BELIEFS AND PRACTICES ABOUT MEASLES AND MEASLES PREVENTION IN GUNUNGKIDUL REGENCY, YOGYAKARTA REGION

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Abstract
Suatu penelitian tentang pengelahian, sikap dan perilaku masyarakat terhadap penyakit campak dan cara peningkatannya di laksanakan di Kabupaten Gunungkidul, Propinsi Daerah Istimewa Yogyakarta. Hasil penelitian ini menunjukkan bahwa dari 1.151 ibu yang diawasi hanya 89,2% tidak pernah menerima vaksinasi campak dan para vaksinasi atau pengobatan penyakit campak. Meskipun demikian, kira-kira 70% perempuan dari ibu-ibu mengetahui bahwa campak dapat disebabkan dengan imunisasi campak. Penelitian juga menunjukkan bahwa ibu-ibu yang menerima vaksin penyakit yang menerima hanya 57% pada anak-anak. Hampir sebesar 45,0% dari ibu-ibu resayap hasil survei anak dapat menerima vaksin campak lebih dari satu kali dan kedinginan yang baik serta kebersihan bidan akan dapat mengurangi kerentanan anak terhadap sakit campak. Kira-kira 90% dari ibu-ibu berpendapat bahwa seorang anak menerima vaksin campak adalah norma keadaan yang bias. Hanya sebagian kecil dari ibu-ibu (30%) berpendapat bahwa ada pengelihatan kematan. Meskipun demikian, studies menunjukkan bahwa vaksinasi campak tidak diminimnya dari penyakit yang berhubungan dengan ibu, sebagian ibu-ibu masih perlu sering pengobatan sakit perut dan sering menerima imunisasi campak. Banyak aspek dari cara penelitian dan pengobatan masyarakat sakit menunjukkan dapat disusun dalam kelompok terapis praktik yang kemandirian atau bersifat refleks. Meskipun demikian, beberapa praktik penelitian yang memperoleh epidemiologi untuk makanan yang suboptimalnya handalannya pating yang seperti demikian dan ikat, juga digunakan oleh beberapa ibu. Dari penelitian ini terlihat bahwa pendidikan kasatman tentang penyakit campak dan cara penelitian dan perawatan.

Key words: measles, measles immunization, beliefs and practices, Village Health Worker, health education.

Introduction
In Indonesia, measles has been known by the people for a long time, therefore certain traditional beliefs and practices related to the disease and its prevention already existed; they are deeply rooted as part of the culture of particular populations. Results of a study conducted in the Prwebaji Subdistrict, Banyumase Regency in Central Java, suggest that traditional beliefs with regard to measles could influence the acceptance of a measles immunization program. The understanding of these beliefs and practices is essential for designing any education program directed to the improvement of the behaviour with respect to health practices. In order to identify the factors affecting the low measles
immunization acceptance in Indonesia, a study of the socio-cultural was conducted.

The aim of the present study is to determine the beliefs and practices of the mothers with regard to measles in order to identify factors influencing the acceptance of measles immunization. Special attention is given to the following items:
- the knowledge of signs and symptoms, cause and modes of transmission;
- the concept of how patients with measles should be treated;
- the perception towards the susceptibility of children to get measles, the seriousness of measles, and the benefits and barriers to get measles immunization;
- the practices of the mothers to manage children suffering from measles.

Subject and Method

Based on the following considerations, Gunungkidul Regency in Yogyakarta Special Region, was chosen as the location of the present study:
- the regency still represents a typical rural area (about 80% of the population of Indonesia lives in rural areas), and
- the measles immunization coverage in this area was lower than in the three other regencies (Yogyakarta Special Region consists of four regencies, namely, Sleman, Bantul, Gunungkidul, Kulonprogo and one municipality of Yogyakarta) and also lower than in the municipality of Yogyakarta.

From the 25 health centers in Gunungkidul regency, the service area of the eight health centers with the lowest measles immunization coverage, were chosen as area for this study. These health centers were Wonsari II, Karangmojo II, Rongkop I, Ngawan, Nglipar II, Ronkop II, Patuk II, and Playen I. The study was set up as an intervention study directed on raising the measles immunization coverage.

