Mothers' Knowledge and Practices Regarding their Children Suffering from Idiopathic Constipation

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Abstract

Background: Idiopathic constipation is a common pediatric gastrointestinal disorder that affects children worldwide and rarely leads to life threatening complications, but can cause physical, emotional and social problems. **Aim:** the study aimed to assess knowledge and practices of mothers regarding their children suffering from idiopathic constipation. **Research design**: A descriptive research design was utilized. **Subjects:** Purposive sample of sixty children with idiopathic constipation and their mothers was involved. **Setting:** the study was conducted at pediatric surgical outpatient clinics at Tanta University Hospital. **Tools:** Two tools were utilized: **I-** Knowledge of children suffering from idiopathic constipation and their mother's structured interview schedule, **II-**observational checklist of children practice and their mother's reported practices. **Results**: All mothers and their children had low knowledge, and all of them had unsatisfactory practice regarding idiopathic constipation. **Conclusion:** Based on the results of the present study, it was concluded that, all mothers had low knowledge and unsatisfactory practice regarding to their children idiopathic constipation. **Recommendation:** Educational instructions must be designed for mothers to raise their performance regarding to idiopathic constipation.

Keywords: *constipation, idiopathic, knowledge, practices.*

Introduction:

Idiopathic constipation is a common pediatric gastrointestinal disorder that affects children worldwide. Idiopathic constipation is defined as constipation without an organic etiology. The etiology of it not fully understood and is likely multifactorial and characterized by difficult, painful defecation, incomplete or infrequent bowel movement. Idiopathic constipation is a diagnosis of exclusion, meaning that it's diagnosed when other possible causes of constipation, such as medical conditions, medications, or structural abnormalities in the digestive system have been ruled out **(Farooq, Hussain, Ayoub, Sumeena, 2024; Cox, Nambiar, Lui, & Cameron, 2020; Allen, Setya, & Lawrence, 2024).**

Idiopathic constipation affects 3% of children presenting to pediatric clinics and 25% of children presenting to gastroenterology clinics suffer from constipation. It is thought that 7% - 29.6% of children worldwide have constipation. It is reported that 3% of preschool and 1- 34% of school children have constipation. Many cases of constipation go unreported or undiagnosed, so the true prevalence may be higher **(Tran, & Sintusek, 2023; Al-Assal, Abd El-Gawad, Yadak, & Elzoghby, 2024).**

According to continents, Africa had a highest prevalence of constipation (31.4%), followed by America (12.1%), Europe (8.3%), and Asia (6.2%).with significantly more American and European children being affected than Asian ones. Additionally, geographical region, diet, and exposure to traumatic life events were linked to idiopathic constipation in children ***(*Tran, & Sintusek, 2023).**

Although the exact cause remains unclear, contributing factors include dietary habits, withholding behavior, and psychological stress. Additionally, toilet training difficulties can exacerbate the condition (**Yacob, & DiLorenzo, 2020**; **Paul, Broad, & Spray, 2021).**

Children with idiopathic constipation may experience physical discomfort that affects their ability to engage in daily activities. Constipation and fecal incontinence also have a negative psychological impact on children, leading to feeling of embarrassment, frustration, and low self-esteem **(Rajindrajith, Devanarayana, & Benninga, 2022).**

Significance of the study

Idiopathic constipation is a common problem in childhood, with estimated prevalence of 30% worldwide. Constipation in children is very common with a reported frequency of

up to 30%, the majority of cases 95% are due to idiopathic constipation. Constipation is often associated with infrequent, painful defecation and abdominal pain causes significant distress to the child and family and has a significant impact on health care costs **(Mutyala, Sanders, & Bates, 2020).**

Aim of the study was to:

Assess knowledge and practices of mothers regarding their children suffering from idiopathic constipation.

Research question:

What is the level of knowledge of mothers and their children regarding idiopathic constipation?

What is the level of practices followed by mothers in managing their children's idiopathic constipation?

Research design: A descriptive research design was utilized.

Setting: the study was conducted at pediatric surgical outpatient clinics at Tanta University Hospital.

