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# Parents understanding on measles: a study in Al-Elwyia paediatric hospital in Baghdad province, Iraq

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**Objectives** The findings of the study have proved that there is a high significant positive relationship between the parents' knowledge and their demographic variables (age, educational level, occupation and residential area). In general, knowledge of parents related to measles was low however, the parents applied preventive practices towards their children with measles. A cross-sectional study was conducted in Al-Elwyia paediatric teaching hospital in Baghdad from the middle of June till the end of September 2014, in order to identify parents' knowledge of their children with measles.
**Aim** To identify the effectiveness of traditional knowledge of parents' whose children suffer from measles.
**Methodology** Purposive sample of 100 parents who accompanied their children with measles have been selected. The reliability of the instrument was determined through a test and validating through a panel of experts. The data was analysed through the application of descriptive statistical analysis that include frequency, mean, mean of scores, standard deviation and percentage and the application of inferential statistical analysis that include Pearson correlation coefficient, chi-square, and analysis of variance for the differences test of the study group.
**Results** The results of the study indicated a positive effect on the knowledge of parents.
**Recommendations** The researchers recommended preparing and implementing the knowledge for parents with measles, and for medical and nursing staff to give them knowledge about the condition.
**Keywords** measles, children, tradition, parents

## Introduction

Many traditions regarding measles were recognised in many countries. These traditions include traditions regarding red dressings,[1] spiritual, supernatural role, herbs and diets.[2] These traditions might include amulets or jewellery on it, supernatural believes like diviners and marabouts, sea water.[3] In general, ethno pharmacological investigations emphasise the importance of medicinal plants in developing countries, species used regularly with diet are under-investigation and potentially make greater contributions to health.[2] Measles is one of these diseases which is acute and infectious mostly occurring in children, which is marked by fever, cough, nasal stuffiness and discharge, lacrimation, small, bright-red spots on the buccal mucosa and skin rashes.

Recently many researchers were done to clarify the role of medical plants in viral diseases including measles,[2] furthermore studies regarding plant vaccines e.g., lettuce measles vaccine.[4,5] Plant-made oral vaccines have the potential to overcome many of the limitations of traditional vaccines.[4] One promising approach is the inhalation of aerosolised vaccine, a study was undertaken to try to immunise very young infants using easily accessible vaccine.[6]

Lettuce (*Lactuca sativa*) had been used to treat many diseases.[7] It has very low calorie content and is composed primarily of water, about 90–95%.

Some plant foods and medicinal herbs such as lettuce and garlic contain flavonoids. An antiviral action of some flavonoids has been observed in a number of test tube experiments.[8–11]

Quercetin is found in green tea, onionskins, kale, red cabbage, green beans, tomatoes, potatoes, lettuce, strawberries, cherries and grapes. It is found in especially high amounts in broccoli, red onions and garlic. One study found that quercetin produced this effect against *Herpes simplex*, polio virus and various respiratory viruses, including influenza.[12–14]

In addition, lettuce has 7% of vit. A. Vitamin A supplementation reduced deaths from measles respiratory infection by 70%.[15]

Also lettuce contains Zinc (Zn; 0.16 mg per 100 g). Zinc is another mineral antioxidant nutrient that the immune system requires. Zinc deficiency results in lowered immune defenses, and zinc supplementation increases immune activity in people with certain illnesses.[16] As with vitamin A, zinc levels have been observed to fall during the early stages of measles infection and to return to normal several days later.[17] There is evidence that zinc supplements are helpful in specific viral infections,[18–20] but there are no data on the effect of zinc on childhood exanthemas infections.

