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THE EFFICACY AND SAFETY OF HERBAL COUGH FORMULATION

FOR SYPTOMS , RELIFE OF ACUTE NON PRODUCTIVE COUGH



A Graduation project
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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

الحمد لله , والصلاة والسلام على رسول الله و اما بعد :

يقول الله تبارك وتعالى :

{اقْرَأْ وَرَبُّكَ الْأَكْرَمُ الَّذِي عَلَّمَ بِالْقَلَمِ عَلَّمَ الْإِنْسَانَ مَا لَمْ يَعْلَمْ} 

العلق: 3 - 5]

الأهداء

الى من مهدوا لنا طريق العلم
الى كل من علمنا حرفاً ..

الى كل من انار لنا الطرق المظلمة لنصل اعلى القمم..

الى من علما ابجدية الحياة ، امهاتنا الشامخات..

الى الرجال الرائعين ،، خلف ستارة نجاحاتنا، المجهولون .. ابائنا العظماء .

الى من وقفوا معنا بروحهم وقلوبهم لتكن ابتسامتنا عنوانهم .. رفاق خطوات الحياة ..

نحن شاكرون..

List Contents

Abstract	1
Objective	1
Method	1
Result	1
Chapter 1	2
Introduction	2
1.1. definition	2
1.2. epidemiology of cough	3
1.3. etiology of acute cough	4
1.4. frequent causes of acute cough	5
1.4.1 colds and acute bronchitis	5
1.4.2. pneumonia	5
1.4.3. pertussis.....	5
1.4.4. ashma and infection – exacerbated copd	6
1.4.5. influenza	6
1.5. Treatment	6
1.5.1. acute cough	6
1.5.2. non productive cough	7
1.5.3. herbal cough syrup	7
1.6. zecuf	7-8-9
1.7. aim of study	9
chapter two	10
2.1. method	10
2.1.1. ethics approval	10

2.1.2. research design and data collection	10
2.1.3. questionnaire	10
2.1.4. data storage	11
2.1.5. statistical analysis	11
2.1.6. study population	11
Chapter three	12
Result	12
Characteristics and responds	12
Chapter four	16
DISCUSSION	16-17
Conclusion	17
References	18

List of tables

Table 1 show the participate age in this study.....12

Table 2 . show the dose is used.....12

Table 3. show how many days patient use the zecuf syrup12

Table 4. show if there is side effect from use the syrup13

Table 5. show if there is a benefit from use the syrup13

Table 6. show the symptoms were accompanying.....13

List of figures

Chart 1. show the participate age in this study14

Chart 2. Show patient response the dose that they use.....14

Chart 3. Show patient response about how many days they use the syrup.....14

Chart 4. Show patient response about side effect of the syrup.....15

Chart 5. Show patient response about the benefit from use the syrup.....15

Chart 6. Show patient response about symptoms were accompanying15

ABSTRACT

Objective

A cough is a reflex action that clears your airway of irritants and mucus. There are two types of cough: productive and nonproductive. A productive cough produces phlegm or mucus, clearing it from the lungs. A cough is one of the most common medical complaints accounting for as many as 30 million clinical visits per year. Up to 40% of these complaints result in referral to a pulmonologist . A nonproductive cough, also known as a dry cough, doesn't produce phlegm or mucus. Many things – from allergies to acid reflux can cause a dry cough. In some cases, - there's no obvious cause. The purpose of this research to indicate the efficacy and safety of Herbal cough formulation zecuf for symptomatic relief of acute non productive cough.

Method

This questionnaire-based on Google form question research to evaluate efficacy and safety of Herbal cough formulation zecuf for symptomatic relief of acute non productive cough .

Result

The result of survey indicated that 66 of the participant who used zecuf Syrup, were female more than male by percentage 65.2% for female users and 34.8 % for male users and show that the dose of zecuf Syrup was more effective just when take it as tablespoonful three times a day and this was about 62.1% of users, and most patient on our research show about 27.3% use it for three days and more you .In addition The result indicated that 59.1% of the participant who used zecuf Syrup had drowsiness as Most common side effect, other users show other less common side effect such as nausea, gastric pain and other side effect in precentage of 30.3%. In our result zecuf Syrup show effectiveness in Reduce nighttime cough 33.3%.

