



The usage of the most frequently preferred herbal products in Turkey in nursing mothers, newborns, infants and children

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ABSTRACT

This study was conducted to identify the most frequently used herbal products available in the pharmacies for the healthcare of nursing mothers newborns, infants and children and to compare their efficacy and the safety of some herbal ingredients in comparison with those reported in the literature. Today, mothers visit the pharmacies with several complaints for themselves and their children. Although these complaints may appear simple at the first glance, they are of importance due to their frequency among people. In this context, herbal medications and chemical agents are being used for the treatment of such complaints. The most frequent problem of nursing mothers seems to be hypogalactia according to the interviews conducted with the pharmacists of 40 pharmacies from several municipalities of İstanbul and Ankara for this study. Pharmacies have several herbal medicines or medicinal teas that are being used for their galactagogue effect. On the other hand, the problems encountered in children generally include lack of appetite, cold, colic, insomnia, and weakness of the immune system. Therefore, herbal remedies and medicinal teas that used as dietary supplements, immune system strengtheners, anti-cold and anti-colic agents are preferably recommended by the pharmacists for the relief of these problems. In addition, externally used herbal preparations are also involved in the composition of various anti-rash creams or lotions, foam shampoos, hair and body shampoos, baby oil and lotions, and bath oils. Notably, these herbal preparations may not be as harmless as they are considered; therefore, their usage should be more conscious particularly in these special patient groups.

Keywords: Newborn, Infant, children, colic, nursing mothers, pharmacy, medicinal tea

INTRODUCTION

Herbal drugs have been used for centuries to cure disease and relieve symptoms. The findings on efficacy were based on the experiences and observations of healed people well into the 19th century. Since ideas about the mechanism of action were missing at that time, one documented purely empirical experiences and did not critically deal with the possibilities and limits of the healing power of a plant or drug. In modern times and increasingly in the 20th century, the areas of application enumerated in the old works have been critically examined and scrutinized (Grünwald and Jaenicke 2004). In Germany, this process took place from 1983 to 1994 in connection with the entry into force of the Pharmaceuticals Act (1978) and was documented in writing by the Commission E in the form of drug monographs (Siegfried 2007). At European level, the ESCOP has been active since 1989; it is constantly developing new and updated older drug monographs and publishes the recognized applications of herbal drugs (Siegfried 2007). As part of the approval of herbal medicines, the HMPC, an EMA committee, formulates the recognized uses for herbal drugs and drug formulations (Siegfried 2007). The WHO also creates plant monographs, giving non-European countries access to scientific knowledge about medicinal plants and their preparations (Siegfried 2007; Grünwald and Jaenicke 2004).

The aim of this study is to find out the most frequently used herbal products for nursing mothers or for newborns, infants and children health in the pharmacies and to compare their herbal contents with the above mentioned monographs regarding their efficacy and safety. Because there is no guarantee of strength, purity or safety of products their effects may vary. The main reason of this fact is that the Minis-

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try of Agriculture and Rural Affairs does not strictly regulate herbs and supplements. Manufacturers don't need to submit any proof of safety for ingredients and this causes incompetent studies on herbal products and insufficient knowledge about their side effects/interactions with drugs (Cupp MJ, 1999). Therefore, there is no guarantee of strength, purity or safety of products and effects may vary (Houghton and Mukherjee 2009). Always the product labels should be read carefully. If there is some medical condition, or is taking other drugs, herbs, or supplements, it should be spoken and consult with a qualified healthcare provider in detail (e.g side effects etc.) before starting a new therapy. This causes incompetent studies on herbal products and insufficient knowledge about their side effects/interactions with drugs (Cupp MJ, 1999). For this reason, more attention must be paid to usage of preparations in delicate patient groups such as newborns (0-1 month), infants (1-12 month), children (1-12 years of age), adolescents (13-18 years of age) and nursing mothers. It is obviously more wisely to use herbal preparations under the doctor's control and supervision of the pharmacist.

In this study, the common suggested herbal products, product's contents and usages for this sensitive group by professionals are evaluated and reported.

MATERIAL AND METHODS

The most frequently used herbal products for lactation problems and childhood illnesses were determined and studied, based on the interviews with pharmacists of 40 pharmacies from several municipalities of Istanbul and Ankara, with help of monographs and current scientific literatures regarding their side effects, usage and drug interactions. Thereafter, the dosage forms, content, company names, forms of the mixture, and medicinal tea samples of the drugs were examined one by one (Tables 1-8).

RESULTS

The results of the study are given in Tables 1-8.

