

Mothers' Knowledge Regarding Weaning Practices for Their Children Aged from 6 to 24 Months

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Abstract

Weaning is a very vulnerable period for children's life that covers from 6-24 months of age, where they transfer from exclusive breastfeeding or formula feeding to complementary food. **Objective:** Identify the mothers' knowledge regarding weaning practices for their children aged from 6 to 24 months. **Settings:** Out-Patient Clinics and Well-Baby Clinics of Matrouh General Hospital and Specialized Children's Hospital at Matrouh city. **Subjects:** A convenience sample of 200 mothers having children aged from 6 to 24 months and free from chronic illness. **Tool:** "mothers' knowledge regarding weaning practices for their children aged from 6 to 24 months structured interview schedule" was developed to collect data. **Results:** Half of the studied mothers had "good" total knowledge score with a mean score of 35.94 ± 6.515 . Where 82.0% of the studied mothers had "good" knowledge score regarding general weaning practices, 52% of them had "fair" knowledge score related to the number of meals and appropriate types of food, 46% of them had "good" knowledge score related to principles of weaning. **Conclusion:** it can be concluded that mothers had a good total knowledge score regarding weaning practices. **Recommendations:** Health teaching sessions about weaning practices for mothers should be conducted in well-baby clinics and outpatient clinics.

Keywords: Knowledge, mothers, weaning practices, children.

Introduction

During infancy period, growth is proceeding very rapidly, requiring a proper and adequate amount of balanced nutrition. Furthermore, cellular growth of essential organs is completed during this period, as well as feeding provides time for meeting the emotional needs of children (Lopes et al., 2017). In the first 6 months of child life, it is important to have for children exclusive breastfeeding, that contains all nutrient needed for growth and development (Irfan, 2019; Lissauer & Carroll, 2021).

From six to 24 months of a child's life, the nutritional requirement for growth and

development are greater than any other time of life (Moraes et al., 2016). On the other side, breastfeeding fails in supplying those children with full and balanced nutritional elements, thus it is a suitable time for introducing complementary food to the child. It's time to contribute high prevalence of malnutrition disorders. These disorders can be prevented by providing children with enough nutritious and safe complementary foods (World Health Organization [WHO], 2017).

Some criteria should be met in weaning practices. It should be timely which means introducing in the right time, adequate frequency, consistency, and using a

variety of food to provide sufficient energy for the child. In addition to safe preparing and storage of weaning food. It also should be properly fed by mothers or caregivers (Pediatric Gastroenterology, Hematology and Nutrition [UNICEF], 2019; Forsido et al., 2019). So, mothers' knowledge about the appropriate complementary food for their children influences the correct way of feeding because lack of their knowledge may lead to malnutrition disorders (Ibrahim & Kalfallah, 2018).

Aims of the Study

This study aims to identify the mothers' knowledge regarding weaning practices for their children aged from 6 to 24 months.

Research Question

What is the mothers' knowledge regarding weaning practices for their children aged from 6 to 24 months?

Materials and Method

Materials

Design: A descriptive design was used to carry out this study.

Settings: The study was conducted in two settings namely the Out-Patient Clinics and Well Baby Clinics of Matrouh General Hospital and Specialized Children's Hospital at Matrouh City.

Subjects:

- A convenience sample of 200 mothers having children comprised the subjects. Those children fulfilled the following criteria:
 - Their age ranged from 6 to 24 months.
 - Free from any chronic illness.
- The study sample was estimated based on the Epi info program which was used to estimate the sample size using the following parameters: population size 259 over 3 months, expected frequency = 50%, the margin of error = 5%,

confidence level = 95%, minimum sample size = 155.

Tool: One tools were used to collect data of the study:

Mothers' Knowledge Regarding Weaning Practices for Their Children Structured Interview Schedule. This tool was developed by the researcher based on reviewing the related literature (Hockenberry et al., 2017; UNICEF, 2019; WHO, 2021; William W. Hay Jr. et al., 2020). This tool included two parts: the first part related to characteristics of mothers and their children while, the second part related to mothers' knowledge regarding weaning practices.

