

Effect of Health Guidelines on Mothers' Awareness regarding Weaning Practices

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Abstract

Healthy infants at weaning age are growing and developing very fast, so great care must be taken to ensure they are getting enough of the right food. **The aim** was to investigate the effect of health guidelines on mothers' awareness regarding weaning practices. **Design:** A quazi –experimental design was used. **Settings:** The present study was collected from Suzan medical center and the general medical center of Alfekria city. **Tools:** three main tools was used: A first was Socio-demographic parts of the newly lactated mothers, the second was the problem and challenges of weaning, the third was mother's awareness related to weaning, which consisted of three subparts including mother's knowledge, attitude, and weaning practices. **Results:** Nearly half of the newly lactated mothers have secondary education, and more than half are aged between 25 and 29. More than two-fifth of the newly lactated mothers with good knowledge levels before implementing health guidelines improved to almost them after implementing health guidelines. The vast majority of the newly lactated mothers who had a positive attitude before implementing health guidelines turned to the most after implementing health guidelines. Also, the majority of the participant mothers had good practices before implementing health guidelines and improved most of them after implementing health guidelines. **Conclusion:** Newly lactated mothers' awareness was improved after implementing health guidelines about weaning, which indicated the effectiveness of the used guidelines on improving their knowledge, attitude, and practices. **Recommendations:** continues health educational guidelines for newly pregnant women to prepare them for future responsibility regarding their health and their infants.

Keywords: Mothers' Awareness, Health Guidelines, Weaning Practices.

Introduction

A child's growth and development are most noticeable in the first two years of life. A lack of proper nutrition during this time can negatively affect mental growth, academic performance, and economic output. (Dahani et al., 2020).

The World Health Organization (WHO) defines weaning as complementary feeding, beginning when breast milk alone is insufficient to meet newborns' nutritional needs and additional foods and liquids are needed in addition to breast milk. For a child's best health, growth, and development, the World Health Organization (WHO) recommends exclusive breastfeeding for the first six months of life, followed by weaning or complementary feeding from six months until the age of two years. After the first six months, breast milk still falls short of providing all the nutrients an active, growing infant needs. Weaning plays a crucial function in closing the gap between what toddlers are getting and what infant need regarding energy. (Mustafa et al., 2021).

The impacts of weaning are significant because they provide the building blocks for a child to enjoy optimal health as an adult. The first 1000 days of a human's existence, or the first nine months of pregnancy and the first two years of life, are a critical time and a significant opportunity to increase nutritional status, according to the United Nations International Children's Emergency Fund (UNICEF). A child not getting enough to eat is at risk for malnutrition's harmful impacts, like increased morbidity and mortality. (Spyreli et al., 2019).

Only one in four children between the ages of 6 and 24 months satisfy age-appropriate nutritional diversity and feeding frequency criteria, largely due to inappropriate supplemental feeding. Assist the mother in deciding when and how to wean her child from nursing and explain the

advantages of continued breastfeeding, by the time a child is 12 to 15 months old; it's time to wean them off the bottle. (Evans et al., 2018).

Examining the potential of women's knowledge in newborn feeding to enhance instruction. Culture can significantly impact a community's well-being by fostering distinctive norms and values (Dave & Chaudhary, 2019). Understanding mothers' cultural ideas about nursing and maternal nutrition is crucial to educating the community. (Edmunds & Green, 2017).

Community health nurses are accountable for advising family members or educating them on issues involving the health of mothers and children. As a result, educating mothers is considered one of the client's rights and one of the essential accrediting indices for a health center. While this is happening, education focused on mothers' needs for weaning is emphasized less often by healthcare practitioners, which is extremely likely to propagate incorrect weaning-related cultural ideas among mothers (Abu Shosha, 2022).

Significance of study

The time between six and twelve months of age, when many infants begin to experience malnutrition, is known as the transition from exclusive breastfeeding to weaning practices and is a very vulnerable period, contributing significantly to the high prevalence of malnutrition in children under five years of age worldwide, where two out of every five children are stunted (WHO, 2018). Optimal weaning procedures have the potential to avert nearly a third (33%) of all infant mortality (UNICEF, 2013).

Faulty weaning techniques may be responsible for as much as 50% of all childhood mortality due to malnutrition and its effects (Wubante, 2017). The prevalence of stunting, wasting, and underweight among Egyptian children under five was 20%, 8%, and 6%, respectively (thin for their age). One-

quarter of Egyptian children between six to fifty-nine months in age have moderate anemia (27%) (Alanwar et al., 2018).

Aim of study

The study aims to investigate the effect of health guidelines on mothers' awareness regarding weaning practices.

Research Hypotheses:

- H1. Mothers who will receive health guidelines will have higher mean scores regarding weaning knowledge than before.
- H2. Mothers who will receive health guidelines will have higher mean scores regarding weaning attitudes than before.
- H3. Mothers who will receive health guidelines will have higher mean scores regarding weaning practices than before

Subject and Method

Research design:

A quazi –experimental design was used (pre-post design was used) to achieve the aim of the study.

