

Research Article

Self-Use of Aspirin Among Mothers in Management of Fever in Children Khartoum, Sudan 2022

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Abstract

Background: Fever is one of the most frequent symptoms of disease in childhood and a common cause of emergency admissions in infants and children. Aspirin is salicylic acid and is used to treat pain and fever. Aspirin should not be administered to a child under 16 years old of age because it might lead to a serious and sometime fatal condition in children called Reye's syndrome. Reye syndrome is a rare and potentially fatal pediatric illness defined as acute noninflammatory encephalopathy with fatty liver failure. **Objective:** To assess attitude and practice among mothers towards self-use of aspirin in management of fever in children under 5 years and its complication in Dar-alsalam almagheriba. **Method:** A descriptive, cross-sectional community-based study applied in sample size of 195 using non probability convenience sampling method, among mothers in Dar-alslam almagheriba area in February 2022. The data was collected by interview questionnaire. Which include sociodemographic data, close end questions contain 21 questions about knowledge, attitude and practice of self-use of aspirin, Data analysis was done by SPSS program and Microsoft excel. **Results:** the study report that (41.5%) of the respondents aged more than 40 years, (95.9%) of them were married, (75.4%) were housewife, (20%) were employee, (2.1%) were students and (2.6%) work, Majority of mother (87.2%) measured children's temperature when felt subjectively rises by touch, irrespective to their beliefs about home management of fever (73.8%) used antipyretics. most of them know about complications of high-grade fever (93.8%) said high grade fever can cause convulsions. About (97.9%) of the participants know Aspirin and most of them (48.7%) get it from booth. Most of the participants (65.1%) used aspirin to lower temperature of their children, about (78.5%) of mothers know how to use aspirin. Majority of mothers (71.8%) don't know the side effect of the irrational aspirin to the children, about (96.4%) don't heard of Reye's syndrome. **Conclusion:** Study concludes nearly all mothers used aspirin without prescription to reduce children's body temperature, mothers' awareness about hazardous use of aspirin and the Reye's syndrome is extremely low, there is relation between low level of education and irrational use of aspirin by mothers. Ministry of health should increase the awareness of mothers about complications of aspirin aimed at eradication of the practice.

Keywords

Children, Fever, Aspirin

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Received: 28 April 2024; **Accepted:** 27 May 2024; **Published:** 14 June 2024



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1. Introduction

1.1. Background

Fever is one of the most frequent disease symptoms and a common cause of emergency admissions in infants and children. [1] The fever is one of the commonest symptoms of disease in childhood [2-4]. A mother's knowledge and conception of fever may determine the degree of her anxiety and fear, and reflect on the way the fever is managed at home. Our understanding of mothers' attitudes may help to improve the home management of fever by correcting unrealistic beliefs. [1, 5, 6] Aspirin is a salicylate (Sa-LIS-il-ate). It works by reducing substances in the body that cause pain, fever, and inflammation. Aspirin is used to treat pain, and reduce fever or inflammation. It is sometimes used to treat or prevent heart attacks, strokes, and chest pain (angina). Do not give this medication to a child or teenager with a fever, flu symptoms, or chickenpox. Salicylates can cause Reye's syndrome, a serious and sometimes fatal condition in children. [7] Reye syndrome is a rare and potentially fatal pediatric illness defined as acute noninflammatory encephalopathy with fatty liver failure. This seems to occur more often with children who have had the flu (influenza virus) or chicken pox (varicella virus) [8, 9]. Australian pathologist R.D.K. Reye first described this syndrome in 1963. National surveillance of Reye syndrome began in the United States in the early 1970s and led to strict warnings regarding aspirin use in children. Reye syndrome typically presents in children as vomiting and confusion with rapid progression to coma and death. Death occurs in Reye's syndrome about 30-40% of cases from brainstem dysfunction [10]. This syndrome often begins in the days following recovery from a viral illness during which aspirin was administered. Inborn errors of metabolism (especially fatty acid metabolism), medication reactions and toxins may also predispose or cause the development of Reye syndrome. This diagnosis is based on clinical signs as well as laboratory testing. However, there is no test specific to Reye syndrome. [11].

There is limited data about self-use of aspirin by mothers for their children in Sudan. The study will provide data regarding use of aspirin in children and will attempt to correct wrong traditional belief of mothers and misconception towards fever. The study will represent the issue of aspirin misuse which will help health authorities in performing educational programs.

1.2. Objective

1.2.1. General

To Assess attitude and practice towards self-use of aspirin among mothers in management of fever in children under 5 years of age and its complication in Dar-alsalam almagheriba

Sharg Alneel-Sudan.

1.2.2. Specific

1. To Asses knowledge about use of aspirin in mothers in Dar-alsalam almagheriba Sharg alneel.
2. To assess Knowledge about complication of use of aspirin in children under 5 years of age (Reye syndrome) in Dar-alsalam almagheriba sharg alneel.
3. To assess attitude towards use of aspirin among mothers in Dar-alsalam almagheriba sharg alneel.
4. To assess the mother practice in management of fever in Dar-alsalam almagheriba sharg alneel.

2. Methodology

2.1. Study Design

Descriptive, cross-sectional community-based study.

2.2. Study Area

Sharg Alneel, Dar-alsalam almagheriba, Khartoum, Sudan.

2.3. Study Population

All Mothers who live in Dar-alsalam almagheriba.

2.3.1. Inclusion Criteria

Mothers lived at Dar-alsalam almagheriba.

