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Food awareness among diarrheal children mothers

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Abstract--Background: Food awareness is vital in the prevention and prevalence of diarrhea in children under the age of five. Assessment of maternal food knowledge is a public health priority for children's health. Therefore, this study aimed to assess food awareness among diarrheal children mothers and determine the associated demographic variables in The-Qar Province/ Iraq. Methods: A cross-sectional study was conducted on a sample of 200 women who had child's with diarrhea. This sample distributed throughout two hospitals include (Bint Al-Huda Teaching Hospital and Martyr Muhammad Al-Moussawi Children's Hospital). The reliability of the questionnaire was achieved through a pilot study and then presented to experts to prove its validity. The total number of items included in the questionnaire was 20-items. The data was collected by using the semi-structured interview and analyzed by the application of descriptive and inferential statistical data analysis approach. Results: The results of the study indicated that (43%) of the mothers exhibited a moderate level of food awareness. There were significant differences in food awareness with regards mothers age, education and residents ($p < 0.05$). Conclusions: Mothers health awareness leads to decrease the prevalence of diarrhea. Therefore, intervention health awareness programmes towards mothers are needed to improve children's health (e.g. nutrition, personal hygiene and home sanitation).

Keywords---Awareness, Diarrhea, Mothers.

Highlights

1. Mothers expressed a moderate level of food awareness and influenced by their age, education level and residents.
2. Food awareness significantly improved by mothers increased age (mothers who are aged 40 years and more were better food awareness).
3. Food awareness significantly influenced by mothers education level (mothers who are college and above graduated better awareness than others graduation).
4. Residents considered influencing factors of food awareness (mothers who are residents in urban areas improved their awareness).

Introduction

The passage of three or more feces in one day is referred to as diarrhoea. Diarrhoea is the second leading cause of death in children under the age of five worldwide, following pneumonia and malaria [1]. Diarrhoea is still one of the leading causes of death in children all over the world. It is thought to be responsible for roughly 9% of all child deaths each year [2]. It's important to highlight that the majority of diarrhea-related deaths (90%) occur in South Asia and Sub-Saharan Africa. Uganda is still one of the 15 countries responsible for nearly three-quarters of all diarrhea deaths among children under the age of five, with a single child experiencing an average of 3.2 episodes annually [3]. This results in dietary deficiencies as well as long-term repercussions such as reduced cognition and stunted growth [4]. Children in low- and middle-income nations bear a disproportionately high burden of diarrhea. It's important to highlight that the majority of diarrhea-related deaths (90%) occur in South Asia and Sub-Saharan Africa [5].

Diarrhea can sometimes be resolved with dietary changes and/or the use of common diarrhea treatment treatments at the same time. There has been a lot of debate over the best way to treat childhood diarrhea with food [6]. The awareness and understanding of the types of food used in the case of diarrhea by mothers or caregivers may be helpful in the treatment of the disease. Promoting good eating and hygiene practices in children with diarrhea is undoubtedly a practical way to lessen the severity of their condition [7]. Improved nutrition should be a crucial component of developmental intervention in this case, as child mortality is a strong predictor of future results. People who have had a lot of difficulties as a child have been demonstrated to have worse cognition, height, and maturity, as well as a higher chance of additional complications and mortality. Morbidity and mortality can result from a lack of maternal awareness of food-related diarrhea and delayed treatment [8]. It is common knowledge that caregivers play an important role in the management of childhood sickness. The level of preventative efforts and subsequent rate of seeking treatment in the event that the child gets diarrhea is ultimately determined by the food awareness of caretakers about the severity of diarrheal disease [9]. It is also critical to determine the dietary and hygiene behaviors of child mothers/caregivers and to provide enough attention for

improvement in order to prevent the high prevalence of diarrhea among children under the age of five [10]. Diarrhoea is not fatal in and of itself; nevertheless, mothers' lack of awareness and inadequate hygiene practices, as well as their misguided attitude to its care and prevention, result in severe dehydration and, eventually, death. As a result, it's critical to assess moms' knowledge of good nutrition and sanitation [11]. Therefore, thus study aimed to assess food awareness among diarrheal children mothers and determine the associated demographic variables in The-Qar Province/ Iraq.

