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Knowledge and Practice of Mothers' Children with Mediterranean Fever among Primary School Age in Beni-Suef City

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Abstract

Familial Mediterranean Fever (FMF) is an auto inflammatory genetic disorder that mainly affects people of Mediterranean origin. **The aim of the study was** to assess the Knowledge and practices of mothers' children with Mediterranean fever among primary school age in Beni-suef City. **Design :** A descriptive exploratory design was utilized in this study**. Setting:** This study was carried out in an outpatient pediatric and immunity clinic at Beni Suef University Hospital, Beni-Suef Governorate, Egypt. **Sample**: A purposive sample of 80 mothers' children with familial Mediterranean fever among primary school age. **Tools**: one tool was used, A structured interview questionnaire sheet, included **four** parts. **Part I**: Socio-demographic characteristics of children with Mediterranean fever among primary school age and their mothers **Part II:** Knowledge assessment questionnaire to assess mothers' Knowledge regarding Mediterranean fever. **Part III:** Report Practices assessment questionnaire to assess mothers' Practices regarding Mediterranean fever. **Results:** This study showed that 76.3% of the studied mothers had a correct answer regarding that Mediterranean fever gets worse if colchicine is not used regularly. 61.2% of the studied mothers had poor Knowledge regarding Mediterranean fever. 46.3% of the studied mothers had a high satisfactory Practices toward caring for their children. **Conclusion**: Two-thirds of the studied mothers had poor Knowledge regarding Mediterranean fever among primary school age. Also there was no statistically significant relation between the studied mothers' total Mediterranean fever Knowledge score, and their age, marital status, educational level, mother occupation, family income, and residence p value was > 0.05. **Recommendation:** Health educational program and further studies should be developed and implemented for mothers to educate them about Familial Mediterranean Fever (FMF) with the most current information and practices about the disease, booklets should be available and distributed to all mothers about the disease and health-related practices.

Keywords: Knowledge, Practices, Mediterranean Fever, Primary School Age

Introduction

School-age children are highly active.

They need physical activity and peer approval and want to try more adventurous behaviors. Children should be taught to play sports in appropriate, safe, supervised areas, with proper equipment and rules. Bicycles, skateboards, and other types of recreational sports equipment should fit the child. They should be used only while following traffic and pedestrian rules, and while using safety equipment such as knee, elbow, and wrist pads or braces, and helmets (**Bethesda, 2023**).

Mothers play the most fundamental role as educators in a child's early life. They continue to be the heart of the child's education right from their childhood to their growing up years. The most important role a woman can ever play is being a mother. Mothers play a crucial role in their children's lives by caring for them, loving them, teaching them, etc. The way a child develops is primarily attribute to their parent's and caregivers' roles in their lives(**Besar, 2022)**. Familial Mediterranean Fever (FMF) also known as 'periodic peritonitis,' 'familial paroxysmal polyserositis,' 'periodic disease,' 'SiegalCattan-Mamou disease,' 'Wolff periodic disease' or 'Reimann syndrome' is an auto inflammatory genetic disorder that causes recurrent fevers and serosal inflammation of the abdomen, lungs, and joints leading to severe pain. The first attack frequently occurs in childhood, and it usually begins before the age of 20 years. All attacks develop over 2 to 4 hours and last anywhere from 6 hours to 4 days. Sometimes it is accompanied by a rash or headache (**Bhatt.,etal ,2020**).

Familial Mediterranean fever usually occurs during childhood. The inflammatory attacks last 1-3 days. The outcome is good in patients treated early. Although episodes of FMF can occur spontaneously for no identifiable reason, certain triggers have been identified in some cases. These triggers include infection, trauma, vigorous exercise, and stress. In women, the onset of their period (menses) can trigger an episode (**El-Shanti, 2023).** Fever is the most common and sometimes the only symptom (especially during childhood) to occur during FMF attacks. The temperature may vary from mild to 38 to 40 degrees C. If the patient is on treatment, the fever may be absent during attacks (**Giat.,etal ,2022**).

abdominal pain attack is the most common type of attack in FMF. Abdominal pain could be localized initially and then become generalized. On physical examination, abdominal distension, guarding, rebound tenderness, and decreased bowel sounds are appreciated due to inflammation of the peritoneum. The episode spontaneously resolves in 2 to 3 days (**Bhatt & Cascella, 2022**). A community health nurse serving children has an important role in child health. The nurse is the backbone of the health care system, a good communicator, and a link with parents and treating doctors. Also, assessing a child with FMF needs and providing initial care, identifying changes in children's symptoms and intervening in emergencies, participating in pain related to FMF management for children and giving information guidance, and being a counselor for mothers regarding the disease, treatment regimen(**Hockenberry .,etal ,2021).**

Significance of the study:

Primary school age is an important and sensitive stage in a child's life due to the child's development and growth. It is also a stage of increasing the child's contact time with the outside world. Also, in this stage, many diseases in the child, especially genetic diseases can be discovered. FMF is a common disease that can cause arthritis, infertility, vasculitis, and kidney diseases (**Yildiz et al., 2020**).