Subjects:

Purposive sample of 60 children with idiopathic constipation and their mothers was involved.

Inclusion criteria of children:

-Both sexes

- Age from5-10 years

-**Rome IV criteria for constipation**: Two or more of the following

Two or fewer defecations per week, painful or hard bowel motion, large fecal mass, one fecal incontinence per week and excessive stool retention.

Exclusion criteria:

- Organic causes of constipation as Hirschsprung's disease, anorectal malformation, and spina bifida.

- Post surgery of the gastrointestinal tract.

Tools for data collection:

Tool I: Knowledge of children suffering from idiopathic constipation and their mothers' structured Interview Schedule:

It was developed by the researcher after reviewing the related literature review to assess knowledge of children and their mothers about idiopathic constipation. It consisted of three parts:

Part (1): Bio-socio-demographic characteristics of mothers and their children consisted of the following:

a. Characteristics of mothers as age, educational level, occupation, marital status, number of children, and residence.

b. Characteristics of children as age, sex, birth order.

Part (2): Child past medical history:

It included; bowel habits, dietetic history, onset and duration of constipation symptoms.

Part (3): Knowledge of children and their mothers about idiopathic constipation:

It was designed by the researcher and was revised by the thesis supervisors as meaning, causes, signs, symptoms, eating habits, daily fluid intake, management and complications of constipation.

Knowledge of children and their mothers was scored as following:

- Correct and complete answers were scored (2)
- Correct and incomplete answers were scored (1)
- Wrong answer or don't know was scored (0)

Total score of children and their mothers' knowledge was classified as:

- Less than 60% was considered low level of knowledge.
- From 60 to less than 75 % was considered moderate level of knowledge.
- From 75 to 100 % was considered high level of knowledge.

Tool II: Observational checklist of children practice and reported practices of their mothers about bowel management

It was adapted by the researcher after review literature to assess practice of children and reported practices of their mothers about bowel management, it included:

Children practice as (e.g. performing diaphragmatic breathing exercises/ belly exercise)

Mothers reported practice as (e.g. monitoring daily fluid intake, and bowel habit training as proper posture, frequency, duration and positive reinforcement).

Abdominal massage therapy technique: It was developed by Mohamed et al in 2024, adapted and modified by the researcher after reviewing the related literature. It included; Applying slow circular clockwise movement along the line of the colon, apply constant moderate pressure to the abdomen for 1 minute and begin massage from the ascending colon toward the sigmoid colon.

Children practice and their mother's reported practice were scored as following:

- Done correctly and completely was scored (2).
- Done correctly and incompletely was scored (1)
- Incorrectly or not done was scored (0).

Total score was calculated as the followings:

- From 70% - 100% was considered satisfactory practice.
- Less than 70% was considered unsatisfactory practice.

Methods

1-Administrative process:

An official permission for data collection was obtained from the dean of the Faculty of Nursing, Tanta

University directed to the hospital administrative authorities of the previously mentioned setting after explanation the aim of the study to get their cooperation and acceptance for carrying out this study.

2- Ethical considerations:

Approval from the ethical committee to conduct the present study, code No.251\5\2023.

Confidentiality and privacy were taken into consideration regarding data collection.

Informed consents were obtained from children's mothers to participate in this study after explaining the aim and benefits of the current study.

The researcher emphasized that participation in the study is voluntary and they have the right to withdraw at any time.

The nature of the study didn't cause any harm or pain to the entire sample.

3- Tools development: Two tools were developed by the researcher to collect needed data.

4-Content validity:

The tools of the study were presented to a jury of five experts in the field of Pediatric Nursing to check content validity and clarity, comprehensiveness, and applicability. The content validity index = 94 %.

5- Reliability of the tools:

Cronbach's Alpha Reliability Analysis was used. For: Tool (I) was 0.811. Tool (II) was 0.943 that indicated high reliability.

6- Pilot study:

A pilot study was carried out on 10% of the study sample to evaluate the clarity, applicability and feasibility of the research tools and the necessary modifications were done. Pilot study was excluded from the study.