Selenium (Se) content in lettuce is 0.5 (μ per 100g): Selenium is a mineral known to have antioxidant properties and to be involved in healthy immune system activity. Recent animal and human research suggests that selenium deficiency increases the risk of viral infection and that supplementation prevents viral infection.[21–24]

In a controlled trial, children with a specific viral infection (respiratory syncytial virus) who received a single supplement of 1 mg (1,000 mcg) of sodium selenite (a form of selenium) recovered more quickly than children who did not receive selenium.[25]

Vitamin C (ascorbic acid) content in lettuce is 3.9 mg per 100 g: Vitamin C has been demonstrated in test tube, animal and human studies to have immune-enhancing and direct antiviral properties.[26] Preliminary observations made on the effect of vitamin C on viral infections have involved both measles and chicken pox.[27,28]

Vitamin E (alpha-tocopherol) content in lettuce is 0.03 (μg per 100g): Healthy immune function also requires adequate

amounts of vitamin E. Vitamin E deficiency is associated with increased severity of viral infections in mice.[29–31]

Supplementation with vitamin E during viral infections has been shown to increase immune cell activity[32] and reduce virus activity[33] in mice. Research into the effects of vitamin E supplementation on childhood exanthemas has not been done.[34]

The aim of this study is to know social believes about measles and to know which plants applied in its treatment in local traditional medicine.

## Material and Methods

The study is cross-sectional and information were taken from 100 mothers whose children were admitted to Al-Elwyia Paediatric hospital in Baghdad from June to September during an epidemic in 2009. Information includes age, gender, vaccination status, residence, educational status and social habits and believes regarding measles treatment.

All cases were diagnosed on clinical and lab bases these children who were admitted to hospital because they had one or more of the following: pneumonia, diarrhea or encephalitis. All cases are confirmed by anti-measles IgM antibodies by ELISA [DAD Behringer] non-confirmed cases or equivocal results are excluded from the study.

Residence of patients in this study was classified according to health sectors of Alrusafa Health Directorate.

Statistical methods used in analysing and assessing results include:

1. Descriptive statistics inform of: A - statistical tables included observed frequencies and percentages. B - Contingency coefficient for the cross tabs (causes correlation ship of the contingency tables).
2. Inferential statistics: in order to accept or reject statistical hypotheses they include: A: Fissure exact probability (FEP) test for testing the interaction (in dependency among two factors in the 2 × 2 ranks of the contingency tables. B: $\chi^2$-test for testing the interaction otherwise in the contingency tables. C: testing the correlation of contingency coefficient. Results are considered as highly significant at $P < 0.01$, significant results at $P < 0.05$ and non-significant results at $P > 0.05$.

## Results

Table 1 shows that 1–4-year-old children constitute 52% of the sample and those bellow 1 year 32% of patient sample. Age distribution of mothers is also shown: highest group is 20–29 years age group which compromise 33% of mothers. Males constitute 52% of the patient sample. Regarding education level of mothers 25% completed college. Table 1 also shows that 69% of mothers believe on vaccination while 54% of children were vaccinated and that 53% of mothers believe bad belief treatment.

Table 1. **Frequencies and percentages with comparison significant of the studied parameters toward measles's mother's believes of treatment**

| Variables | Groups | Frequency | Percent | Cumulative percent | C.S. P-value |
|---|---|---|---|---|---|
| Age of child | <1 yr | 32 | 32 | 32 | (Chi-square) 57.12 P = 0.000 HS |
| | 1–4 | 52 | 52 | 84 | |
| | 5–9 | 14 | 14 | 98 | |
| | 10> | 2 | 2 | 100 | |
| Age of mother | <20 yrs | 7 | 7 | 7 | (Chi-square) 24.2 P = 0.000 HS |
| | 20–29 | 33 | 33 | 40 | |
| | 30–39 | 28 | 28 | 68 | |
| | 40–49 | 21 | 21 | 89 | |
| | 50> | 11 | 11 | 100 | |
| Gender | Male | 58 | 58 | 58 | (Binomial) P = 0.134 NS |
| | Female | 42 | 42 | 100 | |
| Education level of mother | House wife | 21 | 21 | 21 | (Chi-square) 21.8 P = 0.001 HS |
| | Illiterate | 4 | 4 | 25 | |
| | Primary school | 10 | 10 | 35 | |
| | Intermediate school | 13 | 13 | 48 | |
| | Secondary school | 10 | 10 | 58 | |
| | Institute | 17 | 17 | 75 | |
| | College | 25 | 25 | 100 | |
| Mother knowledge for vaccination profit | Profit | 69 | 69 | 69 | (Binomial) P = 0.000 HS |
| | Non-profit | 31 | 31 | 100 | |
| vaccination status | Vaccinated | 46 | 46 | 46 | (Binomial) P = 0.484 NS |
| | Non-vaccinated | 54 | 54 | 100 | |
| Mother's believes on bad belief treatment | Yes | 53 | 53 | 53 | (Binomial) P = 0.617 NS |
| | No | 47 | 47 | 100 | |

