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Parents' preferences for herbal supplements in managing functional gastrointestinal disorders

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Abstract

Gastrointestinal diseases in children and adolescents lead to a considerable impairment of the quality of life of children and parents. Accordingly, there are considerable socio-economic consequences for the family and society. Parents concerned about their children may seek alternative treatments and opt for traditional herbal supplements. This study aimed to determine the utilization status and variety of herbal supplements by parents of children with functional gastrointestinal disorders. 216 study participants were given a socio-demographic questionnaire, a diagnostic questionnaire based on the ROME-IV criteria and a questionnaire with 20 herb names used in traditional treatments. 33.3% of parents reported using "ginger; *Zingiber officinale*" for their children who were infants and suffered from infantile regurgitation. The herb most preferred by parents for their children with functional gastrointestinal disorders in childhood and adolescence was "spearmint; *Mentha spicata*" (28.9%). 57.9% of the parents participating in the study stated that they preferred herbal supplements for their children. In addition, 40% of the participants stated that they use the herbs with the advice of the referral. As a result, it has been shown that parents tend to use herbs or herbal supplements, that they need to be educated in the use of these supplements, and that they need access to the right herb and to reliable supplements derived from the right herb.

Keywords Functional gastrointestinal disorders, Herbs, Children, Parents, Health personnel

Introduction

In addition to being painful for the child, gastrointestinal problems can lead to a lower quality of life, absenteeism from school, and a higher risk of depression and anxiety [1, 2]. This has a negative impact on children's quality of life and increases the caregiving role of parents. Thus, gastrointestinal disorders in children and adolescents can lead to significant reductions in children's and parents' quality of life and have significant socioeconomic consequences for the family and society [1–4]. The use of plants and their products to treat diseases is considered part of folk or traditional medicine [5, 6]. The use of medicinal plants in the treatment of functional gastrointestinal disorders (FGID) can be seen in historical medical literature, in the Egyptian "Papyrus Ebers" and the Chinese "Shénnóng Běncaǒ Jīng". Nowadays, numerous herbs used in FGID are available in modern literature such as the American Botanical Council, EMA (European Medicines Agency), ESCOP (European Scientific Cooperative for Phytomedicines), Phytokodex (Austria), and others [7]. Although the use of medicinal plants in

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FGID is proven by historical data, Although the use of medicinal plants in FGID has been proven by historical data, it is important to choose medicinal plants that are safe in children, have a wide dose range, and have no side effects [8].

Parents are known to use natural products to treat health problems in their children without consulting health professionals. According to the literature, about 52% of all children in Europe are treated with complementary and alternative medicine (CAM), often without the knowledge of pediatricians [6, 9]. The use of CAM approaches such as natural health products, traditional herbal medicines, acupuncture, and food supplements are recognized as alternative therapies with fewer side effects [10]. CAM is attractive to some individuals because patients feel they have control over their own bodies and health [11]. Medicinal plants, which in the past started with trial and error or observation of the environment, but today we know that they have proven effects based on scientific foundations, and herbal products produced from these plants in a controlled and standardized manner, which are scientifically proven to be beneficial, should only be used with the advice of a doctor to maintain health, protect against diseases or regain health. Unconscious use of herbs should be avoided to protect against possible harmful effects of herbs (chemicals in their composition, production in unsuitable environments, interactions, etc.) [12–14]. In the field of children's health, the use of herbal products to solve gastrointestinal problems is becoming increasingly important. As parents look for alternative and natural remedies, it is becoming very important to explore of herbal supplements. The increasing use of natural products may highlight the need for more research and guidance in these areas. Therefore, parental preferences can be an important indicator for the development of better understanding, treatment, and prevention strategies in the health sector.

Therefore, it is of great importance to identify herbal supplements and food supplements used in childhood. In this study, it was aimed to determine the use of herbal supplements by parents for the treatment of gastro intestinal problems in their children on the basis of evidence-based use of medicinal plants, as well as to determine the types of these supplements.