7- **Statistical analysis:**

The collected data were organized, tabulated, and statistically analyzed using SPSS software. For quantitative data, numbers and percentage were used. Mean and standard deviation was calculated.

Results

Table (1) illustrates the percentage distribution of studied mothers based on bio-socio-demographic characteristics. It was found that the ages ranged from 23 to 45 years, with a mean of 32.47 ± 5.905 years, less than half of them were from 20-<30 years. Regarding to educational level, less than half of mothers (43.33%) had secondary education and less than one quarter (23.33) had university education. Concerning their occupation, more than three quarters were housewives (76.67%). Regarding marital status, the majority were married (81.67%). Concerning number of children, nearly half of the mothers (48.33%) had two children and two

thirds of them (66.67%) resided in rural areas.

Table (2) presents the percentage distribution of studied children in terms of socio-demographic characteristics and past medical history. It was found that, children's ages ranged from 5 to 10 years with a mean age of 6.98 ± 1.589 years. Regarding to gender, two third of them (66.67%) were male. Concerning birth order, nearly half of them (48.33%) were first-born. Regarding bowel habits, most of children (96.67%) experienced bowel movements two times or less per week. Dietetic history, the majority of them (81.67%) consumed small amounts of fruits and vegetables and less than one quarter (13.33) consumed fast foods. Two thirds of them (66.67%) were classified as chronic onset for constipation symptoms, and more than half of them (56.67%) had been experiencing symptoms for 1–3 years.

Figure (1) illustrates the percentage distribution of the studied children and their mothers regarding their total knowledge level about idiopathic constipation. It was noticed that all of mothers and their children (100%) had low knowledge regarding idiopathic constipation.

Figure (2) presents the distribution of studied mothers according to total practice level. It was found that, all of mothers (100%) had unsatisfactory practice regarding idiopathic constipation.

Table (3) shows the relationship between total knowledge level and total practice level of studied mothers. It was found that, all mothers (100%) had low knowledge and unsatisfactory practice levels.

Table (4) presents the correlation analysis between total knowledge level and total practice level of studied mothers. It was noticed that, there was a statistically significant positive correlation between knowledge and practice (P = 0.035),

Table (5) shows the relationships between bio-socio-demographic characteristics of studied mothers, total knowledge and practice scores. Regarding to age, significant differences were observed in knowledge scores across age groups (P < 0.05), mothers aged 30–<40 years consistently scored highest. Regarding to educational level, education showed a strong and statistically significant association in knowledge scores (p=0.000). Mothers with higher education levels consistently achieved the highest knowledge and employed mothers scored significantly higher than housewives in knowledge scores (P<0.05).

Table (1) Percentage distribution of studied mothers regarding bio-socio-demographic characteristics.

Bio-socio-demographic data of studied mothers	(no=60)	
	No	%
Age (in years)		
20-<30	27	45.00
30-<40	22	36.67
40-50	11	18.33
Range	**(23-45)**	
Mean ± SD	**32.47±5.905**	
Educational level		
Illiterate , read and write	4	6.67
Primary education	16	26.67
Secondary education	26	43.33
University education	14	23.33
Occupation		
Housewives	46	76.67
Employee	14	23.33
Marital status		
Married	49	81.66
Divorced	7	11.67
Widow	4	6.67
Number of children		
One	11	18.33
Two	29	48.33
Three	16	26.67
More	4	6.67
Residence		
Urban	20	33.33
Rural	40	66.67

Table (2) Percentage distribution of studied children regarding socio-demographic characteristics and medical history.