CHAPTER 1

INTRODUCTION

1.1. **DEFINITION**

Acute cough is one of the most common symptoms for which patients seek medical attention and spend healthcare dollars [1], the most common new presentation in primary care [2], and the most frequent reason for visits to hospital-based outpatient clinics [3]. In the USA, acute cough accounted for 26 million office visits in 2004 [4]. In the vast majority of cases, acute cough is due to acute viral upper respiratory tract infection (URTI), i.e., the common cold. Notably, over the past 50 years, pediatric immunization has dramatically decreased pediatric pertussis cases, from 157 to less than 1 per 100,000 persons [5], but has not decreased the incidence in adults. In fact, during the 1990s, the number of pertussis cases in adolescents and adults more than doubled in the USA and Canada [6]. In a 2.5-year study, the incidence of pertussis in 2,444 healthy people, aged 5-65 years, ranged from 370-450 cases per 100,000 persons per year. Extrapolated to the USA population, nearly a million pertussis cases occur per year [7]. By definition, acute cough is one lasting <3 weeks, subacute cough lasts 3-8 weeks, and chronic cough lasts >8 weeks [8]. Most acute coughs raise minimal concerns among health practitioners as they are generally caused by URIs, usually have a short duration, and are self-limited. However, acute cough may be a symptom of a serious underlying condition, such as pneumonia, acute pulmonary embolism, pulmonary edema, or lung cancer. It is the most common symptom associated with acute exacerbations and hospitalizations with asthma and COPD [2].

Nonproductive coughs

A nonproductive cough is dry and does not produce sputum. A dry, hacking cough may develop toward the end of a cold or after exposure to an irritant, such as dust or smoke. There are many causes of a nonproductive cough, such as: Viral illnesses. After a common cold, a dry cough may last several weeks longer than other symptoms and often gets worse at night.[9][10][11] Bronchospasm. A nonproductive cough, particularly at night, may mean spasms in the bronchial tubes (bronchospasm) caused by irritation Allergies. Frequent sneezing is also a common symptom of allergic rhinitis .Medicines called ACE inhibitors that are used to control high blood pressure. Examples of ACE inhibitors include captopril (Capoten), enalapril maleate (Vasotec), and lisinopril (Prinivil, Zestoretic, or Zestril) Exposure to dust, fumes, and chemicals in the work environment. Asthma A chronic dry cough may be a sign of mild asthma. Other symptoms may include wheezing, shortness of breath, or a feeling of tightness in the chest.[12][13].

1.2.Epidemiology of Cough

Patients with cough may be conveniently divided into those with acute, usually viral, illness and those with chronic cough. Acute cough represents the largest single cause of consultation in primary care, whereas chronic cough is one of the commonest presentations in respiratory medicine.[14][15] The worldwide market in cough treatments is several billion dollars. In both syndromes, cough sensitivity is upregulated, but the inflammation giving rise to cough is localized to the larynx and large airways in acute cough. Whilst this is also true of cough-predominant asthma, the origin of cough in chronic disease may also lie in the esophagus , nose or sinuses leading to errors in diagnosis and treatment.[16][17]

1.3.Etiology of Acute Cough

Published studies on the spectrum and frequency of causes of acute cough do not exist, but overwhelming clinical experience indicates that postnasal drip syndrome because of URIs is the most common cause [18]. For adults, acute cough is most commonly seen in the common cold, acute bacterial sinusitis, acute bronchitis, pertussis, COPD exacerbations, allergic rhinitis, and environmental irritant rhinitis [18,19, 21]. Less common causes for acute cough are asthma, congestive heart failure, pneumonia, aspiration syndromes, and pulmonary emboli [18,19,20]. The most common etiology of the common cold or rhinosinusitis is viral in origin [18,19,20]. The top suspects are usually rhinovirus, adenovirus, and coronavirus (see Table 1). Patients with the common cold present with an acute respiratory illness characterized by symptoms such as rhinorrhea, sneezing, nasal obstruction, postnasal drip, with or without fever, lacrimation, irritation of their throat, and a normal chest exam [20]. Bacterial rhinosinusitis are sometimes difficult to clinically differentiate from their viral cousins. URI are suggestive of a bacterial cause when they have at least two of the following signs and symptoms: a maxillary toothache, purulent nasal secretions, abnormal findings on transillumination of any sinus, poor response to nasal decongestants, and a history of discolored nasal discharge [18,20]. Table 1 also contains the most likely agents in bacterial URIs. Acute bronchitis is an acute cough syndrome, predominately caused by the viruses and less commonly by the bacteria . Rhinovirus infection is the most common and can lead to exacerbations in asthma, COPD, and cystic fibrosis [19]. The mechanism of this cough is a transient bronchial hyperresponsiveness and the primary symptoms of this process include phlegm production and wheezing [19,21,22].

