

Effect of Educational Program on Mothers' Knowledge and Reported Practices regarding their Children Suffering from Short Stature

Nihal T. Abdelbaky, Faten S. Mahmoud and Samah A. Mohamed

Pediatric Nursing Department, Faculty of Nursing, Benha University

E-Mail: Nihaltaha351@gmail.com

Abstract

Background: Short stature is a low height for age of the child compared to the standard child of the same age. Short stature children experience impaired physical and mental development, low immunity, impaired nutrition and health, and low academic achievement and impact on productivity. **Aim of the study:** Evaluating the effect of educational program on Mothers' Knowledge and Reported Practices regarding their Children suffering from Short Stature. **Research design:** Quasi-experimental design was utilized. **Research settings:** The current research was performed in Outpatient of Endocrinology Clinic at Benha University Hospital and Health Insurance Hospital at Benha city. **Research sample:** A purposive sample of 70 mothers and their children suffering from short stature. **Tools of data collection:** tool I: A structured interview questionnaire sheet consisted of 3 parts, part one: Mothers' characteristics, part two: Children characteristics and part three: Mothers' knowledge regarding short stature, tool II: Mother s' reported practice regarding short stature and tool III: Mothers' attitude towards short stature. **Research results:** The majority of mothers had good knowledge, satisfactory practice and positive attitude post educational program implementation. **Conclusion:** The educational program were effective in improving mothers' knowledge, reported practice and attitude regarding their children with short stature post educational program implementation compared to pre- educational program implementation. **Recommendation:** Stress management training should be provided for the purpose of alleviating the psychological issues of short children and future researches should be replicated on a large sample of mothers in different setting which are needed for generalization of the obtained results.

Keywords: Children, Educational Program, Mothers' Knowledge, Reported Practices, Short Stature.

1. Introduction

Children's first five years of life are a golden time for growth and development, as they experience rapid advances in their physical and cognitive development, which will support their future learning abilities as well as their social and emotional capacities. Children under the age of five make up a sizable group that is also at danger or susceptible for many problems like short stature [SS]. Short stature, also known as chronic malnutrition, occurs when a child experiences stunted growth and their height does not match their age, it's one of the most frequent causes of referral to a pediatric endocrinologist. Children's height will not be the only thing affected; it will also cause varied degrees of psychological issues. It affects all aspect of a child's life, including their emotional, social, and spiritual wellbeing in addition to their physical health [19].

Factors contribute in the incidence of SS are low-income families, poverty, the number of family members and working mothers. Low-income families that have limited access to nutritious food, so their children need more nutrition, economic inequality exacerbates this situation as only a few people can access resources. Working mothers are one of the risk factors for delays in child development because of the amount of time spent by the mother to stimulates the growth and development of children is reduced [11].

Sanitary and environmental conditions play an important role in the cause of SS. Also, infections and diseases, such as diarrhea and parasitic diseases, can affect a child's absorption of nutrients and growth. Poor sanitation and limited access to clean water and adequate sanitation facilities also contribute to the problem of SS, especially in rural areas. Limited access to health services is another source of problems that can hinder early identification and treatment of malnutrition in children. Lack of knowledge and awareness about the importance of routine nutrition checks also affects efforts to prevent and treat malnutrition [28].

Short stature may be either a variant of normal growth or the first manifestation of wide variety of underlying pathologic conditions which require early diagnosis and treatment. Variants of normal growth include familial short stature, constitutional delay of growth and puberty, idiopathic short stature and small for gestational age with catch-up growth. Pathological causes of abnormal growth include non-endocrine and endocrine disorders. Non-endocrine causes include: systemic diseases and their management, under-nutrition, metabolic disorders, and genetic syndromes such as Turner Syndrome and Noonan syndrome. Endocrine causes include growth hormone [GH] deficiency, hypothyroidism, and Cushing syndrome [30].