Table 1. Herbal products used as dietary supplements in children

Name of the Preparation	Content	Usage	Warnings (According to literature and/or Monographs)	Dosage Adjustment (According to its prospectus information)
Sambucol® syrup (Pharmacare)	<i>Sambucus nigra</i>	It is used as dietary supplements for children.	*Due to the insufficient data <i>Sambucus nigra</i> L. isn't recommended for use in children under 12 years of age. (EMA/HMPC 2007) *The duration of treatment with <i>S. nigra</i> is 3-5 days in acute viral infections (Zakay-Rones et al. 2004). It should not be used longer than a week. (EMA/HMPC 2007).	1-3 teaspoons per day.
Day&Night® syrup (Milenyum)	<i>Citrus sinensis</i> , <i>Lavandula angustifolia</i> , <i>Matricaria chamomilla</i> , <i>Melissa officinalis</i> , <i>Origanum majorana</i> , <i>Crataegus monogyna</i>	It is used as dietary supplements for children.	* <i>L. angustifolia</i> has the potential to increase the effect of sedative and tranquilizing drugs (Brinker 1998). * <i>L. angustifolia</i> should not be used in people with allergic nature (WHO Monographs 2007). * <i>M. chamomilla</i> can effect synergistic when used in combination with anticoagulants such as warfarin, because it carries the hydroxy coumarins (PDR for Herbal Medicine 2000). * <i>O. majora</i> is not suitable for long term use because of the arbutin in its composition (PDR for Herbal Medicines 2004) * <i>C. monogyna</i> or its drugs can increase the efficacy of cardiac glycosides. It also may effect antihypertensive when used in combination with beta blockers (Mills and Bone 2000). *Internal usage of Meliloti herba may potentiate the activity of anticoagulants (Arora RB, Marthur CN, 1963). In rare cases headaches have been reported after internal use (Bisset 1994). * The use of <i>M. officinalis</i> in children under 12 years of age has not been established due to lack of adequate data (HMPC 2013).	It is taken twice a day after meals as 1 teaspoon (5 ml). It is recommended to be used for 1 month regularly. If deemed necessary, the usage may continue as one month periods.
Herbazinc® Syrup (Milenyum)	<i>Echinacea purpurea</i> , <i>Panax ginseng</i> , <i>Rosa canina</i> , <i>Malpighia punicifolia</i> , <i>Brassica oleracea</i>	It is used as dietary supplements for children.	* <i>E. purpurea</i> should be used up to eight weeks (ESCOP Monographs 2003). Hypersensitive reactions in the form of rash, urticaria, itching, swelling of the face may occur. Cases of severe hypersensitivity reactions, such as Stevens-Johnson Syndrome,	

Table 1. Herbal products used as dietary supplements in children (continued)

Name of the Preparation	Content	Usage	Warnings (According to literature and/or Monographs)	Dosage Adjustment (According to its prospectus information)
Floradix® Syrup (Allergo)	<i>Malva sylvestris</i> , <i>Rosa canina</i> , <i>Croton elutaria</i> , <i>Matricaria chamomilla</i> , <i>Ribes rubrum</i> , <i>Vitis vinifera</i> , <i>Foeniculum vulgare</i>	It is used as dietary supplement. It strengthens the immune system. It increases body resistance to infection.	angioedema of the skin, Quincke oedema, bronchospasm with airway obstruction, asthma and anaphylactic shock have been reported. The frequency is not known (HMPC 2015). * <i>P.ginseng</i> reduces the effect of warfarin when they are taken together and it cause INR values to decrease (Yuan et al. 2004). *There may be the same amount of mild cases of gastrointestinal discomfort because of <i>R. canina</i> usage (Warholm et al. 2003). * <i>M. chamomilla</i> can effect synergistic when used in combination with anticoagulants such as warfarin, because it carries the hydroxy coumarins (PDR for Herbal Medicine 2000). *Fennel preparations should not be used for a long time without consulting a doctor or pharmacist (List of German Commission E Monographs 2016). *Allergic reactions to fennel preparations can affect the skin or respiratory tract by particular cases. (Wichtl 2002) *There may be the same amount of mild cases of gastrointestinal discomfort because of <i>R. canina</i> usage (Warholm et al. 2003).	It is taken twice a day after meals as 1 teaspoon (5 mL) as dietary supplement. It is recommended to be used for 1 month regularly. If deemed necessary, the usage may continue as onemonth periods. Children 6 to 12 years: 1 teaspoonful 2 times daily before the morning and evening meal.

Table 2. Herbal products used as anti-gas medication in newborn, infants, children and nursing mothers

Name of the Preparation	Content	Usage	Warnings (According to literature and/or Monographs)	Dosage Adjustment (According to its prospectus information)
OM-X® syrup (Agiç)	<i>Anethum graveolens</i> , <i>Zingiber officinale</i>	It is used in newborns and infants for the relief of abdominal pain and gas pains.	*Ginger is used under medical supervision in patients with gallstones (List of German Commission E Monographs, 2016). It has been reported that more than 6 grams of ginger can cause irritation to the stomach (Desai et al. 1990). * <i>A. graveolens</i> is considered safe, but in sporadic cases, it causes allergic reactions, oral pruritus, tongue and throat swelling, urticaria, vomiting and diarrhea (Al Snafi 2014).	It can be given 4 times per day as ½ teaspoon (2.5 mL) for newborns between 15 days and 1 month, and 4 times per day as 1 teaspoon (5 mL) for infants between 1 month and 6 months, and 6 times per day in infants between 6 months and 12 months as 10 mL.
Nurse Harvey's® Syrup (Haks)	<i>Anethum graveolens</i> , <i>Carum carvi</i>	It is used in infants to relieve gas and colic pains.	* <i>A. graveolens</i> is considered safe, but in sporadic cases, it causes allergic reactions, oral pruritus, tongue and throat swelling, urticaria, vomiting and diarrhea (Al Snafi 2014). *The oral of <i>C. carvi</i> use in children and adolescents under 18 years of age has not been established due to lack of adequate data. The use in patients with liver disease, cholangitis, achlorhydria, gallstones and any other biliary disorders is not recommended (HMPC 2014).	It is given as 5 mL (1 tsp) for babies of up to 6 months and 10 mL (2 tsp) after 6 months. 1 scale is given after or during feeding. More than 6 scales are not given per day.