1.4.Frequent causes of acute cough

1.4.1 Colds and acute bronchitis

Clinical presentation : Upper respiratory tract infections (URTI; “common cold”) are the most common cause of acute cough. Other typical symptoms are sore throat, runny nose, headache, muscle aches, fatigue, and sometimes a high temperature. Viral infections are usually to blame (adenoviruses, rhinoviruses, influenza- and para influenza viruses, coronaviruses, respiratory syncytial virus [RSV], coxsackieviruses). The cough in acute bronchitis is first dry, then productive. There is no clear cut-off between a cold and acute bronchitis (involvement of the lower respiratory tract). In two thirds of cases a cold is self-limiting and lasts no longer than 2 weeks, while in bronchitis the cough can persist for several weeks. Acute sinusitis in the context of a cold may also stimulate cough receptors. [23]

1.4.2 Pneumonia

Clinical presentation :Coughing accompanied by tachypnea, tachycardia, high fever, typical auscultation findings, and pain on respiration indicates pneumonia. The manifestation of pneumonia may be atypical, e.g., without fever, in older or immune-suppressed patients or in those with chronic lung disease [24].

1.4.3 Pertussis

Clinical presentation—Increasingly, adults too are being affected by pertussis. Adult patients often present an atypical mild disease course with nonspecific dry cough. Vaccination secures immunity for no more than a few years. In the initial catarrhal stage differentiation of pertussis from a cold is difficult. The paroxysmal whooping cough sets in after 1 to 2 weeks (second peak) and can persist for 4 weeks (or longer).[25]

1.4.4 Asthma and infection-exacerbated COPD

Chronic diseases of the respiratory tract may present acute crises, or may first manifest themselves with cough symptoms. The National Disease Management Guidelines should be consulted for advice on the diagnosis and treatment of asthma and chronic obstructive pulmonary disease (COPD). Common signs and symptoms of COPD are shortness of breath, cough and/ or mucus production.[26]

1.4.5 Influenza

Clinical presentation—The onset of symptoms is usually fulminant with high fever.[27]

1.5.Treatment

1.5.1 Acute cough

- **Non-life-threatening acute cough** (URI, acute bronchitis):
 - Nonpharmacological treatment
 - Honey
 - Menthol (vapors)
 - Hydration, lozenges, and humidifiers
 - NSAIDs: for myalgia, headaches, fever
 - Antibiotics: usually not recommended
 - Antitussives, expectorants, bronchodilators are usually not indicated

- Hypersensitivity pneumonitis: antigen avoidance with/without glucocorticoid therapy [28][29][30]

1.5.2 Non-productive cough

cough suppressants (antitussive medications)

- Centrally acting cough suppressants

- Examples: dextromethorphan, codeine

- Peripherally acting cough suppressants (e.g., benzonatate)

- See “Opioids” for more information [31][32]

1.5.3 Herbal cough syrup

The patients suffering from common cold and cough are the highest among 14 different respiratory ailments, followed by whooping cough, asthma, nosebleed and bronchitis which can be treated by medicinal plants. The treatment of cough in children is based on an underlying cause. In children half of cases go away without treatment in 10 days and 90% in 25 days. A trial of antibiotics or inhaled corticosteroids may be tried in children with a chronic cough in an attempt to treat protracted bacterial bronchitis or asthma [33].

1.6. Zecuf

is a natural and herbal composition that is recommended for the treatment of various types of cough including seasonal cough, asthmatic cough, whooping cough, smoker's cough and allergic cough. It is also used as a remedy for tonsillitis, pharyngitis, laryngitis and general cough.

