

REFUSAL TOWARDS VACCINATION: A SURVEY AMONG MALAY PARENTS

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ABSTRACT

Vaccination is a preventive solution for children to protect them from infectious diseases. Although it is good immunization for children, some parents are reluctant about immunizing their children. The study attempts to identify the socio-cultural determinants of parental refusal for vaccination which may have influenced the uptake of vaccination. This study employed a survey method. A sample of 80 parents including both mothers and fathers who have children between the ages of one to 12 years old were recruited. The participants were selected via the random sampling technique. The questionnaire was distributed through email and on social media. Data were analyzed using SPSS. The results indicate that 58% of parents refused to vaccinate their children. Although parents are aware of the importance of vaccines, they refused to adopt them due to the perception that vaccination is unhygienic in nature and is considered unhealthy for their children. They also believed that other preventive methods are better than vaccination. The findings also illustrate significant positive correlation between parents' educational level and their attitude towards vaccine refusal.

Keywords: children, culture, health, immunization, vaccine

INTRODUCTION

Vaccination was first introduced in the 19th century in the United States and the first law on small pox was passed soon after the introduction of vaccination. Consequently, other nations also adopted and incorporated it into their health system. As a result, small pox breakouts were reduced in the middle of the 19th century (Omer et al., 2009). Despite accepting its huge benefits for children's health and their survival, the practice is reportedly insufficient, particularly in developing countries. In Malaysia, the immunization programme was introduced in the early 1950s and vaccines continue to be provided in public health facilities nationwide. The World Health Organization (2017) reported that remarkable child immunization practices in Malaysia have contributed to the good health status of Malaysian children. Yet, despite the good rating of immunization, vaccines are still under-utilised (Pelly et al., 2010).

Parental vaccine refusal varies across and within cultures. It appears that some parents accept vaccination whilst others refuse it. A study on parents' perception towards acceptance of children's vaccination in the United States found that the majority of parents prefer vaccination for their children's safety and healthy life (Mays, Sturm & Zimet, 2004). However, according to Reluga, Bauch and Galvani (2006), public perception about vaccination is poor due to lack of knowledge about its effectiveness on their children. In a similar vein, parents' doubt about the efficacy and safety of their children's vaccination is the reason behind not accepting vaccination (Streefland, 2001). Although immunization programmes are considered as one of the most effective and safest of all health interventions, their implementation faces several challenges. Various socio-economic determinants and parental attitudes are key factors behind the under-utilisation of vaccination programmes.

In Malaysia, the number of parents having concerns and refusing to vaccinate their children has been increasing despite growing evidence on the benefits of vaccination. The main reasons for vaccine refusal include preference for alternative medicine, belief that vaccines do not give any benefits and doubt with the vaccines' content (Lim et al., 2016). Besides, the rejection of vaccines among Muslim parents has led to raised cases of contagious diseases among Muslim children in Malaysia which is worrying health authorities (South China Morning Post, 2016). The understanding behind vaccine refusal among parents is necessary, particularly for policy-makers. The motives for refusing to give vaccine to children are indeed different from one parent to another. Vaccine refusal indicates lack of knowledge, misinterpretation and less confidence about its effectiveness. These

elements are hardly explored in the Malaysian context. Therefore, it is imperative to look further into this issue and to identify parents' perceptions and attitudes towards vaccine refusal. Accordingly, this study aims to evaluate parents' refusal towards vaccination and the socio-cultural factors that influence this decision.

VARIATIONS IN RESPONSES TO VACCINATION

Vaccination is the most useful and safest method for immunization for children in order to prevent them from contracting infectious diseases. It is estimated that annually, vaccines prevent almost 6 million deaths worldwide (Ehret, 2003). The issue of vaccine safety has led to rumours and this undermines the confidence in vaccination and, eventually, has spectacular consequences on immunization coverage and disease incidence (Dermawan, 2016). Studies on vaccine refusal among parents have gained the attention of many scholars for many years. Researchers studied vaccine refusal from various aspects including vaccine safety (Streefland, 2001), its effectiveness (Awadh et al., 2014), parental knowledge about vaccine (Richards & Sheridan, 1999) and many more.

