

Effect of Health Educational Program on Mothers' Performance Regarding their Toddler Children's Toilet Training at Sohag City

Asmaa Mohamed Ahmed Madkour ⁽¹⁾, Manal Fahmy Hussein ⁽²⁾, Rehab Fouad Abd Elkodoos ⁽³⁾

(1) Lecturer of Family and Community Health Nursing, Faculty of Nursing, Sohag University.

(2) Nursing fellow (Pediatric Nursing), Technical Institute of Nursing, Sohag University.

(3) Lecturer of Community Health Nursing, Faculty of Nursing, Cario University.

Abstract

Background: Toilet training is an important social skill that teaches youngsters how to control the timing of their bladder and bowel movements. It is one of the first steps towards independence that children take. Mother plays a vital role in the training process. **Aim of the study:** to evaluate effect of a health education program on mothers' performance regarding their toddler children's toilet training. **Subjects and Methods:** A quasi-experimental study method was used prior to and three months after the intervention. the study was done at four private nurseries in Sohag City such as (al-Mohannadi Group, Toyor Al Ganna, Nasser, and El-Ber). **Sample:** A purposive sample of 200 mothers with their toddlers was chosen from the prior setting. **The study's tools:** Three tools were used in this investigation. **Tool (I):** A structured interviewing questionnaire about personal characteristics and mother's knowledge about toilet training. **Tool (II):** Mothers' reported practices assessment sheet. **Tool (III):** Mothers' attitude regarding toilet training scale. **Results:** 1.5% of the mothers have a good knowledge degree, 35.0% of them had a satisfactory level of practice and 13.0% of the mothers had a positive attitude toward their toddler's toilet training before executing the program. However, After the program was implemented, the mothers' knowledge, practice, and attitude raised significantly. Knowledge, practice, and attitude were all highly significant ($p < 0.001$). **Conclusion:** the toilet training health education program dramatically enhanced the knowledge, practice, and attitudes of mothers. **Recommendations:** Publication of the health education program for mothers addressing the toilet training of their toddlers in in different settings.

Keywords: Health education, Mother of toddler, Performance, Toilet training

Introduction:

Children are like blooming blossoms, and they are a treasured national asset. Children must learn not just how to meet their immediate needs, but also how to prepare for a variety of unpredictable events that may occur in their future as they grow. Children are expected to fulfill their full potential in terms of growth and learning. Parents advocate for their children to warrant that they have equal access to education and health care (Buston, 2017).

Toilet training (TT) is the process of teaching a young child to control his or her bowel and bladder and to eliminate it in the bathroom. A youngster has considered toilet trained when he takes the initiative to use the toilet and can alter his garments as needed to urinate or have a bowel movement. The average age for children to complete TT in the United States is three years old. Some youngsters first learn bladder control, while

others learn bowel control first. Control is usually achieved throughout the day before a child may sleep dry at night. Early in development, some children gain bladder and/or bowel control (Van Nunen, Kaerts, Wyndaele, Vermandel, and Hal, 2015; Goyal, 2017).

Most experts agree that TT shouldn't start until a child exhibits specific readiness indicators, which frequently happen between the ages of two and three. Toddlers, unlike infants, are able to recognize when they need to urinate or defecate. When this occurs, they may adopt particular postures or go completely silent. They have also mastered the language of elimination for their family. Another feature of this developmental stage is a sense of sensitivity and orderliness. Children are more likely to demand that their grimy diapers be changed immediately, and they have an overall curiosity in anything that will help with toilet training (Ratnawati & Warsiti, 2014).

It is possible to think of TT as a multi-staged process during which the child must learn to exercise both physical and mental self-control. It consists of conversing, stripping, leaving, cleaning, getting dressed, flushing, and washing hands. Each child has their own specific task to complete. Instead of starting and ending on a predetermined schedule, it should depend on the child's capacity to accomplish it (Richardson, 2015).

One unfavorable consequence of resistance is that the youngster may delay bowel movements, which can lead to constipation. This leads to the child's discomfort and even agony during elimination, which increases their apprehension and resistance. In extreme cases, constipation can cause encopresis, painful anal fissures, and rectal hypertrophy. Normal children's unusual delays in TT or regression to soiling may signal familial problems and/or underlying psychological issues that may require counseling to address effectively (Noakes, 2018).

Physical, social, emotional, and mental growth are all components of a child's development. Children must be supported in all areas in order to completely develop and the mother is often the person most responsible for this encouragement. Mothers are the main carers for conventional and single-parent families; accordingly, they spend the most time with their children. Mothers are thus in the unique position of influencing their children's development in many aspects, beginning with the bonding and attachments that they generally form with their infants (Richardson, 2015 and Saadah, Yulianto, Setyorini, and Khasanah, 2019).

Experts generally concur that TT is a collaborative effort that calls for the child and caregiver's collaboration. They also concur that the best TT techniques emphasized consistency and positive reinforcement over punishment, making it enjoyable for the child. TT a child is easier when he or she is at least 18 months old, and males must wait longer because they commonly lack essential language and fine motor skills. It is considerably simpler to employ this time frame because the youngster

wants to satisfy his or her parents (Nair and Norohna, 2017).

One of the most important duties of the toddler during growth and development is gaining the ability to regulate the bodily functions of stool and urine. The nurse's role includes assisting parents in determining their children's preparedness for TT. Correct information and understanding among parents or carers are crucial to the success of the child. They may have an incomplete or incorrect grasp of the beginning preparation period and the risks of TT. It is essential to achieve success in every child; Therefore, parents must be informed of appropriate advice (Sharma, Gurung, and Regmi, 2018)..

Nursing professionals have the important task of imparting information about toilet training in childhood, symptoms of TT issues in children, causes of TT issues, and best-practice approaches to TT. The purpose of this study was to evaluate the effect of a health education program on mothers' performance regarding their toddler children's toilet training.