Zecuf herbal cough syrup has the following in its composition ;

Adhatoda vasica (malabar nut) 60mg:

Used as an expectorant to loosen chest congestion and as a bronchodilator agent to open the breathing tubes (bronchi) [34]

Solanum indicum (Indian nightshade) 20mg:

Used as an expectorant and treatment against bronchitis, and to treat dry and spasmodic coughs.[35]

Inula racemosa (indian Eleccampane)20mg:

Known for its antiseptic, anti - bacterial and anti - inflammatory properties. Used to treat respiratory diseases such as coughs, bronchial asthma and bronchitis.[36]

Piper cubeba (cubeb pepper)10mg:

Used for its expectorant qualities, stimulating effect on the mucous membranes of the respiratory tract and ability to ease the symptoms of chronic bronchitis.[37]

Terminalla bellarica (Bahira fruit)20mg:

Used as an expectorant to treat respiratory conditions, including respiratory tract infections, coughs and sore throats.[38]

Aloe barbadensis (Aloe vera) 50mg:

Its anti - inflammatory properties help treat asthma and colds.[39]

Glycyrrhiza glabra (liquorice Root) 60mg:

Helps to loosen and thin mucus in airways. Used as an expectorant and suppressant to accelerate tracheal mucus secretion, a demulcent to treat sore throats, and an anti - inflammatory agent.[40][41]

Zingiber officinale (Ginger)10mg :

Employed in the treatment of colds and flu. Used as an anti - inflammatory agent to treat headaches and upper respiratory tract infections, coughs and bronchitis.[42][43]

Levomenthol (Mint) 6mg:

Used as a decongestant and expectorant agent to thin mucus, as well as for its soothing and cooling properties.[44][45]

Ocimum sanctum (Holy Basil) 100mg:

Used as an expectorant, anti - asthmatic and anti - catarrhal, and in the treatment of bronchitis, the common cold, fever, flu and catarrh.[46][47]

Curcuma longa(Turmeric)50mg :

Used for the treatment of headaches, bronchitis, the common cold and respiratory infections.[48][49].

1.7.Aim of study

The aim from this research to evaluate the benefit effect of herbal secuf syrup for patients who are suffering from non productive cough as well as evaluation of adverse effect for this syrup.

Chapter 2

Method

Ethics approval

A submission including full project proposal was made to the Scientific Research Ethical Committee (SREC) based on Google form. The proposal was reviewed and unconditionally approved by the Committee.

Research design & data collection:

This is a questionnaire-based study that was carried out from February 2021 to May 2021. Participants were selected from Google form.

Participants consented to participate after they were given full details of the study and its intended aims. All participants were made aware that this study is for research purposes only and their participation was voluntary. They were not asked for their names or contact information, ensuring the privacy of survey respondents. The questionnaire was designed in Arabic and was revised to be suitable to the general population. The questionnaire used in the current study was developed to evaluate the participant's Knowledge, Attitude and Practice regarding efficacy and safety of Herbal cough formulation zecuf for symptomatic relief of acute nonproductive cough.

Questionnaire

The questionnaire contained nine question questions divided into many sections. The first one asked about people who use zecuf Syrup. The second one asked about the dose of Syrup was use. The third one collect information about if side effect was notice when use it. The fourth asked about the time of use syrup. The fifth collect information about the benefit you get it when use zecuf Syrup. The sixth one asked about what side effect of that Syrup. The seventh one give ideas about the percentage if period of dry cough was more than 7 days or not. The eighth question collect information about if volunteers have Chronic bronchitis, asthma, or pulmonary tuberculosis.

Data storage

All data collection forms were kept in a secure setting, only available to the principal investigator, and will be destroyed by the principal investigator after completion of the study.

Statistical analysis

efficacy and safety of Herbal cough formulation zecuf for symptomatic relief of acute nonproductive cough This is descriptive study of by using Excel sheet and diagrams.

Study population (inclusion)

Inclusion: We included age from 18 to 50 and both sex female and male .

CHAPTER 3

RESULT

All 66 participants complete the questionnaire 43 of them were female and 23 were male. the participate were from different age (Table 1).

Table 1 show the participate age in this study.

age	Number of participate
18-20	2
20-22	13
22-24	15
24-27	3
27-34	2
34-50	3

Table 2. show the dose is used.

Which dose is used?	
Dose	Number of patient response
Tablespoon once daily	13
Tablespoon twice daily	12
Tablespoon three time a day	41

Table 3. show how many days patient use the zecuf syrup .

How many days did you use the zecuf syrup?	
days	Number of patient response
One day	12
Two day	7
Three day	18
Four day	10
Fife day	10
Six day	9

Table 4. show if there is side effect from use the syrup .

Are there side effect from use it?	
Side effects	Number of patient response
Abdominal pain	3
Nausea	4
Drowsiness	20
Other symptoms	39

Table 5. show if there is a benefit from use the syrup .