Globally, FMF prevalence ranges from 1:400 to 1:1000, with a population of around 70 million. In the American population, FMF is estimated about 1:500 (**Maggio&Corsello, 2020).** Arabic population can suffer from FMF for 1 case per 26000 populations. In Egypt,

data on the prevalence of FMF among the population remain limited but some studies reported that around 20% of Egyptian children with FMF can develop arthritis during the attacks (**Salah et al., 2022**). So this study aims to assess the knowledge and practice of mothers' children with Mediterranean fever in primary school age in Beni-surf City

Aim of the study:

This study aims to assess the knowledge and practice of mothers' children with Mediterranean fever among primary school age in Beni-Suef City through:

- Assessing knowledge of mothers' children with Mediterranean fever among primary school age.
- Assessing self-reported practices of mothers' children with Mediterranean fever among primary school age.
- Assessing the relation between socio-demographic characteristics of mothers' children with Mediterranean fever among primary school age and their knowledge and practice.

Research questions:

The following questions were formulated to achieve the aim of this study

- What is the level of knowledge of mothers' children with Mediterranean fever at primary school age?
- What is the level of practice of mothers' children with Mediterranean fever at primary school age?
- Is there a relationship between socio-demographic characteristics of mothers' children with Mediterranean fever among primary school age and their knowledge and practice?

Subject and Methods:

Research design:

A descriptive design was utilized in this study.

***Setting*:**

This study will be carried out in an outpatient pediatric clinic at Beni Suef University Hospital, Beni-Suef Governorate, Egypt.

Sample type:

A purposive sample of 80 mothers' children with familial Mediterranean fever among primary school age in the previously mentioned setting.

The total number of children in one year was 100 children with familial Mediterranean fever visited the outpatient pediatric clinic in Beni-Suef University Hospital, Beni-Suef, Egypt, so the target population of this study is 80 children who have familial Mediterranean fever, the sample size calculation will be calculated by using the following equation:

$n= N/\{1+N(e)^2\}$ Where n = sample size, N = population size is 100

e= 0.05 is the level of population

$n= 100/\{1+100(0.0025)\} = 80$

Inclusion criteria

Mothers of children with familial Mediterranean fever in primary school age (5-12 years) and accepting to participate in the study.

Tools for data collection:

The required data was collected through three tools to achieve the aim of the study, accurate date the study was started and completed within 6 months:

Tool I: A structured interviewing questionnaire:

This questionnaire was developed by the researcher based on reviewing related literature review and written in simple Arabic language. It consisted of two different parts:-

Part I:

Socio-demographic characteristics of children with Mediterranean fever among primary school age and their mothers which include age, marital status, educational level, occupation, and family monthly income , past family history of FMF, duration of diagnosis of the disease, and type of medication.…etc.

Part II: Knowledge assessment questionnaire to assess mothers' knowledge regarding Mediterranean fever. It was adapted from ***(Maggio & Corsello, 2020)***, and it included 14 closed-ended questions including; FMF definition, causes and risk factors, signs and symptoms, diagnosis, complications

and treatment of FMF….etc. The answer to each question was scored as (0) for incorrect answers, (0), for don't know, and (1) for the correct answer. the total knowledge score was calculated as:
Poor ----------< 60.0% of total knowledge score.
Fair ---------- 60.0-75.0% % of total knowledge score.
Good ----------> 75.0% of total knowledge score.

Part III: Practice assessment questionnaire to assess mothers' self-reported practices regarding Mediterranean fever among primary school-age students: it was adapted from ***(Chan et al., 2020).*** It included 13 items that concerned with reported practice of the studied mothers about Mediterranean fever prevention. Including" best site for measuring temperature, consulting physician once the fever is detected, calculation of antipyretic dose, the appropriate method to administer antipyretic, using alternative medicine, antipyretic administration without a doctor prescription, and giving FMF medication on the time.
For each reported practice item the score was calculated as (0) for not done, and (1) for done. the total practice score was calculated as:
Unsatisfactory ----------< 60.0% of total reported practice score
Satisfactory ---------- 60.0-75.0% % of total reported practice score.
High satisfactory ----------> 75.0% of total reported practice score

Validity:

The developed tool was developed and, then tested for evaluating content validity by five experts in community health nursing specialty essential modifications were done.

Reliability:

Cronbach's Alpha was used to determine the internal reliability of present study tools, it was 0.867 for the knowledge assessment tool, and 0.895 for the practice assessment tool.

Ethical considerations:

An official permission to conduct the proposed study was obtained from the Scientific Research Ethics Committee. Participation in the study is voluntary and subjects will be given complete full information about the study and their role before signing the informed consent. The ethical considerations will include explaining the purpose and nature of the study, stating the possibility to withdraw at any time, and confidentiality of the information where it will not be accessed by any other party without taking permission of the participants. Ethics, values, culture, and beliefs will be respected.

II- Operational design:

The operational item includes the preparatory phase, pilot study, and fieldwork.

A-Preparatory phase:

It included reviewing related literature and theoretical knowledge of various aspects of the study using books, articles, the internet, periodicals, and magazines to develop tools for data collection.

B- Pilot study:

A pilot study was conducted on 8% equal to 7 of child's mother the sample under study to test the applicability, clarity, and efficiency of the tools. The needed modification was incorporated according to the results of the pilot study. Patients shared in the pilot study were not involved in the sample

C- Fieldwork:

Fieldwork included the following:

- Approval was obtained from the study subjects individually and the research scientific ethical committee of the faculty of medicine at Beni-Suef University using written or oral informed consent obtained from each participant before data collection.

