education.

A study conducted by Arnold, Davis, Berkel, Jakson, Nandy, & Londo (2001) showed that reading levels influenced the parents’ level of knowledge about about effects of passive smoking. Their work found that respondents with higher literacy level are more knowledgeable about the health effects of passive smoking and they also more concerned about the adverse effect of smoking on their babies.

The association between parents’ level of knowledge on dangers of smoking and ETS and the parent’s smoking status

Besides that, level of knowledge on dangers of smoking and ETS among the parents also influenced by parents smoking status. A study done by Johansson et al. (2004) show that smoking parents, and especially indoor smokers, are less knowledgeable about ETS or know that ETS exposure can cause adverse health effects compare to those who are non-smoking parents. Al-Jannah et al. (1999) also shown that questions about danger of smoking and passive smoking mostly answered correctly by non-smokers (62.6%) and ex-smokers (80.0%) compare to smokers (46.9%).
The factors that influenced the parents to practiced of preventive measures against ETS at home

A preventive practice to protect the children against ETS is influenced by the parent’s smoking status, knowledge on danger of ETS, educational level, household income, number of cigarette sticks smoked per day, number of smoking friends and number of smoking household members as supported by McMillen, Winekoff, Klein, & Weitzman (2003); Lund et al. (1998); Kelger et al. (2002); Pizacani et al. (2003); Norman et al. (1999). Another significant influence is the number of smoking parent quitting attempts as supported by Kelger et al. (2002).

The association between the practice of home smoking ban and parents’ smoking status

McMillen et al. (2003) found that smoking parents were substantially less likely (32.9%) than non-smoking parents to report the existence of household ban on smoking in the presence of children even though the findings show that 89.5% of smoker parents recognized the adverse effect of ETS exposure in infant or children. Kelger et al. (2002) also found similar finding which show that only 22% of smoking parents reported having complete household smoking ban compare to the non-smoking parents (73.9%).

The association between the practice of home smoking ban and parents’ level of educational

According to Lund et al. (1998) children’s exposure to environmental tobacco smoke was more prevalent in households in which parents had lower level education. In this study, the proportion of smoke-free household decreased significantly with lesser level of household
education. For "high", "medium", and "low" level of education the percentage was 83%, 72%, and 59% respectively. Parallel with findings above, Kelger et al. (2002) also found that respondents who were college graduates more likely to practice complete household smoking restriction in comparison to those who have below than high education level.

The association between the practice of home smoking ban and the parents' level of knowledge on effects of ETS and smoking

A study done by Pizacani et al. (2003) indicated that home smoking bans is strongly associated with respondents who have high level of awareness and knowledge of the harm of ETS. In this study, 4073 of non-smoker-only household respondents and 1581 of household with at least one smoker respondents were aware and knowledgeable about harm of ETS. Out of this number, 86.5% of non-smoker-only household respondents and 41.7% of at least one smoker household respondents were practice full ban household smoking. This is also supported by Mumford, Levy and Romano (2004).

The association between the practice of home smoking ban and the parents' contact

Kelger et al. (2002) found that most of respondents who claimed none of their household members smoke (82.0%) and none of their friends smoke (86.7%) was reported to practice complete home smoking restriction compare to those who claimed their household members smoke and their friends smoke.

Another study was done by Norman et al. (1999) in California to look into the factors that influenced the smoking and non-smoking parents to practice smoking bans in the home or ear. This study revealed that non-smoking parents were nearly eight times more likely to
have a complete home smoking ban when none of their friends were smokers compared to when most of their friends were smokers. Among smoking parents who reported that most of their friends were smokers, the odd of having a complete home smoking ban were more than six times higher when children were living in the home compared to when no children were living in at home. This findings showed that the presence of children at home or the parents’ contact with smoking friends influenced their practicing of the home and car smoking restriction.

**The association between the practice of home smoking ban and the household income**

According to Pizacani et al. (2003) & Kelger et al. (2002) complete household smoking ban is practiced more among those with high household income, and this was shown in both mix-smokers household and non-smokers household. As supported by the findings above, low-income parents may encounter more difficulty to provide smoke free environments, because they are more likely to smoke, more likely to have smoking friends and they live in small houses with few rooms (Pederson, Stephen, & Fowler 1993).