Table 2. Herbal products used as anti-gas medication in newborns, infants, children and nursing mothers (continued)

Name of the Preparation	Content	Usage	Warnings (According to literature and/or Monographs)	Dosage Adjustment (According to its prospectus information)
Aguline® Syrup (Medfors farma)	<i>Zingiber officinale</i> , <i>Foeniculum vulgare</i> , <i>Carum carvi</i> , <i>Anethum graveolens</i> , <i>Pimpinella anisum</i> , <i>Mentha piperita</i>	It helps to ease digestion, and to alleviate the gas and abdominal pain in infants and children.	* <i>M. piperita</i> and <i>Z. officinale</i> should not be used without consulting a doctor when gallstone is concerned (List of German Commission E Monographs 2016). * It has been reported that more than 6 grams of ginger can cause irritation to the stomach (Desai et al. 1990). *Allergic reactions to fennel preparations can affect the skin or respiratory tract by particular cases (Wichtl 2002). *Fennel preparations should not be used for a long time without consulting a doctor or pharmacist (List of German Commission E Monographs 2016). * <i>A. graveolens</i> is considered safe, but in sporadic cases, it causes allergic reactions, oral pruritus, tongue and throat swelling, urticarial, vomiting and diarrhea (Al Snafi 2014). *The oral use of <i>C. carvi</i> in children and adolescents under 18 years of age has not been established due to lack of adequate data. The use in patients with liver disease, cholangitis, achlorhydria, gallstones and any other biliary disorders is not recommended (HMPC 2014). *Ingestion of 1 to 5 millilitres of anise oil (<i>Pimpinella anisum</i>) has been associated with nausea, vomiting, seizures and pulmonary oedema (HMPC 2013).	It can also be given mixed with water or milk during or after feeding as ½ teaspoon 2-3 times a day for newborns up to 1 month old, 1 teaspoon 3-4 times a day for infants between 1 and 6 months old, and 1 teaspoon 4-5 times a day for infants between 6 and 12 months old.
Neo Baby® Gripe Mixture Syrup (Zima)	<i>Zingiber officinale</i> , <i>Anethum graveolens</i>	It is used to relieve gas pains and abdominal pain in infants and nursing mothers.	*Ginger is used under medical supervision in patients with gallstones (List of German Commission E Monographs 2016). It has been reported that more than 6 grams of ginger can cause irritation to the stomach (Desai et al. 1990). * <i>A. graveolens</i> is considered safe, but in sporadic cases, it causes allergic reactions, oral pruritus, tongue and throat swelling, urticaria, vomiting and diarrhea (Al Snafi 2014).	It is given 3 times a day with the 2.5 mL scale for the infants up to 1 month old, and with a 5 mL scale for infants up to 1-year-old.
No Gass® Cream (Megamed)	<i>Laurus nobilis</i> , <i>Foeniculum vulgare</i> , <i>Salvia officinalis</i> , <i>Cinnamomum zeylanicum</i> , <i>Malus domestica</i>	It is used externally as antigas cream for infants.	* <i>C. zeylanicum</i> can cause allergic reactions in the skin and mucous membranes (List of German Commission E Monographs 2016). * <i>C. zeylanicum</i> should be used with doctor consult if there is a recurrent case or if the usage lasts longer than a week (Wichtl 2004).	It is applied on the belly and soles in peasize by massaging with oval movements. It should be applied by massaging for 30 seconds.
Gazon® massage oil (Dr. Besnim)	<i>Cuminum cyminum</i> , <i>Origanum vulgare</i> , <i>Olea europaea</i>	Along with the massage on the baby's abdomen, it relieves the baby's gas pains.	Not applicable	It is dropped 3-4 times a day around the abdominal area as 4-8 drops and applied by massaging the belly.

Table 3. Medicinal teas used as anti-gas medication in newborns, infants and children

Name of the Preparation	Content	Usage	Warnings (According to literature and/or Monographs)	Dosage Adjustment (According to its prospectus information)
Milupa® Chamomile Tea (Numil)	<i>Matricaria chamomilla</i>	It is used as carminative in infants.	* <i>M. chamomilla</i> can effect synergistic when used in combination with anticoagulants such as warfarin, because it carries the hydroxy coumarins (PDR for Herbal Medicine 2000).	It is prepared by adding 2 teaspoon (10 mL to 100 mL of water).

Table 3. Medicinal teas used as anti-gas medication in newborns, infants, and children (continued)