Methodology

A cross-sectional study was conducted on a sample of 200 mothers of diarrhea children is selected purposively. These sample is distributed throughout two hospitals at The-Qar Province/ Southern Iraq

Study instrument: The questionnaire is one of the means to help collect data that contribute to achieving the results expected by the study, so the researcher designed this questionnaire, which aims to clarify the study objectives and significance by obtaining answers to the study's questions.

This questionnaire consists of two for parts which includes the following:

Part I: This section composed of socio-demographic information which include women age, education level, occupation, income/month, residents, child's age and number of children in family.

Part II: This section deals with Food Awareness adopted and developed by Shafizadeh et al. (2019), and consist of (20-items) measures the mother awareness towards food [12].

Validity was assigned to each of the study questionnaire's components based on linguistic appropriateness, correlation with the dimension of study variables to which it was assigned, and fit for the study population. Data was obtained from nurses to assess the questionnaire's reliability, and the test was delivered to 20 people from the study population who were not part of the initial sample. The Cronbach's alpha was found to be 0.87.

The SPSS version 20.0 software application was used to conduct statistical analysis (SPSS). The information was evenly distributed. One-way analysis of variance and independent sample *t test* were used to examine variations in variables based on socio-demographic characteristics. For continuous variables, descriptive data is reported as mean standard deviation, and for categorical variables, it is shown as number (percent). Statistical significance was defined as a *p* 0.05.

Results

Findings show that participants' average age is 26, with those aged 30-39 years old accounting for the biggest percentage (n=71; 35.5 percent), followed by those aged 20-29 years old (n=65; 32.5 percent), those aged 20 and above (n=59; 29.5 percent), and those aged 40 and more (n=5; 2.5 percent). Illiterates predominated (n=74; 37 percent), followed by primary school students (n=44; 22 percent),

intermediate school students (n=33; 16.5 percent), secondary students (n=25; 12.5), and college students (n=24; 12 percent). In terms of occupation, the majority of moms (n=180; 90 percent) were housewives, as opposed to students and those who worked (n=15; 15 percent and n=5; 2.5 percent, respectively). Residents related findings revealed that urban inhabitants made up more than half of the study sample (n=116; 58%), compared to rural residents (n=84; 42%). In terms of monthly income, moms reported having insufficient money (n=90; 45%), compared to those who have enough to a certain extent (n=65; 32%) and n=45; 22.5%, respectively. When it comes to the number of children, the majority of families have three (n=90; 45 percent), as opposed to one or two (n=55; 27.5 percent). In terms of child age, the majority of the mothers investigated had diarrheal infants under the age of one year (n=85; 42.5%), compared to those who had children aged one to four years (n=60; 30% as 3 to 4 years) and (n=55; 27.5 percent as 1 to 2 years).

Table (1)
Sample Characteristics

| Demographic Variables | Class | n=200 | % |
|----------------------------------------|---------------------|-------|------|
| Age/years <i>M± SD= 26.39+6.352</i> | <20years old | 59 | 29.5 |
| | 20-29years old | 65 | 32.5 |
| | 30-39years old | 71 | 35.5 |
| | ≥40 years old | 5 | 2.5 |
| Education level | Illiterate | 74 | 37.0 |
| | Primary school | 44 | 22.0 |
| | Intermediate school | 33 | 16.5 |
| | Secondary school | 25 | 12.5 |
| | College and above | 24 | 12.0 |
| Occupation | Housewife | 180 | 90.0 |
| | Students | 15 | 7.5 |
| | Employment | 5 | 2.5 |
| Residents | Urban | 116 | 58.0 |
| | Rural | 84 | 42.0 |
| Monthly income | Enough | 65 | 32.5 |
| | Certain limit | 45 | 22.5 |
| | Not enough | 90 | 45.0 |
| Number of children | 1 Child's | 55 | 27.5 |
| | 2 Child's | 55 | 27.5 |
| | 3 Child's | 90 | 45.0 |
| Child age | <1 year | 85 | 42.5 |
| | 1-2 years | 55 | 27.5 |
| | 3-4 years | 60 | 30.0 |

According to the total mean of score and standard deviation, the diarrheal children mothers had a fair (moderate) food awareness (n=86; 43 percent), followed by those who had a bad food awareness (n=70; 35 percent) and those who had an excellent food awareness (n=44; 22 percent).