Socio-demographic data and past medical history of studied children.	(no=60)	
	No	%
Age (in years)		
5	13	21.67
6	14	23.33
7	11	18.33
8	10	16.67
9	7	11.67
10	5	8.33
Range	**(5-10)**	
Mean ± SD	**6.98±1.589**	
Gender		
Female	20	33.33
Male	40	66.67
Birth order		
First	29	48.33
Second	18	30.00
Third	9	15.00
More	4	6.67
Bowel habits		
2-3 times/day	1	1.66
3 times/a week	1	1.66
2 times or less/week	58	96.67
Dietetic history		
Small amount of fruits and vegetables	49	81.67
Adequate amount of fruits and vegetables	3	5.00
Fast food	8	13.33
Onset of constipation symptoms		
Acute	20	33.33
Chronic	40	66.67
Duration of constipation symptoms		
3 months	8	13.33
6-12 months	15	25.00
1-3 years	34	56.67
More than 3 years	3	5.00

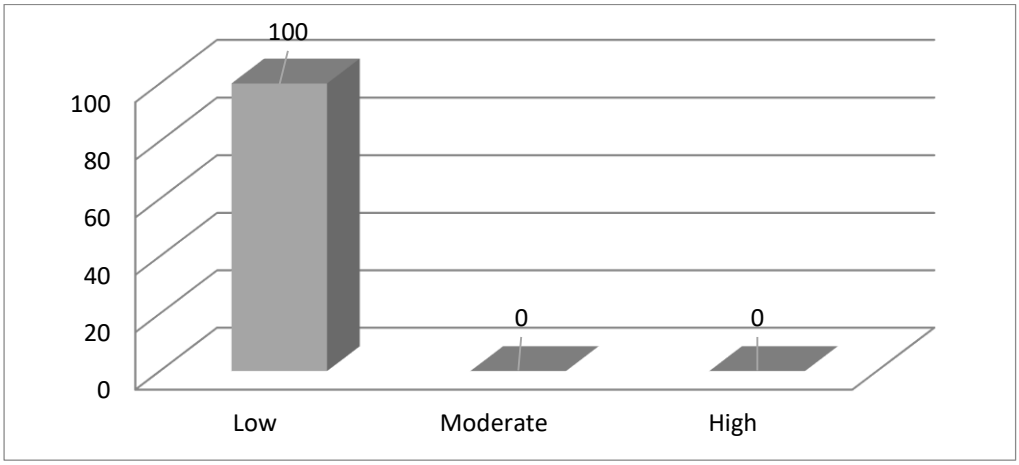

Figure (1) Percentage distribution of studied children and their mothers regarding total knowledge level about idiopathic constipation.

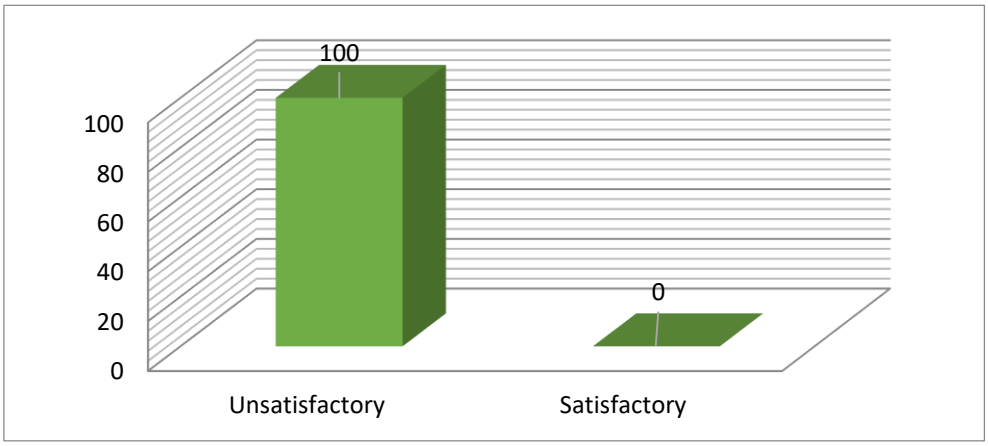

Figure (2) Distribution of studied mothers according to total practice level.

Table (3): Relation between total knowledge of studied mothers and total practice level.

Total knowledge level	The studied mothers (no=60) Total practice level			
	Unsatisfactory		Satisfactory	
	No	%	No	%
Low	60	100.00	0	0.00
Moderate	0	0.00	0	0.00
High	0	0.00	0	0.00

Table (4): Correlation between total knowledge of studied mothers and total practice level.