Settings:

Data of the present study was collected from:

- Suzanne Medical Center, east of Al-Fekria City In Abu Qurqas Center, consists of two floors. The first contains a pharmacy, a radiology room, a chair, an office for the director, and a nursing room. The upper floor consists of a vaccination room, a dental examination room, and a premarital analysis room. The center provides curative and preventive care for the family, including maternity and child health care. It serves 27000 number of population (Minia Health Affairs Province,2021)
- The General Medical Center, West of Al-Fekria City In Abu Qurqas Center, consists of one floor containing a women's examination room, a vaccination room, a dental examination room, the manager's room, a pharmacy, and a follow-up room. The center provides curative and preventive care for the family, including maternity and child health care. It serves 30000 number of population (Minia Health Affairs Province,2021).

Sample

A purposive sample of 80 mothers who fulfilled the following criteria was selected:

Inclusion criteria:

- a. Newly lactated mothers during the first six months.
- b. Infants depended on breast or artificial or combined feeding.

Exclusion criteria:

- a. An infant with chronic illness.
- b. An infant with congenital anomalies.

Sample calculation:

The sample size was calculated based on Slovin's formula (Slovin, 2015), as shown

$$n = \frac{N}{1 + (N * E^2)}$$

n =sample size

$$N = \text{Total population} = (55 + 45) = 100$$

$$E = \text{margin of errors at the standard of value} (0.05)$$

$$E^2 = (0.05)^2 = (0.0025)$$

Two Maternal Child Health Centers aligned to Alfekria city as they possess high raters (55 cases, 45 cases) according to the last three months' rates (Minia Health affairs province 2020) of all malnourished children under 12 months.

$$\text{so: Total of mothers} = 100$$

$$n = 100 / 1 + (100 * 0.0025)$$

$$n = 100 / 1 + 250$$

$$n = 100 / 1.25 = 80$$

Tools of Data Collection

Tool 1: An interviewing Questionnaire

The data collection tools consisted of three main questionnaires:

- **Socio-demographic questionnaire.** It was used to assess the personal data of the participant mothers as the following:

Demographic data of the mother involved ten questions about age, level of education of both mother and father, place of residence, occupation, the income of the family, source of information, type of family, telephone number, and address (Ezenduka et al. 2018).

- **Problems and challenges of the weaning questionnaire:** It assessed problems affecting the weaning process. It consisted of 4 questions, including sources of information about weaning, infant complaints during the weaning process, the challenges facing mothers during the weaning process, and the reason for delayed complementary feeding by selecting the most suitable answer from multiple ones (Alipoor Zahra et al., 2020).

Tool 2: Mother's awareness related to weaning. It consisted of three parts.

- A) **Mother's knowledge Questionnaire.** It was adapted from Ezenduka et al. 2018. It consisted of 4 sub items to evaluate the mother's knowledge as follows:

Concepts of weaning: it consisted of 4 multiple-choice questions, including the actual meaning of weaning, the starting age for weaning, the complete weaning from breast milk, and about colostrum milk produced in the first few days after birth

Principles of weaning: It consisted of 6 multiple choice questions as the guiding principles during the weaning process, breastfeeding to be avoided, for which case, types of weaning, and time of initiation of breastfeeding.

Benefits of weaning: it consisted of 4 multiple choice questions, including infants who are breastfed have a lower risk of what mothers who breastfeed their infants have a lower risk and to determine the mother's experience when the child is ill during weaning.

Types of weaning food and its initiation consisted of 7 multiple-choice questions as wheat should be introduced only after six months of age, and semi-liquid food can be fed to the infant at six months.

Food to be avoided during weaning consisted of 5 multiple choice questions, as tea and coffee are to be avoided because they hinder iron absorption, and whole nuts and whole Grapes are to be avoided because of choking.

Scoring system for knowledge questions, a score of one for the correct answer and a score of zero for the incorrect answer or didn't know. The total number of questions was 26; from 0:11 or from zero to less than 50 % was considered poor knowledge, and from 12 and more or equal, more than 50 % was considered good knowledge.

- **Mother's attitude Questionnaire**. It was adopted from **Ezenduka et al. 2018**. It was used to evaluate attitudes toward weaning practices by assessing their tendency to respond positively or negatively toward the applying available knowledge. It consisted of 20 true or false questions such as whether breastfeeding prevents you from getting pregnant, continuing breastfeeding after 1st year, whether weaning results in a deep emotional distance between the mother and her child, weaning results in better weight gain and appetite for the child, the mother may feel depressed after weaning, and the child should be weaned if the mother becomes pregnant.

Scoring system for attitude questions, Total number of questions was 20; a score of one was allocated for the true answer and a score of zero for a false answer. From 0:9 or from zero to less than 50% was considered a negative attitude, and from 12 and more or equal, more than 50 % was considered a positive attitude.

- **Mothers' weaning practices Questionnaire** (as reported by mothers). It was adopted from (**Alipoor Zahra et al., 2020**). It was used to evaluate weaning practices; it contained (20) questions such as the technique of weaning, weaning challenges, sequence of weaning, and weaning fault practices. It consisted of 24 questions about doing or not doing them, such as giving meat, poultry should be at 12 months, use of marketed complementary feeding, use of expressed milk and feeding the child with stored milk is a good method for weaning, a breastfeeding mother needs to space feedings, so her breasts have time to refill. Using family members' and friends' experiences is an effective method for weaning; traditional and common methods like coloring the breast or pouring pepper on it can help with weaning and giving yogurt as a probiotic in diarrhea.