Materials and methods

In this descriptive and cross-sectional study, answers were sought to the questions determined in order to determine the herbs and herbal supplements that parents frequently use to cope with gastro-intestinal problems of their children with Functional Gastrointestinal Disorders (FGID). For this purpose, answers to the following research questions were sought:

1. Do parents of children with FGID prefer herbs or herbal supplements?
2. On whose recommendation do parents of children with FGID use herbs or herbal supplements?
3. For which current diagnosis do parents of children with FGID use which herb or herbal supplement?

Participants

The data required for the study were obtained from the parents of children between the ages of 0–18 years who applied to the Pediatrics Outpatient Clinic of a university hospital in Turkey. Data were collected between June 2021 and February 2022. Parents with children aged 0–18 years with functional and functional gastro-intestinal disorders (FGID) according to ROME IV criteria were included in the study. At the time of data collection, a total of 2440 patients were admitted to the outpatient clinic and 255 patients with FGID who were followed up by a pediatric gastroenterologist were admitted to the outpatient clinic. Only 216 of this outpatient population agreed to participate in the study. Data were collected face-to-face using a form created by the researchers. Before data collection, parents were informed about the study and informed consent was obtained.

Data collection tools

The questionnaire consists of three parts. All forms were created by the researchers. The first questionnaire form is a demographic information form consisting of 16 questions for parents who agreed to participate in the study. In the second questionnaire form, a section on the determination of gastrointestinal disorders was created according to the classification of functional and functional gastrointestinal disorders for children based on ROME IV criteria (Drossman, 2016) using the relevant literature. In this section, 7 diagnoses for infants, 4 diagnoses for toddlers and 12 diagnoses for children over 4 years of age were presented and parents were asked to mark the diagnosis their children received according to their age group. In the third questionnaire form, the names of the 20 most commonly used herbs in gastrointestinal disorders were given by reviewing the literature. In this section, a table was prepared to determine the herbal supplements used by the parents. A survey form has been prepared for use in this study. This form has not been used in any other study before (See the supplementary file). The selected herbal supplements are products supported by systematic reviews and clinical studies in the relevant literature. This information was obtained from databases such as PubMed and Google Scholar.

Inclusion criteria

1. Parents participating in the study must have a medical diagnosis confirming their child's gastrointestinal disorders.
2. Parents must be willing to share their experiences with using herbal supplements.
3. The children of the participating parents must be between the ages of 0 and 18.

Exclusion criteria

1. Parents who have chosen to use only herbal supplements instead of medical treatment for their child's gastrointestinal disorders have been excluded.
2. Parents who do not have sufficient knowledge about the efficacy or safety of herbal supplements have been excluded from the study.

Data analysis

Statistical analyses were performed using the SPSS (IBM SPSS Statistics 24) package program. Frequency tables and descriptive statistics were used to interpret the findings.

Ethical considerations

This study was approved by the Afyonkarahisar Health Sciences University Clinical Research Ethics Committee (2021/6) and a written consent form was furnished to respondents for review and signature before starting interviews. All participants have given informed consent. Before data collection, parents were informed about the study and informed consent was obtained.

Results

Descriptive characteristics of the participants

A total of 216 parents of children with FGID participated in the study. 79.2% of the participants were mothers and 42.1% had children between 5 and 10 years of age. 80.6% of the participants did not have a child with a chronic disease and 50% of these participants were from families with two children. 57.9% of the participants (125 people) reported that their child had previously used supplements with herbal ingredients. 40% of the participants stated that they used herbs or herbal supplements on the recommendation of a herbalist. Participants who used herbs or herbal supplements used at least one supplements. Other descriptive characteristics of the participants are given in Table 1.