2.3.2. Exclusion Criteria

Those who refuse to fill the questionnaire.
Women who were not available at the time of data collection.

2.4. Study Duration

From the 6th of February2022 to 2th of march 2022.

2.5. Sampling Method and Technique

2.5.1. Sample Type

Non probability convenience sampling.

2.5.2. Sample Size

$$n = Z^2PQ/D^2 = (1.96)^2PQ/D^2$$

n = Sample size

Z = Standard normal deviation = 1.96

P = proportion of the characteristic under study estimated in

the target population.

$$Q=1-p$$

$$D= \text{error allowed} = 0.05$$

$$n=380$$

But due to limitation our sample is 195.

2.5.3. Sample Method

We went to Dar-alsalam almaghariba area for five consecutive day from Saturday 19th of February to 24th of February 2022.

We use random coverage technique.

2.5.4. Data Collection Tool

The collection will be done by Interview questionnaire.

2.6. Study Variables

2.6.1. Dependent Variables

Knowledge and attitude towards self-use of aspirin.

2.6.2. Independent Variables

Age, education level, occupation, social status.

2.7. Analysis Tools

1. The statistical package for social science software version 20 (SPSS).
2. Microsoft Excel.

2.8. Ethical Consideration

A written consent was obtained from the community department, National ribat university to start the research.

Verbal consent was obtained from mothers who filled the questionnaire.

3. Results

A total of 195 mothers during the period between from 19 February to 27 February in mothers who live in Dar-alsalam almaghariba.

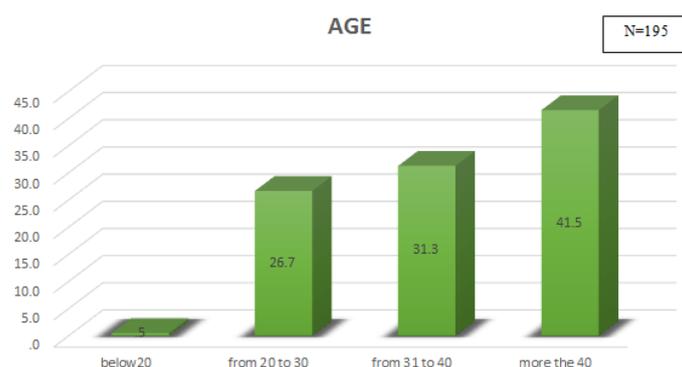


Figure 1. Age groups of mothers who live in Dar-alsalam almaghariba.

This figure shows age group of mothers (more than 40 years) with percentage (41.5%), age group (from 31-40 years) with a (31.3%) Then the age group (21-30 years) with a percentage (26.7%) and finally the age group (less than 20 years) with a percentage (.5%).

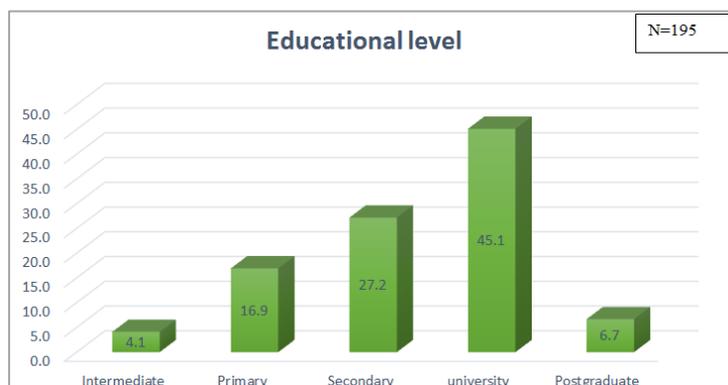


Figure 2. Educational level of mothers who live in Dar-alsalam almaghariba.

This table shows percentage of educational level, intermediate 4.1%, primary 16.9%, secondary 27.2%, university 45.1%, postgraduate 6.7%.