Children who are short in stature face irreversible short- and long-term effects, including

impairments in cognitive, motor and language development. Furthermore, their learning abilities and academic achievements will be affected. As these children become adults, their work productivity could negatively impact a country's economy; they are prone to chronic illnesses that are costly to treat and increase mortality rates, including infection exposure and mortality; increased risk of chronic diseases related to nutrition, such as diabetes mellitus [17].

Prevention of SS can be achieved by healthy diet for mothers before, during, and after pregnancy, optimal breastfeeding during the first two years of life. Initiatives made through programs to increasing maternal knowledge about SS, knowledge could include knowing the diversity of nutrients found in the many food options available and being more conscious of appropriate feeding practices in order to create a healthy environment that includes opportunities for safe physical activity and access to basic health care [33].

Mothers have important role as the child's primary caregiver, they acquire knowledge and awareness about good nutrition, balanced diet, proper feeding practices, food diversity, learn their children express feeling, impact their children in terms of self-esteem and social adjustment, so they seek out growth hormone treatment [7].

Nurses are regarded as first-line healthcare providers who can provide mothers with the necessary knowledge regarding nutritional assessment, diagnosis, support, and care. In addition to teaching and empowering upcoming mothers to make wise financial and health decisions for themselves and their children, nurses model positive behaviors in terms of enhancing maternal nutrition and health [34].

2. Significance of research:

Globally, the affected children under five account for over 162 million. In Egypt, one child in five under five years old has short stature, while one in ten has very short stature [10]. Approximately 24% of children under the age of five worldwide were short in stature in 2015. According to estimates, 144 million children [21.3%] under the age of five in 2019 had short stature. While childhood short stature is common everywhere, it is more common in low- and middle-income nations [2].

Short stature is an important issue that needs to be addressed. Short stature is even regarded as a disability as children suffer from impairments in cognitive, motor and language development. Furthermore, their learning abilities and academic achievements will be affected. As these children become adults, their work productivity could negatively impact a country's economy. Children also are prone to chronic illnesses such as diabetes mellitus [5].

3. Aim of research:

Evaluate effect of educational program on mothers' knowledge, reported practice and attitude regarding their children suffering from short stature.

4. Research Hypothesis:

The educational program will improve mothers' knowledge, reported practice and attitude regarding their children with short stature.

Subjects and Method:

5.1. Research design:

A Quasi- experimental design was utilized to conduct the current study.

5.2. Research settings:

The current study was conducted at outpatient of Endocrinology Clinic at Benha University Hospital and Health Insurance Hospital at benha city.

5.3. Research sampling:

A purposive sample of [70] mothers and their children with short stature which available during data collection [40 mothers from Benha University Hospital and 30 mothers from Health Insurance Hospital] were selected through [6] months from beginning of the study, from the above-mentioned setting and willing to participate in the study after children fulfilling the following criteria:-

- Children under five years old who have short stature.

- Height less than [-2] standard deviation score below the mean for children of the same age and sex or child's height below the 3rd percentile in the growth chart.

Tools of data collection:

5.4.1: Tool I: A structured interviewing questionnaire: It was constructed by the researcher in an Arabic language after reviewing the recent relevant literature to gather data required to assess mothers' knowledge and it was composed of 3 parts:-

-Part 1. Mothers' characteristics as: A- Age, education level, occupation, place of residence, number of family members, mother's length, father's length, kinship between parents and history of short stature in the family.

B- Medical history of mother during pregnancy

-Part 2. Children characteristics such as: as: age, gender, child ranking, weight and length at birth, current weight and height, child medical history.

-Part [3]. Mothers' knowledge regarding short stature: It was developed by the researcher after reviewing recent relevant literature, journals and periodicals. It was adapted from [21,23,14,22 and 27] and modified by the researcher to suit the level of mothers education to assess mother's knowledge regarding their children with short stature, it included [12] questions.

Scoring system of mothers' knowledge: -

Scoring system for knowledge of the studied mothers was categorized as the following: The

studied mothers' answers were compared with a model key answer and [2] scores gave for completely and correct answer, [1] score for incompletely correct answer and [0] score for don't know or incorrect answer.