Scoring system for practice questions, a score of one for the implemented practice, and a score of zero for unimplemented practice. The total number of questions was 24, a score from 0: 9 or less than 50 % was considered poor practice, and a score from 10 and more was considered good practice (as reported by the participant mothers).

Reliability:

The investigator tested the internal consistency of the instruments. It is the administration of the same instruments to the same subjects under similar conditions on one or more occasions. The Cronbach's alpha for knowledge regarding the weaning questionnaire was 0.8. The test and retest reliability of the attitude questionnaire was 0.79. The Cronbach's alpha for the practice questionnaire was 0.8. The reliability of all instruments indicates good reliability.

Validity

The data collection tool was developed after an extensive review of the literature. The tool was reviewed by five panels of experts in Community and Pediatric Health Nursing to test the content validity.

Pilot study

The pilot study was conducted on 10 % of the total sample and was excluded. It was used to estimate the required time to answer the questions and identify the problems that may interfere with data collection. Data was collected using the pre/post interventions.

Ethical considerations

Written initial approval was obtained from the research ethics committee of the faculty of Nursing at Minia University.

Approval to conduct the study was obtained from the dean of the Faculty of Nursing to Health Affairs Province and heads of departments of Pediatrics. The participants were informed that their participation in the study was completely voluntary and there was no harm if they did not participate and could withdraw from the study at any time. Oral consent was obtained from participating mothers explaining the nature and benefits of the study.

Operational definitions (WHO, 2020):

Types of infant feeding:

Breastfeeding includes biological mothers or caregivers breastfed of another child.

Exclusive breastfeeding means that the infant only receives breast milk. No other liquids or solids are received – not even water – except oral rehydration therapy or syrups of vitamins, minerals, or medicines.

Artificial feeding (formula feeding) includes fresh, evaporated, and condensed sweetened or dried animal milk.

Mixed or combined feeding means combining formula feeding with breast milk

Data collection procedures:

The current study was achieved through three phases: the assessment phase (pre-test), the implementation phase (conducting health guidelines), and the evaluation phase (post-test).

- **Assessment phase (pre-test)**

Before conducting the study, official permission was obtained from the directors of MCHs, after explaining the study's aim and nature. The investigator introduced herself to the participant of infants who fulfilled the study criteria. Oral consent was obtained from them. Participants were interviewed individually (25) or in a selected group (75).

The investigator selected the participant mothers from the vaccination sessions during the period of the first six months of birth for the pre-test and introduced the health awareness guidelines regarding weaning practices for the post-test (evaluation of the impact of health guidelines); the investigator made the second and last session after three months during 9-month vaccine (sabin vaccine) as the immediate evaluation after education can be overestimating to awareness scores of the participant.

- **Implementation phase** (conducting health guidelines)

The investigator introduced health guidelines in the Arabic language obtained after an extensive literature review. The investigator explained health guidelines about appropriate weaning practices and accompanied the mothers using power point and a colorful booklet as a handout for them. (National Health and Medical Researcher council, 2012, WHO, 2012, Taylor et al., 2017). The purpose of health guidelines is to support optimum infant nutrition by reviewing the evidence and providing clear guidance on infant feeding for factors affecting human behaviors (WHO, 2012).

Health guidelines included weaning definition, importance, principles, schedule, food weaning types, time of started weaning, infants complaints, the technique of weaning, weaning challenges, and sequence of weaning and weaning faulty practice. Health guidelines were conducted for primipara mothers when their infant at age 6 months from MCH after vaccination sessions individually or in groups for women living in the same location. The duration of data

collection started from the beginning of August 2021 to the end of January 2022.

Evaluation phase:

The pre-test phase represented the baseline of the findings at the age of six months, and the post-test was done after three consecutive months at nine months of age after the vaccination session of the Sabin vaccine. The missed mothers were followed through home visits.

Statistical analysis

The data were tabulated and analyzed using SPSS (a statistical software package for social science version 20). Descriptive statistics were applied, including frequency and percentage. The paired t-test is a type of t-test that is used for comparing Means. It is used if the study sample members are the **same individuals** before and after the intervention. A significant level value was considered when $P < 0.05$.

Results

Table (1): Socio-demographic data of the studied mothers (N= 80) at 2021:

Socio-demographic characters	No	%
Age of mothers:		
20-24yr	33	41.3
25-29yr	43	53.7
30-34	4	5.0
Level of education:		
Not read and write	9	11.3
Primary	17	21.3
Secondary	38	47.5
Bachelor	16	20.0
Place of residence		
Rural	46	57.5
Urban	34	42.5
Occupation		
Housewife	58	72.5
Working mother	22	27.5
Income		
Lower: less than 1500 p	12	15.0
Middle 2000-less than	52	65.0
High 2000-more	16	20.0
Husband education		
Illiterate	5	6.3
Primary	6	7.5
Secondary	50	62.5
Bachelor	19	23.8
Types of feeding		
Breastfeeding	31	38.8
Artificial feeding	27	33.8
Breast & Artificial feeding	22	27.5
Causes of artificial feeding		
Drying of milk	55	68.8
Problems of nipples	19	23.8
Anomalies' defects of infant	1	1.3
Sickness of mother	5	6.3
Types of family		
Nuclear family	32	40.0
Extended family	45	56.3
Single mother	3	3.8

Table (1) explains the socio-demographic characteristics of the studied mothers as 53.7% among are 25-29 yrs old. Regarding the level of education, 47.5% of the studied mothers have secondary education. Regarding the place of residence, 57.5% live in rural area, and 72.5% are a housewife. Also, 65% have a middle income (less than 2000). Regarding the type of feeding, 27.5% give Breast & Artificial feeding. Regarding the Causes of artificial feeding, 68.8% were due to dried milk; on the other hand, only 1.3% were due to infant anomalies.