Name of the Preparation	Content	Usage	Warnings (According to literature and/or Monographs)	Dosage Adjustment (According to its prospectus information)
Milupa® Fennel Tea (Numil)	<i>Foeniculum vulgare</i>	It is used as carminative in infants.	*Allergic reactions to fennel preparations can affect the skin or respiratory tract by particular cases (Wichtl 2002). *Fennel preparations should not be used for a long time without consulting a doctor or pharmacist (List of German Commission E Monographs 2016).	It is prepared by adding 2 teaspoon (10 mL to 100 mL of water).
Humana® Fennel Tea With Cumin (Mamsel İlaç)	<i>Foeniculum vulgare</i> , <i>Carum carvi</i>	It is used as carminative in infants.	*Allergic reactions to fennel preparations can affect the skin or respiratory tract by particular cases (Wichtl 2002). *Fennel preparations should not be used for a long time without consulting a doctor or pharmacist (List of German Commission E Monographs 2016). *The oral use of <i>C. carvi</i> in children and adolescents under 18 years of age has not been established due to lack of adequate data. The use in patients with liver disease, cholangitis, achlorhydria, gallstones and any other biliary disorders is not recommended (HMPC 2014).	It is prepared by adding 2 teaspoon (10 mL to 100 mL of water).
Hipp® Fennel Tea (Hipp)	<i>Foeniculum vulgare</i>	It is used as gastrointestinal movement enhancer, and spasm reliever. It is used in digestive problems such as abdominal pain, gas, and indigestion.	*Allergic reactions to fennel preparations can affect the skin or respiratory tract by particular cases (Wichtl 2002). *Fennel preparations should not be used for a long time without consulting a doctor or pharmacist (List of German Commission E Monographs 2016).	It is used from the 1 st week onwards.
Hipp® Mixed Herbal Tea (Hipp)	<i>Pimpinella anisum</i> , <i>Matricaria chamomilla</i> , <i>Foeniculum vulgare</i>	Chamomile is used in stomach discomfort and gas pains. The anise is known as a good carminative since it prevents formation of gas in the digestive system.	* <i>M. chamomilla</i> can effect synergistic when used in combination with anticoagulants such as warfarin, because it carries the hydroxy coumarins (PDR for Herbal Medicine 2000). *Allergic reactions to fennel preparations can affect the skin or respiratory tract by particular cases (Wichtl 2002). *Fennel preparations should not be used for a long time without consulting a doctor or pharmacist (List of German Commission E Monographs 2016). *Ingestion of 1 to 5 millilitres of anise oil (<i>Pimpinella anisum</i>) has been associated with nausea, vomiting, seizures and pulmonary oedema (HMPC 2013).	It is used from the 2 nd week onwards.
Günvit® Chamomile Baby Tea (Kurtsan)	<i>Matricaria chamomilla</i>	It has a gas removing and relaxing effect in infants and children.	* <i>M. chamomilla</i> can effect synergistic when used in combination with anticoagulants such as warfarin, because it carries the hydroxy coumarins (PDR for Herbal Medicine 2000).	It is prepared by adding 5 g baby tea into 100 mL of water.
Günvit® Baby Fennel Tea (Kurtsan)	<i>Foeniculum vulgare</i>	It has gas removing and pain-relieving effects in infants and children.	*Allergic reactions to fennel preparations can affect the skin or respiratory tract by particular cases (Wichtl 2002). *Fennel preparations should not be used for a long time without consulting a doctor or pharmacist (List of German Commission E Monographs 2016).	It is prepared by adding 5 g baby tea into 100 mL of water.
Günvit® Mixed Baby Tea (Kurtsan)	<i>Matricaria chamomilla</i> , <i>Melissa officinalis</i> , <i>Foeniculum vulgare</i> , <i>Pimpinella anisum</i> , <i>Thymus vulgaris</i>	It has gas removing and relaxing effect in infants and children.	* <i>T. vulgaris</i> (Timol) is contraindicated in enterocolitis, pregnancy and cardiac failure (Braun & Frohne 1987). * <i>M. chamomilla</i> can effect synergistic when used in combination with anticoagulants such as warfarin,	It is prepared by adding 5 g baby tea into 100 mL of water.

Table 3. Medicinal teas used as anti-gas medication in newborns, infants and children (continued)

Name of the Preparation	Content	Usage	Warnings (According to literature and/or Monographs)	Dosage Adjustment (According to its prospectus information)
Günvit® Anise Tea (Kurtsan)	<i>Pimpinella anisum</i>	It is used as carminative.	because it carries the hydroxy coumarins (PDR for Herbal Medicine 2000). *Allergic reactions to fennel preparations can affect the skin or respiratory tract by particular cases (Wichtl 2002). *Fennel preparations should not be used for a long time without consulting a doctor or pharmacist (List of German Commission E Monographs 2016). *Ingestion of 1 to 5 millilitres of anise oil (<i>Pimpinella anisum</i>) has been associated with nausea, vomiting, seizures and pulmonary oedema (HMPC 2013).	Drunk 2-3 cups per day.
Günvit® Minivit Mixed Tea® (Kurtsan)	<i>Pimpinella anisum</i> , <i>Matricaria chamomilla</i> , <i>Foeniculum vulgare</i> , <i>Rosa canina</i> , <i>Nigella sativa</i>	It is used as carminative for infants and young children in stomach and intestinal complaints.	* <i>M. chamomilla</i> can effect synergistic when used in combination with anticoagulants such as warfarin, because it carries the hydroxy coumarins (PDR for Herbal Medicine 2000). *Allergic reactions to fennel preparations can affect the skin or respiratory tract by particular cases (Wichtl 2002). *Fennel preparations should not be used for a long time without consulting a doctor or pharmacist (List of German Commission E Monographs 2016). *Ingestion of 1 to 5 millilitres of anise oil (<i>Pimpinella anisum</i>) has been associated with nausea, vomiting, seizures and pulmonary oedema (HMPC 2013).	Drunk 2-3 cups per day.
Günvit® Mint & Lemon Tea® (Kurtsan)	<i>Mentha piperita</i> , <i>Citrus limonum</i>	It is used carminative in stomach complaints.	* <i>M. piperita</i> should not be used without consulting a doctor when gallstones are concerned (List of German Commission E Monographs 2016).	Drunk 2-3 cups per day.
Günvit® Cinnamon & Clove Tea (Kurtsan)	<i>Matricaria chamomilla</i> , <i>Foeniculum vulgare</i> , <i>Rosa canina</i> , <i>Citrus sinensis</i> , <i>Malus domestica</i> , <i>Cinnamomum zeylanicum</i> , <i>Caryophyllus aromaticum</i>	It is used as carminative for stomach and intestinal gas.	* <i>C. zeylanicum</i> can cause allergic reactions in the skin and mucous membranes (List of German Commission E Monographs 2016). * <i>M. chamomilla</i> can affect synergistic when used in combination with anticoagulants such as warfarin, because it carries the hydroxy coumarins (PDR for Herbal Medicine 2000). *Allergic reactions to fennel preparations can affect the skin or respiratory tract by particular cases (Wichtl 2002). *Fennel preparations should not be used for a long time without consulting a doctor or pharmacist (List of German Commission E Monographs 2016). * <i>C. zeylanicum</i> should be used with doctor consult if there is a recurrent case or if the usage lasts longer than a week (Wichtl 2004). *There may be the same amount of mild cases of gastrointestinal discomfort because of <i>R. canina</i> usage (Warholm et al. 2003).	Drunk 2-3 cups per day.