-The total scores were calculated as the following:

- Good knowledge $\geq 75\%$ [> 9 marks]
- Average knowledge $60\% > 75\%$ [from 7-9 marks]
- Poor knowledge $> 60\%$ [> 7 marks]

5.4.2. Tool [II]: Mother's reported practice regarding short stature: It was developed by the researcher after reviewing literature, journals and periodicals. It was adapted from [6,31,26 and 18] and modified by the researcher to suit the level of mothers education to assess mother's reported practice towards care of children with short stature, it included mother's actual intervention regarding short stature which included [4] parts: Part one anthropometric measurement. Part two measures for nutritional status appropriate for age. Part three measures for mental health and psychological support of the child. Part four growth hormone injections by using pen.

Scoring system of mothers' reported practice:

Scoring system for reported practice of the studied mothers was calculated as the following: The mothers' reported practice was categorized into [1] scores for done, [0] score for not done. Total degrees of questions are 0-106 degree .

-The total scores were calculated as the following:

- Satisfactory practice $\geq 75\%$ [> 80 steps].
- Unsatisfactory practice $> 75\%$ [> 80 steps].

5.4.3. Tool [III]: Mother's attitude towards short stature: Mother's attitude towards short stature: It was developed by the researcher after reviewing recent relevant literature, journals and periodicals. It was adapted from [13 and 3] and modified by the researcher to suit the level of mothers education to assess mother's attitude towards care of children with short stature, it consists of [17] items.

Scoring system of mothers' attitude:

Scoring system for attitude of the studied mothers was calculated as the following: The mothers' attitude was categorized into [3] scores for agree response, [2] scores for unsure and [1] score for disagree response. Total degrees of questions are 17-51 degree.

-The total scores were calculated as the following:

- Positive attitude $\geq 60\%$ [> 31 score].
- Negative attitude $> 60\%$ [> 31 score].

5. Ethical considerations:

The approval was obtained from scientific research ethical committee of Faculty of Nursing/Benha University. Mother's oral and written consents were obtained before data collection with ensuring complete privacy and total confidentiality, complete description of the purpose and nature of the study was approached and

confidentially was assured to mothers. All mothers informed that have the right to withdraw at any time from the study without explanation of their rationale and their data is secured.

6. Content validity and reliability:

Validity of the study tools was done through a jury of three experts [three professors] in the pediatric nursing field from Faculty of Nursing at Benha University. The experts reviewed the tools for its clarity, relevance, comprehensiveness, simplicity and applicability; accordingly. Based on experts comments and recommendations minor modifications were done such as rephrasing, rearrangements or deleting some sentences to reach final version of the tools. The tools were considered as valid from the experts' perspective.

Reliability of the study tools was tested for its internal consistency by administrating the tools to the same study subjects under the similar conditions using Cronbach's Alpha coefficient test. Results from repeated testing were compared [test-retest reliability. Knowledge reliability statistics Cronbach's alpha = 0.94. Attitude reliability statistics Cronbach's alpha = 0.96. Practice reliability statistics Cronbach's alpha = 0.98. This indicates a high degree of reliability for the study tools.

7. Pilot study:

A pilot study was carried out during January 2023 [1 month], involved 10% of sample size [7 mothers and their children were collected from two hospital]. In order to test the reliability and applicability of the constructed tools and the clarity of the included questions. The pilot has also served to estimate the time needed for each subject to fill in the questions and to identify the problems that may be encountered during the study. All participants in the pilot study were excluded from the sample due to modifications that done in the form of rephrasing, organization, omission and addition of some questions in the study tools.

8. Field work:

- Before data collection, the researcher welcomes each mother and informed them about the title, objectives, tools, the study technique and the outcomes of the study to obtain their approval and cooperation which is needed for conducting this study.

-The following phases were adjusted to achieve the aim of the current study; assessment, planning, implementation and evaluation phases. These phases covering 6 months period [from the beginning of February 2023 to the end of July 2023]. It was collected according to the policy of the study setting. Data were collected one day/week [Sunday] for benha university hospital from 9:00 AM until 1 PM and one day/week [Tuesday] for health insurance hospital from 9:00 AM until 1PM .