Total knowledge level	Total practice level	
	R	P
	0.273	0.035*

Table (5): Relations between bio-socio-demographic characteristics of studied mothers, their knowledge and practice score

Characteristics	Total knowledge score	Total practice score
Age (in years)		
20-<30	6.45±0.86	15.82±3.20
30-<40	**7.07±1.84**	**19.41±6.08**
40-50	5.55±1.70	18.45±6.79
F/t	**4.036**	2.788
P	**0.023***	0.070
Educational level		
Illiterate, read and write	3.00±0.82	17.00±1.63
Primary education	5.56±0.51	15.81±3.04
Secondary education	6.62±0.50	17.77±4.51
University education	**8.64±0.93**	**20.86±8.53**
F/t	**102.063**	2.283
P	**0.000***	0.089
Occupation		
Housewives	6.13±1.42	16.96±4.29
Employees	**8.00±1.30**	**21.07±7.77**
T	**19.219**	**6.528**
P	**0.000***	**0.013***

Discussion

Childhood idiopathic constipation is a major global health condition with no underlying medical, genetic, anatomic, or physiological causes with a worldwide prevalence ranging from 0.5% to 32%. The etiology of this disorder is multifactorial and the final common pathway of developing constipation is believed to be due to complex interactions between physiologic, psychological, social, cultural, and behavioral factors **Flankegard, Morelius, & Rytterstrom, (2022).**

The gold standard treatment is family lifestyle adjustment combined with pharmacological interventions. Childhood constipation poses a significant effect on families in terms of worrying, social isolation, economic constraint, and burden on national healthcare systems. Early diagnosis and appropriate treatment are vital, as many children carry

their defecation disorder into adulthood **Casias, & Newton, (2021).**

The current study revealed that, less than half of the studied mothers' age was from 20-<30 years. Younger mothers may have less parenting experience, limited knowledge about their children nutrition, or lower confidence in managing health-related issues. These factors may contribute to inadequate fiber or fluid intake, or insufficient attention to early signs of constipation.

This result was in agreement with **Alfahhad, Assiri, Alajlan, Alshahrani, & Aljarbou, (2024)** who conducted a study entitled "Prevalence of functional constipation among children and adolescents in Saudi Arabia: a cross-sectional study" reported that, young maternal age below the age of 20 years is often correlated with a variety of challenges that might impact child health.

The present study indicated that, two thirds of mothers were residing in rural areas. This may be due to limited access to medical services and communicating with the surrounding environments and healthcare resources may contribute to constipation. This result was in agreement with **Alfahhad, Assiri, Alajlan, Alshahrani, & Aljarbou, (2024)** who reported that, constipation was significantly more prevalent in rural areas than in urban areas 54.6% versus 34.6%.

The present study revealed that, the majority of children had poor dietary habits consuming minimal amounts of fruits and vegetables, and less than one quarter of them consumed fast foods. This is because dietary fibers promote smoother bowel movements by enhancing motility. Fast foods sluggish bowel movement; increase the risk of stool retention which also plays a role in regularity.

These results were supported by **Saad, Mostafa, Elke'iy, (2021)** who studied "knowledge, attitude and practice of mothers towards childhood constipation" and conducted that, 60% of studied children have lacked intake of all nutrients in diet mainly fibers as reported by their parents, whether urban or rural on the incidence of constipation.

The present study revealed that, most of children had infrequent bowel movements two or fewer times per week. This often due to stool staying in the colon too long, withholding behavior, or dietary and lifestyle factors. This result was in accordance with **Saqib, Kazi, Chib, (2024)** who conducted study entitled "functional constipation in children: socio-demographic and risk factors analysis from a tertiary care teaching hospital of northern India" conducted that,

nearly half of the children reported stool frequency 2 times or less per week.