The tool was contained 26 questions, divided into 9 questions for mothers' general knowledge related to weaning practices, 8 questions for mothers' knowledge related to the number of meals and appropriate types of food according to children's, and 9 questions for mothers' knowledge related to principles of weaning. Each question was assigned a score of completely known (2), incompletely known (1), and unknown (zero). The total percent scores were converted to 100%, then classified as follows:

- Good: 60% and more
- Fair: 40 to less than 60%
- Poor: Less than 40%

Method

- An approval from the Research Ethical Committee, Faculty of Nursing, Alexandria University was obtained.
- An official written letter was obtained from the Faculty of Nursing Alexandria University to the administrative authorities in mentioned settings to carry out the current study after explaining its purpose.
- The tool was developed by the researcher after a thorough review of related literature and translated to the Arabic language.
- The developed tool was tested for their content validity by five experts in

pediatric nursing. based on their advices necessary modifications were done.

- A pilot study was conducted on 20 mothers to test the feasibility, and clarity of the tool. Those mothers were excluded from the study subjects.
- Reliability of the tool was identified using Cronbach Coefficient Alpha test, it was $r = 0.837$.
- Every mother was interviewed individually in the waiting area for about twenty minutes in the previously selected settings to collect the necessary data.

Data collection of the study covered a period from the first of September 2020 to the end of December 2020.

Ethical considerations:

- Written informed consent was obtained from the mothers for their participation after an explanation of the aim of the study and the right to withdraw from the study at any time was considered.
- Mothers were ascertained about the confidentiality of their data.
- Privacy was considered.

Statistical Analysis

After data collection, data were coded and transferred into specially designed formats to be suitable for computer feeding using statistical software (SPSS version 26). Following data entry, checking and verification processes were carried out to avoid any errors during data entry. Microsoft Office Excel software was used to calculate the total scores of mothers' knowledge regarding weaning practices for their children aged from 6 to 24 months. It was also used to construct the needed graphs. The level of significance selected for this study was P equal to or less than 0.05. The correlation coefficient (r) measures the strength and direction of a linear relationship between two or more variables. Interpretation of correlation based on 4 categories as follows:

- Value of +1 indicates perfect positive correlation.

- Value between +0.70 and +0.99 indicate strong correlation.
- Value increase than +0.50 and less than +0.70 indicate moderate correlation.
- Value increase than +0.30 and less than +0.50 indicate weak correlation.
- Value 0 indicate no correlation.
- Value of -1 indicates perfect negative correlation.
- Value between -0.70 and -0.99 indicate strong correlation.
- Value increase than -0.50 and less than -0.70 indicate moderate correlation.
- Value increase than -0.30 and less than -0.50 indicate weak correlation (Rumsey, 2016).

Results

Table 1 clarifies mothers' mean scores of knowledge regarding weaning of their children. It was found that the majority of the studied mothers (82.0%) had "good" knowledge score regarding general weaning practices with a mean score of 15.73 ± 2.728 . While slightly more than half of them (52%) had "fair" knowledge score related to the number of meals and appropriate types of food according to children's age with a mean score of 9.33 ± 2.692 . The same table revealed also that 46% of the studied mothers had "good" knowledge score related to principles of weaning with a mean score of 10.88 ± 3.246 . Concerning the total mothers' knowledge score, it was found that half of the studied mothers (50.5%) had "good" total knowledge score with a mean score of 35.94 ± 6.515 .

Table 2 reveals the relationship between mothers' total knowledge score and their socio-demographic characteristics. It was noticed that there were statistical significance differences between level of education, occupation of mother, income of the family, and mothers' total knowledge score ($p=0.035^*$, $p=0.000^*$, $p=0.000^*$) respectively. It was apparent from the table that there weren't statistical significance differences between the age of mothers, marital status,

ethnic group, and mother's total knowledge score.