Details of participants with FGID in infancy

Table 2 shows details of participants with FGID in infancy (0–4 years) and Table 3 shows details of participants with functional gastrointestinal disorders in childhood and adolescence (>4 years). 33.3% of parents reported using ginger for their children who were in infancy and experiencing infantile regurgitation. For infants with persistent vomiting, 33.3% of parents reported using "fennel" and 33.3% reported using "ginger". 29.4% of parents used "fennel" for infantile colic. Among parents whose children had "functional diarrhea", 28.5% used "turmeric". For "dyskinesia" in infancy, 35% of parents reported using "spearmint". Most of the supplements used by parents for their children were given as "herbal tea". They stated that they gave olive oil to their children orally with a teaspoon. Ginger and turmeric powder was preferred to be mixed with honey in older children, while it was preferred to be given as tea with hot water in children under 4 years of age. It was stated that "black cumin oil" was administered by giving 1–2 drops orally. Other herbs such as "fennel", "spearmint", "cumin", "common lady's mantle", "chamomile", "thyme" was brewed in hot water and used as tea (infusion). Parents reported applying "cantoron oil" by massaging the baby's abdomen. Details of other preferred herbs FGID in infancy and childhood are shown in Table 4.

Parents' preferred herbs for children with functional gastrointestinal disorders in children and adolescents

The most preferred herb by parents for their children with FGID (children and adolescents) was spearmint (28.9%). " Spearmint " was the most preferred herb for complaints such as persistent vomiting, nausea and vomiting, functional dyspepsia, irritable bowel syndrome, abdominal migraine and other abdominal pain, and constipation. The parents stated that they applied spearmint, chamomile, cumin, fennel, lemon balm, sage, cinnamon, milk thistle, marshmallow, senna, linden, thyme, echinacea, immortelle, licorice and apricot as tea. Olive oil and banana were consumed orally, while castor oil and St. John's Worth oil were applied by massaging the abdomen. Ginger and turmeric were mixed with honey and black cumin seed was given orally as oil to older children (adolescents). Parents' preferred herbs for children with functional gastrointestinal disorders in children and adolescents are given in Table 5.

Discussion

Gastro-intestinal problems experienced during childhood can be challenging and reduce quality of life [2]. These problems can also create difficulties for parents [1, 4]. Parents may use natural products to alleviate their children's pain, with or without consulting a health professional [9, 15]. Complementary and alternative methods (CAM) are employed to support medical treatment, reduce disease symptoms, and maintain health [16]. However, since children are physiologically and biochemically different from adults, incorrect dosages of

Table 1 Descriptive characteristics of participants

Descriptive characteristics	*n*	%
Age of the child		
0–4	51	23.6
5–10	91	42.1
11–18	74	34.3
Sex of the child		
Girl	110	50.9
Boy	106	49.1
Presence of chronic disease in the child		
Yes	42	19.4
No	174	80.6
Which parent gave the information		
Mother	171	79.2
Father	45	20.8
Family structure		
Core	185	85.6
Wide	22	10.2
Fragmented	9	4.2
Mother's age		
20–30	50	23.1
31–40	120	55.6
41–50	39	18.1
51–60	7	3.2
Mother's Employment Status		
Yes	109	50.5
No	107	49.5
Mother's Education Level		
Primary School	36	16.7
Middle School	37	17.1
High School	53	24.5
University	90	41.7
Father's Age		
20–30	29	13.4
31–40	97	44.9
41–50	65	30.1
51–60	15	6.9
Father's Employment Status		
Yes	196	90.7
No	11	5.1
Father's Education Level		
Primary School	14	6.5
Middle School	23	10.6
High School	64	29.6
University	106	49.1
Family Income Status		
Income less expenses	34	15.7
Income Equals Expenses	115	53.2
Income Exceeds Expenses	67	31
Place of Residence		
Province Center	135	62.5
District	46	21.3
Town	20	9.3
Village	15	6.9
Total Number of Children in Family		

Table 1 (continued)

Descriptive characteristics	*n*	%
1	52	24.1
2	108	50
3	41	19
4	9	4.2
5	6	2.8
Have you ever used herbal supplements for your child?		
Yes	125	57.9
No	91	42.1
If you used herbal supplements, on whose recommendation?		
Akthar (Herbalist)	50	40
Nurse	5	4
Pharmacist	18	14.4
amily-Friends-Internet	48	38.4
Doctor	4	3.2

Table 2 Distribution of functional gastrointestinal disorders in infancy (0–4 years) ($n=51$)