The result of the present study revealed that, all mothers had low knowledge. This may be due to insufficient health teaching programs that were provided to families by health facilities and social stigma that some mothers had preventing them from asking any question about their children health status. The findings were in agreement with **Vipin, Kamal, (2017)** who conducted "A Study to Evaluate the Effectiveness of Planned Teaching Program on Knowledge about the Prevention and Management of Constipation among the Mothers of Infants in Alur Village" and illustrated that, over all pre test knowledge mean was 6.95 ± SD 2.32 and mean percentage was 23.16%.

The present study revealed that, all mothers had unsatisfactory practice regarding idiopathic constipation. This could be explained in the light lack of mother's perception toward their children status, decrease the health teaching programs provided to families by health facilities about care of constipated children This result was in agreement with **Mohamed, (2025)** who noted that, less than half (40%) of the mothers showed inadequate nutritional practices regarding constipation.

The present study found a statistically significant relationship between mothers' knowledge level and their practice level. All of mothers had low knowledge and unsatisfactory practice levels. This result was in agreement with **Salih, Alghamdi, Al-Muaibid, (2022)** who studied "Parents' knowledge, attitude, and practice towards childhood constipation in Al Baha-Saudi Arabia" and illustrated that, after assessing the relationship of knowledge level with practices related to childhood constipation, the majority of the parents who had good knowledge had demonstrated good practices related to 65%, and similarly who had poor knowledge had poor practices 67.1%, which showed a statistically significant association.

Similarly, **DCunha, Rai, Rao & D'Souza, (2023)** who studied "Understanding Childhood Constipation through the Prism of the Caretaker" and revealed that, knowledge and practice concerning childhood constipation are connected to each others. Mothers with greater knowledge had better practice scores (P = 0.020).

The study revealed a statistically significant positive correlation between total maternal knowledge and practice levels, indicating that low level of knowledge was modestly associated with unsatisfactory levels of

practices. This result was in accordance with **Al Khashram et al., (2024)** who studied "Exploring Community Perspectives on Functional Pediatric Habitual Constipation" revealed a statistically significant positive correlation between the knowledge scores and practice scores. As the knowledge scores increased, the participants tended to demonstrate better practice scores ($p < 0.001$).

Regarding to educational level, mothers with university education consistently achieved the highest knowledge and practice scores. Mothers with university education are more likely to have better health literacy, which enhances their ability to access, understand, and apply health-related information. As a result, educated mothers are more likely to understand medical advice, recognize symptoms, follow treatment plans, and implement dietary and behavioral interventions. This result was aligned with **Madkour, Hussein, Abd-Elkodoos, (2023)** who demonstrated that, there was a statistically significant positive relationship between mothers' education and overall knowledge scores (P =.000). Similarly, **Khayyat et al., (2024)** who illustrated that, there was a significant difference in knowledge scores (p=0.001). Postgraduate participants exhibited the highest median knowledge score of 9.0.

Furthermore, **Fazil, Monoto, Tan, Azhari, (2025)** who studied **"**Assessing parental knowledge and worry about childhood constipation among malaysian parents" illustrated that, parental knowledge was higher in parents with tertiary level of education (Median = 8.00) compared to parents with up to secondary level education (Median = 7.00, $p = 0.007$).

The present study indicated that, mothers with three children achieved the highest knowledge and practice scores. Mothers with three or more children often gain practical experience and cumulative exposure to common childhood health issues. This experience enhances both their knowledge and their ability to apply it in real life situations. This result was in agreement with **Al Khashram et al., (2024)** who indicated that, participants who had three or more children exhibited significantly higher knowledge scores than those with only one child ($p = 0.001$).

Conclusion:

Based on the results of the present study, it was concluded that, all of mothers had low knowledge and unsatisfactory practices regarding to their children idiopathic constipation.

Recommendations The following suggestions are recommended based on the present findings:

1. Continuous educational programs must be designed for mothers to raise their knowledge and practices regarding to idiopathic constipation.
2. Booklets and brochures about children idiopathic constipation should be available in pediatric surgical outpatient clinics.
3. Retention strategies, Telehealth tools (e.g., follow-up calls, short video tutorials or SMS reminders) could support remote education in underserved areas.

Further researches should be conducted about idiopathic constipation to help in early diagnosis and management and preventing the complications.

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