Table 4. Herbal preparations and medicinal teas used as galactagogue drugs in nursing mothers

Name of the Preparation	Content	Usage	Warnings (According to literature and/or Monographs)	Dosage Adjustment (According to its prospectus information)
Vita® Malt (Royal Unibrew)	<i>Hordeum distichon</i> , <i>Humulus lupulus</i>	It is used in nursing mothers to increase milk.	* <i>H. lupulus</i> increases the effect of sedative drugs (Lee et al. 1993).	Not given
Humana® Still-tee (Mamsel)	<i>Trigonella foenumgraecum</i> , <i>Foeniculum vulgare</i> , <i>Galega officinalis</i> , <i>Verbena officinalis</i> , <i>Rubus idaeus</i>	It is used in nursing mothers to increase milk.	* <i>G. officinalis</i> interaction with the hypoglycemic drugs is concerned. Care should be taken in use in diabetic patients (PDR For Herbal Medicine 2000).	10 g are added to 200 ml of water. 3-4 cups a day should be consumed.
Hipp® Natal Granular Herbal Tea for Nursing Mothers (Hipp)	<i>Foeniculum vulgare</i> , <i>Illicium verum</i> , <i>Citrus limonum</i> , <i>Melissa officinalis</i> , <i>Urtica dioica</i> , <i>Carum carvi</i> , <i>Ruta graveolens</i>	It is used in nursing mothers to increase milk.	*As a result of the active substances passage to milk, sedation can be seen in infants when <i>M. officinalis</i> is consumed by mother (Mills and Bone 2005). *Allergic reactions to fennel preparations can affect the skin or respiratory tract by particular cases (Wichtl 2002). *Fennel preparations should not be used for a long time without consulting a doctor or pharmacist (List of German Commission E Monographs 2016). *The oral use of <i>C. carvi</i> in children and adolescents under 18 years of age has not been established due to lack of adequate data. The use in patients with liver disease, cholangitis, achlorhydria, gallstones and any other biliary disorders is not recommended (HMPC 2014).	4 teaspoons are added to 200 mL of water and 2-3 cups are consumed per day.

Table 5. Herbal products used for colds in children and adolescents

Name of the Preparation	Content	Usage	Warnings (According to literature and/or Monographs)	Dosage Adjustment (According to its prospectus information)
Propolsaft® Syrup (Marnys)	<i>Mentha piperita</i> , <i>Thymus vulgaris</i> , <i>Propolis</i> , <i>Malpighia punicifolia</i>	It is helpful in the treatment of upper respiratory tract infections. It helps to alleviate the uncomfortable symptoms of respiratory tract infection (cough, nasal congestion etc.).	* <i>M. piperita</i> should not be used without consulting a doctor when gallstones are concerned (List of German Commission E Monographs 2016). * <i>T. vulgaris</i> (Timol) is contraindicated in enterocolitis, pregnancy and cardiac failure (Braun and Frohne 1987).	Up to 6 years old: 5 ml before meals; 6 - 12 years old: 10 ml before meals; 2 years old and adults: 15 mL before meals.
Umca® Solution (Abdi İbrahim)	<i>Pelargonium sidoides</i>	It is suitable for the treatment of acute and chronic infections, respiratory tract infections, ear-nose-throat infections, sinusitis, and arginine. It helps in treating symptoms such as cough, fever, sore throat, and fatigue.	*The use of <i>P. sidoides</i> in children under 6 years of age has not been established due to lack of adequate data. Hepatotoxicity and hepatitis cases were reported in association with the administration of the medicinal product. In case signs of hepatotoxicity occur, the administration of the medicinal product should be stopped immediately and a medical doctor should be consulted (HMPC 2012).	Acute infections: 20-30 drops 3 times a day for adults and children older than 12 years; 10-20 drops 3 times a day for children in the age group of 6-12 years; 5-10 drops 3 times a day in children younger than 6 years. Chronic infections: It is recommended to be used as 10-20 drops 3 times a day in adults and children older than

Table 5. Herbal products used for colds in children and adolescents (continued)

Name of the Preparation	Content	Usage	Warnings (According to literature and/or Monographs)	Dosage Adjustment (According to its prospectus information)
Prospan® Syrup (Biomeks)	<i>Hedera helix</i>	It helps the treatment of acute respiratory inflammation accompanied by cough and chronic inflammatory bronchial diseases.	* <i>Hedera helix</i> may cause mild gastrointestinal disorders (Fazio et al 2009).	12 years. The drops should be taken with some liquid 30 minutes before meals. In order to prevent the relapse of the disorder, the use of the drug is recommended to be continued for several days after the symptoms alleviate. It should not be used in infants under 1 years old. Pregnant women and nursing mothers should not use it. It is used as 2.5 mL 3 times a day in infants (under 1 year of age) and young children (1-5 years); 5 mL 3 times a day in schoolage children (6-9 years) and adolescents (10 years and older); and 5-7,5 mL 3 times a day in adults.
Strath® Cold Drops (Interpharm)	<i>Thymus vulgaris</i> , <i>Primula officinalis</i>	It is cough sedative, expectorant, and supportive in the treatment of colds, flu, bronchial catarrh and whooping cough.	* <i>T. vulgaris</i> (Timol) is contraindicated in enterocolitis, pregnancy and cardiac failure (Braun & Frohne 1987).	Adults use it by dropping 20-30 drops into a small amount of water every 2 hours. 10 drops are given every 2 hours children of 6 years old and older.