Type of disorder	*n*	%
Infant regurgitation	13	25.5
Infant rumination syndrome	2	3.9
Cyclic vomiting syndrome.	6	11.8
Infant dyschezia	19	37.3
Functional diarrhea	8	15.7
Infant colic	26	51.0
Functional constipation	6	11.8

Table 3 Distribution of functional gastrointestinal disorders in children and adolescents (children over 4–18 years of age) ($N=165$)

Type of disorder	5–10 yaş		11–18 yaş	
	n	%	*n*	%
Functional nausea and vomiting disorders				
Cyclic vomiting syndrome	6	6.5	8	11.0
Functional nausea and functional vomiting	13	14.1	14	19.2
Rumination syndrome	6	6.5	6	8.2
Aerophagia	8	8.7	3	4.1
Functional abdominal pain disorders				
Functional dyspepsia	16	17.4	11	15.1
Irritable bowel syndrome	34	37.0	15	20.5
Abdominal migraine	31	33.7	21	28.8
Functional abdominal pain – not otherwise specified	18	19.6	14	19.2
Functional defecation disorders				
Functional constipation	44	47.8	42	57.5
Nonretentive fecal incontinence	7	7.6	1	1.4

herbs and herbal supplements can have toxic effects [12, 17]. This study aimed to determine the herbs and herbal supplements frequently used by parents to address gastrointestinal problems in their children with FGID. It was found that 57.9% of the parents used at least one herbal supplement for their children, indicating a significant preference for such remedies (Table 1).

The second question of the study explored the sources of recommendations for the herbal supplements used by parents for their children with FGID. It was found that 40% of parents followed recommendations from herbalists, 38.4% from family friends or the internet, 14.4% from pharmacists, 4% from nurses, and 3.2% from physicians (Table 1). This is consistent with findings from Araz and Bülbül [16], where mothers predominantly used recommendations from relatives or friends, and Gürol et al. [18], who reported that mothers relied on family members, neighbors, and online information. This reliance on informal sources poses significant risks to children's health, highlighting the need for proper guidance on herbal supplement use [18].

The third question assessed the herbs and supplements used by parents of children with FGID based on ROME IV criteria. The study found that 51% of infants aged 0–4 had infantile colic (Table 3). Meta-analyses report functional constipation as the most common disorder (9.0%) and infant regurgitation syndrome as the second most common (8.0%) in young children [19]. Chia et al. found functional constipation (5.6%) prevalent among infants in Vietnam, with a 2.5% prevalence of colic [20]. In China, the combination of infantile colic and regurgitation (2.73%) was most common [21]. The study revealed that functional constipation was the most common FGID in children over 4 years of age, affecting 47.8% of those aged 5–10 and 57.5% of those aged 11–18 (Table 4). This aligns with studies showing high rates of functional constipation in children and adolescents, including 10.7% in Colombian children, 11.1% in adolescents, and 29% in Spanish children over 4 years [22–24]. The consistency of these findings with Robin et al. [24] supports the prevalence of functional constipation as the most common FGID in this age group.

Table 4 Herbs and herbal supplements used by participants with functional gastrointestinal disorders in infancy*