Significant of the study:

Nationwide, there is no data on the real prevalence of enuresis among Egyptian children. (Kamal and Mahrous, 2019). A 2014 study in Benha, Egypt, found that enuresis was more prevalent in males than in girls (16.5% vs 12.6%, respectively), with a 14.5% prevalent frequency. Enuresis was observed to be the most prevalent form of behavioral change among preschool and primary school children (4-12 years old) (Mohammed, Saleh, and Al Zoheiry, 2014). Another study on the magnitude of the enuresis problem was performed in in Menoufia Governorate, Egypt (2012), and its findings revealed that primary enuresis was common among schoolchildren at a rate of 11.5%, with secondary enuresis at a rate of 3.2% (Al- Kot and Deeb 2012).

Toilet training is an attempt to teach youngsters how to manage their urine and feces. Experts believe that toddlers aged 1-3 years can learn successful TT since they have the language abilities to understand and communicate (Agusniatih, & Suwika, 2022). Childhood bowel and bladder incontinence has a progressively unfavorable impact on health-

related quality of life, with serious psychosocial negative consequences into adulthood (Collis, Kennedy-Behr, & Kearney, 2019)

Inadequate or insufficient TT can delay a child's attainment of continence and some people experience encopresis. Children's gastrointestinal motility has been inefficient and laborious their entire lives. Any of these variables, but notably both of them presents a chance for a power struggle between the parent and the child over issues of autonomy and control (Solarin, Olutekunbi, Madise-Wobo, and Senbanjo, 2017; Fatmawati, Arief, and Kurnia, 2020).

Many factors contribute to the failure of toilet training, such as the mother's ignorance of play-training techniques for their 1-3-year-old children, the use of disposable diapers, the presence of new siblings and many others. Counselling for parents is one approach that can be used to overcome the failure of toilet training for children. Parents' awareness of toilet training will be influenced by the health education of their children, particularly mothers. It is intended that when parents learn about TT, it will lead to a positive attitude or awareness that will inspire them to act on their knowledge. Finally, this understanding should promote improved behavior (Sutrisni, Wigati, Nita, Dwipayanti, and Lelono, 2022). So, the application of a program for mothers regarding their toddler children's toilet training is highly recommended to enhance mothers' performance regarding toilet training and prevent complications.

Operational definition:

Toilet training: is the acquisition of the skills required for defecating and urinating on a toilet at an age and time that is socially suitable.

Health education: refers to specifically established learning experiences that involve a form of communication and are intended to increase health literacy, which includes gaining knowledge and developing life skills that are beneficial to individual and community health.

Mother Performance: refers to mothers' knowledge, attitude, and practice in improving their toddler children's TT.

Aims of the study

The purpose of this study was to **evaluate** the effect of a health education program on mothers' performance regarding their toddler children's toilet training at Sohag City.

Research hypothesis:

- 1- Mothers' knowledge regarding their toddler's toilet training will be improved after program execution.
- 2- Mothers' practices regarding their toddler's toilet training will be increased after program execution.
- 3- After the program is completed, mothers' attitudes about their toddler's toilet training will change.
- 4- There will be a relationship between mothers' performance before and after the program's execution.

Subjects and methods:

Study designs:

The research was conducted using a quasi-experimental approach (a single group both pre and post-test).

Research settings:

The study was carried out in private nurseries in the governorate of Sohag.

Sample and sampling technique:

A purposive sample of 200 mothers with their toddlers was chosen according to mothers' following inclusion:

Criteria for Inclusion

- Mothers with children aged one to three years.
- Children with no bowel or bladder infections:

According to the Sohag governorate's Social Affairs administration, there are 12 districts, each with a number of private nurseries ranging from 10 to 20. Sohag **city** was chosen at random to represent 10% of all districts. Furthermore, 20% of the nurseries were chosen at random, with four private nurseries (**El-Mohannad Group, Toyor El Ganna, Nasser, and Elber**) included. The researchers were given a list of the number of classes in the previously listed nurseries, and 50% of the classes were chosen at random to conduct the study.

Tools of the Study:

During the pre- and post-educational program, the following tools were utilized to collect data.

Tool(I)- A well-structured Interview Questionnaire

The researchers designed this tool according to scientific literature research (Goyal, 2017), and it was built in Arabic for gathering information. It was split into two parts.

Part (1): Personal traits of the mothers studied comprised age, educational level, occupation, monthly income, number of children in the household, rank of children, type of family, residence, and source of data.

Part (2): Mothers' knowledge about their toddler children's toilet training. It contains 30 multiple-choice questions such as: meaning, age at initiation of toilet training, purposes, best positions of toilet training, best season for toilet training, choosing of potty chair, toilet training process, role of parents, problems, management of toilet training and care of potty chair.

Total knowledge score was classified as:

The right response received a (1), while the wrong response was given a (0). These points were totaled 30 score and converted into a percentage. As a result, the overall score fluctuated between 0 and 30. The total knowledge of mothers was classified as follows:

- Less than 50% of mothers have poor knowledge.
- The average level of knowledge ranges from 50% to 75%.
- Good knowledge is greater than 75%.

Tool (II): Mothers' reported practices assessment sheet:

This tool has been adapted from Abd Elgawad, (2014) and updated by the researchers to evaluate mothers' reported practices around their toddler children's toilet training, which includes twenty (20) items divided into four aspects: four (4) items from physiological readiness, three (3) items with psychological readiness, seven (7) items on the parental readiness, and six (6) items associated to the toilet training process.

Total level of mothers' practices was categorized as: A score of (1) was assigned to the action that was completed, while a score of (0) was assigned to the action that was not completed. These scores were totaled 20 score and translated into a percentage. As a result, the overall level of recorded practices was determined as follows:

- Score $0 < 50$ grade indicated to unsatisfactory level of reported practices.
- Score ≥ 50 grade referred to satisfactory level of reported practices.

Tool (III): Mothers' attitude regarding toilet training scale:

It determines mothers' attitudes toward toilet training. It evolved from Varghase (2013), who analyzed mothers' replies using a Likert scale of 20 questions which includes strongly disagree strongly, disagree, do not know, agree, and strongly agree.

Scoring system:

- The scale for attitude ranged from strongly disagree to strongly agree and was given a score on a scale of 1 to 5, which strongly disagree with getting a "1" while strongly agreeing to get a "5".
- Score $0 < 50$ grade indicated to negative attitude.
- Score ≥ 50 grade referred to Positive attitude.