Table (2): distribution of problems of weaning (N= 80) at 2021:

Problems and challenges of weaning	No	%
Sources of Information about weaning		
• Health workers	4	5.0
• Parents, mothers, and/or sister in law	41	51.2

Problems and challenges of weaning	No	%
<ul style="list-style-type: none"> • Previous experience • Friends 	32 3	40.0 3.8
Infant complaints during the weaning process select suitable complaint (s): <ul style="list-style-type: none"> • Abdominal distension and colic • Diarrhea • Refusal food and Vomiting • All of these things 	33 2 25 20	41.2 2.5 31.3 25.0
Challenges Facing Mothers during Weaning Process) : <ul style="list-style-type: none"> • Breast engorgement • Next pregnant • Family Pressure and work. • All of these things. 	27 32 5 16	33.8 40.0 6.2 20.0
Reason for delayed complementary feeding <ul style="list-style-type: none"> • Vomits everything • Milk is enough • The child did not accept other foods • A and C 	17 15 31 17	21.2 18.8 38.8 21.2

Table (2) illustrates problems of weaning as 51.2% of the participant mothers have information about weaning from parents, mothers, and/or sisters-in-law. Only 5% obtain their information from healthcare workers. Also, 41.2% of infants complain during weaning due to abdominal distension, and colic .38,8 of the participant mothers allocated reason for delayed complementary feeding in acceptance of other food by the child

Table (3): distribution of the studied mothers according to their correct knowledge about weaning pre and post-intervention (N = 80) at 2021

Weaning knowledge	Pre %	Post %	paired t-test	P value
Concepts of weaning				
The actual meaning of weaning	12.5	90	-17.110	0.000*
Starting age for weaning	16.3	88.8	-12.904	0.000*
Complete weaning from breast milk	48.8	51.3	-0.331	0.741
In the first few days after birth, you produce a special kind of milk called	45	96.3	-8.318	0.000*
Principles of weaning:				
Guiding principles during Weaning Process	25	81.3	-7.943	0.000*
Breastfeeding should be avoided during	20	91.3	2.236	0.028
Types of weaning and its initiation:				
Time of initiation of breastfeeding	21.3	90	-11.350	0.000*
Consistency of complementary feeding	35	93.8	-9.269	0.000*
Types of Food used for starting weaning	22.5	93.8	-12.544	0.000*
Benefits of weaning:				
Infants who are breastfed have a lower risk of (mention correct answer)	25	62.5	-0.22321	0.000*
Mothers who breastfeed their infants have a lower risk of	28.8	66.3	-0.22321	0.000*
What is the mother's experience when the child illness during weaning	28.8	80	-0.36653	0.000*
Types of weaning food and its initiation				
Wheat should be introduced only after six months of age	33.8	90	-0.43075	0.000*
Semi-liquid food can be fed to the infant at six months	96.3	98	0.02476	0.320
Cow's milk should be introduced after 12 months of age	38.8	93.8	-0.42785	0.000*
Rice soup can be initially fed to the infant, i.e., at six month	97.5	98.8	-0.574	0.567
Fruit juices can be introduced initially to the infant, i.e., at six month	71.3	88.8	-2.996	0.004
After 12 months, the child can consume the same type of food as the rest of the family	73.8	92.5	-3.495	0.001*
Honey should be introduced only after 24 months (2-year	56.3	90	6.511	0.000*
Food to be avoided during weaning				
Tea and coffee should be avoided because they hinder iron absorption	85	95	-2.039	0.045
Whole Nuts and whole Grapes should be avoided because they can cause choking	51.3	92.5	-6.781	0.000*
Soda should be avoided because it provides less energy and decreases apatite	63.8	90	-3.980	0.000*
Exclusive breast feeding for six months prevents children from malnutrition and infectious disease.	95	96.3	-0.375	0.708
Un-boiled cow milk should never be given to the child	96.3	98.8	-1.000	0.320

Table (3) illustrates the correct knowledge before and after implementing health guidelines. Regarding concepts of weaning, 12.5% and 90% correctly defined weaning before and after the implementation, respectively. 45% & 96.3% correctly defined colostrum milk before and after health guidelines revealing significant differences (P -value less than 0.05).

Regarding weaning principles, 25% and 81.3% correctly defined the guiding principles before and after implementing health guidelines, respectively, revealing significant differences as (P-value less than 0,05).

Regarding types of weaning & its initiations:21% and 90% correctly defined the time of initiation before and after implementing health guidelines, respectively. Also, all item types have significant differences (P-value less than 0.05).

Regarding the benefits of weaning, 25% and 62.5% reported a lower risk due to breastfeeding before and after implementing health guidelines revealing significant differences (P-value <0.05).