In this study, a cross sectional design was used; the respondents were mothers with children aged 6-12 months who resided in the study area at the time of the study. The questionnaire about measles and measles immunization was written in Javanese and was pretested in the Palyan subdistrict, an adjacent area, outside of the study area.

The measurement of the attitude of the mother with regard to measles and measles immunization was based on the four major components of the Health Belief Model, i.e. the perceived susceptibility to measles, the perceived seriousness of measles, the perceived benefits of measles immunization and the perceived barriers to get measles immunization for the children.

The perceived susceptibility to get measles had to do with the perceived susceptibility of children as compared with adults; further, it was related to the nutritional status, the immunization status, previous experiences with measles, resistance to measles and the level of hygiene.

The perceived seriousness included the assessment of the necessity of measles immunization, the method of treatment, the severity of measles in comparison with other common diseases, the influence of sick children on the social life and feeling of the mother.

The perceived benefits of measles immunization were related to the efficacy of the vaccination, the nutritional status, the belief in traditional preventive methods and the belief concerning the causation of measles which might be related to the benefits of other preventive measures.

The perceived barriers included the relation with the side-effects of immunization, the interference with the social life of the mother and the influence of the opinion of family members, the health condition of the children and the existing immunization service. In the case that the mothers made use of an immunization service, they were asked if they were content with the information given by the vaccinator.
The mothers were asked to respond to each statement according to a five-point Likert-type rating scale, from "strongly agree" to "strongly disagree". In the analysis, the five categories were reduced to three categories, i.e., "agree" (calculated from the sum of the percentages of disagree and strongly disagree).

The interviews were held at the respondents' homes. The questionnaires were filled in by six interviewers, Javanese speaking students from various faculties of the Gadjah Mada University, who had received a special training to conduct this study. All respondents were asked by the village headman to be at home on the day of the planned interviews were held in the evening. The data collected during the study are the following:

1. The bio-socio characteristics of the parents:
2. Occupation, educational level;
3. Knowledge about measles: local names, signs and symptoms, cause, mode of transmission, care and treatment of children with measles;
4. Knowledge about prevention of measles: general belief, ideal age and frequency of immunization, health service facilities, sources of information;
5. Perceived susceptibility to measles;
6. Perceived seriousness of measles;
7. Perceived benefits of measles immunization;
8. Perceived barriers to get measles immunization;
9. Experiences of the mothers with children suffering from measles;
10. Experiences of the mothers to get immunization for their children.

Results
Bio-social characteristics of the parents
In the study, which was carried out in eight health centers and their service areas, 1,151 mothers were included. The questions on the bio-social situation of the parents yielded the following results:

Age.
Most of the mothers (91%) and the fathers (73%) are in the age group of 20-40 years. Only a small percentage of them was younger than 20 years or older than 40 years of age (Table 1).

<table>
<thead>
<tr>
<th>age group</th>
<th>mothers</th>
<th>fathers</th>
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<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
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<tr>
<td>&lt; 19</td>
<td>40</td>
<td>3.5</td>
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<tr>
<td>20-29</td>
<td>487</td>
<td>66.4</td>
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<td>&gt; 39</td>
<td>254</td>
<td>22.3</td>
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<tr>
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<td>40</td>
<td>3.5</td>
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<tr>
<td>total</td>
<td>1,151</td>
<td>100.0</td>
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Occupation.
About 71% of the mothers and 55% of the fathers were farmers. More fathers than mothers worked in private business or as government/civil servant. About 11% of the mothers had no other job than house wife (Table 2).

<table>
<thead>
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<th>education</th>
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<tbody>
<tr>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>farmer</td>
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<tr>
<td>private business</td>
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<td>6.5</td>
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<tr>
<td>government/civil servant</td>
<td>48</td>
<td>4.2</td>
</tr>
<tr>
<td>day labourer</td>
<td>55</td>
<td>4.8</td>
</tr>
<tr>
<td>house wife only</td>
<td>268</td>
<td>11.1</td>
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<tr>
<td>others</td>
<td>24</td>
<td>2.1</td>
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<tr>
<td>total</td>
<td>1,151</td>
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Educational level.
The proportion of mothers and fathers who never had visited school was similar, about 8%; however, the proportion of fathers who entered the secondary school and high school was about 9% higher than of the mothers (Table 3).
Knowledge about measles