Is there a benefit from use it?	
Benefit	Number of patient response
Decrease nocturnal cough	22
Decrease Daytime cough	7
Stope nocturnal cough	6
Stope Daytime cough	7
Decrease throat congestion	12
No benefit from uses it	12

Table 6. show the symptoms were accompanying.

What symptoms were accompanying?	
Symptoms	Number of patient response
Dry cough	20
Increase temperature	11
throat congestion	30
Other symptoms	5

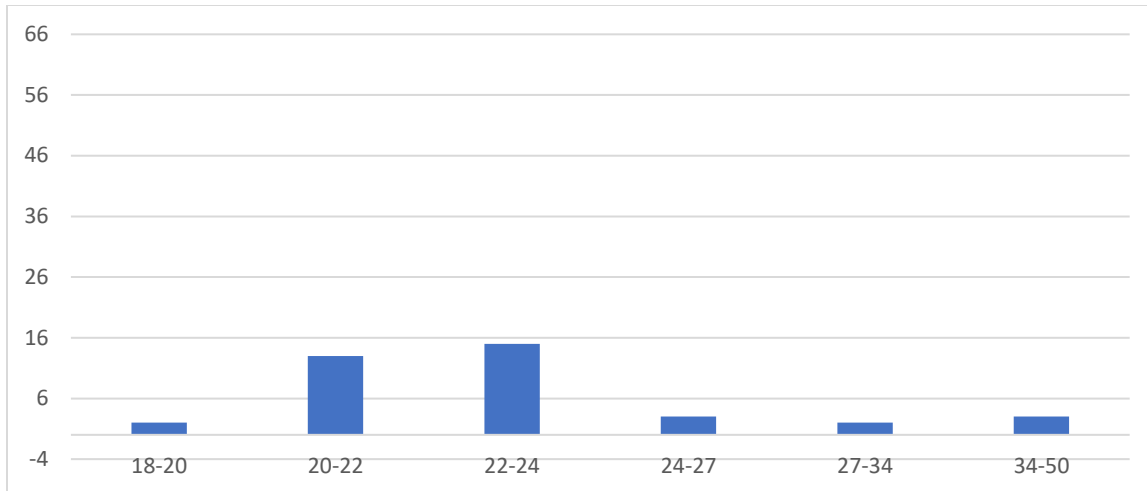


Chart 1. show the participate age in this study.