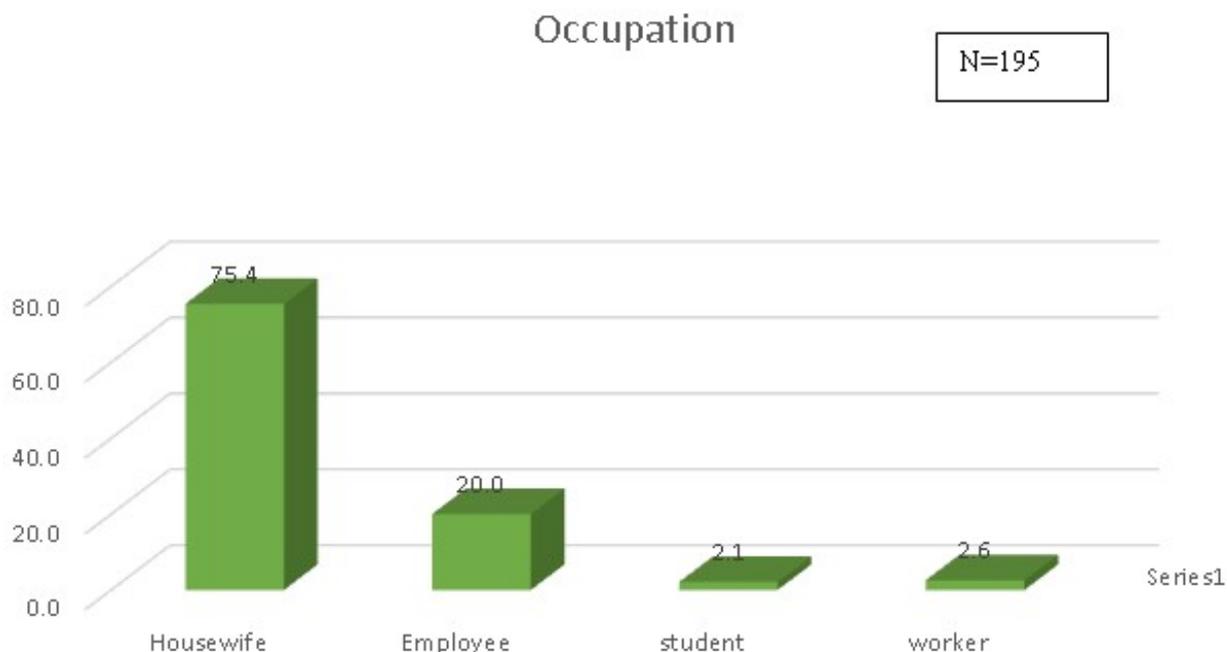


Figure 3. Occupation of mothers who live in Dar-alsalam almaghariba.

This figure shows percentage of occupation for mothers, housewife 75.4 %, employee 20.0 %, student 2.1 %, worker 2.6%.

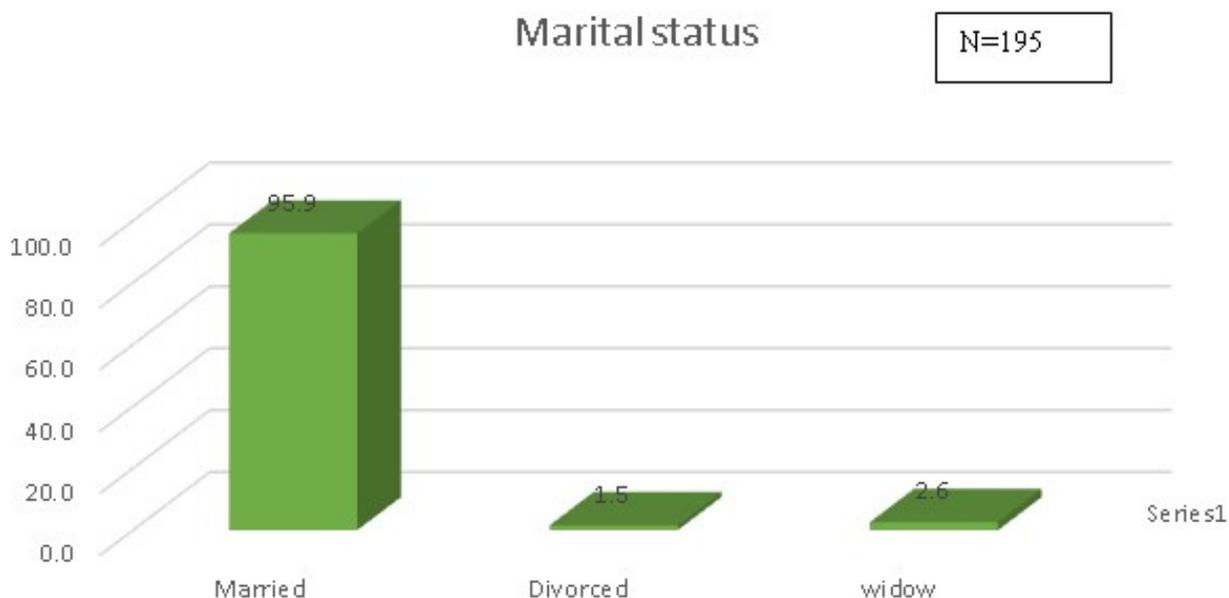


Figure 4. Marital status of mothers who live in Dar-alsalam almaghariba.

This table showed percentage of marital status, married 95.9%, divorced 1.5%, widow 2.6%.