- The data collection process was started and completed within six months.
- Data collection was done 2 days/ week by the investigator in the morning and afternoon shifts.

III-Administrative design:

Approval to carry out this study was obtained from the dean of the faculty of nursing of Beni-Suef University and the directors of Beni Suef University Hospital, Beni Suef governorate, Egypt.

IV- Statistical design:

Upon completion of data collection, data was computed and analyzed using Statistical Package for the Social Science (SPSS), version 26 for analysis. The P value was set at 0.05. Descriptive statistics tests such as numbers, percentages, and mean standard deviation (± SD) were used to describe the quantitative results. The coefficient Correlation r-test was utilized to evaluate the association between studied mothers' knowledge and practice.

Results:

Table (1): Frequency distribution of Demographic characteristics of the studied mothers (n=80).

Variables	Item	Frequency	%
Age in years	Less than 20	6	7.5
	20-30	19	23.8
	31-40	25	31.3
	>40	30	37.5
	Mean	**35.69±9.35**	
Marital status	Married	55	68.8
	Divorced	17	21.3
	Widow	8	10.0
Educational level	Illiterate	3	3.8
	Read and write	10	12.5
	Secondary	33	41.2
	University	34	42.5
Mother Occupation	housewife	39	48.8
	Employee	29	36.3
	Free business.	12	15.0
Family income	Enough	58	72.5
	Not enough	22	27.5
Residence	Rural	55	68.8
	Urban	25	31.2
Parental consanguinity	Yes	24	30
	No	56	70

Table (1) indicated that 37.5% of the studied mothers' age were more than 40 years old with a mean age of 35.69, 68.8% of them were married, 42.5 & 41.2% of them had a university and a secondary educational level respectively. In addition, 48.8% of them were housewives. Moreover, 72.5% of them had enough family income, 68.8% of them were resident in rural settings and 30% of

the studied mothers had a consanguineous marriage.

Table (2): Frequency distribution of Demographic characteristics of the studied children (n=80).

Variables	Item	Frequency	%
Age in years	5-8	42	52.5
	9-12	38	47.5
	Mean	7.68±2.35	
Gender	Male	36	45.0
	Female	44	55.0
Family history of Mediterranean fever	Yes	55	68.8
	No	25	31.2
If yes, **mention the degree of relationship(n= 55)**	First degree	12	21.8%
	Second degree	32	58.2%
	Third degree	11	20.0%
A child diagnosed with Mediterranean fever	Less than one year	10	12.5
	1-<2 year	47	58.8
	2-< 4 years	13	16.2
	4 years≥	10	12.5

Table (2) indicates that more than half (52.5%) of the studied children's age ranged from 5-8 years old with a mean age of 7.68, more than two-thirds 55.0% of them were females, and, more than two-thirds of the children had a family history of Mediterranean fever. In addition, more than half 58.8% of children were diagnosed with Mediterranean fever from one to less than two years old.

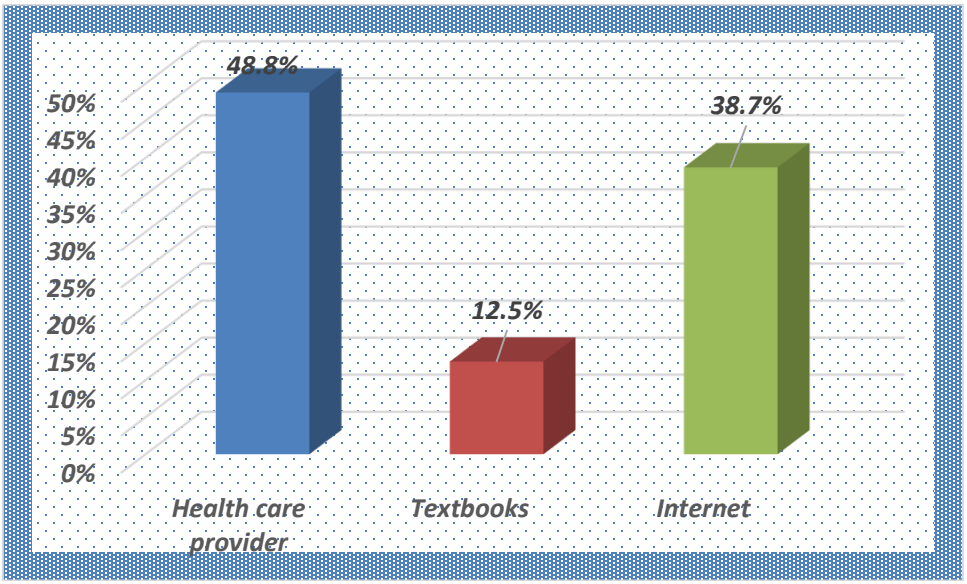

Figure (1): percentage distribution of studied mothers' sources of Mediterranean fever knowledge.

Figure (1) illustrates that nearly half 48.8 % of the studied mothers' source of knowledge were healthcare providers, 38.7% of their source of knowledge was the internet, and 12.5% of their source knowledge was textbooks.

Table (3): Distribution of Mediterranean fever knowledge among the studied mothers (n=80).