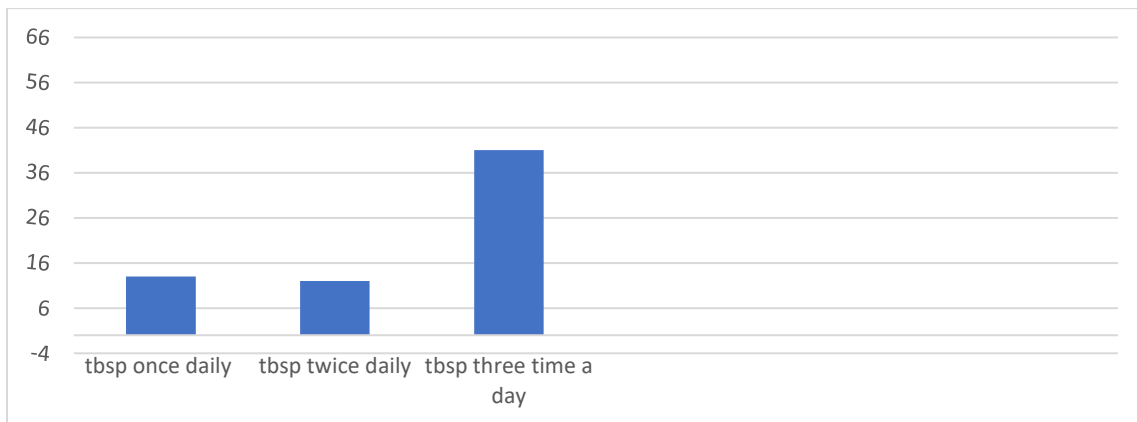
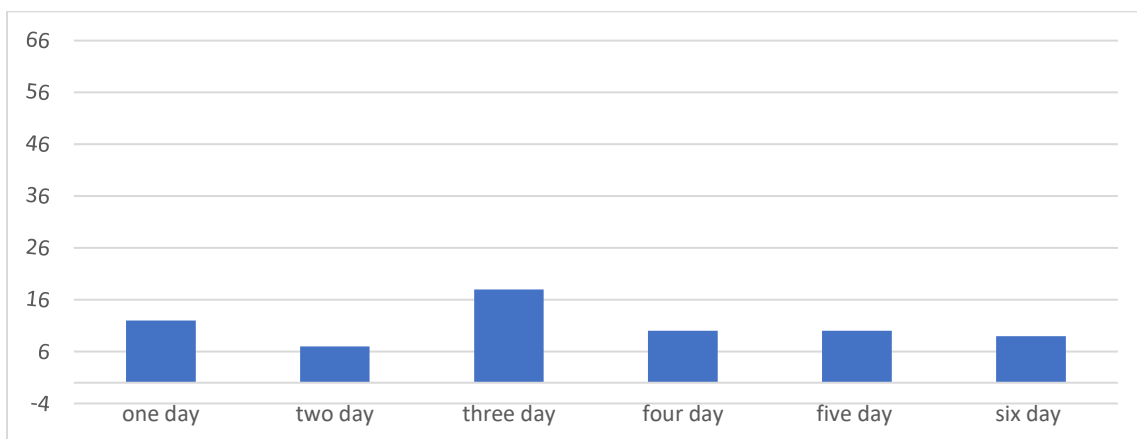
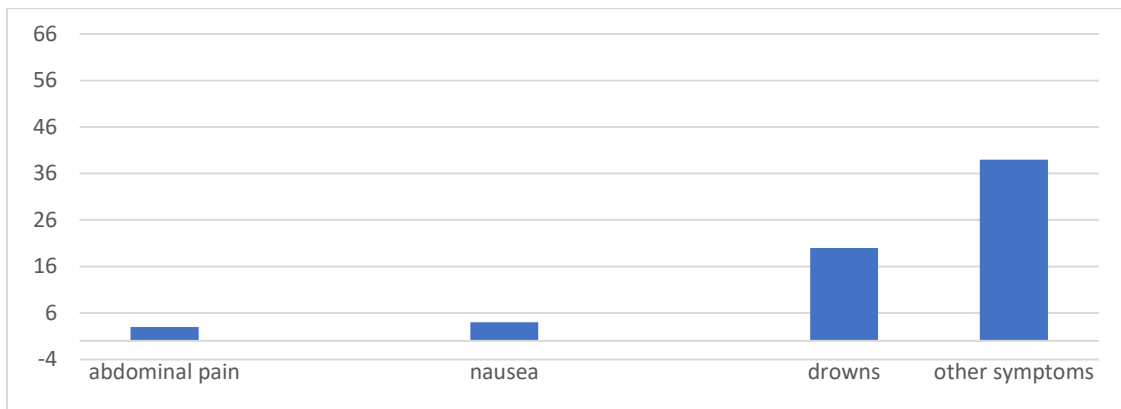