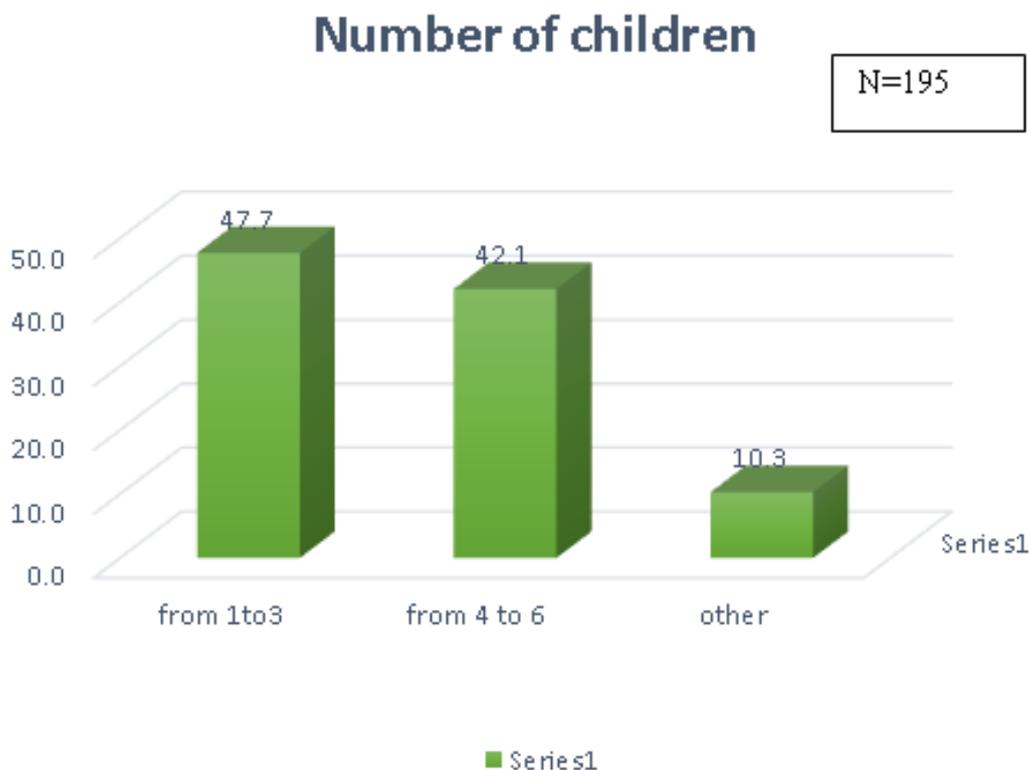


Figure 5. Number of children who live in Dar-alsalam almaghariba.

This table showed percentage for number of children (from 1_3) 47.7%, (from 4_6) 42.1%, (other) 10.3%.

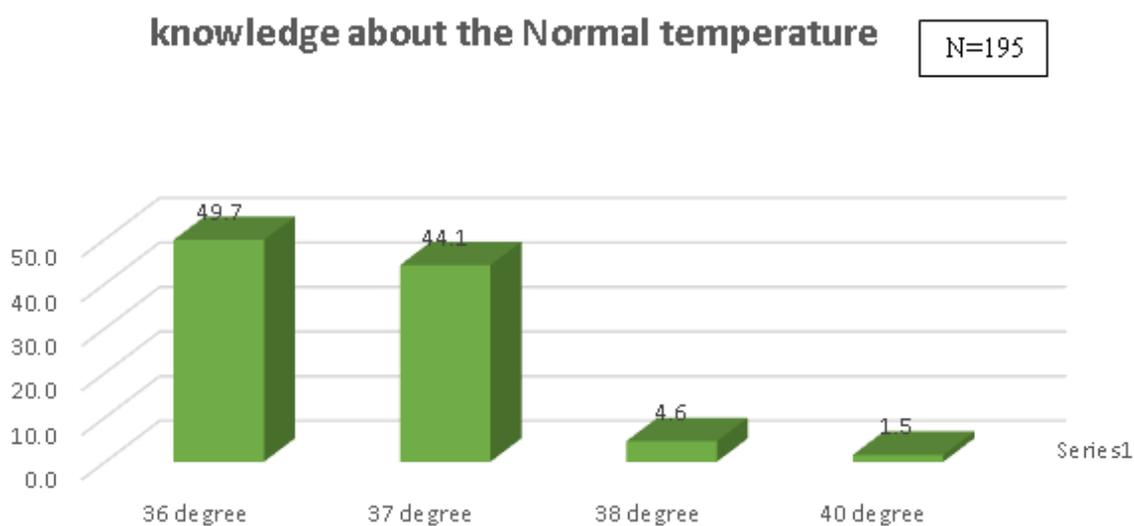


Figure 6. Knowledge about the normal temperature of children among mothers who live in Dar-alsalam almaghariba.

This table showed percentage of normal temperature for child's, most of them is 36 degree (49.7%), 37 degree (44.1%), 38 degree (4.6%), and 40 degree (1.5%).

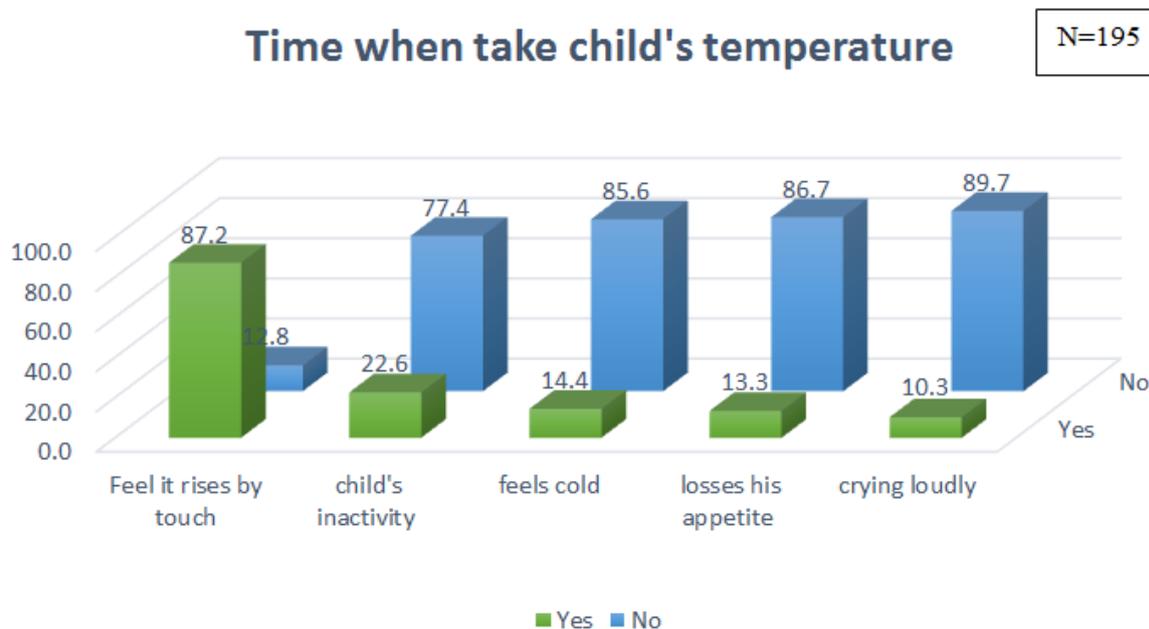


Figure 7. Attitude about mother's regarding the time when take the temperature of the child who live in Dar-alsalam almaghariba.