Results from previous studies have indicated that parents are not convinced with vaccine outcomes. The situation has provoked an outcry among doctors as many diseases can be prevented with vaccines. A study on immunization refusal among Malay parents by Lim et al. (2016) depicts that 75% of parents sampled believed in alternative treatments and would rather consider homeopathy rather than conventional immunization due to perceived fewer side effects. Furthermore, 37.5% reported vaccines as ineffective and 25% reported doubts about vaccines' ingredients. This study is supported by Ahmad et al. (2017) and Amal (1995) in which both studies found that vaccination is perceived in more negative manner by Malaysian parents. Ahmad et al. (2017) report that reasons for low vaccine uptake are due to several factors like personal reasons, logistic, time factor and having doubts about the vaccines' halal (permissible) status. Interestingly, Amal (1995) unravels that the absence of evidence on the cleanliness and halal nature of vaccines has led parents to refuse vaccination. Furthermore, they believed that vaccinating their children goes against nature. In other words, they accepted their fate as God given and considered it as a test of their patience. Nonetheless, Salsberry, Nickel and Mitch (1993) report that system factors like cost, lack of insurance coverage and long office wait are barriers for vaccination refusal among parents.

Apart from those aforementioned reasons, mothers' knowledge about vaccination contributes significantly to the vaccination uptake. A study by Benin (2006) discovers that mothers' knowledge significantly correlates with the acceptance of immunization. For example, most mothers in Nigeria have very positive attitudes and more than half of them are generally knowledgeable about symptoms of vaccine-preventable diseases (Odusanya et al., 2008). It demonstrates that parents' knowledge is a crucial factor in determining vaccination acceptance. Another study in Greece reports that socio-economic factors, including parental education, play an important role in getting vaccination (Danis et al., 2010). Similarly, in examining mothers' attitude and practices towards immunization of children in Pakistan, the majority of women who were illiterate were not aware of children's immunization programme (Nisar, Mirza & Qadri, 2010; Bukhsh et al., 2017). The results further illustrate that the majority of the mothers missed their children's vaccination due to lack of understanding of vaccination schedules, the non-availability of health staff and other reasons like preoccupation with household work. Some of the mothers quit immunization after missing one dose. The study concludes that the knowledge of mothers in Pakistan about vaccination was found to be insufficient.

Findings from Ahmed et al. (2018) have also highlighted that religion matters in the decision to vaccinate as the rate of vaccination was reported to be low among Muslims. The findings also show that a majority of the respondents perceived that vaccines contain haram (forbidden) substances. This triggers a sense of reluctance among Muslim parents to vaccinate their children, fearing that any haram substance is forbidden in Islam (Padela, 2010; Abdullah, 2014). The issue of trustworthiness is another crucial finding in this study. The reasons for refusal to vaccinate the children stem from not having sufficient knowledge which leads to lack of trust and, eventually, parents shying away from the practice (Harmsen et al., 2013; Ahmad et al., 2017; Abdullah et al., 2016). In addition, the existence of anti-vaccination websites that provide misleading or false claims or negative information about vaccination (Sak et al., 2016; Davies, Chapman & Leask, 2002) can be another reason for the parents' negative perception of vaccination. Interestingly, based on their study on the readability of online messages on influenza vaccination in Japan, Okuhara et al. (2017) found that anti-influenza online messages were more readable than pro-vaccination messages. Consequently, readers' understanding or misunderstanding of vaccination and actions would be influenced by the messages. Therefore, they prefer to not have their children vaccinated. Parents' obsession about being responsible for choosing what is best for their children makes them more inclined towards vaccination refusal.

In short, there has been an abundance of empirical studies related to vaccine refusal. However, little baseline information about vaccine refusal among young Malay couples and how their social and cultural settings influence their decisions have been reported in Malaysia. Therefore, this study is designed to address the gap.

METHODOLOGY

Study Design and Population

This is a cross-sectional study conducted on 80 Malay parents who have children between the ages of one to 12 years old. They were recruited via convenient sampling method. Most of them are educated and live in urban areas. The choice of studying Malay parents as our research participants did not stem from pragmatic deliberations alone. Urban Malay parents have experienced tremendous social and cultural changes. They have made lifestyle changes and have more control of their own lives due to modernization.