Item	Correct		Incorrect		Don't know	
	No	%	No	%	No	%
Mediterranean fever is a contagious disease	19	23.8%	42	52.4%	19	23.8%
Mediterranean fever is a hereditary disease	56	70.0%	21	26.2%	3	3.8%
There is a vital risk during attacks of Mediterranean fever	42	52.5%	24	30.0%	14	17.5%
Colchicine is an effective drug in treating Mediterranean fever	58	72.4%	7	8.8%	15	18.8%
Mediterranean fever treatment is addictive	11	13.8%	32	40.0%	37	46.2%
Mediterranean fever affects children's intelligence	12	15.0%	54	67.5%	14	17.5%
Mediterranean fever resolves on its own over time	6	7.5%	52	65.0%	22	27.5%
With advancing age, the symptoms of Mediterranean fever become more severe	23	28.7%	43	53.8%	14	17.5%
Patients with Mediterranean fever cannot work or go to school	36	45.0%	44	55.0%	0	0.0%
With Mediterranean disease, they cannot join any sports game	51	63.7%	24	30.0%	5	6.3%
Mediterranean fever gets worse if colchicine is not used regularly	61	76.3%	11	13.8%	8	10.0%
Mediterranean fever medications have side effects such as infertility	32	40.0%	12	15.0%	36	45.0%
Damage to internal organs such as the kidneys can occur when colchicine is not taken regularly	41	51.2%	11	13.8%	28	35.0%
Mediterranean fever is a chronic disease that must be	54	67.5%	21	26.3%	5	6.2%

followed up regularly by a pediatric rheumatologist and/or pediatrician.						

Table (3) indicates that more than three-quarters (76.3%)of the studied mothers had a correct answer regarding that Mediterranean fever gets worse if colchicine is not used regularly. In addition, more than two-thirds of them (72.4%, 70.0%, 67.5%, 63.7%) had a correct answer regarding, Colchicine being an effective drug in treating Mediterranean fever, Mediterranean fever being a hereditary disease, Mediterranean fever being a chronic disease that must be followed up regularly by a pediatric rheumatologist and/or pediatrician, and with Mediterranean disease, children cannot join any sports game respectively. On the other hand, more than two-thirds (67.5% & 65.0%) of them had incorrect answers concerning how Mediterranean fever affects children's intelligence respectively. Moreover, nearly half of them (46.2% & 45.0%) don't know that Mediterranean fever treatment is addictive and that Mediterranean fever medications have side effects such as infertility respectively.

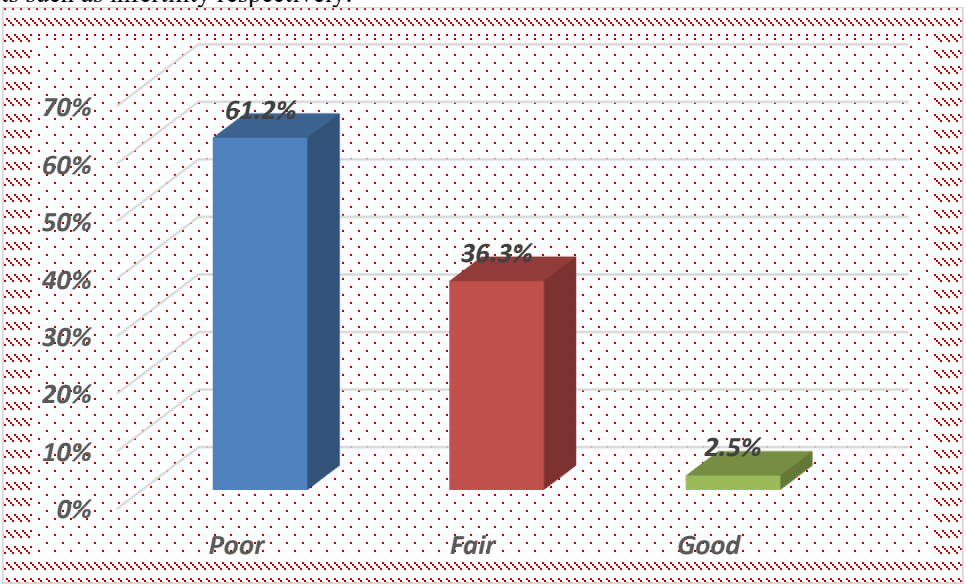

Figure (2): Percentage distribution of total knowledge score of the studied mothers regarding Mediterranean fever.

Figure 2 illustrates that nearly two-thirds 61.2% of the studied mothers had poor knowledge regarding Mediterranean fever, while 36.6% of them had a fair level of knowledge, on the other hand, only 2.5% of them had a good level of knowledge.

Table (4): Distribution of Mediterranean fever-related self-Reported practice among the studied mothers (n=80).