Type of disorder	Herbs/ (Turkish name; Latin name; The plant part used; How it is used)	*n*	%
Infant regurgitation	Olive oil (Zeytinyağı; *Olea europea* L.; fixed oil; externally)	1	8.3
	Fennel (Rezene; *Foeniculum vulgare* Miller; fruit; herbal tea)	3	25
	Spearmint (Bahçe nanesi; *Mentha spicata* L.; leaves; herbal tea)	3	25
	Caraway (Kimyon; *Carum carvi* L.; fruit; herbal tea)	1	8.3
	Ginger (Zencefil: *Zingiber officinale* Roscoe; rhizome; herbal tea)	4	33.3
Infant rumination syndrome	Chamomile (Papatya; *Matricaria chamomilla* L.; flowers; herbal tea)	1	50
	Spearmint (Bahçe nanesi; *Mentha spicata* L.; leaves; herbal tea)	1	50
Cyclic vomiting syndrome	Olive oil (Zeytinyağı; *Olea europea* L.; fixed oil; externally)	1	16.6
	Common lady's mantle (Aslanpençesi; *Alchemilla vulgaris* L.; aerial parts; herbal tea)	1	16.6
	Fennel (Rezene; *Foeniculum vulgare* Miller; fruit; herbal tea)	2	33.3
	Ginger (Zencefil: *Zingiber officinale* Roscoe; rhizome; herbal tea)	2	33.3
Infant colic	Thyme (Kekik; *Thymus* sp., *Origanum* sp., *Tymbra* sp., *Saturea* sp., *Coridathymus* sp.; aerial parts; herbal tea)	1	5.8
	Common lady's mantle (Aslanpençesi; *Alchemilla vulgaris* L.; aerial parts; herbal tea)		
	Spearmint (Bahçe nanesi; *Mentha spicata* L.; leaves; herbal tea)	1	5.8
	Olive oil (Zeytinyağı; *Olea europea* L.; fixed oil; externally)	4	23.5
	Fennel (Rezene; *Foeniculum vulgare* Miller; fruit; herbal tea)	2	11.7
	Chamomile (Papatya; *Matricaria chamomilla* L.; flowers; herbal tea)	5	29.4
	Black cumin oil (Çörek otu; *Nigella sativa* L.; fixed oil; orally)	1	5.8
	Caraway (Kimyon; *Carum carvi* L.; fruit; herbal tea)	1	5.8
	Ginger (Zencefil: *Zingiber officinale* Roscoe; rhizome; herbal tea)	1	5.8
		1	5.8
Functional diarrhea	Spearmint (Bahçe nanesi; *Mentha spicata* L.; leaves; herbal tea)	1	14.2
	Common lady's mantle (Aslanpençesi; *Alchemilla vulgaris* L.; aerial parts; herbal tea)	1	14.2
	Fennel (Rezene; *Foeniculum vulgare* Miller; fruit; herbal tea)	1	14.2
	Ginger (Zencefil: *Zingiber officinale* Roscoe; rhizome; herbal tea)	1	14.2
	Turmeric (Zerdeçal; *Curcuma longa* L.; rhizome; herbal tea)	2	28.5
Infant dyschezia	Thyme (Kekik; *Thymus* sp., *Origanum* sp., *Tymbra* sp., *Saturea* sp., *Coridathymus* sp.; aerial parts; herbal tea)	1	5
	Olive oil (Zeytinyağı; *Olea europea* L.; fixed oil; externally)		
	St. John's Wort oil (Kantaron; *Hypericum perforatum* L.; macerate; externally)	2	10
	Common lady's mantle (Aslanpençesi; *Alchemilla vulgaris* L.; aerial parts; herbal tea)	1	5
	Fennel (Rezene; *Foeniculum vulgare* Miller; fruit; herbal tea)	2	10
	Chamomile (Papatya; *Matricaria chamomilla* L.; flowers; herbal tea)	4	20
	Spearmint (Bahçe nanesi; *Mentha spicata* L.; leaves; herbal tea)	2	10
	Black cumin oil (Çörek out; *Nigella sativa* L.; fixed oil; orally)	7	35
		1	5
Functional constipation	Olive oil (Zeytinyağı; *Olea europea* L.; fixed oil; externally)	1	33.3
	Fennel (Rezene; *Foeniculum vulgare* Miller; fruit; herbal tea)	1	33.3
	Spearmint (Bahçe nanesi; *Mentha spicata* L.; leaves; herbal tea)	1	33.3

* Latin plant names are given according to WFO 2024. (https://www.worldfloraonline.org)