Regarding types of weaning food & its initiations, 33.8% & 90% of the studied mothers reported that wheat should be introduced only after six months of age before and after implementing health guidelines. Also,38,8 % & 93.8% reported that Cow's milk should be introduced after 12 months of age, respectively, before and after implementing health guidelines.

Similarly, 56% & 90% of studied mothers reported that Honey should be introduced only after 24 months (2 years), respectively, before and after implementing health guidelines. Also, there are significant differences in most item types (P-value less than 0.05).

Regarding food to be avoided during weaning, 51.3% and 92,5% of the studied mothers reported that Whole Nuts and whole grapes should be avoided because they can cause choking respectively before and after implementing health guidelines.

Also, 63.8% and 90% of the studied mothers reported that Soda should be avoided because it provides less energy and decreases appetite, respectively, before and after implementing health guidelines revealing significant differences at both mentioned items (P -value less than 0.05).

Table (4): Distribution of the studied mothers according to their positive attitude about weaning pre- and post-intervention (N = 80) at 2021

Attitude items	Pre %	Post %	paired t-test	P value
Breastfeeding prevents you from getting pregnant	25	80	-8.608	0.0001*
Continue breastfeeding after 1st year	95	93.8	0.331	0.741
Weaning results in a deep emotional distance between the mother and her child.	81	90	-1.541	0.127
Weaning results in better weight gain and appetite for the child	76.3	91.3	-2.530	0.013*
The mother may feel depressed after weaning.	78.8	87.5	-1.622	0.019*
The child should be weaned if the mother becomes pregnant.	52.5	83.8	-4.598	0.0001*
Diarrheal diseases can be spread because of a lack of sanitary measures	78.8	92.5	-1.916	0.059
Bottle feeding can be a factor in diarrhea morbidity among children under two years of age	70	82.5	-1.921	0.058
The mother's occupation affects weaning.	55	53.8	0.168	0.867
Vaccination can help in the prevention of diarrheal diseases	78.8	92.5	-2.476	0.015*
Early weaning before three months enhance child health And appetite	71.3	85	-2.255	0.027*
Weaning may result in physical problems like anorexia, diarrhea, sleeping disorders, or the child's weight loss.	92.5	96.3	-1.000	0.320
Breastfeeding protects the child from infection	95	96.3	-0.375	0.708
Serving balanced foods prevents malnutrition and infectious diseases.	97.5	97.5	0.000	1
Weaning may result in psychological reactions like fear, anxiety, immorality, pertinacity, and irritability in the child	91.3	96.3	-1.423	0.159
Breast dependence results in poor eating behaviors in the child	62.5	82.5	-2.776	0.007*
Weaning is not affected by seasons	45	37.5	0.925	0.358
The child should be weaned at any age if he/she is underweight	63.7	66.3	-0.331	0.741
The mother should seek a pediatrician's comments for weaning	92.5	98.8	-1.921	0.058
Serving only starchy food prevents malnutrition and infectious diseases.	30	87.5	-9.043	0.0001*

Table (4) illustrates the mothers' positive attitude; 25% and 80% of the studied mothers respect that breastfeeding prevents pregnancy, respectively, before and after implementing health guidelines.

Also, 52.5% and 83.8% of the studied mothers reported that the child should be weaned in case of pregnancy, respectively, before and after implementing health guidelines.

There are significant differences between the two previous items.

There are no significant differences regarding the nest of attitude items.

Table (5): Distribution of the studied mothers according to their reported practices about weaning pre and post-intervention (N = 80) at 2021

Practices items	Pre %	Post %	Paired t-test	P value
Giving meat, poultry should be at 12 months	42.5	85	-6.684	0.000*
Use of marketed complementary feeding.	31.3	62.5	-4.188	0.000*
Using expressed milk and feeding the child with stored milk is a good method for weaning.	63.8	70	-0.928	0.356
A breastfeeding mother needs to space feedings, so her breasts have time to refill	77.5	86.3	-1.354	0.180
Using family members' and friends' experiences is an effective method for weaning.	96.3	88.8	1.75	0.083
Using traditional and common methods like coloring the breast or pouring pepper on it can help with weaning	26.3	82.5	-8.823	0.000*
Giving yogurt act as a probiotic in diarrhea	60	42.5	2.333	0.022*
Giving bananas useful in reducing the electrolyte imbalance in diarrhea	61.3	46.3	1.981	0.051
Wash hands before eating is a healthy practice for the prevention of disease	88.8	97.5	-2.158	0.034
wash hands after changing diapers.	26.3	91.3	-	0.000*
Boiled water is useful for preventing malnutrition and infectious disease.	92.5	97.5	-1.423	0.159
Using cow milk to your children for feeding After the first year.	62.5	90	-4.291	0.000*
Using a gradual method for weaning is effective.	52.5	83.3	-4.950	0.000*
Family members' help and cooperation are needed for weaning.	85	97.5	-2.783	0.007
Wash equipment with soup/ detergent	93.8	98.8	-1.650	0.103
The bottles should be sterilized by boiling for 10-15 Minute before using	87.5	96.3	-3.348	0.001*
The bottles should be sterilized every time before use	87.5	95	-1.620	0.109
Wash your hand before weaning preparations	92.5	93.8	-0.375	0.708
Tasting food not using an infant spoon	63.8	91.3	-4.467	0.000*
Infant food should be safely stored before serving	71.3	82.5	0.424	0.673

Practices items	Pre %	Post %	Paired t-test	P value
Infant food should be served immediately after preparation	85	93.8	-1.976	0.052
Frequency of breastfeeding scheduled	8.8	10	-0.331	0.741
Frequency of breastfeeding on demand	97.5	96.3	0.444	0.658
Feeding pattern at a time from both sides	76.3	78.8	-0.497	0.620

Table (5) explains the correct practices about weaning among the studied mothers. 42,5% & 85% reported that giving meat and poultry should be at 12 months before and after implementing health guidelines.