Local names: In the Gunungkidul area, measles has as local name galaguen. In other parts of Indonesia, almost in each province or island, there are several names for measles, e.g., tampak, cutmah and penyet bagus ("the beautiful disease") in Jakarta Special Territory, tampak and sas in West Java, gabagen in Middle Java, East Java and Yogyakarta, medewa, eder, gabag and runak palca in Bali, edeh, bal, kawaro and krena in West Nusa Tenggara, karomaribi, torame and kara in East Nusa Tenggara, puru kaseja, puru matutuo, camara, sarampah and peruan in South Sulawesi, gampa in Middle Sulawesi, gerumul, rempo, kurusawe and nembababa in Southeast Sulawesi, kerumut in South and East Kalimantan, prue, nekhe and sampiran in Aceh Special Region; probably, there are still other local names in other areas with different kinds of traditional treatments.

Signs and symptoms: When the mothers were asked about the signs and symptoms of measles, 58% of them mentioned that they did not know them; and the rest (42%) gave correct answers, namely: high fever occurrence of corza, cough, conjunctivitis and specific rash.

Cause: Most of the mothers (80%) were ignorant of the cause of measles; 13% of the mothers mentioned that measles was caused by "fever"; 4% considered measles was caused by "germ" (virus or bacteria); the rest answered that bad weather, bad food or mosquitoes could bring about the measles. From Mali, Africa, it is reported that witches were considered as the main cause of measles. In a particular rural area in Kenya, measles is classified as one of "God’s diseases" which are believed not to be result from sorcery or witchcraft. A study in Bangladesh indicated that 45% of the respondents (80 mothers) believed that measles was caused by the "will of God".

Mode of transmission: 64% (or 56%) of the mothers mentioned that measles was a contagious disease, 35% mentioned that it was a contagious, and 9% was ignorant. From the mothers who mentioned that measles was a contagious disease, 43% thought that the way measles infected other persons was through contact with a patient by playing or being close to the sufferer, by droplets, or through the wind, or by indirect contact through objects, such as cloth, glass, soap, powder etc. (4%). From the mothers, or by skin contact including through sweat (23%); about 20% of the mothers said they did not know how measles was transmitted.

Care and treatment of children with measles: When the mothers were asked what they would do if their children suffered from measles, it was found that the kind of treatment or care undertaken usually depends on the stage of the disease.

In the early stage of the disease, when the prominent symptom is fever and when the mothers suspect their children to have measles, many mothers said that they would try to cool the rash to come out on the surface of the skin, and that they would do some efforts to reduce the fever which usually is high. After the eruption of rash, the treatment often is directed to minimize the spread of the disease over the body, to lessen itching and to make rash dry and healed.

For the purpose to bring out the rash and to lower the fever, several kinds of efforts will be done for the sick children, such as:
- let them drink honey mixed with egg yolk (mentioned by 26% of the mothers);
- give them compresses with water (12%);
- blow their joints, ears and nails (6%);  
- wash their bodies with water mixed with herbs (2%);
- let them drink javanese herb mixture (jamu pater) (11%);
- give them antipyretics (0.4%).

When the rash has come out on the skin, some efforts will be done by the mothers, such as:
- spike upon their bodies with pre-chewed "babal gos" (Artocarpus heterophylla) (12%);
- pour water in which a chicken with feathers has been boiled ("chicken water") on the body of the children (2%);
- rub the body with powder, water mixed with herbs, papaya (Carica papaya), lau (Legenan Arucantha), tamarind leaves mixed with salt, etc.

Some mothers stated that they would blow the eyes of the children every day of their illness in the belief to protect their eyes from germs which may cause blindness. Although a lot of indigenous forms of treatment will be performed by the mothers, 47% of the mothers mentioned that they would go to the health center to seek treatment; 39% of the mothers considered that a combination of indigenous treatment and modern medicine from the health center was a good measure; a small proportion of the mothers (5%) mentioned that no treatment was necessary for children with measles.