Assessment phase

-Assessment phase involved interviews with mothers and their children to collect baseline data. At the beginning of interview; the researcher welcomed mothers and their children, explained the purpose, duration of the study and take their oral and written approval to participate in the study prior to data collection. An individual interview was conducted for every mother to collect the necessary data using the tools for data collection.

- Data collected in this phase before implementing the educational program. The questionnaire sheets were distributed to all mothers individually to assess mother's knowledge, attitude and reported practice and determine mothers' needs regarding short stature using the previous study tools. The time needed for filling all data collection tools were 30- 40 minutes, the average time needed to answer personal data and knowledge questions 10-15 minutes, attitude questions 5-10 minutes and reported practice steps are 10-15 minutes. The period of assessment phase [pre-test] took one month [February 2023]. An average of 5-6 mothers were interviewed per/day, 2 days/week [one day for each setting].

8.1. Planning phase:

This phase included analysis of the assessment phase [pre-test] findings and identification of the actual needs of the studied mothers. Accordingly, the educational program was designed by the researcher using simple Arabic language and pictures in order to facilitate mothers' understanding.

8.2. Implementation phase:

-General and specific objectives of educational program were stated and implemented to satisfy the actual needs of the studied sample. It was achieved through 5 sessions at a period of 2 days/week. Each session started by a summary of the previous session and objectiveness of new one. Take into consideration, the use of the Arabic language that suits the mothers' educational level. During session, mothers, children and researcher sits together in circle and take turns sharing. Motivation and reinforcement during sessions were used for the sharing in the study. During sessions, every mother had an opportunity to ask questions and share information with each other. Different methods of teaching were used as modified lecture, group discussion and demonstration, and re-demonstration, suitable teaching media were included colored brochure, role play, videos, to help proper understanding of the content by mothers and their children.

-The sessions were held in outpatient of Endocrinology Clinic at Benha University Hospital and Health Insurance Hospital at benha city. The total numbers of sessions were 5 sessions; each session was taken 45-60 minutes at a period of 4

months beginning from [March 2023 till the end of June 2023]. Moreover, 5 sessions containing the study objectives and carried out through [3 sessions for the theoretical and affective parts and 2 sessions for the practical part] with different teaching methods and media .

-A schedule suitable for mothers developed including date, time, place, topics and duration of each session. It was challenging to take whole mothers at the same time; so, they divided into 12 groups [8 groups from benha university hospital and 4 groups from health insurance Hospital] each group consisted of 5-6 mothers and their children. Each mother was supplemented with a copy of program and share video to her mobile or received a copy of video on CD.

8.3. Evaluation phase:

After implementation of educational program. An immediate posttest was carried out after the implementation to assess mothers' knowledge, attitude and reported practice regarding their children with short stature, using the same forms of the pretest. This helped to evaluate the effect of the implemented educational program. The period of post-test took one month [July 2023].

8.4. Administrative design

An official approval was taken from the Dean of the Faculty of Nursing Benha University to the hospital directors and head of out- patients' clinics at Benha university Hospital affiliated to ministry of higher education and health insurance Hospital affiliated to general authority for health insurance. A clear Explanation was given about the nature, importance and expected outcomes of the study to carry out the study with minimal resistance.

9. Statistical analysis:

The collected data was arranged, categorized, coded, analyzed and tabulated using electronic computer and Statistical Package for Social Sciences [SPSS] software version 21. Software graphics were done by using Microsoft Office Excel Program Version 2010. Frequencies and percentages for qualitative descriptive data, chi-square coefficient χ^2 was used for relation tests, Pearson correlation [r] was used for correlation tests which measures a linear dependence [an association] between two variables, and mean and standard deviation was used for quantitative data.