Validity: The study's methods have been validated with (5) pediatric and community health nursing specialists of Sohag University Faculty of Nursing. Every member was called and requested to assess the tool's content and structural design to ensure the item's completeness and clarity. All comments and ideas were considered, and some statements were reworded and sequenced accordingly.

Reliability: The researchers used the test-retest procedure to evaluate the internal consistency of the tools' reliability. It was completed prior to the start of data collection during the pilot research. Cranach's alpha for knowledge was 0.866, 0.895 for practice, and 0.868 for attitude.

Ethical considerations:

Official consent was requested to obtain approval from the Faculty of Nursing, Sohag University's ethical committee, and the director of four private nurseries in a previous setting;

all offered their official approval and permission prior to the study's conduct. Furthermore, after the researchers explained the goal of the study and promised them that confidentiality would be maintained during the investigation, all mother volunteers verbally agreed to participate. Everyone who participated was advised that their information would be kept strictly confidential and used for research reasons only, that their participation in the study was entirely voluntary, and that they could opt-out at any moment.

Field of work

Data was gathered for a period of nine months, beginning in August 2022 and ending in April 2023. The investigators might be located in the previously mentioned places on a two-day per week routine on Monday and Wednesday for the El-Mohannad Group. Toyor El Ganna and on Saturday and Thursday for Nasser and Elber private nurseries, depending on the presence of mothers in the afternoon to gather data through the previously mentioned tools. The researchers interviewed mothers in the previously mentioned settings to examine their performance regarding their Toddler Children's TT. The questionnaire sheet was delivered to the mothers based on their availability to participate, and the researchers were always present while the mothers filled out the questionnaire sheet. The pre-test period took one month from the start of data collection.

The research was divided into four stages:

Stage (1): Period of assessment (pre-planning)

Initially, researchers spoke with each mother, introduced themselves to the mothers taking part in the study, and obtained their verbal agreement to take part in the research after explaining the objective of the study to them. In order to collect baseline data, mothers were asked to complete the structured interviewing questionnaire separately.

Stage (2)- Planning phase

This step comprised analyzing the results of the assessment stage (pre-test) and determining the real requirements of the study's mothers. Using the most recent relevant literature, (Varghese, (2013), Ratnawati, (2014), Keerthi, (2018), Ilmalia, (2019)) the researchers then developed

an education program for mothers' performance in regard to their toddler children's toilet training.

The general aim

By the end of the education program, the mothers' performance regarding their Toddler Children's Toilet Training will be improved.

Specific objectives: By the completion of the instruction program, mothers were able to:

1. Define toilet training.
2. Determine the age to initiate toilet training and best positions for TT.
3. List basic principles of TT.
4. Enumerate signs of child readiness to TT.
5. Explain choosing potty chair.
6. Practice steps of TT process.
7. Enlist the TT tips and benefits.
8. Recognize common problems related TT.
9. Define Enuresis, elaborate signs, and symptom of Enuresis.
10. Apply management of Enuresis.
11. Define Encopresis, illustrate signs and symptoms of Encopresis.
12. Implement management of Encopresis.
13. Define constipation and determine signs and symptoms of constipation.
14. Demonstrate management of constipation.
15. Perform care of potty after TT.
16. Explain roles of parents during TT.

Stage (3)- Implementation

This phase was completed over a period of four days during four sessions (3 sessions for the theoretical section and one session for the practical part). The duration of both theoretical and practical sessions ranged from 45 to 60 minutes. The education sessions started at 1:00 p.m. and lasted until 2:00 p.m. The theoretical sessions focused on the meaning of toilet training, the best positions for toilet training, basic principles of toilet training, signs of child readiness to toilet training, choosing potty chair, toilet training tips and benefits, common toilet training problems, defining Enuresis, signs and symptoms of Enuresis, define Encopresis, signs and symptoms of Encopresis, define constipation, signs and symptoms of constipation and roles of parents during toilet training.

The practical sections include the steps of the toilet training procedure, potty care after toilet training, and managing enuresis, encopresis, and constipation.

The investigated women (200 mothers) were separated into 20 groups in four private nurseries, with each group consisting of ten mothers. The study was done in the classrooms of the four private nurseries.

The total number of sessions for the group was one every day, with two sessions per week. Each month, four groups were implemented. The program lasted four hours and was broken into four separate sessions. Each session began with a summary of the prior lesson and the aims of the new one. A timetable for mothers was established, which included the date, time, setting, issues, and duration of each session. two researchers who gathered information.

The researchers kept up their reinforcement of her newly acquired information by answering any questions and providing feedback. The mothers were shown the sessions via a laptop and a booklet. In addition, the teaching program's technique was determined by selecting a suitable teaching method (lecture, small-group discussion, demonstration and re demonstration) and a suitable teaching material (handouts, audiovisual material, baby potty and dolly)

Stage (4)- Evaluation phase

The performance of each group was examined three months after the program's implementing. The post-tests were administered via similar tools as the pretests.

Statistical Analysis

The statistical software for the social sciences (SPSS) version 26 was utilized for data entry and analysis. The data was presented in the form of a number, a percentage mean, and a standard deviation. The T-test was performed to compare means. The Mc Nemar test was used to demonstrate the difference between variables in the before and post-test, and the Pearson test was used to demonstrate the correlation between variables. P-value considered statistically significant when <0.05 , highly statistically significant when < 0.01 and non-significant when > 0.05

Limitation of the Study:

- ❖ Inadequate nationwide studies have been conducted to study the current research issue.
- ❖ Data on practice was acquired through the self-reporting of respondents and was neither measured nor witnessed by the researchers.

Result:

Table (1) revealed that more than a third of the mothers (36.5%) were between the ages of 31 and 35, with a mean SD age of 28.525.78 years old. Over one-third (35.0%) of mothers had a secondary education. The table also showed that 53.5% of the mothers were from rural areas, almost three-quarters (73.5%) were employees, and more than half of them (57.5%) had only one child. Concerning family income, the table showed that almost two-thirds (65.5%) of the mothers reported enough for their expenditures, and 64% were nuclear families.