Table 6. Herbal teas used for colds in infants, children and adolescents

Name of the Preparation	Content	Usage	Warnings (According to literature and/or Monographs)	Dosage Adjustment (According to its prospectus information)
Günvit® Linden Tea (Kurtsan)	<i>Tilia cordata</i>	It is used as respiratory softener, and sweater and relaxer in fierce colds.	The use of <i>T. cordata</i> in children under 12 years of age has not been established due to lack of adequate data (HMPC 2012).	Drunk 2-3 cups per day.
Günvit® Rosehip Fruit Tea (Kurtsan)	<i>Rosa canina</i>	It is used as body protection against the cold.	As a specific adverse event in rare cases, allergy to <i>R. canina</i> may occur. Allergy with generalized exanthema and gastrointestinal complaints may even occur after drinking rose hip tea (LLeonart et al. 2007).	Drunk 2-3 cups per day.
Hipp® Mixed Fruit Tea (Hipp)	<i>Rosa canina</i> , <i>Melissa officinalis</i> , <i>Citrus sinensis</i> , <i>Citrus limonum</i> , <i>Malus domestica</i> , <i>Alcea rosea</i>	It is used as body protection against the cold.	*As a specific adverse event in rare cases, allergy to <i>R. canina</i> may occur. Allergy with generalized exanthema and gastrointestinal complaints may even occur after drinking rose hip tea (LLeonart et al. 2007). * The use of <i>M. officinalis</i> in children under 12 years of age has not been established due to lack of adequate data (HMPC 2013). *There may be the same amount of mild cases of gastrointestinal discomfort because of <i>R. canina</i> usage (Warholm et al. 2003).	It is used from 6 th month onwards. Drunk 2-3 cups per day.

Table 7. Herbal products and medicinal teas used as an immune system booster in children and adolescents

Name of the Preparation	Content	Usage	Warnings (According to literature and/or Monographs)	Dosage Adjustment (According to its prospectus information)
Propolmar® Syrup (Marnys)	<i>Echinacea purpurea</i> , Propolis, <i>Mentha piperita</i>	It supports strengthening of the immune system. It reduces the risk of contracting colds, flu and lower and upper respiratory tract diseases.	* <i>M. piperita</i> should not be used without consulting a doctor when gallstones are concerned (List of German Commission E Monographs 2016). * <i>E. purpurea</i> should be used up to eight weeks (ESCOP Monographs 2003). Hypersensitive reactions in the form of rash, urticaria, itching, swelling of the face may occur. Cases of severe hypersensitivity reactions, such as Stevens-Johnson Syndrome, angioedema of the skin, Quincke oedema, bronchospasm with airway obstruction, asthma and anaphylactic shock have been reported. The frequency is not known (HMPC 2015).	Up to 6 years old: 5 mL before meals; 6 - 12 years old: 10 mL before meals; 12 years of age and adults: 15 mL before meals.
Immuzine® Syrup (Berko)	<i>Sambucus nigra</i> , <i>Echinacea purpurea</i> , Propolis	It supports strengthening of the immune system. It reduces the risk of contracting colds, flu and lower and upper respiratory tract diseases.	*Due to the insufficient data <i>Sambucus nigra</i> L. isn't recommended for use in children under 12 years of age. (EMA/HMPC 2007) * <i>E. purpurea</i> should be used up to eight weeks (ESCOP Monographs 2003). Hypersensitive reactions in the form of rash, urticaria, itching, swelling of the face may occur. Cases of severe hypersensitivity reactions, such as Stevens-Johnson Syndrome, angioedema of the skin, Quincke oedema, bronchospasm with airway obstruction, asthma and anaphylactic shock have been reported. The frequency is not known (HMPC 2015).	½ scale per day for 1-3 year-olds, 1 scale per day for 4-6 year-olds, and 1.5 scale per day for 7-12 year-olds. *The duration of treatment with <i>S. nigra</i> is 3-5 days in acute viral infections (Zakay-Rones et al. 2004). It should not be used longer than a week. (EMA/HMPC, 2007).
Echinol® Syrup (Mikro-gen)	<i>Echinacea purpurea</i>	It contributes to immune system function. It is used as a support against upper and lower respiratory tract diseases.	* <i>E. purpurea</i> should be used up to eight weeks (ESCOP Monographs 2003). Hypersensitive reactions in the form of rash, urticaria, itching, swelling of the face may occur. Cases of severe hypersensitivity reactions, such as Stevens-Johnson Syndrome, angioedema of the skin, Quincke oedema, bronchospasm with airway obstruction, asthma and anaphylactic shock have been reported. The frequency is not known (HMPC 2015). It should not be used more than 8 consecutive weeks.	It should be taken 3 times a day as 5 mL.
Strath® Syrup (Interpharm)	<i>Citrus sinensis</i> , <i>Mentha piperita</i> , <i>Melissa officinalis</i> , <i>Carum carvi</i> , <i>Thymus vulgaris</i> , <i>Matricaria chamomilla</i> , <i>Cinnamomum zeylanicum</i> , <i>Salvia officinalis</i> , <i>Ocimum basilicum</i> , <i>Sambucus nigra</i> , <i>Foeniculum vulgare</i> , <i>Armoracia rusticana</i> , <i>Hyssopus officinalis</i> , <i>Lavandula angustifolia</i> , <i>Glycyrrhiza glabra</i> , <i>Petroselinum crispum</i>	It supports strengthening of the immune system.	* <i>M. piperita</i> should not be used without consulting a doctor when gallstones are concerned (List of German Commission E Monographs 2016). * <i>C. zeylanicum</i> can cause allergic reactions in the skin and mucous membranes (List of German Commission E Monographs 2016). * <i>T. vulgaris</i> (Timol) is contraindicated in enterocolitis, pregnancy and cardiac failure (Braun and Frohne 1987). * <i>L. angustifolia</i> has the potential to increase the effect of sedative and tranquilizing drugs (Brinker 1998). *Due to the insufficient data <i>Sambucus nigra</i> L. isn't recommended for use in children under 12 years of age (EMA/HMPC 2007). * <i>L. angustifolia</i> should not be used in people with allergic nature (WHO Monographs 2007).	It is used 2 times a day before meals as 5 mL.

