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Original Article

# Knowledge, attitude, and practice of working and non-working mothers concerning immunization of underfive children

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**ABSTRACT**

***Objective*** To compare the knowledge and attitude of working mothers (WM) and non-working mothers (NWM) concerning immunization in children.

***Methods*** A cross sectional study was conducted on February, 18-23, 2002 at PT. Olagafood Industri, a noodle manufacture in Tanjung Morawa, Medan. Subjects were female workers and non-working wives of male workers who had under-five-year children. Mothers were interviewed using a questionnaire. Sample size for each group was 38. Degree of knowledge, attitude, and practice concerning immunization were classified into good, insufficient, and bad.

***Results*** Mothers' age, educational level, and children's age were comparable between the two groups. Ten WM and 8 NWM had good knowledge concerning immunization, which did not differ significantly ($p>0.05$). Good attitude toward immunization was found in 25 WM and 12 NWM; it was a statistically significant difference ($p<0.05$). The practice of immunization showed similar result as the attitude. The age of mothers had a significant relationship with the degree of knowledge and practice, but not with attitude.

***Conclusion*** Degree of knowledge about immunization between WM and NWM are comparable, but differences exist in their attitude and performance **[Paediatr Indones 2004;44:101-105].**

***Keywords:*** working mothers, non-working mothers, child immunization

Immunization has been proven as one of the essential community's health efforts,[1] very cost-effective in preventing infectious diseseas,[2-4] and thus enhancing life-expectancy.[5] There are many misunderstandings about immunization.[6] Davis *et al* found that 43% of websites on the internet were against vaccination.[7] This ultimately causes a low achievement in immunization program.[8,9] In Indonesia, immunization programs are faced with low coverage and high drop-out. A study by Lubis *et al* found that lack of information (60-75%) and motivation (2-3%) are the main obstacles for this problem besides other causes (23-37%).[10]

Parents' and physycian's concern about immunization are very important.[11] Many studies found that mothers' age, race, education level, and socioeconomic state are strongly associated with immunization coverage. Mothers' health values and attitude are also important.[12] Proper knowledge of parents about the relative risks of vaccination and illness is associated with a greater likelihood for immunization.[13] Parents' cooperation and consent may not be a major obstacle if adequate awareness and education strategies are used.[14] The change from agriculture to industrial state in Indonesia, improvement in education, and more attention to women lead to an increase in women workers.[15] The purpose of this study was to compare knowledge, attitude, and practice concerning immunization between working mothers (WM) and non-working mothers (NWM).

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## Methods

This was an analytic and cross sectional study conducted on February, 18-23, 2002, at PT Olagafood Industri, a noodle manufacture in Tanjung Morawa, Medan. Subjects were recruited by simple random sampling; the sample size for each group was 38. Subjects were female workers (WM) and non-working wives of male workers (NWM). The subjects were interviewed by a designed questionnaire which should be answered by true or false and they were asked to answer as truthfully as they could. The subjects had to answer the whole questions completely.

During the interview, all mothers with children below five years had to show the KMS (road to health chart) of their youngest child. The questionnaire collected data about identity/mother's characteristics (age, educational level, number of children below five years), knowledge about immunization (definition, benefits, type of vaccines, duration of immunity, frequency of the administration). We also asked for the location of vaccine injection, preventable associated diseases, adverse reactions, simultaneous immunizations, and booster immunization. Questions about their attitude included their opinion about parents' compulsory to search vaccination information, whether vaccination was necessary, whether the preventable infection diseases were considered as serious ones, whether it should be stopped if reaction appeared, whether it was done to succeed the government's program, and whether they agreed in the administration of more than one vaccine simultaneously. Questions about their practice (participation in health improvement, completion of their children's immunization, whether their KMS were well-kept) were also asked. They were also asked for whether their children had simultaneous immunization, whether they had ever informed the importance of immunization to others, and their response if any side effect appeared.

Interviewers were doctors in the Department of Child Health, Adam Malik Hospital, Medan who had been trained to interview the mothers. Trials were done to evaluate the process of interview and the completion of the questionnaire forms.

Statistical analysis was done by chi-square test with a p value less than 0.05 considered statistically significant. Data were analyzed using SPSS program version 10.0

Knowledge, attitude, and practice were classified into good, insufficient, and bad based on the correct answer for every item. There were 10 questions about knowledge, subjects were classified as good if there were >5 correct answers, insufficient if 3-5 correct answers, and bad if only <2 correct answers. There were 6 questions each for attitude and practice, subjects were classified into good if correct answers were >5, insufficient if correct answers were 3-4, and bad if correct answers were less than 2.

## Results

Seventy-six subjects were interviewed, consisting of 38 WM and 38 NWM. **Table 1** shows the characteristics of the subjects. The distribution of age, educational level, and age of children in the two groups were comparable.

**TABLE 1.** CHARACTERISTICS OF RESPONDENTS

| | Working mothers n | Non-working mothers n |
|---|---|---|
| **Age** | | |
| <20 years | 3 | 0 |
| 20-35 years | 32 | 36 |
| >35 years | 3 | 2 |
| **Educational level** | | |
| Primary school | 4 | 13 |
| Junior high school | 11 | 11 |
| Senior high school | 22 | 14 |
| College | 1 | 0 |
| **Age of under-five children** | | |
| 4–11 months | 17 | 14 |
| 12–59 months | 21 | 24 |

Comparing knowledge about immunization between WM and NWM, we found that good knowledge was found 10 WM vs. 8 NWM out of 38 subjects in each group, insufficient knowledge in 20 WM vs. 26 NWM, and bad knowledge in 8 WM vs. 4 NWM. The differences were not statistically significant ($x^2=2.330$, df=2, p=0.310).