This table showed percentage of time when mothers take child's temperature, most of them feels it rises by touch (87.2%) yes, (12.8%) no, crying loudly (10.3%) yes, (89.7%)

no, losses his appetite (13.3%) yes, (86.7%) no, feels cold (14.4%) yes, (85.6%) no, child's inactivity (22.6%) yes, (77.4%) no.

Measurement of child's temperature

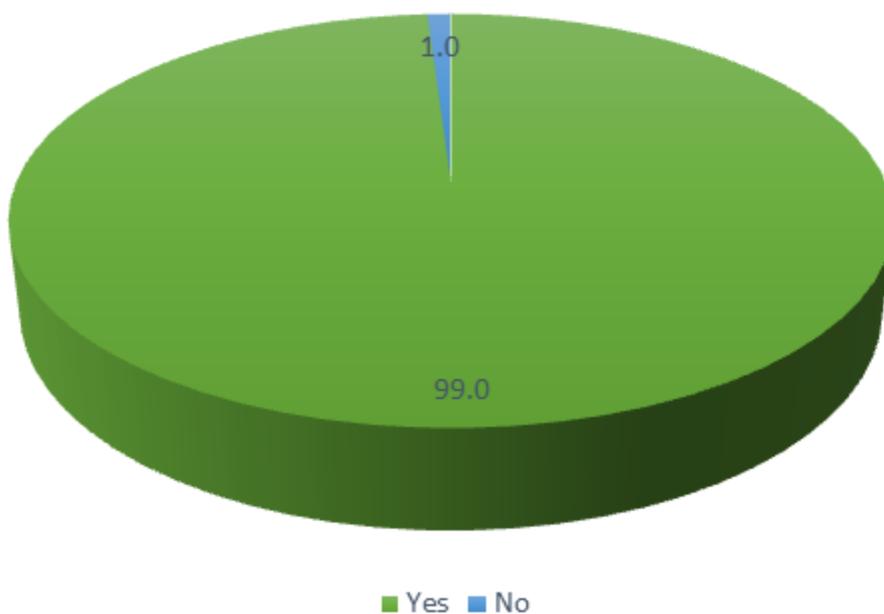


Figure 8. Knowledge of mothers about measurement the temperature of the children in.

Dar-alsalam almaghariba.

This figure shows that must of mothers the measurement of temperature 99%.

Method of take child's temperature

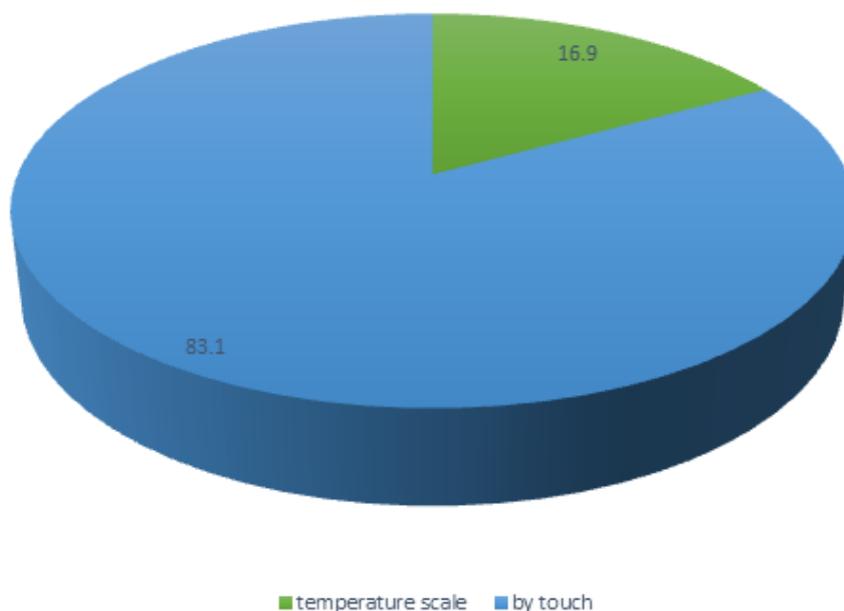


Figure 9. Knowledge of mothers about method of taking child's temperature in Dar-alsalam almagariba.

This figure showed percentage of How to measure a child's temperature ‘most of ways are temperature scale (16.9 %), by touch (83.1 %).