Also, 26,3% and 82,5% of the studied mothers reported that using traditional and common methods like coloring the breast or pouring pepper on it can help with weaning, respectively, before and after implementing health guidelines.

In the same line, 26,3% and 91,3% of the studied mothers reported that they should wash their hands after changing diapers before and after implementing health guidelines.

Also, 62,5% and 90% of the studied mothers reported using cow milk for their children for feeding after the first year, respectively before and after implementing health guidelines revealing a significant difference in the previously mentioned items (p-value less than 0,05)

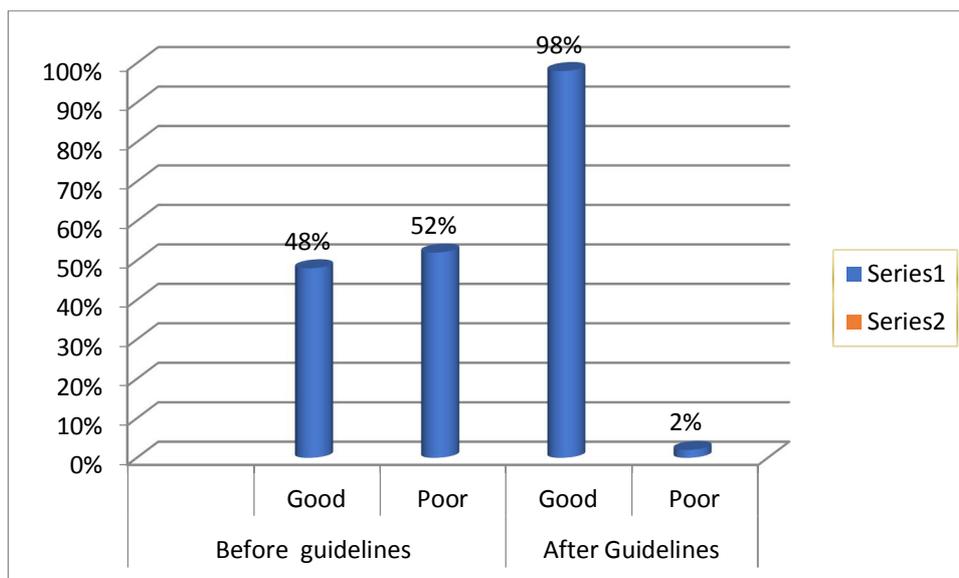


Figure (1) Knowledge level regarding weaning among the participant mothers before and after health guidelines implementation (n = 80).

Figure (1) illustrates knowledge level before and after implementing health guidelines 48% of the studied mothers who had a good knowledge level before implementing health guidelines improved to 98% after implementing health guidelines.

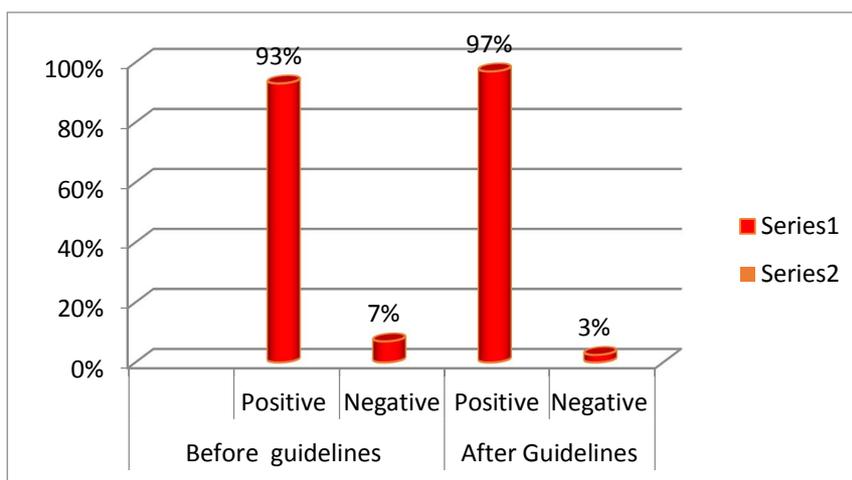


Figure (2) Attitude responses regarding weaning among the participant mothers before and after health guidelines implementation (n = 80).