10. Results:

Table (1) proved that, with a mean age of 26.45 ± 8.79 years, more than half [54.3%] of the moms in the study were in the 20>30 age range. In terms of educational attainment, preparation accounted for over two fifths [42.9%] of the total. In terms of occupation, slightly more than three-quarters [75.7%] of them lived in rural areas, and fewer than two-thirds [65.7%] of them were unemployed.

Table (2) Indicate that; fewer than three-quarters [74.3%] of children under study in age group of ≥ 1 year when short stature was detected with the mean age $1.74 \pm .44$ years, and more than two thirds [67.1%] of them had taken nutritional intervention as a medical intervention for short stature.

Fig (1) This figure illustrates that; only [14.3%] of mothers under study had good total knowledge level in pre implementation of educational program compared to less than three-quarters [71.4%] post implementation of educational program, while less than two thirds [67.1%] of them had poor total knowledge level at pre implementation of educational program in contrast to [15.7%] post implementation of educational program.

Fig (2) According to this figure, 21.4 % of the mothers who were studied had a total satisfactory practice level prior to the implementation of the educational program, in contrast to 82.9 % post-

implementation. On the other hand, 78.6 % of the mothers had a total unsatisfactory practice level prior to the implementation of the educational program, in contrast to 17.1 % post-implementation.

Fig (3) This figure shows that, compared to more than three quarters [80%] of the studied mothers after the program was implemented, a minority [25.7%] of the mothers had positive attitudes toward children with short stature prior to the program's implementation, while slightly fewer than three quarters [74.3%] had negative attitudes toward such children prior to the program's implementation compared to 20.0% after the program's implementation.

Table (3): demonstrates that the total knowledge, total reported practices, and total attitude scores of the mothers under study had favorable associations both before and after the educational program was implemented [$P = > 0.05$].

Table (1) Frequency distribution of the studied mothers regarding their characteristics [n=70].

Mothers' characteristics	No.	%
Age in years		
>20	6	8.6
20>30	38	54.3
30>35	14	20
≤ 35	12	17.1
Min-Max	20-35	
Mean \pmSD	26.45\pm8.79	
Educational level		
Can't read and write	1	1.4
Primary Education	2	2.9
Preparatory Education	30	42.9
Diploma	21	30.0
University education	16	22.8
Occupation		
Working	24	34.3
Not working	46	65.7
Residence		
Rural	53	75.7
Urban	17	24.3

Table (2) Distribution of the studied children regarding their medical history [n=70].

Medical history	No.	%
Onset of the disease		
<1 year old	18	25.7
≥ 1 year old	52	74.3
Table (2) Continue		
Min-Max		1.00-2.00
Mean \pmSD		1.74\pm.44
Type of medical intervention		
Nutritional intervention	47	67.1
Surgical intervention	0	0.0
Physiotherapy	8	11.4
Growth hormone injection	15	21.5