Data Collection

Data were obtained using an online survey technique. A survey link was distributed to family members, close friends and workmates through email link and social media network. Participants were asked to further distribute the survey link to their networks. They were informed about the purpose of the study and that their participation was voluntary. To protect their privacy, they were assured total anonymity and that all data were treated with utmost confidentiality. The survey also contained a consent form that participants were required to complete before answering the questionnaire.

Study Instrument

A questionnaire was developed in both English and Malay by the researchers based on the literature review and discussion with a panel of experts which comprised of a sociologist and a family medicine specialist. The questionnaire components consisted of 44 items asking respondents about their attitudes, implications, beliefs and perceptions of vaccination programmes for their children. A 5-point Likert scale was used. Scores of “5”, “4”, “3”, “2” and “1” were used for “Strongly Disagree”, “Disagree”, “Neutral”, “Agree” and “Strongly Agree”, respectively. The total score was transformed into a percentage by dividing the accumulated score to the maximum score and multiplying the value by 100.

Face validity was assessed by ten parents conveniently sampled from various socio-demographic backgrounds. This was to ensure that all items were fully understood by respondents, to identify problematic wording and to estimate time needed in answering the questionnaire. During this stage, a few words in the questionnaire were adjusted. Following face validation, a pilot test was performed to establish the reliability of the questionnaire. The pilot test was performed by distributing the questionnaire to 30 parents who were not included in the actual study. The Cronbach alpha obtained from the analysis was 0.96 which indicates that the tool has good reliability. The uni-variate and bi-variate tests were employed to perform a non-parametric statistical analysis to illustrate the findings of the study.

RESULTS AND DISCUSSION

Socio-demographic Characteristics of Participants

Table 1 presents the socio-demographic characteristics of the respondents. The table illustrates that the majority (57%) of the participants' age is between 29-39 years old. The majority (60%) of the respondents also have a first degree and work full-time. The table also shows that 58% of the respondents were not in favour of vaccinating their children. This indicates that the refusal of vaccination is high as parents did not consider its importance for their children.

Table 1: Participants' Socio-demographic Background

Characteristics	N	%
Age (Years)		
20-29	46	57.5
30-39	30	37.5
40-49	4	5.0
Level of Education		
Secondary education	4	5.0
Diploma	16	20.0
Undergraduate	48	60.0
Postgraduate	12	15.0
Employment Status		
Full-time	51	63.8
Part-time	7	8.8
Retired	18	22.5
Self-employed	1	1.8
Unemployed	3	3.8
Vaccination Preference		
Yes	33	41.2
No	47	58.8

Attitude towards Vaccination

Parents' attitude towards vaccination was elicited through 13 items with 1-5 scale responses. As the established literature verified parents' rejection for vaccination, all statements directly asked the reasons for the negative attitude towards vaccination. Table 2 presents the analysis of participants' attitude towards vaccination. This study found that the median score for attitude was 32 out

of 65 total points. This implies that half of the parents had positive attitude towards prescribing vaccines while the other half seemed to have negative attitude about vaccinating their children.

Table 2: Participants' Attitude towards Vaccination

	N	Minimum	Maximum	Median	IQR
Attitude	80	18.00	63.00	32	25,51

Furthermore, the responses illustrate that parents' refusal towards vaccination was also due to their perception of its unhealthy practice. These findings are supported by a study (Lim et al., 2016) which reports that 37.5% of parents in Malaysia perceived vaccines as ineffective and 25% reported they have doubts about the vaccines' contents. The highest mean found in the study was on the statement "Too many vaccines". Too many options had made parents incapable of choosing what is best for their children and thus aggravated their attitude towards refusing vaccination. Some of the parents also indicated that vaccines are harmful for their children's health due to their unhygienic ingredients. Furthermore, the results of a one-way ANOVA test show that no significant mean difference in attitude scores existed among different age groups and employment status ($P > 0.05$).

Table 3: Parents' perception towards implications of vaccination

	N	Minimum	Maximum	Median	IQR
Perception	80	7.00	34.00	22	20,25

The median score of parents' perception towards implications of vaccination is 22 out of a total score of 50 which indicates that the majority of parents perceived that vaccinations can have harmful implications on their children. They felt that their children are safer without vaccinations and it saves their time and financial resources. Their children are not at risk of any potential harm and are healthier despite not being vaccinated. The Spearman's correlation was also applied to identify the relationship between the attitude of parents towards vaccination and its implications on their children. There is significant positive correlation between the parents' attitude towards refusal of vaccination and its implication is $r = 0.42^{**}$, $n = 80$, $p < 0.005$.