Figure 1 illustrates that only 1.5% of the participants had a good level of knowledge about their toddler's toilet training prior to the implementation of the program, compared to 52.5% after-application. This diagram depicted the first research hypothesis.

Regarding the source of information **Figure 2** indicated that over fifty percent of the mothers (54.0%) got their information pre-implementation of the program from relatives, while only 2% of them got their information from books and journals.

Figure 3 demonstrated that 35.0% of the participants had a satisfactory level of practice toward their toddler's toilet training prior to the application of the program compared to 93.5% post-implementation. This diagram described the second research hypothesis.

Figure 4 found that 13.0% of mothers had a positive attitude towards their toddler's toilet training before the program carrying out, compared to 91.5% after program completion. This diagram depicted the third study hypothesis.

Table 2 showed that There was a statistically significant disparity between the mothers' total knowledge, total practice, and total attitude scores about their toddler's toilet training before and after the program's operation. The first, second, third, and fourth study hypotheses ($P = .001^{**}$) were covered in this table. ($P = .001^{**}$).

Table 3 demonstrated a statistically significant positive relationship between mothers' education and overall knowledge scores ($P = .000^{**}$). In addition, a positive, statistically significant correlation was established between mothers' work, the number of living children, and all of their knowledge levels prior to executing the programme ($P = .028^*$ and $P = .032^*$). A highly statistically significant beneficial connection was discovered between the mothers' education and their total practice scores prior to program implementation ($P = .002^{**}$).

The table also revealed a very statistically significant positive link between the mothers' occupation, the number of living children, the rank of their children, family income, and their total practice score ($P = 0.00^{**}$). Also, after the program's introduction, a significant positive relationship was discovered between the

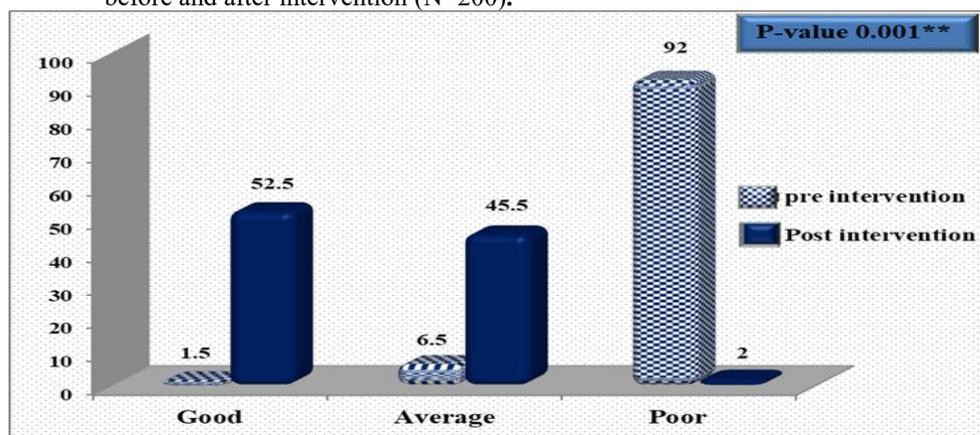
mothers' total practice level and family type ($P = .045^*$). Prior to program accomplishment, an extremely statistically significant positive connection was discovered between the mothers' age and their total attitudes grades ($P = .001^{**}$), and a negative correlation of statistical significance was established between the mothers' and their total attitude scores ($P = .032^*$).

Table 4 suggested a strong statistics significant positive association between the mothers' total practice and total knowledge scores, as well as a highly statistically significant negative correlation between the mothers' total knowledge and total attitude scores regarding their toddler's toilet training prior to the operation of the program ($P = .000^{**}$).

Table 5 explained an enormously statistically important positive relationship between the mothers' total practice and their total knowledge grades, and a highly statistically significant adverse correlation between the mothers' total knowledge and their total attitude scores around their toddler's toilet training after the implementation of the program ($P = .000^{**}$).

Table (1): distribution of the studied mothers based on their personal traits (N=200)

personal characteristics (N=200)	N	%
Age		
< 20	16	8.0
20-25	62	31.0
26-30	33	16.5
31-35	73	36.5
36-40	16	8.0
Age (mean±SD)	28.52±5.78	
Residence		
Rural	107	53.5
Urban	93	46.5
Mother's education		
Primary	10	5.0
Preparatory	12	6.0
Secondary	70	35.0
University	83	41.5
Postgraduate	25	12.5
Mother's occupation		
Employee	147	73.5
Housewife	53	26.5
No of living child		
One	115	57.5
Two	57	28.5
Three	27	13.5
4 or more	1	0.5
Child's rank		
First	113	56.5
Second	59	29.5
Third	28	14.0
Type of family		
Nuclear family	128	64.0
Extended family	72	36.0
Income of family		
Enough	131	65.5
Not enough	69	34.5

Figure (1) distribution of the study mothers on the basis of their level of toilet training knowledge before and after intervention (N=200).

McNemar test

(**) Highly statistically significant difference

Poor level of knowledge= <50% of total score

Average level of knowledge= 50% to 75% of total score

Good knowledge= more than 75% of total knowledge

Figure (2) distribution of the mothers investigated through their source of information about toilet training in pre-intervention (N=200)