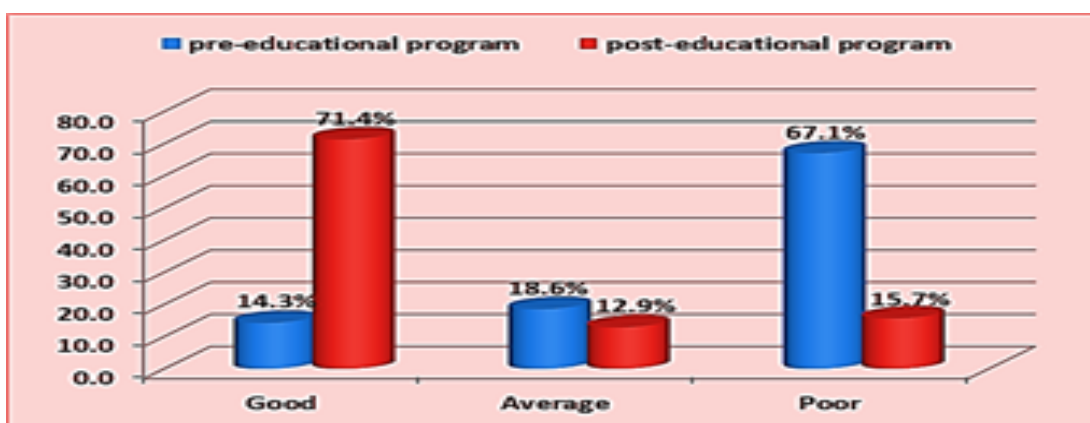
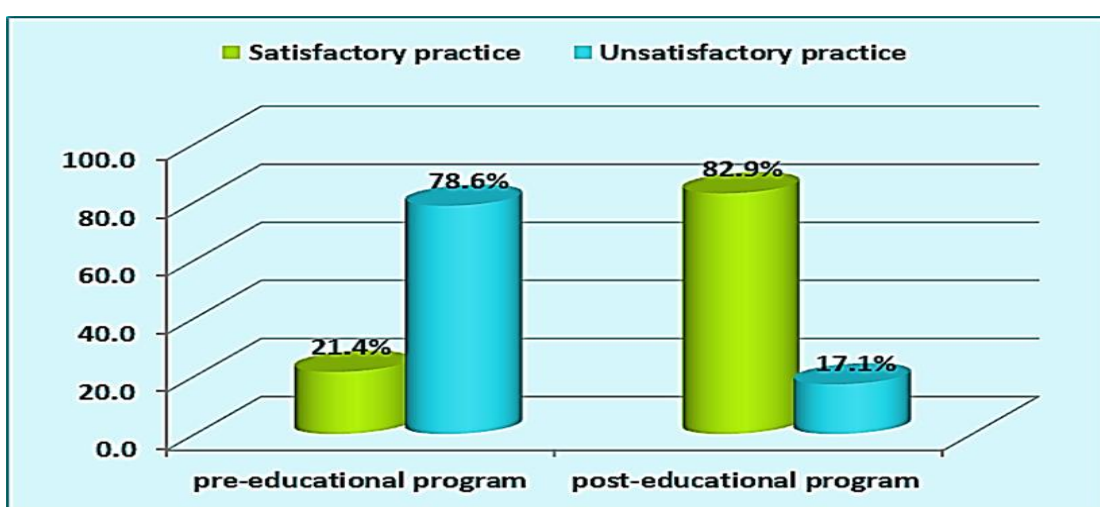


Fig (1) Percentage distribution of the studied mothers regarding their total knowledge level about short stature pre and post implementation of educational



program [n=70].

Fig (2) Percentage distribution of the studied mothers regarding their total practice level about short stature pre and post implementation of educational program [n=70].

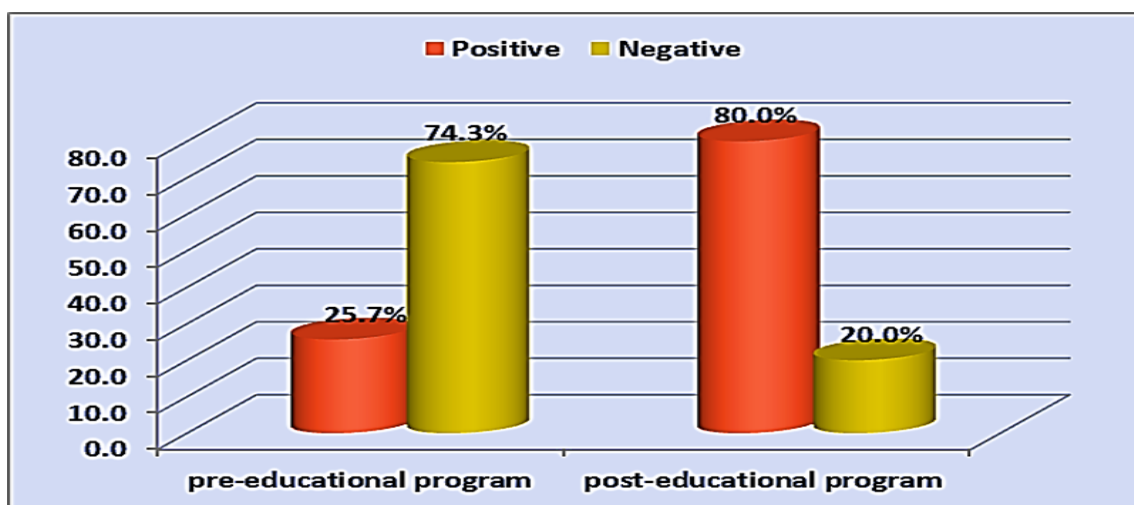


Fig (3) Percentage distribution of the studied mothers regarding their attitude towards their children with short stature pre and post implementation of educational program [n=70].