Item	Done		Not done	
	No	%	No	%
I often check my child's temperature.	44	55.0%	36	45.0%
I check my child's temperature using a thermometer.	48	60.0%	32	40.0%

I consult a doctor when the fever starts.	54	67.5%	26	32.5%
I use cold compresses to reduce the temperature.	65	81.3%	15	18.8%
I often give my child an antipyretic without consulting a doctor.	39	48.8%	41	51.2%
When there is abdominal pain during acute attacks, I give painkillers.	73	91.3%	7	8.8%
I use alternative medicine to relieve the child's abdominal pain, such as anise.	22	27.5%	58	72.5%
I support my child emotionally during severe seizures.	56	70.0%	24	30.0%
Keep your child completely comfortable during an acute attack.	57	71.3%	23	28.7%
I give my child colchicine as prescribed by the doctor and at the specified time.	54	67.5%	26	32.5%
I give my child fruits and vegetables constantly	57	71.3%	23	28.7%
I give my child food low in fat and sugar	44	55.0%	36	45.0%
I avoid giving my child fast food.	47	58.8%	33	41.3%

Table (4), indicates that the vast majority of the studied mothers (91.3%) give painkillers to their children when they have abdominal pain attacks. In addition, the majority of them (81.3%) use cold compresses to reduce the temperature. Moreover, more than two-thirds of them (71.3%, 70.0%, & 67.5%) keep their child completely comfortable during an acute attack, give their child fruits and vegetables constantly, support their child emotionally during severe seizures, consult a doctor when the fever starts and, give their child colchicine as prescribed by the doctor and at the specified time respectively.

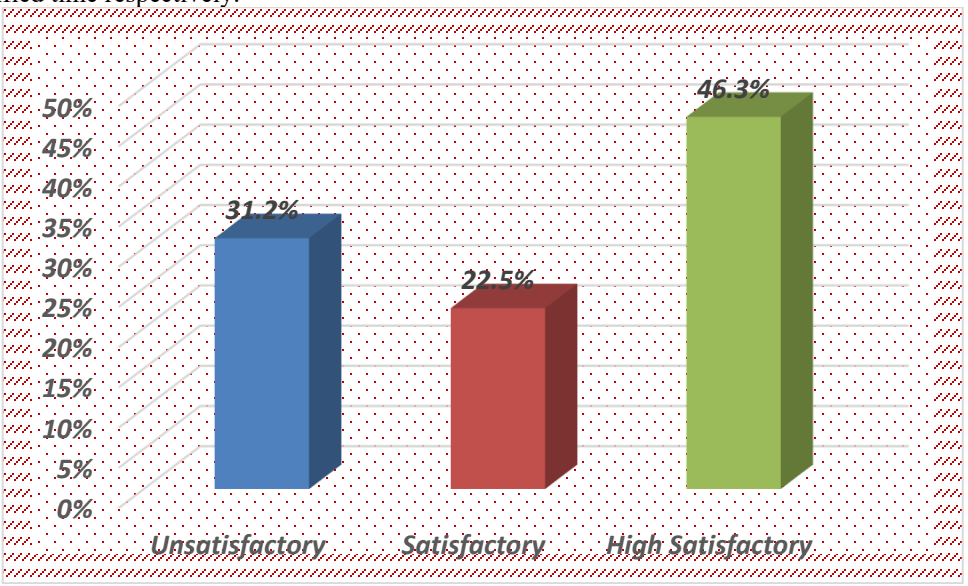

Figure (3): percentage distribution of total Mediterranean fever-related practice total score of the studied mothers.

Figure 3 illustrates that nearly half 46.3% of the studied mothers had a highly satisfactory practice toward caring for their children, while 22.5 % of them had a satisfactory practice toward caring for their children. On the other hand, 31.2% of them had unsatisfactory practice levels.

Table (5): Distribution of relation between studied mother demographic characteristics and

their Mediterranean fever-related knowledge score (n=80).

Variables	Item	mothers' Mediterranean fever-related knowledge score						Chi-square	P value
		Poor		Fair		Good			
		No	%	No	%	No	%		
Age in years	Less than 20	2	4.1%	4	13.8%	0	0.0%	8.41	>0.05
	20-30	15	30.6%	4	13.8%	0	0.0%		
	31-40	14	28.6%	11	37.9%	0	0.0%		
	>40	18	36.7%	10	34.5%	2	100.0%		
Marital status	Married	33	67.3%	20	69.0%	2	100.0%	1.96	>0.05
	Divorced	12	24.5%	5	17.2%	0	0.0%		
	Widow	4	8.2%	4	13.8%	0	0.0%		
Educational level	Illiterate	1	2.0%	2	6.9%	0	0.0%	5.32	>0.05
	Read and write	5	10.2%	5	17.2%	0	0.0%		
	Secondary	23	46.9%	10	34.5%	0	0.0%		
	University	20	40.8%	12	41.4%	2	100.0%		
Mother Occupation	housewife	22	44.9%	17	58.6%	0	0.0%	5.25	>0.05
	Employee	18	36.7%	9	31.0%	2	100.0%		
	Free business.	9	18.4%	3	10.3%	0	0.0%		
Family income	Enough	38	77.6%	18	62.1%	2	100.0%	2.96	>0.05
	Not enough	11	22.4%	11	37.9%	0	0.0%		
Residence	Rural	37	75.5%	17	58.6%	1	50.0%	2.75	>0.05
	Urban	12	24.5%	12	41.4%	1	50.0%		

Table (5), indicates that there was no statistically significant relation between the studied mothers' total Mediterranean fever knowledge score, and their age, marital status, educational level, mother occupation, family income, and residence p value was > 0.05.

Table (6): Distribution of relation between studied children's demographic characteristics and their mothers' Mediterranean fever-related knowledge score (n=80).