MANAGMENT OF HIGH TEMPERATURE

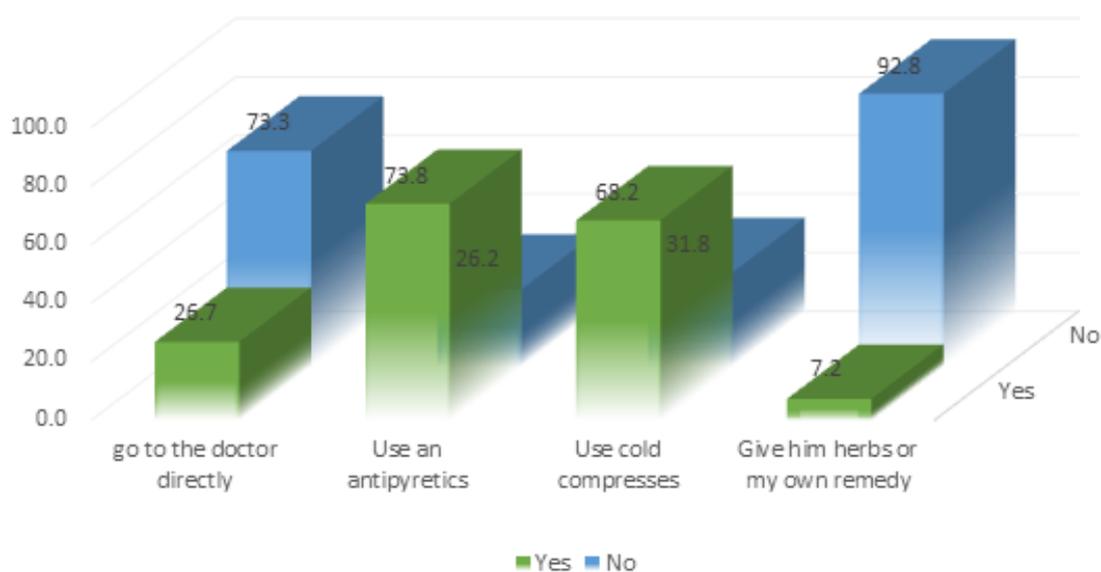


Figure 10. Knowledge about management of temperature among children who live in Dar-alsalam almagariba.

This table showed percentage of What mothers do when the child's temperature is rising ‘goes to the doctor directly (26.7%), don't go (73.3%), use antipyretics (37.8%) don't use

(26.2%), use cold compresses (68.2 %), don't use (31.8%), give him herbs or my own remedy (7.2%) don't give (92.8%).

Knowledge about complication of high temperature

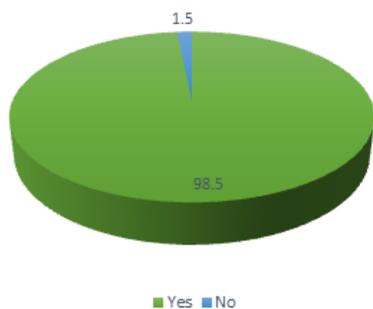


Figure 11. Knowledge about complications of high temperature among mother's who live in Dar-alsalam almaghariba.

This figure showed percentage of Is high temperature of your child harmful or not ' most of mothers said yes (98.5%) and just (1.5 %) said no.

Complications of high temperature

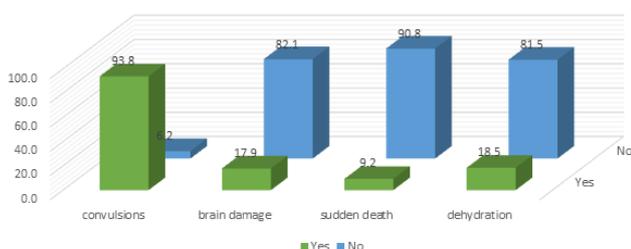


Figure 12. Knowledge about complications of high temperature in children among mothers who live in Dar-alsalam almaghariba.

This table showed percentage of complications of high temperature, most of mothers said yes for convulsions (93.8%), no (6.2%), brain damage yes (17.9%), no (82.1%), sudden death yes (9.2%), no (90.8%) dehydration yes (18.5%), no (81.5%).

knowledge about the aspirin or (cavlgen)



Figure 13. Knowledge about the aspirin or (cavlgen) among mothers who live in Dar-alsalam almaghariba.

This figure showed percentage of how many mothers know about aspirin, (97.9%) of mothers said yes, they know, and just (2.1) said no they don't.

knowledge about the used of aspirin or (cavlgen)to lower your child's temperature

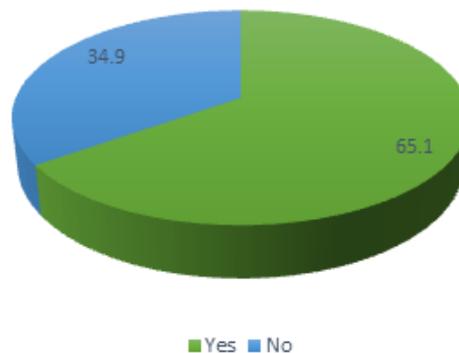


Figure 14. Knowledge about the use of aspirin or (cavlgen) to lower temperature of child among mother's who live in Dar-alsalam almaghariba.

This table showed percentage of mothers use aspirin to lower the temperature of their children, most of them (65.1%) said yes, we use it, and (34.9%) said no we don't.