FGID experienced in infancy

The aim of this study was to evaluate the most frequently used herbs and herbal supplements by parents for their children with FGID according to Rome IV criteria. Table 5 shows that infantile colic was most common in children under 4 years, with 29.4% of parents using fennel for treatment. Previous studies in Türkiye also highlighted fennel tea as a common remedy for infantile colic [25, 26]. A meta-analysis confirmed fennel's effectiveness for colic, although more research is needed [27]. Despite some concerns, fennel tea's estragole concentration is not considered harmful [28]. The scientific evidence supporting the recommendation of herbal remedies, such as fennel and mint, for alleviating infantile colic is very limited [29]. Rumination syndrome is characterized by repetitive, effortless regurgitation of food while eating or after eating, followed by re- chewing and re-swallowing [30]. Chamomile and spearmint were used for infantile rumination syndrome, characterized by repetitive regurgitation and re-chewing. Chamomile is known for its digestive benefits, but caution is advised to ensure its purity and to avoid allergic reactions from contaminants [31, 32]. Spearmint is used for dyspepsia and irritable bowel syndrome, but its use for infantile rumination is novel [33]. Finally, 28.5% of parents used turmeric for

Table 5 Herbs and herbal supplements used by participants with functional gastrointestinal disorders in childhood

		Chamomile tea	Spearmint tea	Ginger tea	Cumin tea	Fennel tea	Licorice root tea	Olive oil	Lemon balm tea	Turmeric tea	Black cumin oil	Sage tea	Senna tea	Cinnamon tea	Milk thistle tea	Marshmallow tea	Castor oil	St. John's Wort oil	Linden tea	Banana fruit	Thyme tea	Echinacea tea	Immortal tea	Apricot tea
Functional nausea and vomiting disorders																								
Cyclic vomiting syndrome	**n**	**5**	7	2			1				1													
	%	31.25	43.75	12.5			6.25				6.25													
Functional nausea and functional vomiting	n	5	7	6	1	1				2				2										
	%	20.8	29.1	25.0	4.1	4.1				8.3				8.3										
Rumination syndrome	n		3	1	2	1	1		1	3														
	%		25	8.3	16.6	8.3	8.3		8.3	25														
Aerophagia	n	2	1	2	2	2		1			1			2										
	%	15.3	7.6	15.3	15.3	15.3		7.6			7.6			15.3										
Functional abdominal pain disorders																								
Functional dyspepsia	n	4	5	4	2	5	1		1	1		1							1		1		1	1
	%	14.2	17.8	14.2	7.1	17.8	3.5		3.5	3.5		3.5							3.5		3.5		3.5	3.5
Irritable bowel syndrome	n	6	14	1	1	6	3	2	3		3	1	1	4	1						1			1
	%	12.5	29.1	2.0	2.0	12.5	6.2	4.1	6.2		6.2	2.0	2.0	8.3	2.0						2.0			2.0
Abdominal migraine	n	7	14	1	4	5		1	1	2	1		1	2	1	2				1	2			
	%	15.5	31.1	2.2	8.8	11.1		2.2	2.2	4.4	2.2		2.2	4.4	2.2	4.4				2.2	4.4			
Functional abdominal pain – not otherwise specified	n	2	13	1	1	3				1	2	1			2						3			
	%	6.8	44.8	3.4	3.4	10.3				3.4	6.8	3.4			6.8						10.3			
Functional defecation disorders																								
Functional constipation	n	6	21	4	4	17	1	3	3	1	3		2	3	1	1	1	1	1	1	3	1		
	%	7.6	26.9	5.1	5.1	21.7	1.2	3.8	3.8	1.2	3.8		2.5	3.8	1.2	1.2	1.2	1.2	1.2	1.2	3.8	1.2		
Nonretentive fecal incontinence	n	2	2		1			1		1				1										
	%	25.0	25.0		12.5			12.5		12.5				12.5										
Total	**n**	**39**	**87**	**22**	**18**	**40**	**7**	**8**	**9**	**11**	**11**	**3**	**4**	**14**	**5**	**3**	**1**	**1**	**2**	**2**	**10**	**1**	**1**	**2**
	%	**12.9**	**28.9**	**7.3**	**5.9**	**13.2**	**2.3**	**2.6**	**2.9**	**3.6**	**3.6**	**0.9**	**1.3**	**4.6**	**1.6**	**0.9**	**0.3**	**0.3**	**0.6**	**0.6**	**3.3**	**0.3**	**0.3**	**0.6**

functional diarrhea, supported by evidence of its efficacy in treating intestinal disorders [32, 34, 35].