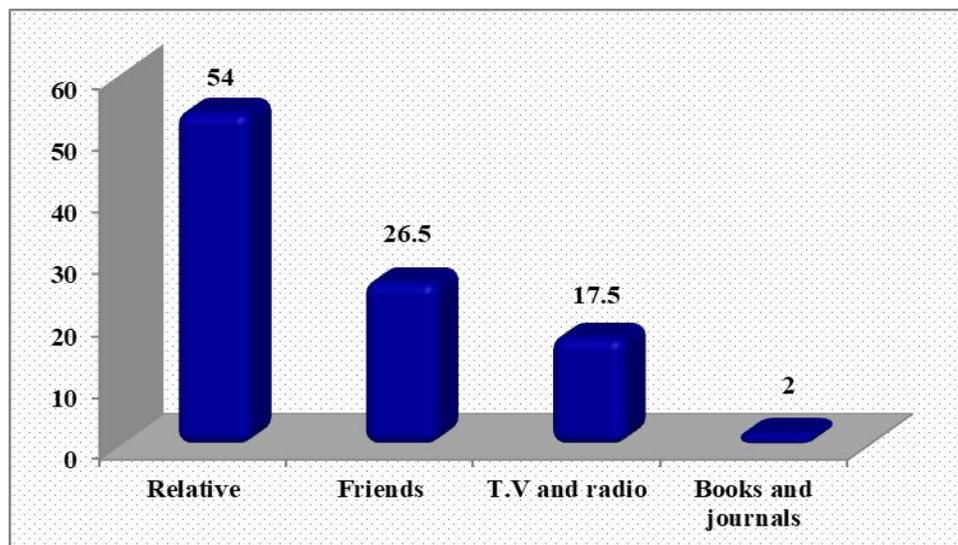
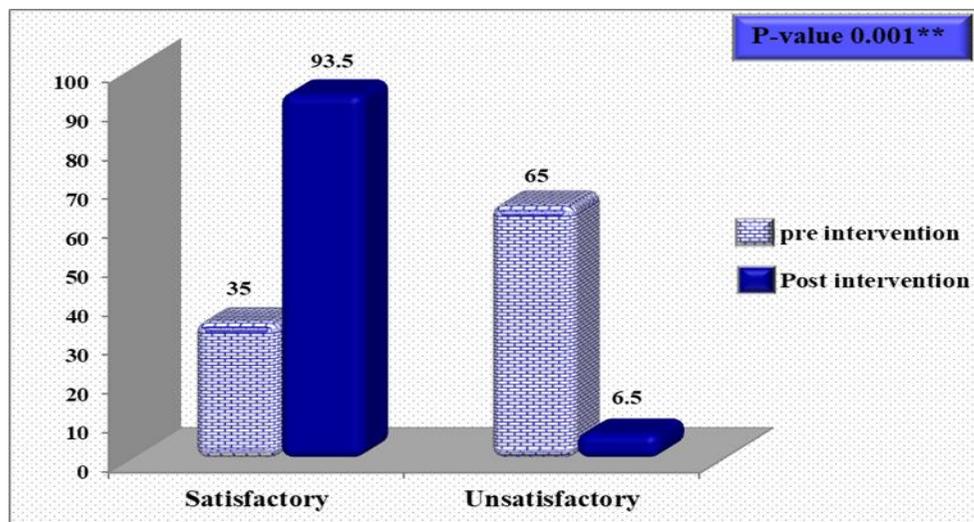


Figure (3) distribution of the mothers studied based on their level of toilet training practice before and at the end of the intervention (N=200)



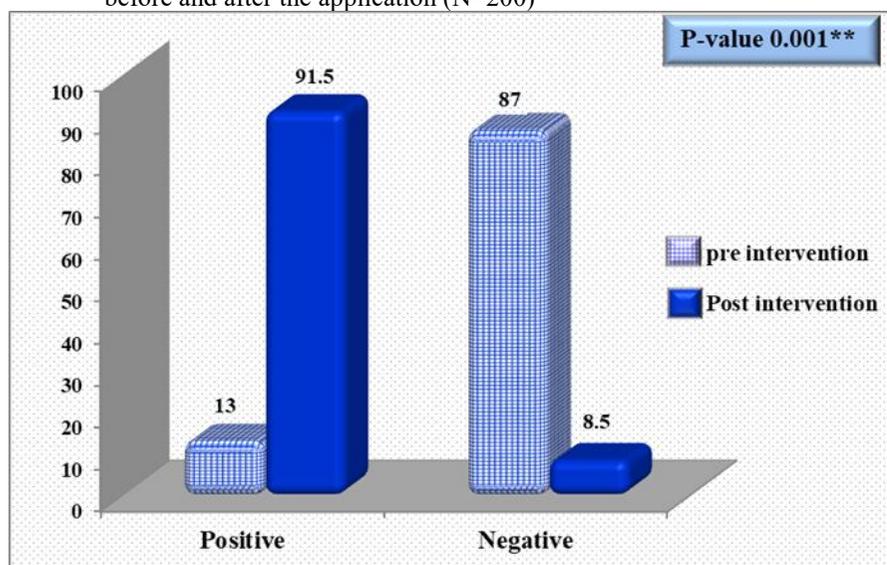
McNemar test

(**) Highly statistically significant difference

Unsatisfactory level of practices = <50% of total score

Satisfactory level of practices = more than 50% of total score

Figure (4) distribution of the investigated mothers depending on their attitude toward toilet training before and after the application (N=200)



McNemar test

(**) Highly statistically significant difference

- Score $0 < 50$ grade indicated to negative attitude.
- Score ≥ 50 grade referred to Positive attitude.

Table (2) distribution of the researched mothers determined by the mean and standard deviation of the total score of knowledge, practice, and attitude before and following the intervention (N=200)

Items	pre intervention	post intervention	P-value
	Mean \pm SD	Mean \pm SD	
Total knowledge	6.74 \pm 4.43	22.99 \pm 2.96	0.001**
Total practice	9.26 \pm 2.72	14.92 \pm 2.95	0.001**
Total Attitude	41.18 \pm 6.59	61.74 \pm 7.79	0.001**