Parental Refusal of Vaccination

Table 4 shows several factors that contribute towards parents' refusal of vaccination. Based on the analysis, the study identifies eight possible reasons that influenced parents' refusal towards vaccines.

Table 4: Contributing Factors towards Vaccine Refusal

Factors	Mean	SD
Vaccine contains <i>haram</i> (prohibited) ingredients	3.38	1.439
Lack of trust in vaccination	3.33	1.469
Violations of international health standards	3.18	1.420
Vaccination's reactions	3.02	1.408
Vaccination is ineffective	3.20	1.447
Vaccination is painful	3.05	1.455
Other preventive methods are better than vaccination	3.58	1.499
Vaccination time schedule is not suitable	3.05	1.466

*1=Strongly Agree, 2=Agree, 3=Neutral, 4=Disagree, 5=Strongly Disagree

The highest mean score of 3.58 was found for the statement, "Other preventive methods are better than vaccination". Additionally, lack of trust exists among parents about the ingredients in the vaccines produced by different pharmaceutical companies. Hence, parents felt that it is against their religious practices to get the children vaccinated. Some parents believed that vaccines can cause negative reactions and side effects. The mean scores for other statements also indicate that parents refused vaccination due to their perception of its ineffectiveness, violations of international health standards and pain on their children. This indicates that the majority of the parents perceived that it is their responsibility to choose better options for their children in relation to vaccination. A study by Awadh et al. (2014) supports these findings by asserting that parents perceive they are the prime decision-makers of their children's health, including receiving vaccinations.

An important determinant for refusing vaccination is parents' age. The results found that the majority of the respondents were between the ages of 20 to 29 years old. This is not surprising as this is the age range of young married couples with less than three children. In this study, there were significant associations between knowledge on vaccines and the practice of vaccination.

Although most of the participants reported that they have heard about the importance of vaccines, interestingly, they did not get their children vaccinated. This finding is similar with the results of studies conducted by other researchers (Schmalz & Larwa, 1997; Al-Lela et al., 2014) who have mentioned certain barriers against immunization such as lack of information about vaccines, adverse effects of vaccines, lack of parental knowledge and so forth. In fact, some parents perceive that mild illnesses are also due to vaccinations. Therefore, they choose not to get their children vaccinated in the future.

This study has identified factors that are important in the refusal of childhood vaccination by parents. The study found that most refusal of vaccination is based on parents' deliberate decision-making. Our results show that parents refusal to vaccinate their children is based on multiple factors, like the age of parents, knowledge about vaccination, perception of vaccination side effects and effectiveness, and perception of other methods' effectiveness. Parents in this study reported to have lack of trust in vaccines. The reason is that they rely on the social media for information. Several websites about vaccines which are created by anti-vaccination groups have supplied information which contradicts with standard health practices. Some information appears convincing to these parents which has led them to make a choice from all the information they find. The study concludes that although parents are aware about vaccination practices, they are fearful about its usage on their children. Parents prefer to use alternative methods of immunization rather than vaccination.

CONCLUSION

This study addresses several socio-cultural barriers towards vaccination. The study finds that lack of knowledge and information about vaccines prevents parents, particularly young parents, from getting their children vaccinated. In this respect, the investigation has led the researchers to conclude that there is a huge vacuum in the study on vaccination and its challenges in Malaysia. Thus, this study proposes future opportunities in certain areas such as the roles of religious authority and social media. Results from this study may be used to make and improve certain successive policies to create awareness programmes and convince parents regarding the importance of vaccination for their children. As healthcare and medicine is one of the priority areas of any nation, vaccination is therefore essential to ensure the societal well-being, particularly of the younger population. This study is not without its limitations. The study was conducted on parents from the Malay ethnic group only. Ideally, it should cover at least three main ethnicities in Malaysia which include the Chinese and the Indians. Perhaps, future studies should be done at multiple settings, taking into account the racial differences across Malaysia. In addition, the convenient sampling method used for data collection also signifies that the results obtained cannot be generalized to all Malay parents since the data can only represent the studied population.

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