Variables	Item	mothers' Mediterranean fever-related knowledge score						Chi-square	P value
		Poor		Fair		Good			
		No	%	No	%	No	%		
Age in years	5-8	28	57.1%	13	44.8%	1	50.0%	1.11	>0.05
	9-12	21	42.9%	16	55.2%	1	50.0%		
Gender	Male	18	36.7%	17	58.6%	1	50.0%	3.54	>0.05
	Female	31	63.3%	12	41.4%	1	50.0%		
Family history of Mediterranean fever	Yes	28	57.1%	25	86.2%	2	100.0%	8.09	<0.05*
	No	21	42.9%	4	13.8%	0	0.0%		
The time that child diagnosed with Mediterranean fever	Less than one year	5	10.2%	4	13.8%	1	50.0%	11.76	>0.05
	1-<2 year	34	69.4%	13	44.8%	0	0.0%		
	2-< 4 years	7	14.3%	6	20.7%	0	0.0%		
	4 years≥	3	6.1%	6	20.7%	1	50.0%		

Table (6), indicates that there was no statistically significant relation between the studied mothers' total Mediterranean fever knowledge score, and their children's age, gender, and the time that the child was diagnosed with Mediterranean fever p value was > 0.05. On the other hand, there was a significant relation between their level of knowledge and family history of Mediterranean fever p value <0.05*.

Table (7): Distribution of relation between studied mother demographic characteristics and their Mediterranean fever-related practice score (n=80).

Variables	Item	Mediterranean fever-related practice score						Chi-square	P value
		Unsatisfactory		Satisfactory		High satisfactory			
		No	%	No	%	No	%		
Age in years	20-30	4	16.0%	1	5.6%	1	2.7%	8.76	>0.05
	31-40	7	28.0%	6	33.3%	6	16.2%		
	41-50	6	24.0%	7	38.9%	12	32.4%		
	>50	8	32.0%	4	22.2%	18	48.6%		
Marital status	Married	18	72.0%	11	61.1%	26	70.3%	2.47	>0.05
	Divorced	6	24.0%	5	27.8%	6	16.2%		
	Widow	1	4.0%	2	11.1%	5	13.5%		
Educational level	Illiterate	1	4.0%	1	5.6%	1	2.7%	7.16	>0.05
	Read and write	3	12.0%	2	11.1%	5	13.5%		
	Secondary	14	56.0%	9	50.0%	10	27.0%		
	University	7	28.0%	6	33.3%	21	56.8%		
Mother Occupation	housewife	15	60.0%	9	50.0%	15	40.5%	3.30	>0.05
	Employee	6	24.0%	6	33.3%	17	45.9%		
	Free business.	4	16.0%	3	16.7%	5	13.5%		
Family income	Enough	20	80.0%	9	50.0%	29	78.4%	5.90	<0.05*
	Not enough	5	20.0%	9	50.0%	8	21.6%		
Residence	Rural	16	64.0%	10	55.6%	29	78.4%	3.31	>0.05
	Urban	9	36.0%	8	44.4%	8	21.6%		

Table (7), indicates that there was no statistically significant relation between the studied mothers' total Mediterranean fever practice score, and their age, marital status, educational level, mother occupation, and residence p value was > 0.05. On the other hand, there was a significant relation between their level of practice and their family income p value <0.05*.

Table (8): Distribution of relation between studied children's demographic characteristics and their mothers' Mediterranean fever-related knowledge score (n=80).

Variables	Item	Mediterranean fever-related practice score						Chi-square	P value
		Unsatisfactory		Satisfactory		High satisfactory			
		No	%	No	%	No	%		
Age in years	5-8	16	64.0%	11	61.1%	15	40.5%	3.98	>0.05
	9-12	9	36.0%	7	38.9%	22	59.5%		
Gender	Male	14	56.0%	6	33.3%	16	43.2%	2.25	>0.05
	Female	11	44.0%	12	66.7%	21	56.8%		

Family history of Mediterranean fever	Yes	17	68.0%	11	61.1%	27	73.0%	0.803	>0.05
	No	8	32.0%	7	38.9%	10	27.0%		
A child diagnosed with Mediterranean fever	Less than one year	5	20.0%	3	16.7%	2	5.4%	4.98	>0.05
	1-<2 year	15	60.0%	11	61.1%	21	56.8%		
	2-< 4 years	3	12.0%	2	11.1%	8	21.6%		
	4 years≥	2	8.0%	2	11.1%	6	16.2%		

Table (8), indicates that there was no statistically significant relation between the studied mothers' total Mediterranean fever practice score, their children's age, gender, and the time that the child was diagnosed with Mediterranean fever, and family history of Mediterranean fever p value was > 0.05.

Table (9): correlation between the studied mothers' total knowledge score and total practice score

Variables		**Total knowledge score**	**Total practice score**
Total knowledge score	r	1	.286
	P- value	-	0.001**
Total practice score	r	.286	1
	P- value	.000**	-

)(Highly statistically significant p < 0.000**

Discussion:

Familial Mediterranean Fever(FMF) is an inherited auto inflammatory disease characterized by recurrent episodes(attacks) of fever and acute inflammation of the membranes lining the abdomen, joints, and lungs. Some affected individuals may develop skin rashes (erysipelas like erythema) affecting the lower legs. Less often, inflammation of the membrane lining the heart or covering the brain and spinal cord may occur. Some individuals may develop a serious condition known as amyloidosis, in which certain proteins called amyloids accumulate in various tissues of the body **(Touitou, 2024)**.