Knowledge about prevention of measles

General belief: About three-fourth (78%) of the mothers mentioned that measles could be prevented, 6% mentioned that it could not be prevented, and the others (18%) did not know whether measles could be prevented or not. Among the mothers who mentioned that measles could be prevented, 85% thought that immunization was the measure for prevention. Only 1% mentioned another type of measure, while 14% did not know how to prevent measles. The mothers who mentioned that measles could not be prevented gave as reason that measles was normal for children, or that suffering from measles was caused by destiny. Ideal age and frequency for immunization. Concerning the ideal age for measles immunization, only 48% of the mothers gave the correct answer; however, 7% of the mothers knew that measles immunization is given only once.

Sources of information. Most of the mothers (83%) who ever had heard about the immunization program, stated as sources of this general information: a nurse, midwife, or vaccinator (56%), a Village Health Worker (26%), a medical practitioner (5%), a neighbor (3%) or a village headman (3%). Only a small number (1%) mentioned as source of information the mass media, such as radio, TV, newspaper or magazine.

About one half (49%) of the mothers mentioned that most frequently, they received the more detailed information about measles immunization from official health personnel, 38% was informed by Village Health Workers and the rest by the village headman, a member of the PKK (Pembinaan Keselamatan Keluarga = Family Welfare Movement, a women organization) and neighbors. These proportions differ not much from the resources of information about immunization in general, as mentioned earlier.

Furthermore, about one half (49%) of the mothers mentioned that Village Health Workers were the persons who most frequently reminded them that their children had to be vaccinated against measles.

Barriers to get measles immunization: With regard to the problems faced to get immunization for their children, about three-fourth (78%) of the mothers stated
that there was no hindrance at all. From the mothers who perceived problems, 67% did not bring their children for immunization because they were too busy or had to work, or their children were frequently ill (10%); 2% of these mothers were afraid that their children should get fever after immunization, and 1% was forbidden by a family member. Some conditions of the children, such as, fever, cough and diarrhea, were mentioned as reasons for postponing measles immunization.

There were 18 mothers (1.4%) who mentioned that their children were rejected from immunization by the vaccinator because they were considered to be not in good health, or because the mothers came on a faulty day or because the vaccine was not available at that time.

Knowledge about health service facilities: Almost all mothers (99%) knew where they could get immunizations for their children, i.e. either at a health center or subcenter, or at a Posyandu. Many mothers (88%) had ever visited a Posyandu. Only 7% of the mothers reported that during the immunization session the vaccinators always gave some information. 71% mentioned that vaccinators sometimes gave information, 71% mentioned that vaccinators never gave information.

The content of the information given by the vaccinator was in 32% of the cases about diseases prevented by immunization, in 12% about side-effects of the vaccination, in 15% about the immunization schedule, in 19% about the date and place for the next immunization session and in 14% of the cases about other subject is such as nutrition, growth and development, sanitation and family planning.

Perceived susceptibility to measles

The results of the attitude assessment of the mothers with respect to the susceptibility to get measles, it appears that approximately 90% of the mothers considered measles a disease which attacks mostly children, and especially children which never had been vaccinated against measles. Of these mothers 40% believed that children which ever had measles never will get measles again, 19% did not know whether children once ill will get measles again or not, and 37% of the mothers thought that those children could get another measles attack.

The mothers, who mentioned that a child could get measles more than once, probably had the experience to see a child suffering from a disease with similar symptoms as measles, i.e. fever and rash.

A good nutritional status was considered to make children less susceptible to measles (42%), and good hygiene was believed to be able to lessen the susceptibility of children to get measles (37%). The latter opinion may have been arisen because these mothers thought that measles is a type of skin disease which can be prevented by a good hygienic condition.

More than one half (57%) of the mothers believed that their children were more resistant to measles than other children. Almost three-fourth (73%) of the mothers considered that children in their villages were vulnerable to measles.

Perceived seriousness of measles

The vast majority of mothers (85%) believed that suffering from measles was normal for children. This belief might be caused since measles is regarded as part of the normal development of children, as was also found in Kenya. However, only 11% of the mothers considered it is necessary for every child to suffer from measles; this may be related to the belief of some mothers about destiny or "God's will" as a reason for children to get measles.

Almost all mothers (98%) believed
that it was better that children should not intentionally be infected if there was a case of measles in the family or in the surrounding. Most of the mothers (94%) would feel worried, and their house works would be disturbed, if their children would get the measles.