Table (2)
Food Awareness

| Psychological Aspects | Freq. | % | M ± SD |
|-----------------------|-------|-------|-------------|
| Poor (M=20-26) | 70 | 35.0 | 28.78±5.947 |
| Fair (M=27-33) | 86 | 43.0 | |
| Good (M=34-40) | 44 | 22.0 | |
| Total | 200 | 100.0 | |

Table (3)
Significant Differences in Food Awareness with regard Mothers Age Groups

| Mothers Age | Source of variance | Sum of Squares | d.f | Mean Square | F | $p \leq 0.05$ |
|----------------|--------------------|----------------|-----|-------------|-------|---------------|
| Food Awareness | Between Groups | 1.821 | 3 | .607 | 7.539 | .000 |
| | Within Groups | 15.780 | 196 | .081 | | |
| | Total | 17.601 | 199 | | | |

Findings demonstrated there were significant differences in food awareness with regards mothers age ($p < 0.01$).



Figure 1: Distribution of Food Awareness according to Age Groups

Table (4)
Significant Differences in Food Awareness with regard Mothers Education Level

| Education | Source of variance | Sum of Squares | d.f | Mean Square | F | $p \leq 0.05$ |
|----------------|--------------------|----------------|-----|-------------|-------|---------------|
| Food Awareness | Between Groups | 1.465 | 4 | .366 | 4.427 | .002 |
| | Within Groups | 16.135 | 195 | .083 | | |
| | Total | 17.601 | 199 | | | |

Findings demonstrated there were significant differences in food awareness with regards mothers level of education ($p < 0.05$).

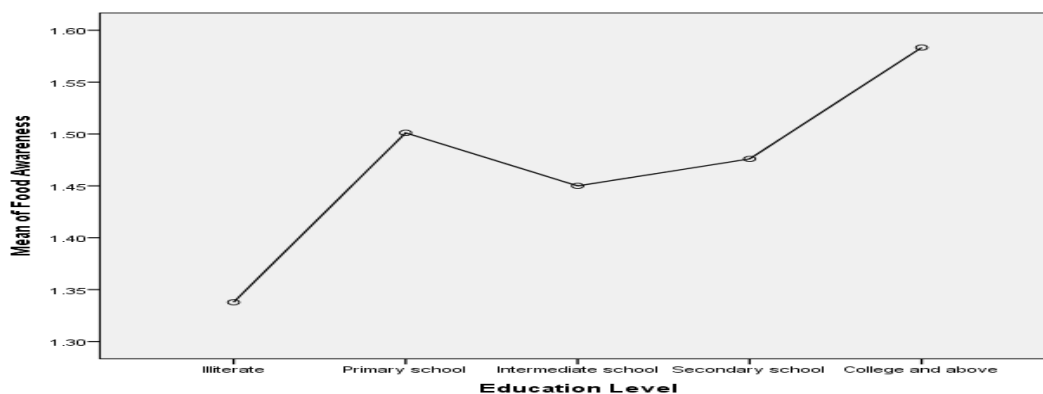


Figure 2: Distribution of Food Awareness according to Education Level

Table (5)

Significant Differences in Food Awareness with regard Mothers Occupation

| Occupation | Source of variance | Sum of Squares | d.f | Mean Square | F | $p \leq 0.05$ |
|----------------|--------------------|----------------|-----|-------------|------|---------------|
| Food Awareness | Between Groups | .155 | 2 | .078 | .876 | .418 |
| | Within Groups | 17.446 | 197 | .089 | | |
| | Total | 17.601 | 199 | | | |

Findings demonstrated there were no-significant differences in food awareness with regards mothers occupation ($p > 0.05$).

Table (6)

Significant Differences in Food Awareness with regard Mothers Residents

| Variables | Residents | Mean | SD | t-value | d.f | $p \leq 0.05$ |
|----------------|-----------|------|------|---------|-----|---------------|
| Food Awareness | Urban | 1.49 | .290 | 3.425 | 198 | .001 |
| | Rural | 1.35 | .287 | | | |

Findings demonstrated there were significant differences in food awareness with regard residents ($p < 0.05$).