Table 2 shows that there is significant association between age and gender of children and mothers belief, while meaningful association at confidence 93.9% observed at mothers age group >50 years of age and constitute 90.9% within positive mother's belief while college level of education observed to be meaningful at confidence 92.7% and were 28.3% for this level. Both vaccination status of the child and mothers knowledge of effectiveness of vaccination were insignificantly associated with mother's belief on traditional treatment and believes.

Table 3 shows the sample, wearing red clothes was 35% and lettuce soup drink 8%.

Table 2. **Significant association between age and gender of children and mothers believes**

| Studied Parameters | Groups | Count & percentages | Mother's belief on bad belief treatment | | Total | C.S. P-value |
|---|---|---|---|---|---|---|
| | | | Yes | No | | |
| Age of child | <1 yr | Count | 15 | 17 | 32 | $\chi^2 = 3.293$ P = 0.349 C.C. = 0.179 P = 0.349 NS |
| | | % within age of child | 46.9% | 53.1% | 100.0% | |
| | | % within mother's belief | 28.3% | 36.2% | 32.0% | |
| | | % of total | 15.0% | 17.0% | 32.0% | |
| | 1–4 | Count | 30 | 22 | 52 | |
| | | % within age of child | 57.7% | 42.3% | 100.0% | |
| | | % within mother's belief | 56.6% | 46.8% | 52.0% | |
| | | % of total | 30.0% | 22.0% | 52.0% | |
| | 5–9 | Count | 8 | 6 | 14 | |
| | | % within age of child | 57.1% | 42.9% | 100.0% | |
| | | % within mother's belief | 15.1% | 12.8% | 14.0% | |
| | | % of total | 8.0% | 6.0% | 14.0% | |
| | 10> | Count | | 2 | 2 | |
| | | % within age of child | | 100.0% | 100.0% | |
| | | % within mother's belief | | 4.3% | 2.0% | |
| | | % of total | | 2.0% | 2.0% | |
| Gender | Male | Count | 30 | 28 | 58 | F.E.P.T. P = 0.461 C.C. = 0.030 P = 0.764 NS |
| | | % within gender | 51.7% | 48.3% | 100.0% | |
| | | % within mother's belief | 56.6% | 59.6% | 58.0% | |
| | | % of total | 30.0% | 28.0% | 58.0% | |
| | Female | Count | 23 | 19 | 42 | |
| | | % within gender | 54.8% | 45.2% | 100.0% | |
| | | % within mother's belief | 43.4% | 40.4% | 42.0% | |
| | | % of total | 23.0% | 19.0% | 42.0% | |
| Age of mother | <20 yrs | Count | 2 | 5 | 7 | $\chi^2 = 9.023$ P = 0.061 C.C. = 0.288 P = 0.061 NS Confidence 93.9% meaningful |
| | | % within age of mother | 28.6% | 71.4% | 100.0% | |
| | | % within mother's belief | 3.8% | 10.6% | 7.0% | |
| | | % of total | 2.0% | 5.0% | 7.0% | |
| | 20–29 | Count | 15 | 18 | 33 | |
| | | % within age of mother | 45.5% | 54.5% | 100.0% | |
| | | % within mother's belief | 28.3% | 38.3% | 33.0% | |
| | | % of total | 15.0% | 18.0% | 33.0% | |
| | 30–39 | Count | 14 | 14 | 28 | |
| | | % within age of mother | 50.0% | 50.0% | 100.0% | |
| | | % within mother's believes | 26.4% | 29.8% | 28.0% | |
| | | % of total | 14.0% | 14.0% | 28.0% | |
| | 40–49 | Count | 12 | 9 | 21 | |
| | | % within age of mother | 57.1% | 42.9% | 100.0% | |