Table (4) Correlation between mothers' total knowledge, reported practices and attitude regarding short stature in pre and post educational program implementation.

Variables	Studied mothers [N=70]						
	Pre implementation of educational program			Post implementation of educational program			
	Total knowledge	Total reported practice	Total attitude	Total knowledge	Total reported practice	Total attitude	
Total knowledge	r	1	.853	.872	1	.895	.896
	P-vale		.000**	.000**		.000**	.000**
Total practice	r	.853	1	.888	.895	1	.910
	P-vale	.000**		.000**	.000**		.000**
Total attitude	r	.872	.888	1	.896	.910	1
	P-vale	.000**	.000**		.000**	.000**	

11. Discussion

Short stature in childhood has become one of the greatest global health challenges. The impact of SS is serious and lasting for children, families, communities and countries. Multiple causes and risk factors for SS were reported including low socio economic status, intrauterine growth retardation, inadequate nutrition in infants and young children, frequent infections during early stage of life and deficiency of growth hormone. In addition to, children who experience severe emotional deprivation may suffer slow growth since psychosocial stress affects the functioning of the pituitary gland [25].

So, the current study was a quasi-experimental research study that aimed to evaluate effect of educational program on mothers' knowledge, attitude and reported practice regarding their children with short stature

Regarding characteristics of the studied mothers. It was mentioned that, more than half of them were in the age group $20 < 30$ years with a mean age of $26.45 \pm .879$ years. Also, less than two thirds were not working. These findings were congruent with [23] who carried out a study about "Mother's knowledge and attitude about stunting of children in namorambe distric" and found that more than half of mothers [52.9%] of the studied mothers in the age group of 21 to 30 years, less than two thirds [60.9%] were not working. The researcher interpreted this finding as level of knowledge is influenced by age. The older mothers, the more knowledge and experience one gets. Families with good knowledge will find it easier to recognize and understand existing problems and the nutritional status of children under five is more related to the experience of mothers.

Additionally, the current study revealed that more than three-quarters of the mothers were lived in rural areas. These findings were congruent with [11] who carried out a study about "Maternal factors associated with moderate and severe stunting in Ethiopian children: analysis of some environmental

factors based on 2016 demographic health survey" and found that more than three-quarters of mothers [81.6%] of the studied mothers live in rural area. The researcher interpreted this finding as Benha University Hospital is central setting for surrounding rural areas.

Regarding the level of education, the current study revealed that, less than two thirds of the studied mothers had preparatory education. This finding was supported by [15], who found in a study entitled " Risk factors associated with under-five stunting, wasting, and underweight in four provinces of the Democratic Republic of Congo: Analysis of the American Society of Safety Professionals [ASSP] project baseline data" and reported that, [47.3%] of mothers had preparatory education. Conversely, this finding disagreed with [9], who studied "Exclusive breastfeeding protects young children from stunting in a low-income population: A Study from Eastern Indonesia", reported that [35%] of studied mothers was graduated from elementary school. From the researcher point of view children of mothers with low level of education more susceptible to many problems like short stature.

Concerning children medical history, related to onset of disease, it was stated that, less than three-quarters of the studied children in age group of ≥ 1 year when short stature was detected with the mean age $1.74 \pm .44$. This finding was consistent with [2020] that entitled "Characteristics and etiologies of short stature in children: Experience of an endocrine clinic in a Tunisian tertiary care hospital" and reported that, age at diagnosis in age group of ≥ 1 year years with mean age at diagnosis was 8.2 ± 4.38 .