Many mothers (85%) considered measles a dangerous disease, but only 3% mentioned the professional treatment from a physician or nurse would be necessary; a small proportion (5%) of the mothers believed that measles could cause death.

Perceived benefits of measles immunization

Only the 957 mothers (83.1% of the respondents) who stated to have ever heard about measles immunization were asked about the perceived benefits of this immunization. Almost all mothers (96%) believed that measles immunization necessarily had to be given to ever child; immunization was viewed as the best measure to prevent children from measles (95%). The efficacy of the measles immunization was trusted by 87% of the mothers. However, it was found that 16% of the mothers whose children already had received measles immunization were in doubt about the possibility to get measles. About 62% of the mothers believed that traditional methods had some benefits to protect children against measles. This might be related to the belief that the cause of measles was supernatural.

Perceived barriers to get measles immunization

The side-effects which may occur after measles immunization, such as fever or more severe, fever with fretfulness, were considered as barrier of taking the measles immunization, as perceived by 45% and 52% of the mothers respectively. The fact that they were busy or the fact that a family member objected, were not considered as barrier by most of the mothers (92%). However, more than one-half of the mothers (59%) would not bring their children for immunization if they considered the children were not in good health. Many mothers (58%) mentioned that they were satisfied with the information given by the vaccinator.

Experiences of mothers with children suffering from measles

From the 1,151 mothers included in the study, 219 (27.7%) stated that their children had ever had measles in the past years. From their experiences with measles cases, the information about the practices undertaken for sick children as reported by the mothers, not by observation, was obtained.

With regard to the severity of the measles suffered by their children, 60 mothers (19%) considered measles as serious/severe; 259 mothers (81%) considered it as a trivial disease.

a. General care and treatment of measles cases

When the mothers were questioned about the first place for seeking treatment, it was found that 42% of the cases was treated at home; 41% brought to a health center; 4% was treated by a nurse or midwife; 4% was treated by a traditional healer, 3% was treated by a VHV, and 2% was brought to the hospital; only 4% was treated by other facilities. Many measles cases, i.e. 265 (83.1%) were mentioned to be cured; 54 cases (16.9%) were not cured. Among the 54 cases who were not cured, the health center and nurse/midwife were mentioned by 94% of the mothers as the subsequent places for seeking treatment; 6% of these cases was brought to the traditional healer.

The mothers thought that, during their illness, the children should not be washed (66%), and not be much exposed to wind (76%) or sun (3%); the children were not
allowed to go out of the house (8%) or to get an injection (2%) or to smell something fragrant, such as a perfume or flower (2%). The mothers believed that these restrictions would avoid the raise of the fever, and the spreading of the disease, and that, also the condition of the children was prevented to become worse. The practice of not washing children with measles was also found in South India.

The kinds of treatments given to the children at home by the mothers are generally identical to the suggestions brought forward by the mothers in reply on questions concerning their knowledge about measles and the treatment of children with measles; these were cooling with water, or with water from a special fruit, subu (Lagenaria loeseliana) (20%), splitting upon the body with pre-chewed babal gori Artocarpus heterophylla (48%), smearing the skin with powder or with sidap serep leaves (Erythrina subumbrella) (25%), pouring the body with "chicken water" (21%), blowing the eyes and the joints of the sufferer (21%), and, finally, disyarati a kind of traditional ceremony (some kinds of leaves and coins are put in a basket that is left at the cross-road near the house of the sufferer) in 6% of the children.

b. Practices about food and fluid consumed by measles cases.

Ideally, children suffering from measles should be encouraged to eat their normal meals. In some places in Africa, there is a belief that a certain kind is recommended to be given during the illness10,11.

From this study it appeared, that about 50% of the mothers believed that some food or some fluids preferably should be consumed by children with measles, such as honey (91%), 15 vegetables and fruits (6%), milk (3%), traditional herbs (Jantu paitan) (3%), porridge (3%), water mixed with "asam" Tamarindus indica and salt (2%).

Beliefs and Practices

The mothers believed that certain foods or fluids would reduce the fever (85%), would hasten the rash eruption (20%), and would improve the condition of the sufferer (7%). However, some mothers did not exactly know the benefits of the suggestion with regard to food and fluid, maybe because this type of practices was derived from a heritage without clear explanation.