Table 2. **Continued**

| Studied Parameters | Groups | Count & percentages | Mother's belief on bad belief treatment | | Total | C.S. P-value |
|---|---|---|---|---|---|---|
| | | | Yes | No | | |
| Education level of mother | 50> | % within mother's belief | 22.6% | 19.1% | 21.0% | $\chi^2 = 11.524$ P = 0.073<br>C.C. = 0.321 P = 0.073 NS<br>Confidence 92.7% meaningful |
| | | % of total | 12.0% | 9.0% | 21.0% | |
| | | Count | 10 | 1 | 11 | |
| | | % within age of mother | 90.9% | 9.1% | 100.0% | |
| | | % within mother's believes | 18.9% | 2.1% | 11.0% | |
| | | % of total | 10.0% | 1.0% | 11.0% | |
| | House wife illiterate | Count | 13 | 8 | 21 | |
| | | % within education level | 61.9% | 38.1% | 100.0% | |
| | | % within mother's believes | 24.5% | 17.0% | 21.0% | |
| | | % of total | 13.0% | 8.0% | 21.0% | |
| | Primary school | Count | 7 | 3 | 10 | |
| | | % within education | 70.0% | 30.0% | 100.0% | |
| | | % within mother's believes | 13.2% | 6.4% | 10.0% | |
| | | % of total | 7.0% | 3.0% | 10.0% | |
| | Intermediate school | Count | 4 | 9 | 13 | |
| | | % within education level | 30.8% | 69.2% | 100.0% | |
| | | % within mother's believes | 7.5% | 19.1% | 13.0% | |
| | | % of total | 4.0% | 9.0% | 13.0% | |
| | Secondary school | Count | 3 | 7 | 10 | |
| | | % within education level | 30.0% | 70.0% | 100.0% | |
| | | % within mother's believes | 5.7% | 14.9% | 10.0% | |
| | | % of total | 3.0% | 7.0% | 10.0% | |
| | Institute | Count | 7 | 10 | 17 | |
| | | % within education level | 41.2% | 58.8% | 100.0% | |
| | | % within mother's believes | 13.2% | 21.3% | 17.0% | |
| | | % of total | 7.0% | 10.0% | 17.0% | |
| | College | Count | 15 | 10 | 25 | |
| | | % within education level | 60.0% | 40.0% | 100.0% | |
| | | % within mother's believes | 28.3% | 21.3% | 25.0% | |
| | | % of total | 15.0% | 10.0% | 25.0% | |
| Vaccination status | vaccinated | Count | 25 | 21 | 46 | F.E.P.T. P = 0.481<br>C.C. = 0.025 P = 0.803 NS |
| | | % within vaccination status | 54.3% | 45.7% | 100.0% | |
| | | % within mother's believes | 47.2% | 44.7% | 46.0% | |
| | | % of total | 25.0% | 21.0% | 46.0% | |
| | Non vaccinated | Count | 28 | 26 | 54 | |
| | | % within vaccination status | 51.9% | 48.1% | 100.0% | |
| | | % within mother's believes | 52.8% | 55.3% | 54.0% | |
| | | % of total | 28.0% | 26.0% | 54.0% | |
| Mother knowledge for vaccination profit | Profit | Count | 35 | 34 | 69 | F.E.P.T. P = 0.322<br>C.C. = 0.068 P = 0.496 NS |

*Continued*

Table 2. **Continued**

| Studied Parameters | Groups | Count & percentages | Mother's belief on bad belief treatment | | Total | C.S. P-value |
|---|---|---|---|---|---|---|
| | | | Yes | No | | |
| | Non profit | % within mother knowledge | 50.7% | 49.3% | 100.0% | |
| | | % within mother's believes | 66.0% | 72.3% | 69.0% | |
| | | % of total | 35.0% | 34.0% | 69.0% | |
| | | Count | 18 | 13 | 31 | |
| | | % within mother knowledge | 58.1% | 41.9% | 100.0% | |
| | | % within mother's believes | 34.0% | 27.7% | 31.0% | |
| | | % of total | 18.0% | 13.0% | 31.0% | |
| | | Count | 53 | 47 | 100 | |
| Total | | % within mother knowledge | 53.0% | 47.0% | 100.0% | |
| | | % within mother's believes | 100.0% | 100.0% | 100.0% | |
| | | % of total | 53.0% | 47.0% | 100.0% | |