Regarding to type of medical intervention, less than two thirds of children had taken nutritional intervention as a medical intervention for short stature. These findings were compatible with [20] that entitled "Nutritional interventions for preventing stunting in children [0 to 5 years] living in urban slums in low and middle-income countries [LMIC]" and reported that; majority [76%] had taken

nutritional intervention and minority by other strategies. The researcher interpreted this that the cause of short stature in studied children is nutritional family habits depend on starch food and not help for growth [quality of food] and deficiency in nutrition intake [quantity of food].

Concerning total mothers' knowledge of short stature, it was revealed that, less than one fifth of the studied mothers had good knowledge in pre educational program implementation. This finding was similar to [16], whose study entitled "History of exclusive breastfeeding and complementary feeding as a risk factor of stunting in children age 36-59 months he in Coastal Areas, Sitiro Regency" [n=204] which portrayed that, more than one forth [25,6 %] had good knowledge about short stature in pr educational program.

Concerning total mothers' knowledge of short stature, it was revealed that, less than three-quarters of the studied mothers had good knowledge in post educational program implementation. This finding was similar to [24] whose study entitled "the impact of community health education about stunting on mothers' knowledge levels" and cleared that, less than three-quarters [67,65%] of mother had good knowledge in post implementation of educational program. Regarding the researcher opinion the present study finding reflect the importance of conducting educational program for improving mothers' knowledge.

Concerning total reported practices of the studied mothers, more than one fifth had satisfactory practice in pre educational program implementation and improved to more than three quarters had satisfactory practice in post educational program implementation. This finding was similar to [12], who reported that, more than one fourth of mothers [28.6 %] had satisfactory practice in pre educational guidelines compared to majority [90%] had satisfactory practice in pre educational guidelines.

Concerning mothers' total attitude of short stature; it was found that, more than one fifth of the studied mothers had positive attitude in pre educational program implementation. This finding was similar to the study done by [29], who studied "Oral health attitude with the socioeconomic conditions of mothers with growth stunting children. Bandung", reported that more than one third [40%] of mothers had positive attitude pre education regarding short stature.

Concerning mothers' total attitude of short stature; it was found that, more majority of the studied mothers had positive attitude in post educational program implementation. This finding was similar to the study done by [32], who studied "The Effect of Supportive Educative Nursing Program on Mother's Knowledge and Attitude of Feeding Practice among Stunting Children Aged 6-24 Months " and reported that more than two third of mothers [68%] has positive attitude post

education regarding short stature. This indicated the significance of educational program for enhancing mothers' attitude about short stature.

The present study mentioned that, there was positive correlation between mothers' knowledge, attitude and practice in pre/ post educational program implementation. This finding was congruent with [4]. It was found that, there was positive correlation between knowledge, attitude and practice of participants. The researcher rationalized that, mothers' knowledge, attitude and practice factors related to each other's, as increasing knowledge led to positive attitude and correct done practices.

12. Conclusion

The results of this investigation indicate that the research hypothesis is valid. When compared to before the educational program was implemented, mothers' knowledge, reported practices, and attitudes toward their children who are short-statured improved as a result of the program. In the meantime, when compared to the implementation of the pre-educational program, mothers' knowledge, reported practice, and attitude score regarding their children with short stature improved in a highly statistically significant way. Mothers' stated practice, attitude, and overall knowledge all showed positive correlations.

13. Recommendations:

- Educational program about benefits of early detection of problems through mass media, monitoring growth & development of the child
- Educational nutritional intervention for mothers that promote and support infant and young child feeding practices to increase awareness of mothers about healthy nutrition.
- Stress management and assertiveness training program should be given to short stature children to relieve their psychological problems and enhance their coping patterns.
- Disseminate booklet with illustrated pictures included all information and care provide towards short stature to inform mothers about importance of follow up and improve their children quality of life

14. Recommendations for further studies:

- Future researches should be replicated on a large sample of mothers in different setting which are needed for generalization of the obtained results.

15. Acknowledgements:

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