Figure (2) explains attitude responses 93% of the participant mothers had positive attitudes before implementing health guidelines turned to 97% after implementing health guidelines

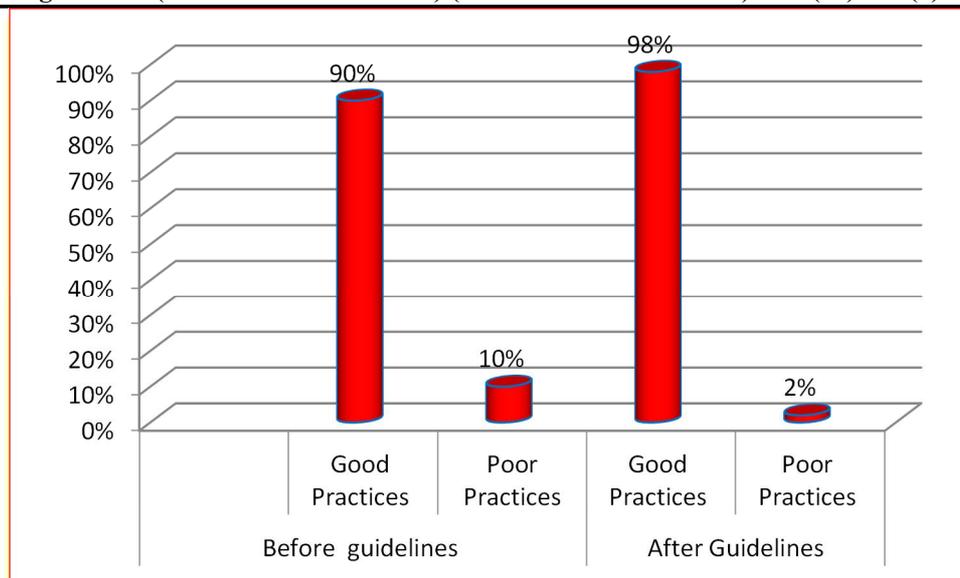


Figure (3) Practices level regarding weaning among the participant mothers before and after health guidelines implementation (n = 80).

Figure (3) explains practices responses 90% of the participant mothers had good practices before implementing health guidelines improved to 98% of than after implementing health guidelines.

Discussion

Parental support in influencing their children's eating habits through feeding methods can make weaning a trying and emotional time. Not yet understood are the variables and influences that shape parental feeding practices; this knowledge will be useful in identifying and addressing problematic weaning routines. By learning more about complementary feeding techniques, women and their caretakers might benefit greatly from postnatal care. (Yohannes et al., 2018)

The current study result revealed that nearly two-fifth of the studied mothers claimed that the reason for delayed weaning is not accepting other food by the child followed by nearly one-quarter of them reporting the reason is children who vomit everything.

The present study results were not in the same line with Kurian & Livana (2020), Who studied the effectiveness of self-instructional modules on the level of knowledge regarding weaning among primi mothers in pediatric units in private hospitals of different states, India" who reported that, Delays in weaning were most commonly attributed to a lack of knowledge on when to begin weaning, as well as to cultural norms, beliefs, and practices that perpetuated myths.

The current study results agreed with (Sethi et al., 2017), who studied knowledge, attitude, and practices regarding complementary feeding among mothers of children 6 to 24 months of age in the Konaseema region" and indicated that Children not accepting or vomiting after eating complementary foods was the most common reason for delayed complementary feeding.

The current study results revealed that the vast majority (93%) of the participant mothers had a positive attitude before implementing health guidelines and turned to the most (97%) after implementing health guidelines.

The current study results are in agreement with Ferahtia (2021), who studied surface water quality assessment in semi-Arid (EL honda watershed, Algeria, based on the water quality index and found that the educational module led to an increase from 59% positive to 80% good

attitudes toward weaning, which occurred after the guidelines were implemented.

Also, Akinrinmade (2019), who studied the effectiveness of nutrition education in improving maternal knowledge and attitudes towards complementary feeding practices, reported that, after receiving nutrition counseling, caregivers in the intervention group had a significantly better attitude than those in the control group.

In the same line, Guled et al. (2018) and Jal ambo et al. (2017) studied the effect of a nutrition education intervention on the knowledge, attitude, and practice of mothers on infant and young child feeding in Shabelle (Gode) Zone, Somali Region, Eastern Ethiopia, stated that mothers' and caregivers' attitudes, the mean score of the intervention group increased significantly following the nutrition intervention as compared to the control group.

The study results showed that the majority of the participant mothers had good practices (90%) before implementing health guidelines and improved (98%) most of them after implementing health guidelines.

The current study results are supported by Bhatti (2020), who studied the impact of nutritional education on feeding-related knowledge and practices among mothers of under five years children" reported that statistically significant differences in the pre-and post-test scores of the mothers in regard to their feeding practices, indicating that the educational intervention had a major impact on the mothers' feeding practices.

Also, Samuel et al. (2021) studied. Complementary feeding knowledge and practices of caregivers in Orphanages improved after nutrition education intervention in Ibadan, Nigeria reported that complementary feeding knowledge and practices of caregivers in Orphanages improved after nutrition education intervention in Ibadan, Nigeria found a strong correlation was found between the use of supplemental feeding methods. As a result, after the nutrition education intervention, there was an increase in the proportion of caregivers who used appropriate complementary feeding practices.

From the investigator's point of view, mothers' knowledge, attitude, and practice were improved after receiving guidelines about weaning compared to pre-intervention, which indicated the effectiveness of these guidelines on improving their knowledge, attitude, and practice.