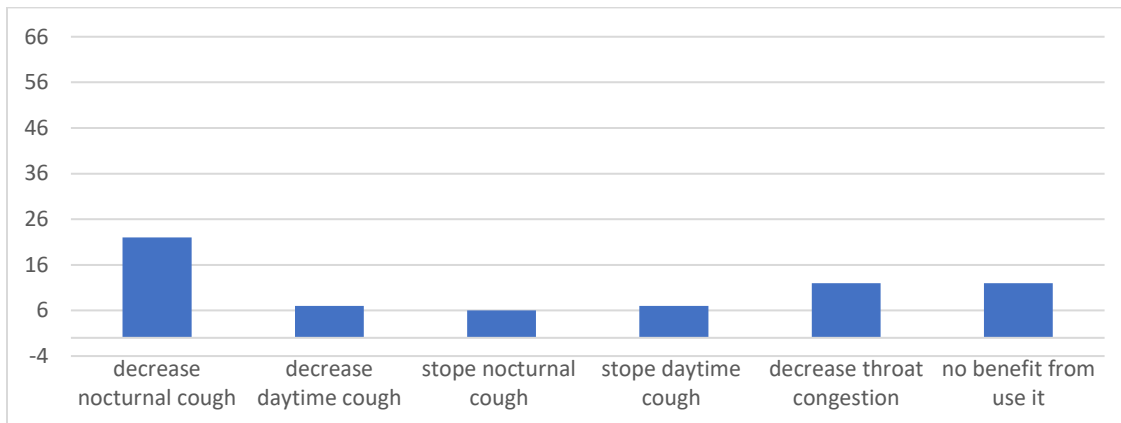
Chart2. show the dose is used



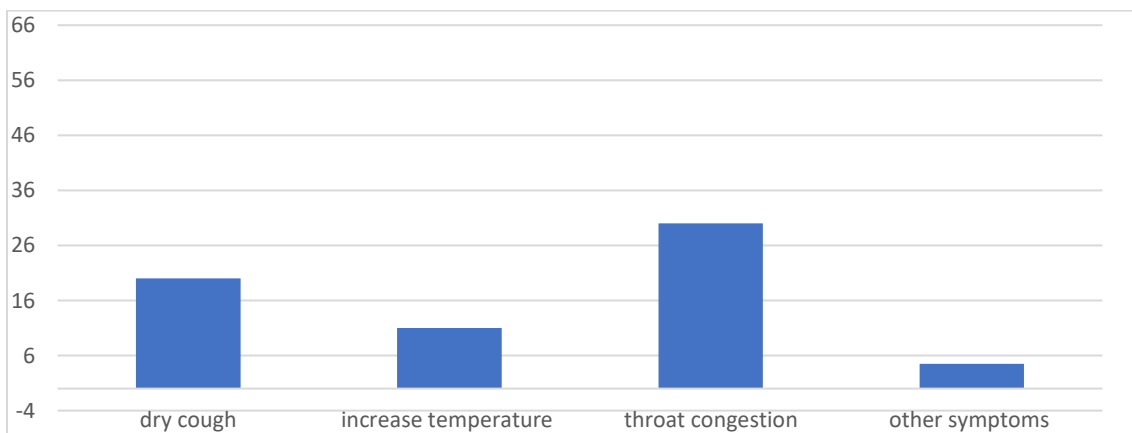
Column Chart 3. Show patient response about how many days they use the syrup.



Column Chart 4. Show patient response about side effect of the syrup.



Column Chart 5. Show patient response about the benefit from use the syrup.



Column Chart 6. Show patient response about symptoms were accompanying

CHAPTER 4

4.1. Discussion

A nonproductive cough is one that does not bring up any mucus or other secretions. Also known as a dry cough, a nonproductive cough often is caused by some sort of irritation in the throat. Many people describe the irritation as a "tickling" or "scratchy" sensation.[\[50\]](#)

Zecuf Syrup is considered to be one of the most effective treatment for patients with acute non productive cough, is combination of herbal extracts that works Naturally. Broncholytic ,mucolytic, effective for Wet and Dry Coughs, for coughs associated with colds and flu Expectorant

•available in syrup and lozenges •cough Calming anti-inflammatory For day and night use, Demulcent •alcohol free.[\[51\]](#)

The result of survey indicated that 66 of the participant who used zecuf Syrup, were female more than male by percentage 65.2% for female users and 34.8 % for male users and show that the dose of zecuf Syrup was more effective just when take it as tablespoonful three times a day and this was about 62.1% of users, and most patient on our research show about 27.3% use it for three days and more you .In addition The result indicated that 59.1% of the participant who used zecuf Syrup had drowsiness as Most common side effect, other users show other less common side effect such as nausea, gastric pain and other side effect in percentage of 30.3%. In our result zecuf Syrup show effectiveness in Reduce nighttime cough 33.3%.

According to other research Zingiber It contains 1–4% volatile oil containing cineole, zingiberene, borneol, and resins like gingerol and shogaol. Cineole shows antitussive effect by suppressing the cough reflex through direct action of cough center in the medulla [\[52\]](#)

Adhatoda vasica It contains quinazoline alkaloids like vasicine and vasicinone and also essential oil. Vasicine present in the leaves possesses respiratory stimulant activity and induces bronchodilation as well as

relaxation of the tracheal muscle. It offered significant protection against histamine induced bronchospasm [53].

Liquorice is root of *Glycyrrhiza glabra* It contains majorly triterpenoid saponin glycyrrhizin and few flavonoids. Glycyrrhizin exerts antitussive effect by stimulating salivation and inducing a more frequent swallowing reflex [54].

conclusion

in this research , it can be recommended that zecuf syrup would be used for to decrease nocturnal cough and seasonal cough , smokers cough and even decrease throat congestion and to get effective result you can use it more than three days as tbsp three time a day and it has no serious adverse effect as we mention .

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