Table 3. **Social and traditional belief on treatment**

| Believe | Frequency within the 53 patients who believes in traditional treatment | % within 53 patients |
|---|---|---|
| Wearing red cloth | 35 | 66 |
| Gold wearing | 7 | 13.2 |
| Red lipstick application | 4 | 7.5 |
| Feather under head or in shoulder | 3 | 5.3 |
| Lettuce soup drinking | 8 | 15.1 |
| Lettuce soup/garlic under head | 2 | 3.8 |
| Others | 6 | 11.4 |

## Discussion

Like other studies this study shows that infants constitute a remarkable proportion of affected children. In this study affected infants were 32% of the sample; 16.3% of cases in another cross-sectional study done in this hospital in 2008 were below 9 months of age.[35] According to Muhammad Siddiq's study 6–9 months of age constitute 12.14% of reported measles cases to District Head-quarter Hospital, Bahawalnagar in Pakistan.[36] There reported 186 (23%) cases in infants aged <1 year in Measles outbreak in the Republic of the Marshall Islands, 2003.[37] Males in this study constitute 58% of affected children with measles.

Confirmed cases in males are more than females in previous Tareef's study[35] (62%) which contradict Muhammad Siddiq's study District Head-quarter Hospital, Bahawalnagar in Pakistan who report female cases more than male cases.[36]

This study shows that 46% of the sample had been vaccinated compared to 37 % in previous study done in 2008[35] in the same hospital. In Muhammad Siddiq's study only 60 cases (42.86%) were immunised against measles[36] compared to (46%) Buenos Aires, Argentina, 1997 and 1998 outbreak[38] were not vaccinated. While 37% of confirmed measles cases are vaccinated in Tariff's study.[35]

Measles is an old disease and is managed according to certain traditions and believes including certain herbs and certain diets.

In Kasak, the magical properties of the shirt colour were attributed to the fact that its red patches protected from measles, yellow ones from jaundice, and deep blue from whooping-cough.[1] In Chinese medicine treatment of late measles include strawberries, deep red, thick yellow dry coat , according to this study red colour (dressing, gold wearing and lip stick) constitute 35%, 7%, and 4% of total social beliefs, respectively. Symbolic function of red colour might be most important of all explanation of widespread among many societies.

The most interesting in this study is that 15.1% of mothers believes that lettuce soup drinking is of value in treatment of measles. This might be one good example of accumulative experience of society regarding medical plants and its rule in management of this disease other recognised observation in this study is the odour of lettuce and garlic which constitute 3.8% in frequency in this regard, preliminary studies shows that plant-based inhalational using lettuce is effective for further studies regarding the efficacy of inhalation therapy in measles management (Fig. 1).

## Conclusions

- Accounting to the review of literature and the finding of the study, measles is prevalent among children 6–15 years of age. Parents should not become overwhelmed with feelings of frustration or failure due to their child's measles.
- Although it is prevalent, measles is seldom a topic of conversation among parents due to the private nature of the topic and perhaps to avoid harming the feeling of the child.
- This research is an attempt to inform the reader of measles and lists treatment methods and parent practices; it should by no means be a substitute for professional medical care.
- A thorough examination of the child by the family physician should be done to rule out any medical issues and if necessary professional counseling should be sought to help the child overcome their measles behaviour.