Table 7. Herbal products and medicinal teas used as an immune system booster in children and adolescents (continued)

Name of the Preparation	Content	Usage	Warnings (According to literature and/or Monographs)	Dosage Adjustment (According to its prospectus information)
Günvit® Rosehip Fruit Tea (Kurtsan)	<i>Rosa canina</i>	It is used as body resistance increaser and body protector against colds.	<p>*<i>M. chamomilla</i> can effect synergistic when used in combination with anticoagulants such as warfarin, because it carries the hydroxy coumarins (PDR for Herbal Medicine 2000).</p> <p>*Allergic reactions to fennel preparations can affect the skin or respiratory tract by particular cases (Wichtl 2002).</p> <p>*The oral use of <i>C. carvi</i> in children and adolescents under 18 years of age has not been established due to lack of adequate data. The use in patients with liver disease, cholangitis, achlorhydria, gallstones and any other biliary disorders is not recommended (HMPC 2014).</p> <p>* The use of <i>M. officinalis</i> in children under 12 years of age has not been established due to lack of adequate data (HMPC 2013).</p> <p>*<i>C. zeylanicum</i> should be used with doctor consult if there is a recurrent case or if the usage lasts longer than a week (Wichtl 2004).</p> <p>*Fennel preparations should not be used for a long time without consulting a doctor or pharmacist (List of German Commission E Monographs 2016).</p> <p>*The duration of treatment with <i>S. nigra</i> is 3-5 days in acute viral infections (Zakay-Rones et al. 2004). It should not be used longer than a week. (EMEA/HMPC 2007).</p> <p>*There may be the same amount of mild cases of gastrointestinal discomfort because of <i>R. canina</i> usage (Warholm et al, 2003).</p>	Drunk 2-3 cups per day.

Table 8. Herbal products for external use in infants and children

Name of the Preparation	Content	Usage	Warnings (According to literature and/or Monographs)	Dosage Adjustment (According to its prospectus information)
99® Diaper Rash Preventive Cream (İstanbul Cosmetic)	<i>Echinacea purpurea</i> , <i>Hamamelis virginiana</i> , <i>Centella asiatica</i>	Echinacea purpurea strengthens the immune system. It boosts cell renewal. It helps heal wounds. It helps the healing of wounds such as witch hazel. It softens the baby skin. Gotu kola has antibacterial effects. It helps to remove redness and irritation. It is cell regenerative and softening.	<p>* <i>E. purpurea</i> can trigger allergic reactions in atopic patients (HMPC 2015).</p> <p>*Topical use of the <i>C. asiatica</i> extract has led to reports of rash [Eun 1985].</p> <p>*Allergic contact dermatitis when using <i>H. virginiana</i> has been reported. The frequency is not known (HPMC 2009). It is applied externally to sensitive areas each time the diaper is changed.</p>	
Popishic® Diaper Rash Cream (Medicure)	<i>Anthemis nobilis</i> , <i>Primula veris</i>	It has relaxing and moisturizing qualities. It makes the skin look healthy.	Not applicable	It is applied externally to sensitive areas each time the diaper is changed.
Popolin® Diaper Rash Cream (İstanbul Cosmetic)	<i>Matricaria chamomilla</i> , <i>Calendula officinalis</i> , <i>Centella asiatica</i> , <i>Melissa officinalis</i> ,	It is hypoallergenic. It prevents rash and redness.	<p>*<i>Matricariae flos</i> can rarely cause allergic skin reactions (Wichtl 2004).</p> <p>*Skin sensitization to <i>C. officinalis</i> is reported. The frequency is not known (HPMC 2008).</p>	It is applied externally to sensitive areas each time the diaper is changed.

Table 8. Herbal products for external use in infants and children (continued)

Name of the Preparation	Content	Usage	Warnings (According to literature and/or Monographs)	Dosage Adjustment (According to its prospectus information)
	<i>Hamamelis virginiana</i> , <i>Tilia cordata</i>		*Topical use of the <i>C. asiatica</i> extract has led to reports of rash (Eun HC 1985). *Allergic contact dermatitis when using <i>H. virginiana</i> has been reported. The frequency is not known (HPMC 2009).	
99® Premature and Newborn Foam Shampoo (Istanbul Cosmetic)	<i>Persea americana</i> , <i>Calendula officinalis</i> , <i>Tilia cordata</i> , <i>Camellia sinensis</i>	Avocado provides intense hydration. Calendula has antibacterial properties. It protects the skin against irritation and redness. Green tea is a powerful antioxidant. It supports hair growth. Linden has restorative, moisturizing and soothing properties.	*Skin sensitization to <i>C. officinalis</i> is reported. The frequency is not known (HPMC 2008).	It is thoroughly rinsed after application to the baby's damp hair.
99® Baby Hair & Body Shampoo (Istanbul Cosmetic)	<i>Oleum olivae</i> , <i>Matricaria chamomilla</i>	Olive oil gives softness, vitality and shine to baby hair by softening dry and damaged hair skin. Chamomile soothes irritated skin and relieves it.	*Matricariae flos can rarely cause allergic skin reactions (Wichtl 2004).	It is thoroughly rinsed after application to the baby's damp hair.
99® Baby Oil (Istanbul Cosmetic)	<i>Macadamia integrifolia</i> , <i>Simmondsia chinensis</i>	It gives the baby skin brightness and vitality. It is used in the care of dry and damaged skin. It has intensive moisturizing and soothing qualities. It prevents dehydration of the skin.	Case reports of contact dermatitis confirmed by skin patch tests exist for jojoba oil (<i>Simmondsia chinensis</i>) (Wantke et al. 1996).	It is applied on the entire body of babies after the bath and at each diaper change.
99® Baby Lotion (Istanbul Cosmetic)	<i>Prunus amygdalus var. dulce</i> , <i>Calendula officinalis</i> , <i>Melissa officinalis</i>	It has antibacterial properties. It prevents dryness and itching on baby skin. It is cell regenerative and moisturizing.	*Skin sensitization to <i>C. officinalis</i> is reported. The frequency is not known (HPMC 2008).	It softens the skin. It is applied by massaging the entire body of the baby. It is used every day regularly.
99® Bath Oil (Istanbul Cosmetic)	<i>Matricaria chamomilla</i> , <i>Mercurialis annua</i> , <i>Pseudevernia prunastri</i> , <i>Mentha piperita</i> , <i>Eucalyptus globulus</i>	It has antibacterial properties. It is inhalant, skin refreshing and invigorating. It has soothing and itching reducing effect on the skin. It has softening effect.	*Matricariae flos can rarely cause allergic skin reactions (Wichtl 2004).	8-10 drops of bath oil is dripped into 20 liters of water: 3-5 minutes is sufficient for body bath. For the use before sleeping, 5 drops are dripped into 1 cup of warm water 1 hour before taking the baby to the room. Thus, it makes the baby's room refreshing and relaxing.