Get aspirin or (cavlgen)from

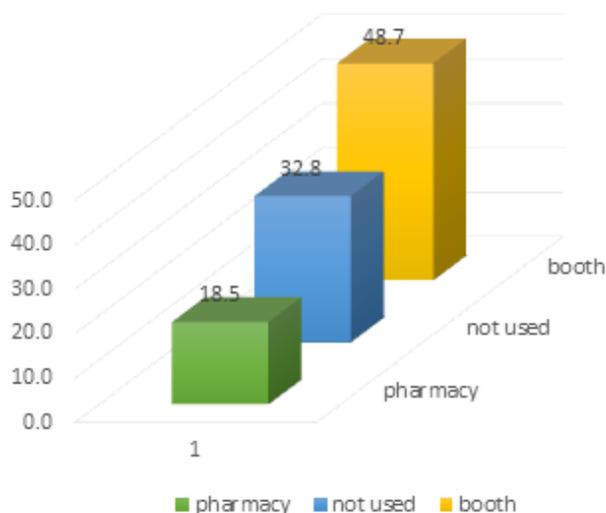


Figure 15. Percent of mothers get the aspirin from booth for treatment of child who live in Dar-alsalam almaghariba.

This figure showed percentage from Where do mothers get aspirin, (18.5%) from pharmacy, (32.8%) not used, (48.7%) from booth.

knowledge about how to use aspirin

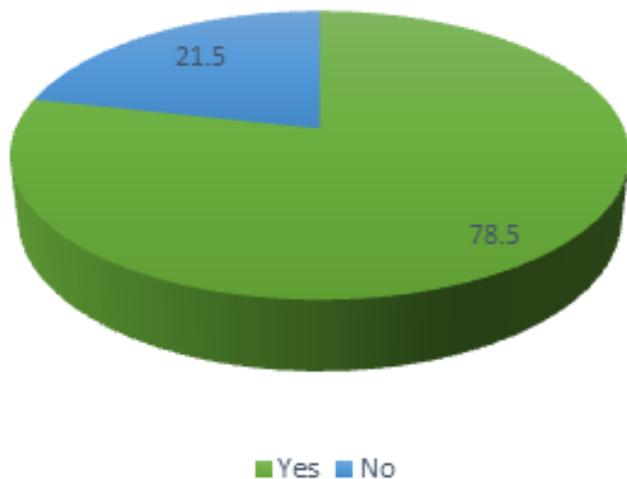


Figure 16. Knowledge about how to use aspirin or (cavlgen) among mothers who live in Dar-alsalam almaghariba.

This figure showed percentage of how many mothers how to use aspirin, (78.5%) of mothers said yes, they know, and just (21.5%) said no they don't.

knowledge about complication of Reye's syndrome



Figure 18. Knowledge about complication of Reye's syndrome after using aspirin or (cavlgen) in children among mothers who live in Dar-alsalam almaghariba.

This figure showed percentage of if child has constant vomiting, convulsion or lethargy after using aspirin, most of them (96.4%) said no, and (3.6%) said yes.

knowledge about side effect of aspirin or(cavlgen)

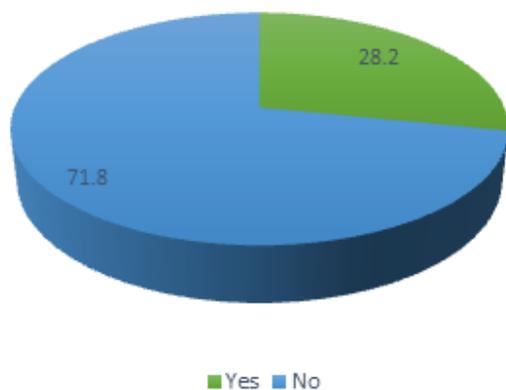


Figure 17. Knowledge about side effect of aspirin or (cavlgen) in children among mothers who live in Dar-alsalam almaghariba.

This figure showed percentage of if mothers know the side effects of aspirin, (28.2%) said yes, we know, and most of them (71.8%) said no we don't.

knowledge about symptoms of reye's syndrome



Figure 19. Knowledge about symptoms of Reye's syndrome in children among mothers who live in Dar-alsalam almaghariba.

This figure showed percentage of if mothers know that the above symptoms are symptoms of Reye's syndrome, most of them (96.9%) said no, and (3.1%) said yes.

see doctor and told you that is a Reye's syndrome

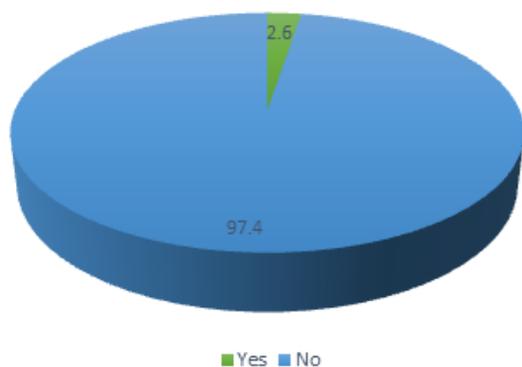


Figure 20. Knowledge about see doctor and told you that is a Reye's syndrome among mothers who live in Dar-alsalam almaghariba.

This table showed percentage of if mothers saw a doctor and he told them that, (2.6%) said yes, but most of them (97.4%) said no.

knowledge about Reye's syndrome

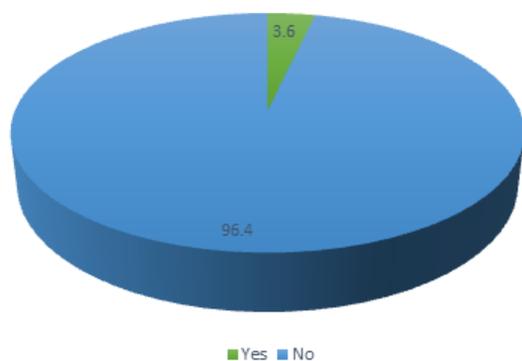


Figure 21. Knowledge about Reye's syndrome in children among mothers who live in Dar-alsalam almaghariba.