Table 3 represents the relationship between mothers' total knowledge score and their children socio-demographic characteristics. It was noticed that there were statistical significant differences between children's age, birth order, types of feeding in the first 6 months, and mothers' total knowledge score ($p=0.030^*$, $p=0.050^*$, $p=0.000^*$) respectively. It was found that there were no statistical significance differences between children's sex, weight for length percentage, and mothers' total knowledge score.

Table 4 illustrates the correlation between mothers' general knowledge regarding weaning practices, number of meals, appropriate types of food, principles of weaning for their children, and total mothers' knowledge. It was noticed from the table that there was a moderate positive correlation between them and mothers' general knowledge with highly statistical significance difference between them, where $r= 0.659$, $P=0.000^*$. While, there was a strong positive correlation between total knowledge score and knowledge related to the number of meals and the appropriate type of food according to children's age, knowledge related to weaning practice. A highly statistical significance differences were found between them, where $r = 0.715$, $P = 0.000^*$ and $r = 0.763$, $P=0.000^*$.

Discussion

Weaning is a natural stage in children's development. It is a gradual process of giving the child other food while continuing to breastfeed in the first two years of life. Weaning is the first change in child's life from eating liquid to solid diet by providing adequate, balanced, timely food to prevent malnutrition that may arise in the infancy stage (Semahegn et al., 2014).

The current study revealed that half of the studied mothers had "good" total knowledge score. It could be explained in the line of the fact that less than two-thirds of the

studied mothers their age were 20 to less than 30 years old, one-fifth of them had secondary education, as well as, the majority of them were housewives, where they spend most of the time effort looking for their children and they not exhausted as working mothers. In addition, more than half of them started weaning when their children aged from 6 to less than 8 months, and the majority of them were fed their children by breastfeeding till 2 years of life. From another perspective, the current study could be justified by the increase of knowledge supplied by health care staff in hospitals and the presence of experienced people support around mothers as their mothers and mothers in low, which in turn may improve their level of knowledge. This finding was in harmony with Abiyu & Belachew (2020) and Saeed et al (2019). They who reported that mothers had good knowledge regarding weaning. On the other hand, the findings of Bimpong et al.(2020), Doğan et al. (2019), and Egyir et al (2016) contradicted with the result of the present study where they found that mothers had notable deficiency in knowledge regarding weaning.

The current study findings revealed that there were statistical significance differences between the level of education, occupation of the mothers, the income of the family and mothers' total knowledge score. These results were confirmed in the present study where the majority of mothers who were either illiterate or read and write had "poor" total knowledge score. While slightly one-quarter of those who were secondary educated had "good" total knowledge score. These findings were confirmed by 21% of the studied mothers who had university education, only 15% of them knowing the correct and complete meaning of weaning, and more than half of the studied mothers start weaning in the appropriate time. In addition, less than two-thirds of the mothers had enough income for living, slightly two-thirds of them lived in the nuclear family. Furthermore, less than half of them gave children breastfeeding only in the first 6 months and the majority of mothers continued breastfeeding till 2 years.

These findings could be explained by educated mothers having a lot of sources of information as school, mass media, and reading books, also they have a desire to give optimal care for their children, and mothers know that they are the only responsible person for the children growth and development.

There were more explanations for mothers' knowledge significance as working mothers have better education and life experience rather than housewives, where they have to start weaning 4-6 months because they leave their child for too long time, so they improve their knowledge for giving optimal weaning practices. Furthermore, these findings may be attributed to social solidarity in the bedouin family in matrouh. In addition, families with low income have difficulty in getting special types of food needed for the child at the beginning of weaning as fruits and fortified cereal. As well as less than half of the mothers prepare their child's food with family meals. These findings were congruent with the findings of Berisha et al (2017), Dhanasekaran (2015), Folasade et al(2017), Saeed et al.(2019) and where they found that there was statistical significance differences between mothers' knowledge and mothers' education, occupation and income of the family.