CONCLUSION

The complaints of the mothers coming to pharmacies regarding themselves and their children were examined based on a survey with 40 pharmacists from various municipalities of Istanbul and Ankara.

It was found that colic in children and hypogalactia in nursing mothers are relatively more common than others and therefore they were in this study more under focus. We have summarized on the tables the recommended numerous herbal preparations for these complaints in the pharmacies. According the monographs and the recent studies of the used me-

dicinal herbs in these preparations we can clearly say that the contents of these preparations have been carefully selected. It has been observed that these herbal preparations are not as harmless as they are considered.

As a result of the detailed review about the contents of the common used herbal products were showed there are serious drug interaction. *C. monogyna* may effect antihypertensive when used in combination with beta blockers (Mills and Bone 2000), Meliloti herba and *M. chamomilla* may strengthen the activity of anticoagulants (Arora RB, Marthur CN, 1963; PDR for Herbal Medicine 2000), *P. ginseng* reduces the effect of warfarin (Yuan et al. 2004), *H. lupulus* and *L. angustifolia* increase the effect of sedative drugs (Lee et al. 1993; Brinker 1998) and should not be used in people with allergic nature (WHO Monographs 2007), *G. officinalis* may interact with the hypoglycemic drugs (PDR For Herbal Medicine 2000) are found in product compositions without any warning on products.

In the leaflet of the some herbal products and medicinal teas and herbs, which are used for different purpose for children, have without sufficient data for usage. Due to the lack of adequate data the usages of *M. officinalis* and *Sambucus nigra* L. under 12 years old have not been established (HMPC 2013; EMEA/HMPC 2007). The oral use of *C. carvi* under 18 years and the use of *P. sidoides* under 6 years old also has not been established because of same reason (HMPC 2014; HMPC 2012).

In contrast to popular belief should be used these products under an expert's control. It is the only way patients can reach sufficient knowledge of situations to encounter during treatment or duration of usage. The duration of treatment with *S. nigra* is 3-5 days in acute viral infections (Zakay-Rones et al. 2004). *E. purpurea* should be used up to eight weeks which may cause severe hypersensitivity reactions, such as Stevens-Johnson Syndrome, angioedema of the skin, Quincke oedema, bronchospasm with airway obstruction, asthma and anaphylactic shock (ESCAP Monographs 2003; HMPC 2015). Another missing information on the researched preparation is that *O. majora* is not suitable for long term use because of the arbutin regarding to its composition (PDR for Herbal Medicines 2004). *A. graveolens* is considered safe, but in sporadic cases, it causes allergic reactions, oral pruritus, tongue and throat swelling, urticaria, vomiting and diarrhea (Al Snafi 2014). Topical use of the *C. asiatica*, *C. zeylanicum* or *H. virginiana* extract has led to reports of rash (Eun 1985; List of German Commission E Monographs 2016; HPMC 2009). Case reports of contact dermatitis confirmed by skin patch tests exist for jojoba oil (*Simmondsia chinensis*) (Wantke et al. 1996).

There are several examples of herbal products and medicinal teas used for different purposes in children/breastfeeding mother includes *Zingiber officinalis*, *Pimpinella anisum*, *Hedera helix* and others with reported side effects. It has been reported that more than 6 grams of ginger can cause irritation to stomach (Desai et al. 1990). Ingestion of 1 to 5 millilitres of anise oil (*Pimpinella anisum*) has been associated with nausea, vomiting, seizures and pulmonary oedema (HMPC 2013). *Hedera helix* may cause mild gastrointestinal disorders (Fazio et al 2009). Allergy with generalized exanthema and gastrointestinal com-

plaints may even occur after drinking rose hip (*Rosa canina*) tea (Lleonart et al. 2007). *T. vulgaris* (Timol) is contraindicated in enterocolitis, pregnancy and cardiac failure (Braun and Frohne 1987). Sedation can be seen in infants when *M. officinalis* is consumed by mother (Mills and Bone 2005). There may be the same amount of mild cases of gastrointestinal discomfort because of *R. canina* usage (Warholm et al. 2003). Allergic reactions to fennel preparations can affect the skin or respiratory tract by particular cases (Wichtl 2002). In rare cases headaches have been reported after internal use of Meliloti herba (Bisset 1994). But people intending to buy concerned products can not reach this kind of information on their packages.

Main side-effects of herbal ingredients are listed as a table. The main output of this survey and investigations result is that the field of herbal products needs to be supported with more detailed and comprehensive studies.

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