In a study conducted in Indonesia, parents used a mixture of guava leaves, turmeric, and black tea for traditional diarrhea treatment, aligning with the use of turmeric in our study [36]. Turmeric, particularly its active component curcumin, is known for its anti-inflammatory properties and potential benefits in managing inflammatory bowel diseases, although its safety for children remains uncertain [37–41]. Peppermint tea was used by 43.75% of parents for cyclic vomiting syndrome, functional nausea, irritable bowel syndrome, abdominal migraine, functional abdominal pain, and functional constipation. Despite the lack of clinical studies on peppermint tea's use for these conditions, it is known to aid in gastrointestinal disorders [32, 34, 42, 43]. Spearmint was also commonly used, with no prior studies specifically documenting its use for these conditions, making this study novel in recording its application. For functional dyspepsia, both mint and fennel were used, with fennel shown to have a carminative effect [44–46]. Experimental studies have validated fennel's effectiveness, and both fennel and peppermint are recognized for treating gastrointestinal issues [47, 48]. Chamomile and spearmint were used for fecal incontinence, with chamomile recognized by the FDA as generally safe but occasionally causing allergic reactions [31, 49, 50]. Despite limited data on chamomile's safety for infants, it is traditionally used for gastrointestinal relief [51]. All supplements used for aerophagia have known therapeutic effects, though safety and efficacy data for children are limited.

Conclusion

Little is known about the use, benefits, and risks of herbs and herbal supplements in the pediatric population. The use of herbs and herbal supplements is a cause for concern, as there is not yet clear and accurate information on the use of herbal supplements in children. In this study, 57.9% of parents reported that they preferred herbs or herbal supplements for their children. However, 40% of the participants stated that they used herbs on the recommendation of herbalists. As a result of this study, it was revealed that parents are inclined to use herbs or herbal supplements, need education on the use of these supplements, and need access to the right herb and reliable supplements derived from the right herb. In this direction, parents should be trained on the supply and use of herbs. The risk of herbs or herbal supplements interacting with medicines used by children is also a worrying issue. For this reason, parents should use herbs and herbal supplements in consultation with a physician, pharmacist, or other healthcare professional. The use of such supplements without consulting a healthcare professional may pose great risks to children's health. The adulteration of herbal products is also a major problem; therefore, it is important to highlight the need for authentic herbal products to ensure their quality and effectiveness.

Parents should understand how critical it is to seek professional advice when using herbal supplements. This is necessary to minimize risks related to both safety and efficacy. Professional guidance is crucial for the correct use of herbal products and for preventing potential side effects. Therefore, clearly highlighting the role of professional guidance in the use of herbal supplements and the protective measures it provide will help parents make informed and safe decisions.

Investigating the long-term effects of herbal supplement use in children or exploring methods for healthcare providers to educate parents more effectively could contribute to a better understanding of this area.

Abbreviations

ROME-IV	The Rome IV criteria system was developed to classify the functional gastrointestinal disorders based on their clinical symptoms
EMA	European Medicines Agency
ESCOP	European Scientific Cooperative for Phytomedicines
FGID	Functional Gastrointestinal Disorders
CAM	Complementary and Alternative Medicine

Supplementary Information

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Supplementary Material 1

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Author contributions

Concept – AB, AK, MTB; Design – AB, AK, MTB; Supervision – AB, AK; Resources –AB, MTB; Materials – AN, AK; Data Collection and/or Processing – AB, AK, MTB; Analysis and/or Interpretation – AB, AK, MTB; Search – AB, AK, MTB; Writing Manuscript – AB, AK; Critical Review – AB, AK, MTB.

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Data availability

The data supporting the conclusions of this study are available from the corresponding author upon reasonable request.

Declarations

Ethical approval

Ethics committee approval was received for this study from the ethics committee of Afyonkarahisar Health Sciences University (Date: April 30, 2021, Decision No. 2021/6). All methods were carried out in accordance with Declaration of Helsinki. Before data collection, parents were informed about the study and informed consent was obtained.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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