**The association between the practice of home smoking ban and the smoking parents’ quit attempt and the number of cigarette sticks smoke per day**

Kelger et al. (2002) found that respondents who reported smoked less than 10 cigarettes sticks per day more likely to practice complete home smoking restriction compare to those who reported smoked more than 20 cigarettes sticks per day. Quit attempt seem did not influenced the respondents to have home smoking restriction in this study. However findings still show that respondents who have ever tried to quit smoking were more likely to practice complete home smoking restriction compare to those who have never tried.
Summary

Harmful ETS effect on children’s health is already well known by the public. However there is still not much effort done by the parents to protect their children from ETS. Therefore many studies have been done regarding this issue. These studies focus on parents’ level of knowledge or awareness about harm of ETS and their preventive practices towards ETS at home. Most of these studies found that parents’ practices to protect their children are much influenced by their level of knowledge, awareness, or belief about harm of ETS to children. Besides that, parents’ smoking restriction practices are also influenced by their smoking status and income status. Additional to these, friends and household members smoking status also influence their level of smoking restriction at home.
CHAPTER III
METHODOLOGY

Research design

This study is a cross-sectional study.

Sample and Setting

A convenience-sampling of 40 non-smoking fathers and 40 smoking fathers were involved. The inclusion criteria for the samples for this study were: (1) Parents who have children aged 1 day to 10 years old. The reason for inclusion criteria is because children in the age group spend most of their time with their parents and they cannot complain yet as supported by Ashley et al. (1998). (2) Do not having mental problem. (3) Do not having hearing and vision problem. (4) Able to give consent independently.

This study has been conducted in the researcher’s village, which is Kampung Merindun. This has been chosen because from the researcher’s observation, most of the parents in this village are smokers.

Instrument

The questionnaire is modified from other studies Al-Jannah et al. (1999); Arnold et al. (2001); Johansson et al. (2004); Helgason et al. (2001); Blackburn et al. (2003) that have done at overseas and Sarawak. The questionnaire was prepared in two languages, which were Malay, and Iban language and divide to four sections.

First part in this modified questionnaire was related to demographic data; to find out respondent’s sex, age, race, educational level, occupation, income and number of family
members. Second part is to find out about the respondents smoking status, any household member and friends who smoke, number of cigarette sticks taken per day, and the place of smoking.

Third part is about the respondent’s level of knowledge. This part is dividing into two sections, which are the respondents’ general knowledge about smoking and their knowledge about danger of ETS. The last part is to measure their preventive actions towards ETS, by asking their opinions on some of preventive measures to be used.

Data collection

This data was collected by face-to-face interview guided by questionnaire. Most of the participants were not available at home during day time because they need to work. Therefore researcher collected the entire data from the samples during nighttime.

Data analysis

All collected data was analysed using SPSS version 11.5. Descriptive statistics was used to describe sample’s demographic data. In order to see any association between the variables such as level of knowledge about ETS and preventive practices towards ETS in this data, chi-square test by cross tab was used. Data was presented in tables.

Meanwhile knowledge level was analysed using scoring test and categorized to three levels of knowledge which were good, fair and poor. For general knowledge about smoking respondents will be categorized as poor knowledge if correct answer scored is below than 3, fair knowledge if correct answer scored is in ranged 4 to 6 and good knowledge if correct
answer scored is above than 7. For knowledge on effect of ETS respondents will be
categorized as poor knowledge if correct answer scored is below than 4, fair knowledge if
correct answer scored is between 5 to 8 and good knowledge if correct answer scored is
above than 9.

Research procedure

Ethical approval was obtained from the Ethics Committee of Research and Postgraduate
Committee of Faculty Medicine and Health Sciences, University Malaysia Sarawak
(UNIMAS). While waiting for ethical approval, a pilot study was carried out on five non-
smoking fathers and five smoking fathers to test the clarity of the questionnaire. The
samples were selected from the Kem Askar Batu 8, Kuching according to the inclusion
criteria that is required. In order to test clarity of the questionnaire, each participant is
required to answer all the questions honestly based on their understanding. If there are any
doubts that arise, the participants were free to give their comment to the researcher. After
completed the pilot study, evaluation was made based on the participants’ comments.

The actual study was conducted at Kampung Merindun by face-to-face interview guided by
questionnaire. Data was collected while the researcher has intra-semester break. Before that,
the researcher was meeting with the Ketua Kampung to ask the permission. Brief
explanation of the purpose of the study was given to Ketua kampong and the chosen
samples. Consent was obtained from those who agree to involve in this study. Then the
entire data was analysed by the researcher, and final report was prepared to submit on 15th
May 2005.