Familial Mediterranean Fever is a chronic inflammatory and autosomal recessive inherited disease with recurrent attacks, characterized by episodes of fever and inflammation of the serous membranes. Although FMF prevalence shows geographical differences, still its reputation is "the most common inherited auto inflammatory disease" The disease is prevalent among eastern Mediterranean populations, non-Ashkenazi Jews, Armenians, Turks, and Arabs, and is usually symptomatic during childhood or adolescence **(Mahboobi et al., 2024).**

Related to the age of studied mothers more than one-third of the studied mothers' age were more than 40 years old. This result was in agreement with **Karapetian & Karapetian (2024**) who conducted a study entitled "Family

reflections: familial Mediterranean fever" and found that about 49% of children's mothers were more than 40 years old from the researcher's point of view this due to elevating marry age more than before.

This study revealed that nearly half of the studied mothers were housewives. This result was by **Al-Bshri et al., (2021)** who conducted a study entitled " Pediatric rheumatology-Health-related quality of life of school-age children with familial Mediterranean fever" who found that about 52% of studied mothers were housewives. This result was in contrast with **Giat et al., (2022)** in Turkey who conducted a study titled "Evaluation of emotional changes in the mothers of patients who have a diagnosis who have a diagnosis of familial Mediterranean fever" and found that about 77.4% of studied mothers were housewives from the researcher point of view this due to decrease job opportunities in most countries.

The current study showed that more than two-thirds of the studied mothers' residences were in rural settings. This result was in agreement with **Esmeray et al., (2021)** states who conducted a study entitled " Oral health status in children with familial Mediterranean fever" and found that about 60% of the studied sample lived in rural settings. On the other hand, this result was in disagreement with **Jackson (2021)** in the United States who conducted a study titled "Coping and Perceived Social Support as Predictors of Quality of Life, Hope, Depression, and Anxiety Among Individuals Diagnosed with Familial Mediterranean Fever" who found that 79% of participants live in urban settings from the researcher point of view this due to difference of sample and setting of country of the two studies.

The current study showed that the age of the studied children's more than half of them their age ranged from 5-8 years old with a mean age of them were 7.68. This result was by **Poddighe et al., (2022)** who conducted a study entitled "Conventional and novel therapeutic options in children with familial Mediterranean fever: A rare auto inflammatory disease" who found that the mean age was 7.52. This result also was in contrast with **Ayaz et al., (2021)** who conducted a study entitled " Comorbidities and phenotype-genotype correlation in children with familial Mediterranean fever" and found that the mean age of the children was 13.1 ± 5.4.

The current study found that more than two-thirds of the children had a family history of Mediterranean fever this result was in agreement with **Di Ciaula et al., (2023)** in Italy who conducted a study entitled " Genetic and clinical features of familial Mediterranean fever (FMF) in a homogeneous cohort of patients from South-Eastern Italy" who found that 72% of participant had a family history of Mediterranean fever from the researcher point of view this due to FMF is familial or genetic disease.

This study showed that more than half of children were diagnosed with Mediterranean fever from one to less than two years old. This result was in agreement with **Kehribar & Özgen (2020)** who conducted a study entitled "The importance of Mediterranean fever gene in familial Mediterranean fever" and found that about two-thirds of children were diagnosed with Mediterranean fever one-year-old from the researcher's point of view this due to increase medical improvement nowadays.

This study showed that slightly less than one-half of mothers' source of knowledge were the health care providers and more than one-third of them their source of knowledge was the internet. This result was in disagreement with **Yıldırım et al., (2021)** in Turkey who conducted a study entitled "Parental knowledge about familial Mediterranean fever: a cross-sectional study" and found that parents preferred to obtain information from physicians (98.8%), websites (47.9%), seminars (3.5%), and books (1.7%) from researcher point of view this due to decrease level of awareness of the studied mothers.

This study showed that two-thirds of the studied mothers had poor knowledge regarding

Mediterranean fever. The above-mentioned results exposed and proved research question number one, which asked about the level of knowledge of mothers' children with Mediterranean fever among primary school age. This result was in agreement with **AbdEL-Satar et al., (2020)** in Mahalla, Egypt who conducted a study entitled " Assessment of Mothers' Perception about Unknown Fever among Preschool Age Children at Mahalla Fever Hospital " who found that more than four-fifth of mothers had poor knowledge about Mediterranean fever from the researcher point of view this due to similarity of educational level and culture of mothers. On the other hand, this result was in disagreement with **Yıldırım et al., (2021)** in Turkey who found that 90.1% of parents were aware and had good knowledge about FMF from the researcher's point of view due to the increased educational level of parents than in Egypt.

This study revealed that the vast majority of the studied mothers (91.3%) give painkillers to their children when they have abdominal pain attacks and more than four-fifths use cold compresses to reduce the temperature. This result was in agreement with **Şentürk et al., (2021)** in Turkey who conducted a study entitled "Association of complementary and integrative therapy use and symptoms among Turkish patients with familial Mediterranean fever" and found that the majority of participants have a satisfied level of practice about FMF. About the use of colchicine more than two-thirds give their child colchicine as prescribed by the doctor at the specified time.