T-test

(**) Highly statistically significant difference

Table (3) Correlation among mothers' personal traits and total knowledge, practice, and attitude prior to and subsequent to implementation (N=200)

personal traits		Total knowledge		Total practice		Total attitude	
		Pre intervention	post intervention	Pre intervention	post intervention	Pre intervention	post intervention
Age/ years	Pearson Correlation	-.109-	-.018-	-.113-	-.048-	.224**	.010
	Sig. (2-tailed)	.123	.803	.113	.499	.001	.887
Residence	Pearson Correlation	-.015-	-.053-	-.067-	-.106-	.051	.103
	Sig. (2-tailed)	.828	.456	.345	.136	.478	.146
Mother's education	Pearson Correlation	.340**	.087	.214**	.086	-.129-	-.079-
	Sig. (2-tailed)	.000	.218	.002	.226	.068	.266
Mother's occupation	Pearson Correlation	.156*	.031	.043	.346**	-.152-*	-.101-
	Sig. (2-tailed)	.028	.658	.543	.000	.032	.155
No of living child	Pearson Correlation	.151*	.044	.059	.330**	-.136-	-.100-
	Sig. (2-tailed)	.032	.538	.409	.000	.055	.159
Child's rank	Pearson Correlation	-.036-	.018	-.082-	.379**	.016	-.116-
	Sig. (2-tailed)	.608	.796	.246	.000	.825	.102
Type of family	Pearson Correlation	-.017-	.064	-.041-	.142*	.000	-.031-
	Sig. (2-tailed)	.809	.369	.563	.045	.996	.663
Income of family	Pearson Correlation	-.062-	.043	-.073-	.267**	-.073-	-.104-
	Sig. (2-tailed)	.383	.547	.302	.000	.303	.142

Pearson test

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

*** Correlation is significant at the 0.05 level (2-tailed).**

Table (4) Relation between each of the studied the mother's total knowledge, practice, and attitude in preceding intervention (N=200)

Items		Total knowledge before intervention
Total practice before intervention	Pearson Correlation	.494**
	Sig. (2-tailed)	.000
Total attitude before intervention	Pearson Correlation	-.541**
	Sig. (2-tailed)	.000

Pearson test

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

*** Correlation is significant at the 0.05 level (2-tailed).**

Table (5) Association among the examined mother's overall knowledge, practice, and attitude after the intervention period (N=200)

Items		Total knowledge after intervention
Total practice after intervention	Pearson Correlation	.192**
	Sig. (2-tailed)	.006
Total attitude after intervention	Pearson Correlation	-.445**
	Sig. (2-tailed)	.000

Pearson test

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

* Correlation is significant at the 0.05 level (2-tailed).

Discussion

Toilet training is a process of educating a young child to urinate and defecate in a bathroom and can begin with a smaller gadget shaped like a toilet bowl. Controlling the physiological activities of excretion and Urination remains one of the most vital responsibilities of the toddler period. Toilet control and urine are two personal stages of childhood development that are inextricably tied to sensory and motor control. It can be understood as a multi-stage process in which the child must gain both physical and cognitive self-control and involves conversing, undressing, leaving, wiping, dressing, flushing, and hand washing (Monika and Muthulakshmi, 2019).

The present research sought to assess the effect of health education program on mothers' performance regarding their toddler children's toilet training.

According to the present study results on the personal traits of the investigated mothers, the vast majority of the investigated mothers were between the ages of 20 and 35, and nearly three-quarters of them were employed. Furthermore, less than two-thirds of them had nuclear families, with more than half having only one child. This result was reinforced by Joshi et al., (2019), who did a research investigation on the Impact of home-based toilet training on the knowledge and practices of moms and revealed that all of the examined mothers were within the ages of 20 and 35, with most of them working. Furthermore, the majority of them were from nuclear homes and had only one child. This might have been ascribed to working mothers and nuclear families enrolling their toddlers in nursery school.

Concerning mother education. Over two-fifths of them have a university education, as indicated by the current research. This finding contradicted the outcomes of Sharma et al., (2018), who carried out research on bathroom training understanding, attitude, and practice among mothers of toddlers in Kalika Municipality- Chitwan and discovered that nearly one-third of the mothers had a general level of education and less than half were homeworkers. This may be due to mothers' need to have a basic degree of education in order to grasp the numerous components of toilet training.

In accordance with the research's hypothesis about all the levels of knowledge of the investigated mothers concerning toilet training their toddlers. In the present research, the vast majority of the investigated mothers had a good level prior to the program's implementation, but more than half of them had a good level after the program's completion. This finding is consistent with the results of Keerthi (2018), who conducted a study to explore the influence of a structured teaching program on levels of toilet training knowledge among mothers of toddlers in Chennai's Medavakkam rural region. The data revealed that almost all of the participants were unaware of the toilet training pre-program. Following the implementation of the program, the majority of them had adequate knowledge of toilet training. Furthermore, Supriya (2019) reported that fewer moms had a sufficient understanding of their children's readiness for toilet training in a study she did in a selected rural area of the Moradabad district. According to the researchers, the majority of the investigated mothers get their information regarding toilet training from relatives and having one child.

On the other hand, **Sutrisni et al., (2022)**, who performed a study on the effect of health education on the level of awareness of bathroom training in mothers with toddler-age children, found that over two-thirds of mothers had sufficient knowledge before being counseled, but almost all of them had good knowledge after counseling.

Regarding the source of information. Based on the existing studies outcomes, more than half of the women got their information through relatives, while the minority got it from textbooks and magazines. This finding was confirmed by **Mohammed and Ali, (2021)**, who carried out research on the information of toddler mothers for bathroom training at primary health care centers in Baghdad, Iraq City's Alrusafa District, and discovered that roughly half of the mothers studied got their information from their household and relatives. The study clarified this point because the majority of the women who studied acquired their information from relatives, which is a good indicator of poor expertise.

Depending on the research hypothesis about the total practice level of the studied mothers concerning their toddler's toilet training, the current investigation discovered that more than a third of the participants had a satisfactory degree of practice for their toddler's toilet training before program execution, contrasted with a majority of them post-implementation. This data contradicts **Sharma et al., (2018)**, that claimed that more than three-quarters of moms have good toilet training practices. From the researchers' perspective, this implies that knowledge influences practice.

Regarding to the research hypothesis about the overall attitude of the mothers studied towards their toddler's bathroom training. The current research discovered that fewer than five percent of the mothers had a positive attitude towards their toddler's toilet training prior to program execution, as opposed to a majority of them after implementation. This conclusion contradicts the outcomes of **Rahmawati et al., (2022)**, that performed a research investigation on mothers' opinions and roles related to bathroom preparation in toddlers and

discovered that the majority of mothers had positive attitudes toward toilet training. This result is also in line with the findings of **IImalia (2019)**, who found that respondents' attitudes towards toilet training are positive in a study titled the correlation of knowledge level and Mom's Views with toilet training achievement of young children in Sumberadi Sleman Yogyakarta..