It was shown from the present study findings that there wasn't statistical significance difference between the age of mothers, marital status and ethnic group and mothers' total knowledge score, where two-thirds of the studied mothers who aged from 20 to less than 30 years old had "good" total knowledge score, while three-fifths of those aged less than 20 years old had "poor" knowledge score, as well as, nearly two-thirds of the studied mothers who were bedouin had "poor" total knowledge score. These findings could be related to their culture, their sources of mothers' knowledge about weaning practices, availability of mass media and internet in almost all homes, as well as the availability of health team

members in the health care setting. This finding was supported by Folasade et al.(2017), Liu et al.(2018), and Shrestha et al (2020) who reported that the difference wasn't statistically significance between mothers' knowledge and mothers' age and ethnic group .

The present study illustrated that there were statistical significant differences between children's age, birth order, type of feeding in the first 6 months, and mothers' total knowledge score. It could be justified by the experience of mothers that the more the child grows the more knowledge and practice they have, also the more children number they have the better experience and knowledge they get, as well as awareness of aged mothers are increased. It was confirmed in the light of the present study that two-fifth of the studied children were the fourth and more born children, nearly two-thirds of the mothers who were fed their children by breastfeeding and bottle feeding had "poor" total knowledge score. On the other hand, half of the studied mothers who were fed their children by breastfeeding only had "good" knowledge score. This finding was online with Ariff et al.(2020), Kampman & Winkels (2015) and Kostecka et al (2021) who reported that there was significant difference between mothers' knowledge and age of children and type of feeding.

The finding of the present study revealed that there was no statistical significance difference between children's sex, weight for length percentage, and their mothers' total knowledge score, where nearly two-thirds of mothers have male children had "poor" total knowledge score, the majority of mothers who had normal weight for length children had "poor" total knowledge score. This may be attributed to that there wasn't preference between males and females, the culture of the city, better education, the income of the family and mass media that inter every home. The findings of Helle et al.(2018), Rossem et al.(2013), Kostecka et al. (2021), Monterrosa et al (2012), and Zaragoza-Cortes et al.(2019) supported the findings of the current study,

where they concluded that there was no statically significant difference between mothers' knowledge, children's gender and weight for height percentage.

Conclusion

According to the study findings, it can be concluded that half of the studied mothers had "good" total knowledge score, slightly half of them had "fair", while the minority of studied mothers had "poor" knowledge score. There were statistically significant differences between mothers' total knowledge and their level of education, occupation, and income. Besides, children's age, birth order, and type of feeding during the first 6 months of age.

Recommendations

In line with the findings of the study, the following recommendations are made:

- Health teaching sessions about weaning practices for mothers should be conducted in well-baby clinics and outpatient clinics.
- A hot-line telephone concerned with answering mothers' questions about weaning practices should be established and advertised through all mass media.
- Health care providers in children's different health settings should provide mothers with updated simplified Arabic handouts, brochures, pamphlets, and booklets about weaning practices to improve mothers' and their families' awareness.
- Mass media should emphasize the physical, psychological, and social needs of mothers and their families to raise society awareness regarding weaning practices.

Table 1: Mothers' Mean Scores of knowledges regarding weaning of their children

Mothers' knowledge	n=200	%	Mean± S.D
Mothers' general knowledge related to weaning practices.			
▪ Poor	4	2.0	15.73 ± 2.728
▪ Fair	32	16.0	
▪ Good	164	82.0	
Mothers' knowledge related to number of meals and appropriate types of food according to children's age.			
▪ Poor	53	26.5	9.33 ± 2.692
▪ Fair	104	52.0	
▪ Good	43	21.5	
Mothers' knowledge related to principles of weaning.			
▪ Poor	27	13.5	10.88 ± 3.246
▪ Fair	81	40.5	
▪ Good	92	46.0	
Total Mothers' knowledge.			
▪ Poor	5	2.5	35.94 ± 6.515
▪ Fair	94	47.0	
▪ Good	101	50.5	