Besides the food which was considered good for children with measles, there are food of which some mothers (48%) think that they should be avoided by measles sufferers, such as meat, fish or fishy foods (33%), kiwift fruit (Artocarpus integr) (5%) and chilly foods (3%); these kinds of food are believed to cause itching, to raise the fever and to worsen the disease. In Kenya, milk, fats and meat were prohibited for children with measles because they would prevent the rash from appearing on the surface of the body.

Discussion

A lot of information about the beliefs and practices of the mothers with respect to measles and measles prevention was gathered from this Gurungkidi study. Facing several kinds of customary practices of the community, the division of practices into four categories according to their apparent public health value, as proposed by Jelliffe and Bennett11, was used. The four categories comprise (some examples of practices applied to measles cases):

1. Beneficial practices, such as drinking honey mixed with egg, eating vegetables and fruit, or sponging with water for children with fever, etc.
2. Neutral practices, such as blowing the eyes and joints, smear the body with pounded leaves mixed with water, etc. These practices have no scientific value, therefore, they should be left alone.
3. Unclassifiable practices, such as drinking traditional herb mixture (jamu). This practice should also be left alone, pending further observations and considerations.

4. Harmful practices, such as restriction of nutritious food such as meat and fish. These practices should be discouraged or altered.

The division of customs as described above will permit the health worker to proceed supporting the beneficial practices, and discouraging or modifying the harmful practices.

From this study, some points were noted to be deficient; they need to be improved or changed through health education. A number of these points are:

1. Knowledge of measles:
   - about 60% of the mothers did not know the cause, signs and symptoms of the measles disease;
   - only about 55% of the mothers stated that measles was contagious, nevertheless most of them did not know how the disease was transmitted.

2. Knowledge of care and treatment:
   - a lot of traditional treatments and practices were undertaken by the mothers for children with measles. Some beneficial, neutral and harmful practices were noted.

3. Knowledge of prevention:
   - about 20% of the mothers did not know that measles could be prevented;
   - some mothers (15%) did not know how to prevent measles and a small proportion of the mothers mentioned other methods than immunization to prevent measles;
   - about 17% of the mothers never had heard about measles immunization;
   - more than one half of the mothers did not know at what age measles immunization should be given to their children.

4. Source of information:
   - as the source of information about immunization in general and about measles immunization in particular, official health personnel (nurse/midwife, vaccinator, physician), Village Health Workers (VHW) or village headmen were found to be the main sources; VHWs were the persons who most frequently reminded the mothers to get measles immunization for their children.

5. Problems to get immunization:
   - the main reason for not bringing the children for immunization was because the mothers thought their children were not in good health;
   - the vaccinator rejected to give immunization for the children without giving a good reason as contra indication;
   - information about immunization was not routinely given by vaccinators and the content of information needed to be improved.

6. Perceived susceptibility to measles:
   - some mothers believed that a child could get measles more than once;
   - a good nutritional status and a good hygienic condition should lessen the susceptibility to measles.

7. Perceived seriousness of measles:
   - about 90% of the mothers believed that suffering from measles was normal for children;
   - some mothers connected the chance to get measles with destiny;
   - mothers felt worried and disturbed when their children suffered from measles;
   - only a very small number of mothers believed that measles could cause death.

8. Perceived benefits of immunization:
   - some mothers (25%) were still in doubt or did not know the efficacy of measles immunization;
   - some mothers (60%) still believed in the traditional methods of prevention;
   - one third of the mothers believed that the cause of measles was supernatural.

9. Perceived barriers to get immunization:
   - side-effects of immunization were mentioned as barrier to get immunization.

From conclusion the result of the study concerning the practices in the treatment and management of children with measles, it appeared that beneficial, neutral, unclassifiable and harmful practices could be undertaken by the
mothers of these children. The essential suggestion for the measles immunization program in Indonesia that comes out from this study is that the knowledge of the mothers with regard to the causation and the prevention of measles still needs to be improved. Also a more positive attitude of the mothers toward the disease and its prevention is needed for the success of the measles immunization program. Further, some problems to get immunization were probably caused by the provider himself. Finally, by means of better health education activities, and more intense training of health workers, a significant improvement of measles immunization coverage can be expected.

References