According to the research hypothesis about the relation of a total score of the investigated mothers' knowledge, practice and attitude toward their toddler's toilet training. The current study discovered statistically significant variations in the mothers' overall knowledge, whole practice, and total attitude scores about their toddler's toilet training before and after implementation. This outcome is congruent with the findings of an **Osman et al. (2016)** investigation regarding the consequences of a training program on mothers' understanding, attitude, and practice toward their children with nocturnal enuresis. The results showed that when the program was executed, mothers' enuresis understanding, attitude, and practice increased substantially, with statistically significant variations between before and after implementation. There were significantly different connections among mothers' enuresis information, attitude, and skills.

With respect to the mother's overall knowledge grade. The present investigation found highly significant statistical disparities between before and after program execution, with post-program improvement. This result was discovered by **Rajan (2019)**, who conducted a study on the Efficiency of a video-assisted instructional program on the bathroom training of toddlers between parents in a chosen rural area in Shimla, India, and noticed that it was a significantly greater development in parents' awareness regarding toilet training following the completion of the video-assisted teaching program.

Concerning the association between the overall knowledge level of the mothers researched and their personal qualities. The present investigation discovered a highly significant correlation between mothers' education and overall knowledge scores ($P = .000^{**}$). Also, a significant positive

correlation was discovered among mothers' occupations, the number of living children, and their overall knowledge scores prior to the program's start ($P = .028^*$ and $P = .032^*$) respectively. This study contradicts **Rajan's (2019)** claim that no causal association existed between knowledge score and specific demographic factors. Furthermore, **Mohammed and Ali (2021)** observed that there is not a significant correlation (0.05) between the degree of knowledge of mothers of toddlers concerning toilet training and personal features (age, educational status, number of children, family income, family type). This explained why the level of education increases the grade of awareness of mothers.

Concerning the association between the total practice grade of the mothers investigated and their personal traits. The current research indicated a highly substantial statistically favorable association between the mothers' education and their total practice scores prior to program implementation ($P = .002^{**}$). It was a very significant statistically beneficial relationship among the mothers' occupation, number of living children, child's rank, family income, and all practice scores ($P = 0.00^{**}$), as well as a significant statistically positive correlation between the mothers' total practice scores and family type ($P = .045^*$) after the program was carried out. This finding contradicts **Mohammed, (2021)**, who conducted a study regarding the Perform of Early Childhood Women Concerning Bathroom Training at Primary Health Care Centers in Baghdad City and discovered that there were weak associations that showed a lack of significance level that was recorded at $P > 0.05$ among parent's and studied mothers' practices, except between marital status and mothers' practices, and between mothers' education and mothers' practices. Another study performed by **Varghese (2013)** on the research to assess bathroom training performance and the effectiveness of a pamphlet on the awareness of mothers on toilet training of children in a selected tertiary care hospital, Bangalore, found a lack of correlation between a mother's practice and the research variables such as age, gender, number of children, beginning toilet training or not, and age of starting toilet training. This suggests that

a high degree of education for mothers influences their level of performance when it comes to toilet training.

The present study discovered significant statistically beneficial relationships between mothers' total practice and overall knowledge grades, in addition to significant statistical adverse correlations between mothers' all knowledge and total attitude scores towards their toddler's toilet training prior to the program's execution ($P = .000^{**}$). This finding was made in a similar situation as **Sharma et al. (2018)**, who reported a substantial association between mothers' awareness and practice ($r = 0.277$ $p = 0.001$) and also a significant relationship between mothers' attitude and practice ($r = 0.257$ $p = 0.001$).

This association has a modest level of strength. This indicated that mothers with good toilet training knowledge had a positive view and performed good toilet training with their children.

The current study discovered large statistically positive associations with the mothers' practice and their overall knowledge scores, as well as statistically significant statistical negative correlations between the mothers' whole knowledge and their total attitude scores on their toddler's toilet training following the program's completion ($P = .000^{**}$). This outcome was consistent with the findings of **Osman et al., (2016)**, who discovered a significant moderate beneficial correlation between mothers' expertise and practice ($r=0.546$) and their views towards child enuresis ($r=0.890$) after the program. Inferring that increased information has a favorable impact on moms' practices and attitudes towards potty training their toddler children.

Conclusion:

According to the findings of this study, the health education program has a positive influence on enhancing mothers' knowledge, attitude, and practice about their toddler children's toilet training. As a result, the study hypothesis was validated.

Recommendations:

The following recommendations can be given depending on the present research findings:

- ❖ Provision of instructions through the media and a variety of community health centers to improve parental practice towards child bathroom training.
- ❖ Publication of the health education program for mothers addressing the toilet training of their toddlers in in different settings.
- ❖ Replication of the same research with a larger sample size in several situations.

List of Abbreviations

TT = Toilet Training

Ethics Approval and Consent to Participate

This research was approved by the Standard of Research Ethics Committee -Faculty of Nursing - Sohag University.

- Study number (42) on date of 7/2/2023.

ACKNOWLEDGEMENTS

The authors extend their thanks to all the mothers in Sohag governorate who volunteered to participate in the study, as well as all the workers in the four randomly selected nurseries (Al-Mohannad Group, Birds of Paradise, Nasser, and Al-Bar).