Table 2: Relationship between Mothers' Total Knowledge Score and their Socio-Demographic Characteristics

Socio-Demographic Characteristics of Mothers	Total Knowledge Score						Significance
	Poor n= 5		Fair n= 94		Good n= 101		
	No.	%	No.	%	No.	%	
Age of the mothers(years)							MCP =0.825
▪ less than 20	3	60	14	14.9	6	5.9	
▪ 20>30	0	00	54	57.4	66	65.3	
▪ 30>40	2	40	16	17.1	25	24.8	
▪ 40>50	0	00	10	10.6	4	4.0	
Marital status							MCP =0.285
▪ Married	5	100	93	98.9	95	94.1	
▪ Divorced	0	00	1	1.1	6	5.9	
Ethnic group							MCP =0.635
▪ Bedouin	3	60	51	54.3	48	47.5	
▪ Other population	2	40	43	45.7	53	52.5	
Level of education							MCP =0.035 *
▪ Illiterate/ read and write	4	80	58	61.7	44	43.5	
▪ Primary education	1	20	15	16	11	10.9	
▪ Secondary school	0	00	19	20.2	24	23.8	
▪ University education	0	00	2	2.1	22	21.8	
Occupation of mother							MCP =0.000 *
▪ Housewife	5	100	90	95.7	78	77.2	
▪ Working mother	0	00	4	4.3	23	22.8	
Income of family							MCP =0.000 *
▪ Enough	5	100	49	52.1	71	70.3	
▪ Not enough	0	00	45	47.9	30	29.7	

^{MCP}: Monte Carlo Test

* P < 0.05 (significant)

Table 3: Relationship between Mothers' Total knowledge Score and their Children Socio-Demographic Characteristics

Socio-Demographic Characteristics of Children	Total Knowledge score						Significance
	Poor n=5		Fair n=94		Good n=101		
	No.	%	No.	%	No.	%	
Age / Months							MCP =0.030 *
▪ 6 >8	2	40	23	24.5	17	16.8	
▪ 8 > 12	2	40	25	26.6	24	23.8	
▪ 12 >18	1	20	28	29.8	21	20.8	
▪ 18-24	0	00	18	19.1	39	38.6	
Birth order							MCP =0.050 *
▪ 1st	3	60	21	22.3	28	27.7	
▪ 2nd	0	0	17	18.1	25	24.8	
▪ 3rd	0	00	14	14.9	11	10.9	
▪ 4th & more	2	40	42	44.7	37	36.6	
Sex							MCP =0.620
▪ Male	3	60	47	50	58	57.4	
▪ Female	2	40	47	50	43	42.6	
Weight For Length Percentage							MCP =0.290
▪ Low weight for length	0	00	11	11.7	5	5.0	
▪ Normal weight for length	4	80	54	57.4	57	56.4	
▪ High weight for length	1	20	29	30.9	39	38.6	
Type of feeding in the first 6 months							MCP =0.000*
▪ Breastfeeding	0	00	47	50	51	50.5	
▪ Bottle feeding	2	40	25	29.8	10	9.9	
▪ Breast and bottle feeding	3	60	19	20.2	40	39.6	

^{MCP}: Monte Carlo Test

* P < 0.05 (significant)

Table 4: Correlation between Mothers' General Knowledge Regarding Weaning Practices, Number of Meals, Appropriate Types of Food according to Children's age, Principles of Weaning for their Children and Total Mothers' Knowledge

Mothers' Knowledge	Total mothers' knowledge score	
	r	p
Mothers' general knowledge related to weaning practices	0.659**	0.000
Mothers' Knowledge related to the number of meals and the appropriate type of food according to children's age	0.715**	0.000
Mothers' knowledge related to the principles of weaning	0.763**	0.000

**Correlation is significant at the 0.01 level (2-tailed)

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