This result was in agreement with **Marzouk et al., (2020)** in Egypt who conducted a study titled "Effect of an increased dose of colchicine on microalbuminuria in children with familial Mediterranean Fever" who found that the majority of mothers follow the prescribed medication and the number of annual attacks decreased significantly with the increased doses of colchicines from 39.9 ± 22.43 attacks/year to 7.92 ± 4.92 attacks/year ($p = 0.0001$) from the researcher point of view this due to mothers usually follow the doctor ordered.

This study showed that more than two-thirds of mothers keep their children completely comfortable during an acute attack this result was in agreement with **Durcan et al., (2021)** who conducted a study entitled "Evaluation of Health-Related Quality of Life in Children and Adolescents with Familial Mediterranean Fever" who found that the majority of mothers keep their children relaxed during the MF attack researcher point of view this due to mothers aware about the benefit of rest for their children during the attack that it decrease their suffer.

The current study revealed that nearly half of the studied mothers had a highly satisfactory practice toward caring for their children of FMF. The above-mentioned results exposed and proved research question number two, which asked about the level of practice of mothers' children with Mediterranean fever among primary school age. This finding was by **Salah et al., (2022)** in Egypt who conducted a study entitled "Egyptian evidence-based consensus on clinical practice recommendations for the management of familial Mediterranean fever" and found that slightly more than one-half had a highly satisfactory practice toward caring for FMF patients from the researcher point of view this similarity due to similarity in culture and knowledge of participants.

On another hand, this result was in disagreement with **Ehlers et al., (2023)** who conducted a study entitled "Treat-to-target strategies for the management of familial Mediterranean Fever in children" and found that slightly more than two-thirds of participants had a highly satisfactory practice toward caring for FMF from the researcher point of view this due to increase the level of education for participants.

This study revealed that there was no statistically significant relation between the studied mothers' total Mediterranean fever knowledge and their demographic characteristics. The above-mentioned results

exposed and proved research question number four, which asked about the relationship between socio-demographic characteristics of mothers' children with Mediterranean fever among primary school age and their knowledge.

This finding was in disagreement with **Gezgin et al., (2021)** who conducted a study entitled "Evaluation of caregiver burden and coping strategies in parents of pediatric familial Mediterranean fever patients about illness severity, therapy and health-related quality of life." They found that there was a statistically significant relation between the studied caregivers' (parents) Mediterranean fever knowledge and their demographic characteristics from the researcher's point of view this is due to a high level of knowledge and level of education between the studied sample.

This study showed that there was a significant relation between their level of knowledge and family history of Mediterranean fever p value <0.05. This result was in agreement with **Tufan & Lachmann (2020)** who conducted a study titled "Familial Mediterranean fever, from pathogenesis to treatment: a contemporary Review" and found that there was a relation between the level of knowledge and family history of Mediterranean fever from the researcher point of view this due to the family with Mediterranean fever led to increase their experience and knowledge about the disease.

This study revealed that there was no statistically significant relation between the studied mothers' total Mediterranean fever practice score, and their age, marital status, educational level, mother occupation, and residence. The above-mentioned results exposed and proved research question number four, which asked about the relationship between socio-demographic characteristics of mothers' children with Mediterranean fever among primary school age and their practice.

These findings were by **Durmuş et al., (2022)** who conducted a study entitled "Health-related quality of life of children aged 2-18 years with familial Mediterranean fever" and found that there wasn't a significant relation between the demographic variables and mothers' practice from the researcher point of view this is due to there were no changes of clinical features of the children whose mother age, marital status and occupation distinguish.

This study showed that there was a significant relation between the studied mothers' level of practice and their family income p value <0.05. This result was in agreement with **Koşan et al., (2021)** who conducted a study entitled "Evaluation of the burden of care and the quality of life in the parents of Turkish children with familial Mediterranean fever" in Turkey who found that there was a relation between the caregivers of FMF patients experience in low-income and middle-income countries from the researcher point of view the high costs of the health care system and prominent changes in the health care policies have played role in our findings.

On another hand, this result was in disagreement with **Ehlers et al., (2023**Turkey who conducted a study entitled "Economic impact of juvenile idiopathic arthritis and familial Mediterranean fever" in Turkey and found that there wasn't a relation between their level of practice and their family income this due to the low costs of the health care system and prominent changes in the health care policies for the last 5 years in Turkey.

Conclusion

Based on the results of the present study, it can be concluded that:

Two-thirds of the studied mothers had poor knowledge regarding Mediterranean fever among primary school age. Nearly half of the studied mothers had a highly satisfactory practice toward caring for their children with Mediterranean fever. Also, there was no statistically significant relation between the studied mothers' total Mediterranean fever knowledge score, and their age, marital status, educational level, mother occupation, family income, and residence p value was > 0.05.

Recommendations

Based on the results of the present study, the recommendations have been considered the following:

1- Health educational programs and further studies should be developed and implemented for mothers to educate them about Familial Mediterranean fever with the most current information and practices about the disease.

2- Similar population-based studies are advised to achieve the generalization of results.

3- Booklets should be available and distributed to all mothers about the disease and health-related practices

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