This figure showed percentage of have mothers heard of Reye's syndrome, most of them (96.4%) said no, and (3.6%) said yes.

4. Discussion

Aspirin is not recommended to use in children under 16 years without doctor advice in some cases because it leads to serious condition such as Reye's syndrome.

Reye's syndrome is defined as acute noninflammatory encephalopathy with fatty liver failure.

This study revealed that (41.5%) of the respondents aged more than 40 years, (31.3%) between 31-40 years, (95.9%) of them were married.

Regarding occupations (75.4%) were housewives, (20%)

were employee, according to their educational level (45.1%) were university graduate, (27.2%) were secondary schooled.

Regarding knowledge about normal temperature (49.7%) said that normal temperature is 36 degrees, (44.1%) for 37degrees.

Nearly all mothers measured children's body temperature by touch and felt subjectively rises about (83.1%).

Study shows that (73.8%) of mothers use antipyretics to treat fever, while (68.2%) use cold compresses.

Regarding to their opinion Majority of mothers (98.5%) said the fever is harmful to their children, about knowledge of complications of high-grade fever by mother's result shows good knowledge about complications like convulsions (93.8%), (17.9%) brain damage and (9.2%) sudden death.

The majority of mothers (97.9%) know about aspirin, most of them (65.1%) would use it to decrease their children temperature, about (48.7%) get it from booth and (18.5 %) get it from the pharmacy, about (78.5%) of mothers know how to use aspirin.

Majority of mothers (71.8%) do not know about the side effects of aspirin. (97.4%) of mothers never heard about Reye's syndrome. only a minority (3.1%) of children developed symptoms of Reye's syndrome after taking aspirin.

According to previous study the prevalence of use aspirin was (7.3%) while in our result mothers using aspirin to their children was (65.1%) [12].

According to other study report similar finding that aspirin should not be used for children except for specific therapeutic reasons [13].

South African study showed that (21%) of patients who experienced complications as a result of the use of aspirin, (4%) of them died, and (3%) sustained serious brain injuries, (2%) of them developed Reye's syndrome.

With regard to the knowledge about complications of high-grade fever by mother's result shows good knowledge about complications like convulsions (93.8%), (17.9%) brain damage and (9.2%) sudden death.

We found out that the source of the non-prescribed aspirin is the booths located in the neighborhood, where the percentage of mothers obtaining aspirin from the booth in Sudan represents (32.8%).

Therefore, attention should be paid to this problem to reduce its complications, by increasing the awareness of mothers about the hazard of using aspirin and the need to consult a doctor before using it to ensure the safety of their children.

According to other study aspirin was the AAD most used in children (57.4%) but among them, the percentage of subjects treated with aspirin deceased (-27%) and it was replaced by paracetamol (71.6%) while in our result about the use of aspirin by mothers to lower your children temperature is (65.1%) which is increasing [14].

5. Limitations

1. Short time.

2. Some women refuse to fill the questionnaire.
3. Political issues.

6. Conclusion

Result shows most of mother's measure child's temperature when felt subjectively rises by touch and majority of mothers use cold compresses and use an antipyretic in most cases to treat fever without consulting a doctor.

Most of mothers had good knowledge about complications of high-grade fever, they mentioned that can cause convulsions.

About attitude and practice towards irrational use of aspirin majority of mothers know about aspirin and majority of them used aspirin without knowing any information about its complications, we concluded that the most prevalent source of obtaining aspirin that is sold without prescription is a booth, most of mothers know about how to use aspirin but Majority of the mothers didn't know about the side effect of aspirin, and most of the mothers have never heard of Reye's syndrome.

Only few of the cases experienced constant vomiting, convulsions and lethargy after use of aspirin.

Most of mothers thought that aspirin is useful for their children.

Therefore, attention should be paid to irrational use of aspirin to reduce its complication by increasing the awareness of mothers about side effect of aspirin use to children.

7. Recommendation

1. Recommend the World Health Organization to pay attention to the problem of the spread of aspirin and the ease of its possession in order to avoid the harmful health effects that may lead to the death of children, especially in developing countries.
2. Recommend that the Ministry of Health prohibit the sale of aspirin without a prescription.
3. Recommend that the Ministry of Health publish paper posters for mothers to inform them of the risks of using aspirin.
4. The Ministry of Health must clarify safe alternatives to reduce the temperature of children so that mothers do not have to use aspirin.
5. Recommend medical societies intensify health education about safe aspirin doses and side effects when used in excess.
6. Recommend that mothers consult a doctor before using aspirin.

Abbreviations

SPSS Statistical Package for Social Science

Author Contributions

Esra Abdu Ajlan Babiker: Data curation, Funding acquisition, Investigation, Methodology, Resources, Writing – original draft

Rowida Isameldin Nasr Ibrahim: Conceptualization, Funding acquisition, Methodology, Software

Fatima Abdalla Abdahalem Haj: Funding acquisition, Investigation, Project administration, Visualization

Mustafa Magbol: Formal Analysis, Resources, Software, Writing – review & editing

Israa Mohamed Nour: Funding acquisition, Methodology, Project administration, Resources

Ikhlas Elyas: Supervision

Conflicts of Interest

The authors declare no conflicts of interest.

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