A significant difference was found in the attitude of WM compared to that of NWM. In the WM group, good attitude was found in 12 mothers, insufficient in 24, and bad in 2 out of 38 subjects. While in the NWM group, 25 were good, 13 insufficient and 2 bad. The difference in good attitude toward immunization was significant between the two groups (p=0007).

There was a significant difference between WM and NWM concerning the practice of immunization on their children. Good practice was found only in 12 WM compared to 25 NWM, which was statistically significant (p=0.0117). Insufficient practice was found in 16 WM vs. 8 NWM and bad practice was found in 10 WM compared to 5 NWM.

This study showed that there was no correlation between either knowledge, attitude, or practice on immunization and the educational level of respondents (p>0.05) (**Table 2**).

**Table 3** shows that mothers' ages had significant relation with their knowledge and practice of immunization (p<0.05), but no correlation with their attitude (p>0.05).

## Discussion

Only few studies that had specifically examined the relation between parents' knowledge or attitude and childhood immunization.[16] Immunization programs can be successful by continuing efforts of those who are concerned, and high level of commitment to this program.[17] The source of information obtained by our subjects were posyandu/integrated health post (42%), society (16%), clinic (13%), midwives (12%) community health center (8%), doctors (6%), and mass media (3%). Posyandu was still dominant as the main source of information. Unfortunately this was not followed by the role of doctors. A recent study revealed that 96% of parents received doctor's advice before deciding to get their children immunized.[18]

This study showed significant differences in attitude and practice of immunization between WM and NWM. Most NWM approved immunization as one of the important community health attempts and realized that it was not merely a government program. Unfortunately, these good attitude and practice of immunization in NWM were not supported by sufficient knowledge even though the majority of the subjects had finished senior high school. There was no significant difference regarding knowledge about immunization between WM and NWM. Likewise, a study by Masjkuri in Kebayoran Lama, South Jakarta revealed that 61% of WM did not know about immunization. From 548 mothers who had children below five years, 56.6% knew nothing about immunization and this was closely related with their educational level.[19]

The lack of knowledge on immunization was also reported by Suharsono in a descriptive study involving Chinese mothers at Kelapa Kampit area in Belitung. The study showed that good knowledge was only found in 40.2% of mothers, mostly in those below 25 years (64.5%) and those with moderate educational level (87.1%).[20] Another study by Strobino revealed that 65% of mothers did not know which vaccine protects against particular diseases.[16]

It is still unclear why NWM had better attitude and practice on immunization even though their basic knowledge was not sufficient. On the other hand, a study by Lubis *et al* concluded that good knowledge in immunization absolutely did not contribute to good attitude and practice,[10] while Strobino *et al* revealed that parents' good knowledge and attitude could not explain their children's low immunization status.[16]

Our study found no correlation between either mother's knowledge, attitude, or practice and educational level. It was different with the results of previous studies done by Lubis & Masjkuri.[10,19] Significant

**Table 2.** The relation between mothers' education and either levels of knowledge, attitude, or practice of immunization

| Educational level | Knowledge | | | Attitude | | | Practice | | |
|---|---|---|---|---|---|---|---|---|---|
| | Good | Insuff | Bad | Good | Insuf. | Bad | Good | Insuff | Bad |
| Primary School | 0 | 13 | 4 | 10 | 7 | 0 | 8 | 6 | 3 |
| Junior high school | 5 | 12 | 5 | 13 | 8 | 1 | 11 | 6 | 5 |
| Senior high school | 13 | 20 | 3 | 14 | 21 | 1 | 18 | 11 | 7 |
| College | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| Total | 18 | 46 | 12 | 37 | 37 | 2 | 37 | 24 | 15 |
| p | 0.310 | | | 0.205 | | | 0.245 | | |

**TABLE 3.** THE RELATION BETWEEN MOTHER'S AGE AND KNOWLEDGE, ATTITUDE, OR PRACTICE OF IMMUNIZATION

| Mothers' age | Knowledge | | | Attitude | | | Practice | | |
|---|---|---|---|---|---|---|---|---|---|
| | Good | Insuff | Bad | Good | Insuff | Bad | Good | Insuff | Bad |
| < 20 years | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 3 |
| 20-35 years | 18 | 43 | 7 | 36 | 30 | 2 | 37 | 21 | 10 |
| > 35 years | 0 | 3 | 2 | 1 | 4 | 0 | 0 | 3 | 2 |
| Total | 18 | 46 | 12 | 37 | 37 | 2 | 37 | 24 | 15 |
| p | 0.003 | | | 0.412 | | | 0.01 | | |

relationship between knowledge, attitude, or practice of immunization and mothers' age in this study was similar with the report of Lubis.[10]

In our study, there were numerous misunderstanding about vaccination programs although all subjects assumed that the program was really important. For instance, in the case of simultaneous provision of several vaccines, most subjects (83%) did not approve. Worries about immunization are obviously reasonable, not only in our population, but also in developed countries, such as The United States. A telephone survey by Gellin found that most parents (86.9%) had a perception that immunization was an essential program. However, 25% of parents assumed that multiple and repeated immunizations could lower their children's immunity and 23% were convinced that their children had accepted more immunization than they require.[5]

We conclude that there is no significant difference in knowledge about immunization between working and non-working mothers. Nevertheless, the attitude and practice are much better in non-working mothers. Education about immunization is still insufficient, advertisement and information should be more intensive and thorough. Several misunderstandings need better explanation and approach.

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