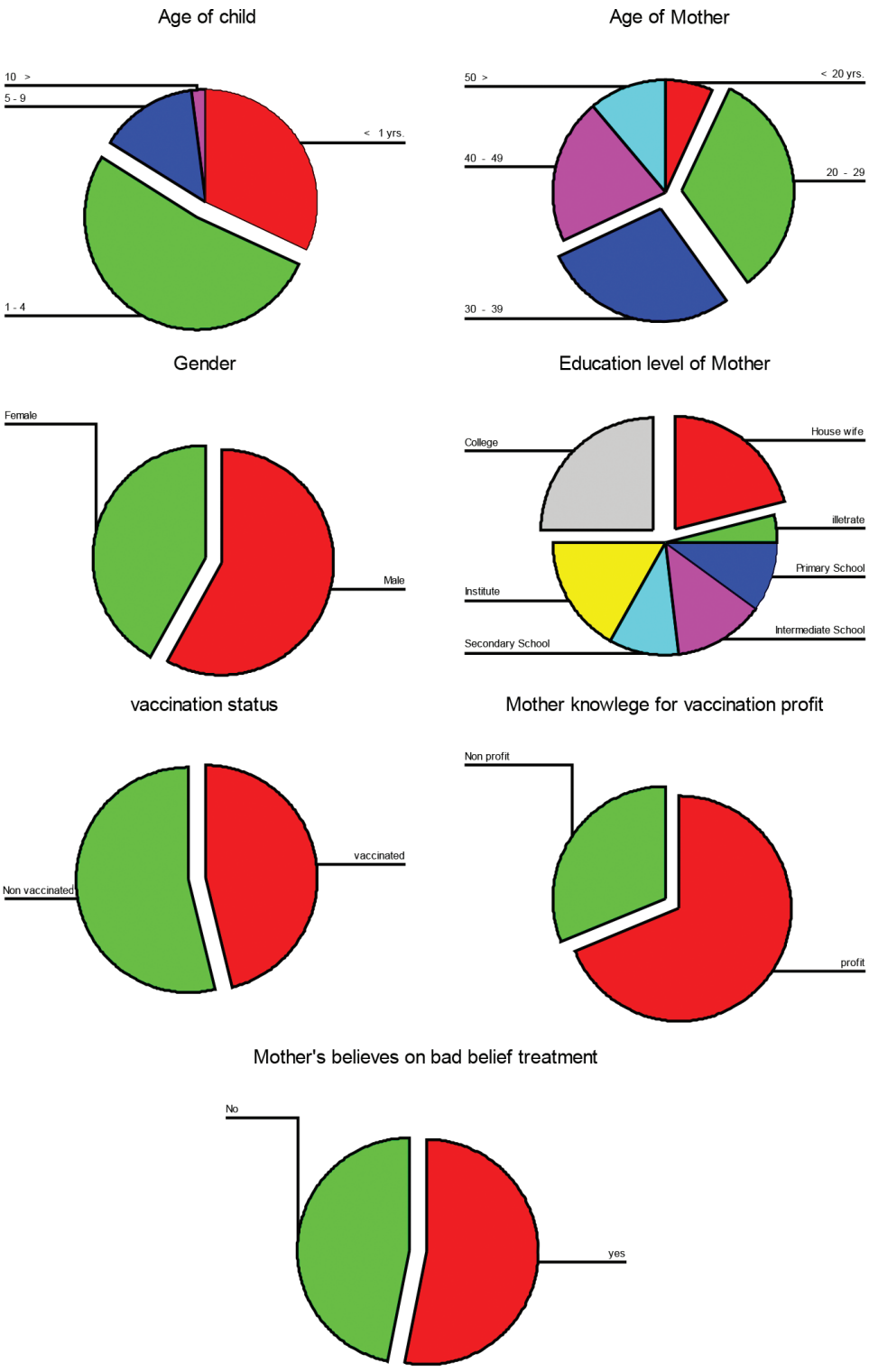


Fig. 1 **Pie chart of the studied parameters toward bad beliefs of Measles's treatment.**

- Based on the present results and the discussion the study has concluded that parents having minimum level of experiences about measles need a specific education programme and training sessions.

## Recommendations

Keep the sample group large. In doing so, the researcher will have a good representation of the population. A specific education programme can be designed and presented to parent's who have minimum level of knowledge in order to improve their level of knowledge.

- The educational programme of the present can be used as means for knowledge improvement for parents who have children with measles.
- In service, continuous educational programme should be presented to parents of on a regular base to maintain their level of knowledge.

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