Conclusion

Nearly half of the studied mothers had good knowledge; most of the participant mothers had positive attitudes, and the majority of the participants had good practices before implementing health guidelines improved to most of them after implementing health guidelines. So, newly lactated mothers' awareness was improved after implementing health guidelines about weaning, which indicated the effectiveness of these guidelines on improving their knowledge, attitude, and practices

Recommendations:

Implement health education at home about providing the primipara mothers and their families with the needed knowledge and practice by a trained health team.

Provide the community with preventive information, especially at the primary level, about weaning practices to increase the public's awareness about malnutrition risk factors

References

1. Abu Shosha, G. M. (2022). Weaning practices of Jordanian mothers: A qualitative study. *Health & Social Care in the Community*, 30(2), 612-621.
2. Akinrinmade, R., Njogu, E., Ogada, I. A., & Keshinro, O. O. (2019). Effectiveness of Nutrition Education in Improving Maternal Knowledge and Attitudes towards Complementary Feeding Practices: A cluster-randomized controlled trial in Ondo State, Nigeria. *The Korean Journal of Food & Health Convergence*, 5(4), 1-10.
3. Amir, A., & Rahman, S. (2020). The effect of virtual nutrition education for the improvement of Mother's knowledge about complementary feeding: Randomized Control Trial. *Systematic Reviews in Pharmacy*, 11(9), 825-829.
4. Bhatti, Z. I., Nawaz, K., & Ali, M. (2020). Impact of Nutritional Education on Feeding Related Knowledge and Practices among mothers of under 5 years children. *Religion*, 35(39), 10.
5. Dahani, A. A., Jafry, S. I. A., Naqvi, S. M. Z. H., Shaikh, M. A., Hydrie, M. Z. I., & Shah, M. Z. (2020). Awareness regarding weaning and its associated factors among mothers in rural Sindh. *Annals of abbasi shaheed hospital and karachi medical & dental college*, 25(3), 158-164.
6. Dave, P. H., & Chaudhary, M. (2019). Assessment of knowledge regarding recommended weaning practices amongst tribal mothers of Sabarkantha. *Journal of Pharmacognosy and Phytochemistry*, 8(2), 732-735.
7. Edmunds, C., & Green, S. (2017). What makes a mother wean early? *Community Practitioner*, 90(6), 42.
8. Evans, S., Daly, A., MacDonald, J., Pinto, A., & MacDonald, A. (2018). Fifteen years of using a second stage protein substitute for weaning in phenylketonuria: a retrospective study. *Journal of Human Nutrition and Dietetics*, 31(3), 349-356.
9. Guled, R. A., Mamat, N. M., Bakar, W. A. M. A., Assefa, N., & Balachew, T. (2016). Knowledge, attitude, and practice of mothers/caregivers on infant and young child feeding in shabelle Zone, somali region, eastern Ethiopia: A cross sectional study. *Revelation and Science*, 6(2), 42-54.
10. Mustafa, A. E. M., Almutairi, K. H., Almutajry, F. M., Alshahrani, N. A., Almobty, S. M., & Almathami, W. A. (2021). Awareness Level of Mothers Regarding Child Weaning Practice in Aseer Region, Southern of Saudi Arabia. *Middle East Journal of Family Medicine*, 7(10), 65.
11. National Health and Medical Research Council. Australian dietary guidelines. Brownie, S., Muggleston, H., & Oliver, C. (2015). The 2013 Australian dietary guidelines and recommendations for older Australians. *Australian family physician*, 44(5), 311.
12. Rajmohan, N., Masoud, M. H., & Niyazi, B. A. (2022). Appraisal of groundwater quality and health risk in the Yalamlam basin, Saudi Arabia. *Environmental Science and Pollution Research*, 29(55), 83653-83670.
13. Samuel, F. O., Akintayo, B., & Eyinla, T. E. (2021). Complementary Feeding Knowledge and Practices of Caregivers in Orphanages Improved after Nutrition Education Intervention in Ibadan, Nigeria. *Open Journal of Nursing*, 11(7), 642-652.
14. Spyreli, E., McKinley, M. C., Allen-Walker, V., Tully, L., Woodside, J. V., Kelly, C., & Dean, M. (2019). "The one time you have control over what they eat": a qualitative exploration of mothers' practices to establish healthy eating behaviours during weaning. *Nutrients*, 11(3), 562.
15. Taylor, R. W., Williams, S. M., Fangupo, L. J., Wheeler, B. J., Taylor, B. J., Daniels, L., ... & Davies, R. S. (2017). Effect of a baby-led approach to complementary feeding on infant growth and overweight: a randomized clinical trial. *JAMA pediatrics*, 171(9), 838-846.
16. World Health organization. Exclusive breastfeeding statement. 2011 (cited 12 April 2012). <http://www.who>
17. Yohannes, B., Ejamo, E., Thangavel, T., & Yohannis, M. (2018). Timely initiation of complementary feeding to children aged 6–23 months in rural Soro district of Southwest Ethiopia: a cross-sectional study. *BMC Pediatrics*, 18(1), 1-7.
18. Alanwar, A., Ahmed, H., Mahmoud, S., & Adly, W. (2018). Tackling Stunting and Anemia in Egypt. available at <https://documents.aucegypt.edu/Docs/GAPP/Public Policy Hub Webpage/10- Tackling Stunting and Anemia in Egypt Policy Brief - En.pdf>