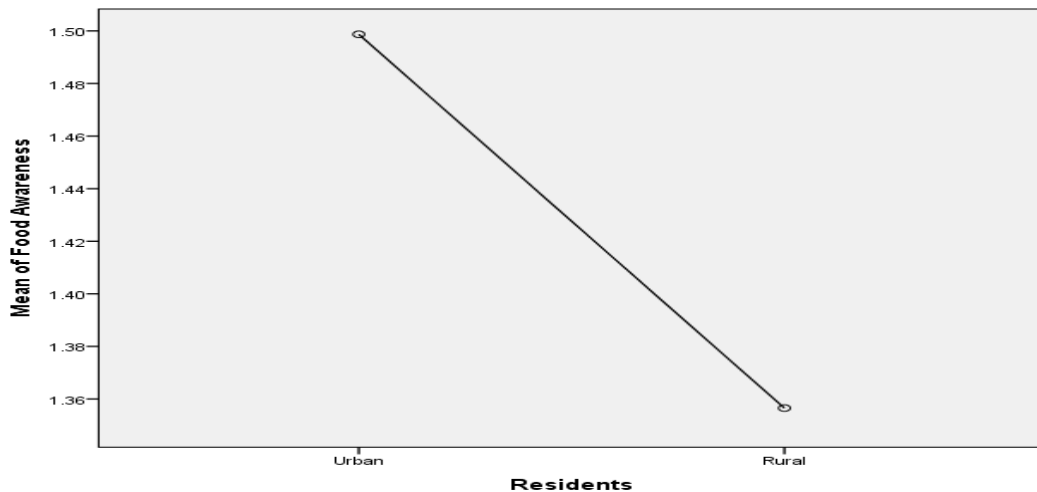


Figure 3: Distribution of Food Awareness according to Residents

Table (7)
Significant Differences in Food Awareness with regard Mothers Monthly Income

| Income | Source of variance | Sum of Squares | d.f | Mean Square | F | $p \leq 0.05$ |
|----------------|--------------------|----------------|-----|-------------|------|---------------|
| Food Awareness | Between Groups | .003 | 2 | .002 | .019 | .981 |
| | Within Groups | 17.597 | 197 | .089 | | |
| | Total | 17.601 | 199 | | | |

Findings demonstrated there were no-significant differences in food awareness with regards mothers monthly income ($p > 0.05$).

Table (8)
Significant Differences in Food Awareness with regard Number of Children

| No. Children | Source of variance | Sum of Squares | d.f | Mean Square | F | $p \leq 0.05$ |
|----------------|--------------------|----------------|-----|-------------|------|---------------|
| Food Awareness | Between Groups | .088 | 2 | .044 | .494 | .611 |
| | Within Groups | 17.513 | 197 | .089 | | |
| | Total | 17.601 | 199 | | | |

Findings demonstrated there were no-significant differences in food awareness with regards number of children ($p > 0.05$).

Table (9)
Significant Differences in Food Awareness with regard Child's Age

| Child's Age | Source of variance | Sum of Squares | d.f | Mean Square | F | $p \leq 0.05$ |
|----------------|--------------------|----------------|-----|-------------|-------|---------------|
| Food Awareness | Between Groups | .205 | 2 | .102 | 1.158 | .316 |
| | Within Groups | 17.396 | 197 | .088 | | |
| | Total | 17.601 | 199 | | | |

Findings demonstrated there were no-significant differences in food awareness with regards child's age ($p>0.05$).