References

- Abd Elgawad, S. (2014):** Saudi mothers' knowledge, attitudes and practices regarding toilet training readiness of their toddlers, *Advances in Applied Sciences* Vol (3), No (7).
- Agusniatih, A. & Suwika, I. (2022):** The Effectiveness of Toilet Training on Children's Independence Through Demonstration Methods. *Journal Pendidikan Usia Dini*, 16(2), 240-248.
- Al-Kot, M. and Deeb, M. (2012):** Nocturnal enuresis among school children in Menoufia Governorate: A hidden problem, *J Am Sci*; Vol (8), No (1).
- Buston, E. (2017):** Hubungan Pendidikan Dan Sikap Dengan Keberhasilan Toilet Training, *Mahakam Nursing Journal* Vol (2), No. (1).
- Fatmawati, K., Arief, Y. and Kurnia, I. (2020):** Determinants of Toddler Toilet Training Readiness in the Kenjeran Community Health Center in Surabaya, *Pedimaternat Nursing Journal*. Vol (6), No (1).
- Goyal, M. (2017):** A Study to assess effectiveness of structured teaching programme on knowledge regarding toilet training among the mothers of toddler of selected area, jaipur, rajasthan, Vol (3), No (3).
- Hussain, K., (2012):** Mother's knowledge over child toilet training in Sebardan village in Erbil, *Zanco Journal of Medical Sciences*, Vol (16), No (3).
- Ilmalia, N. (2019):** Hubungan Tingkat Pengetahuan Dan Sikap Ibu Dengan Keberhasilan Toilet Training Pada Anak Usia Toddler Di PAUD Desa Sumberadi Sleman Yogyakarta (Doctoral dissertation, Universitas' Aisyiyah Yogyakarta).
- Joshi, R., Chanu, S. & Chauhan, V. (2019):** Effectiveness of Home Based Toilet Training on Knowledge and Practice of Mothers. Age, 11, 16. *International Journal of Trend in Scientific Research and Development (IJTSRD)*, Vol. (3), No. (3). Available Online: www.ijtsrd.com e-ISSN: 2456 – 6470.
- Kamal, N. and Mahrous, D. (2019):** The Epidemiology and Factors Associated with Nocturnal Enuresis among Primary School Children in Minia City, Egypt, *The Egyptian Journal of Community Medicine*, Vol. (37), No. (1).
- Keerthi, G. (2018):** A Study to Assess the Effectiveness of Structured Teaching Programme on levels of Knowledge regarding Potty Training (Toilet Training) among mothers of Toddlers at residing at Medavakkam Rural Area, Chennai (Doctoral dissertation, College of Nursing, Madras Medical College, Chennai)
- Mohammed, A. and Ali, E. (2021):** Knowledge of Early Childhood 's Mothers

- Regarding Toilet Training at Primary Health Care Centers in Alrusafa District in Baghdad City, *Indian Journal of Forensic Medicine and Toxicology*, Vol (15), No (2).
- Mohammed, A. (2021):** Practices of Early Childhood's Mothers Regarding Toilet Training at Primary Health Care Centers in Al-Rusafa District in Baghdad City, *Iraqi National Journal of Nursing Specialties*, Vol(34), No(1).
- Mohammed, A., Saleh, A., and Al Zoheiry, I. (2014):** Frequency of bedwetting among primary school children in Benha City, Egypt, *The Egyptian Journal of Medical Human Genetics*, Vol (15), No (2).
- Monika, M and Muthulakshmi, C. (2019):** A comparative study to assess the knowledge regarding toilet training among mothers of toddler in selected rural and urban area, *Indian Journal of Applied Research*, Vol (9), No (8).
- Nair, N. and Norohna, A. (2017):** A study to assess the knowledge of mothers regarding toilet training among toddlers in selected areas of mysuru, *IJCRI*, Vol(9), No(10).
- Noakes, A. (2018):** Potty training tips for parents, *Journal of Health Visiting*, Vol (2), No (7).
- Osman, Z., Osman Ali, S and Fouad Kamel, N. (2016):** Impact of an Educational Program on Mothers' Knowledge, Attitude and Practice Regarding Their Children with Nocturnal Enuresis, *Egyptian Journal of Health Care*, Vol(7), No(2).
- Rahmawati, A., Indriati, G. and Deli, H. (2022):** Mother's Attitude and Role Related to Toilet Training Readiness in Toddler, *Jurnal Ilmu dan Teknologi Kesehatan*, Vol (9), No (2).
- Rajan, J. (2019):** Effectiveness of video-assisted teaching program on toilet training of toddlers among parents in a selected rural area in Shimla, Himachal Pradesh, India, *Journal of Datta Meghe Institute of Medical Sciences University*, Vol(14), No(4).
- Ratnawati, D. (2014):** Perbedaan Kemampuan Ibu dalam Toilet Training Toddler Berdasarkan Status Pekerjaan Ibu di Posyandu Jeruk Desa Tirtomulyo Kretek Bantul Yogyakarta (Doctoral dissertation, STIKES' Aisyiyah Yogyakarta)
- Richardson, J. (2015):** Toilet Training: The Benefits of a Passive-Permissive Approach. *Intuition: The BYU U DJ*, Vol (1), No (15).
- Saadah, N., Yulianto, B., Setyorini, D. and Khasanah, U. (2019):** Maternal Knowledge and Motivation in Conducting Toilet Training for Toddlers, *Indian Journal of Forensic Medicine and Toxicology*, Vol (1), No (4).
- Sharma, P., Gurung, G. and Regmi, S. (2018):** Knowledge, attitude, and practice regarding toilet training among mothers of toddler at Kalika Municipality, Chitwan, *Journal of Chitwan Medical College*, Vol (8), No (1), 36-42.
- Solarin, A., Olutekunbi, O., Madise-Wobo, A. and Senbanjo, I. (2017):** Toilet training practices in Nigerian children. *South African Journal of Child Health*, Vol(11), No(3).
- Supriya, A. (2019):** A Study to Assess the Knowledge Regarding Readiness of Toddler for Toilet Training Among Mothers in the Selected Rural Areas at Moradabad District, *Int J Recent Sci Res*. Vol (10), No (03).
- Sutrisni, S., Wigati, P., Nita, N., Dwipayanti, A. and Lelono, L. (2022):** The Effect of Health Education on the Level of Knowledge about Toilet Training in Mothers with Toddler Age Children (1-3 Years), *Journal for Quality in Public Health*, Vol(5), No(2).
- Van Nunen, K., Kaerts, N., Wyndaele, J., Vermandel, A. and Hal, G. (2015):** Parents' views on toilet training: A quantitative study to identify the beliefs and attitudes of parents concerning TT, *Journal of Child Health Care*, Vol (19), No (2).

Varghese, P. (2013): A study to assess the toilet training practices and effectiveness of a pamphlet on knowledge of mothers on toilet training of children in a selected tertiary care hospital, Bangalore (Doctoral dissertation).