Discussion

Food awareness is vital in the prevention and prevalence of diarrhea in children under the age of five. The assessment of maternal food knowledge is a public health priority for children's health. Mothers' awareness refers to personal information, views, and attitudes..., which are typically gained through a variety of means, including education, interaction with people, various forms of media, and personal experiences..., among others. It influences and drives mothers' health and illness-related behavior and practices. The awareness of mothers was assessed using a Likert scale and a variety of health-related markers. The findings were ($M\ SD= 28.785.947$) according to the total mean of score and standard deviation. The results were as follows: diarrheal children's moms had a medium (moderate) level of food awareness, followed by those who had a bad level of food awareness, and finally those who had a high level of food knowledge. This is due to the fact that the most important influencing factors such as the mother's age is considered an influential variable in relation to food awareness, as well as differences in educational levels (a large percentage of the studied sample is uneducated), and housing, which is a major factor in nutritional awareness (there was a large difference between urban residents and rural). According to the findings of Afaf et al. (2014), 43 percent of moms have a median degree of awareness, 34 percent have either a high or very high level of awareness, and only 23 percent of mothers have lower levels of awareness [13]. The majority of moms were found to have a poor understanding of complementary feeding, according to their research. Mothers' health and nutritional awareness play a significant role in child malnutrition, especially when they are educated [14]. Because they are frequently in regular touch with pregnant and lactating women, Lady Health Workers (LHWs) programs with proper training may be one of the best ways to raise knowledge about health and diet [15]. Furthermore, increased maternal health awareness reduces the prevalence of diarrhea. As a result, intervention health awareness programs aimed at mothers are required to promote the health of children (e.g. nutrition, personal hygiene and home sanitation). The government should also focus more on enacting new measures to raise the general level of living [16]. Because of the low level of food awareness, nurses should focus on providing an educational program about food awareness tailored to each mother in the community, and healthcare organizations should develop a dedicated funding plan that supports health education about healthy food and food borne illness [17]. The importance of dietary awareness among mothers has been proven in studies. The stronger a mother's food awareness is, the less likely her children will get diarrhea. It is possible to arrange sessions and seminars aimed at educating moms about the need of dietary awareness in maintaining their children's overall health. Higher nutritional knowledge level mothers avoid giving artificial foods to their children, as proven by Yabanc et al. (2014), and believe more in nutrition-health knowledge. The amount of nutrition awareness of mothers has an impact on the dietary patterns of their children [18].

There were substantial differences in food awareness across moms of different ages ($p=0.000$), according to the findings. This is reinforced by Mahgoub et al.

(2014), who found that mothers' awareness was substantially related to their age ($p=0.004$) [19]. Food safety awareness was low among younger mothers [20]. The age of their mothers had a major impact on their dietary knowledge (younger women should be given more attention) [21]. According to the findings of the current study, the disparities were in favor of the age group 40 and over, which had the highest mean of food awareness, while the age group under 20 had the lowest mean. Food awareness increased dramatically as mothers grew older.

There were significant disparities in food awareness in responses to the moms' educational level ($p=0.002$), according to the current study findings. Education proved to have a significant impact on the dietary knowledge of many mothers. These findings are consistent with a research of the intake of specific food items in Flemish preschool children, which indicated that disparities in fruit, vegetable, and soft drink consumption were connected to the mothers' educational levels [22, 23]. The mother's educational level is a factor determining their food knowledge, as those who graduated from college or above had the highest average food awareness, contrasted to those who are considered ignorant (illiterate), who got the lowest average food awareness. As a result, the educational level has a significant impact on nutritional awareness. As the mother's educational level rises, she gains a better understanding of nutrition and is better able to avoid her child's diarrhea. There was a direct beneficial relationship between mothers' health awareness and their educational level ($p=0.021$). Education improves awareness of prevention strategies, such as sanitary behavior and increased home sanitation to combat insects and disease vectors [16]. Another point to consider is that education of moms is the most essential factor determining overall health. Though, health education for women is important for preventing diseases and improving the health condition of the entire family, it is difficult to achieve [13].

Food awareness is higher among mothers who live in cities (M SD= 1.490.290) than among mothers who live in rural regions (M SD= 1.350.287), with statistically significant variations in food awareness between urban and rural residents ($t=3.425$; $p=0.001$). The substantial differences were in favor of the urban dwellers through the arithmetic mean because they are better knowledgeable and interact with the community, making them more information-gaining. The housing regions looked examined aspects that influence mothers' knowledge of feeding their infants (rural residents were limited and need more attention) [24]. In terms of diet and nutrition, urban dwellers had much more knowledge than rural residents [18]. Diarrhea-related foods were more common in rural areas than in urban areas [25].

Study Limitation

Lack of national studied underlying of study.

Conclusion

Mothers health awareness leads to decrease the prevalence of diarrhea. Therefore, intervention health awareness programmes towards mothers are needed to improve children's health (e.g. nutrition, personal hygiene and home sanitation).

Study Suggestion

A manual booklet of food awareness and how to manage child with diarrhea be write in simple words and use attractive pictures given to the mothers and family.

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