

# Promoting Health with Herbal drinks

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## Abstract

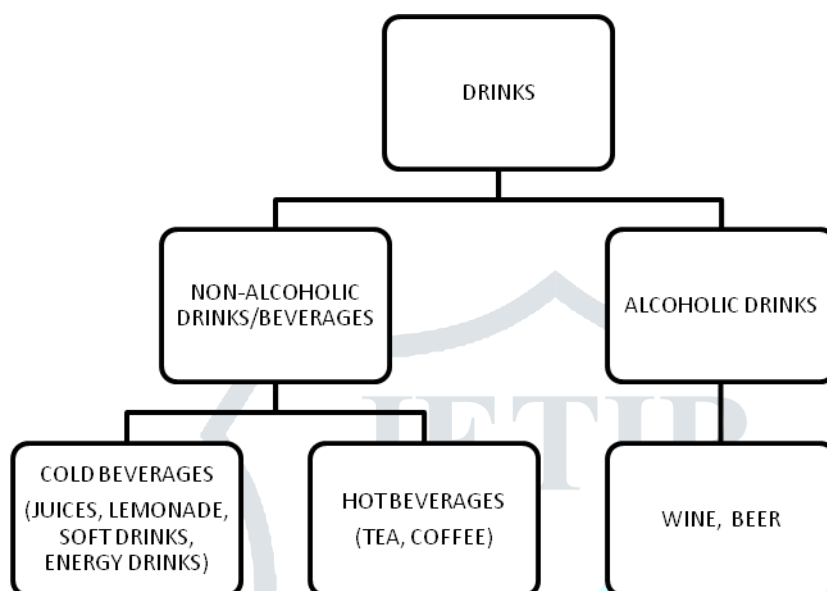
Drinks have always been a medium to quench thirst. They have also evolved and matched to the taste- buds of public in general. There are selected health drinks available in market which only give taste and aroma and do not have much health benefits as they have some or the other synthetic components. On the contrary, the novelty of this proposed work is to provide a genuine herbal health drink (mainly for adolescents) which possess all the natural constituents including herbs that have high nutrient content (vitamins, antioxidants and minerals) for meeting the energy requirements of adolescents. Therefore, there is a need to find replacement of such drinks, with those that are full of nutrients and have no health hazards. Meticulous use of herbal combinations for preparation of herbal health drinks, followed by several acceptability tests, can launch a safe and completely nutritive herbal drink for our young population, who need it the most.

## Introduction

Any liquid that is intended for human consumption and fulfills the minimal requirement of human body that is satisfying the thirst is called a drink. Drinks have been a part of our culture from the beginning of human civilization. They are prepared by various methods which include distillation, pasteurizing, fermentation, carbonation, infusion, juicing and mixing. In day to day life we consume many types of drinks like milk, tea, coffee, soft drinks, buttermilk, juices, wines, beer, etc. Depending on the alcohol content present in the drinks; they are basically classified as, alcoholic and non-alcoholic drinks. The non-alcoholic drinks have been further classified as hot and cold drinks. The term beverage is generally used in place of drink and 'drinks' are usually referred to alcoholic drinks. These drinks vary from place to place as local and traditional knowledge has brought up the diversity in food drinks.

The journey of drinks has come a long way. There are numerous drinks that are being commercialized in the market today. There is a trend among the people of accompanying food with the drinks. After water, tea (prepared through infusion) is the most preferred drink all over the world. Substituting all such drinks like water, milk, tea and coffee, the attention has been made on consumption of soft drinks, carbonated drinks and juices by people as they are made to attract their taste buds and are easy to digest [1]. Adolescents as well as adults are inclined towards soft drinks. These soft drinks may be carbonated or non-carbonated. With the ongoing fashion in drinks, a new type of soft drink namely 'energy drinks' or 'stimulant drinks' have gained the limelight among the people. Figure 1 classifies the types of drink on the basis of presence or absence of alcohol.

The consumption of these drinks has seen an enormous increase over the past decades. In an annual report from British Soft Drinks Association in the year 2016, they have reported that there has been a 0.2% increase in the consumption of soft drinks from 2010-2015 [2].



**Fig. 1** Types of drinks depending on the presence or absence of alcohol.

They contain large amounts of sugar or sugar substitutes, caffeine, artificial sweeteners and a number of stimulants. As the name suggests, these drinks are attributed to boost with energy and stamina, improve health, concentration and athletic performance [3, 4]. They have become a part of colleges and recreational places.

The ever increasing demand of drinks has led to surveys conducted by various institutes which conclude that consumption of such drinks has a potential health hazard and their intake should be restricted. This leads to finding an alternative which nutrients along with the taste.

### Current market and preference of drinks

In a survey conducted in Gulf Medical University, it was reported that energy drinks which are a source of carbohydrates and caffeine, are preferred by nearly 92% of students and only 8% students consumed health drinks. In majority, these students were ignorant about the amount of sugars and caffeine present in such drinks [5]. These drinks are intended and marketed to 'energise' the youth, which has led to increase in its consumption over the years. The marketing of such drinks is done among the youth and professionals who are involved in activities of sustained concentration and require stamina and endurance. These drinks are consumed among the adolescents, children and young adults as a substitute of water, influence from peer group members and lack of knowledge on their health [6]. Not only non-alcoholic beverages, but alcoholic beverages are often found to be the taste of youth and adults. It is generally mistaken as a matter of pride in social occasions. Not realizing the amount of alcohol which is suitable to intake, people usually overdose it which leads to fatigue,

headache, liver damage, pancreatitis, cancer, ulcer and gastrointestinal problems, brain damage, immune dysfunction, osteoporosis and cardiovascular problems. The youth can be motivated by the brand advertisements and peer influence.

### Need of health drinks

There are many ingredients in the currently marketed soft drinks and energy drinks which have no therapeutic properties in them. Overdose of such products may lead to adverse health effects. These drinks may contain caffeine, taurine, guarana, ginseng, sugars and some herbal supplements. The most common herbal supplement used is yohimbine which is an alkaloid extracted from *Pausinystalia yohimbe* and *Rauwolfia serpentine*. It is added to boost energy and metabolism. This may adversely affect the health as it may cause hypertension at regular doses and hypotension at overdose. Some plants (eg. *Paullinia cupana*) are known to increase the caffeine content in drinks which is not necessarily mentioned by the manufacturers on the label, thus the caffeine content is exceeded beyond its usual dose. The overdose of caffeine may cause aggression, headache, depression, anxiety and restlessness. The prolonged exposure of caffeine may lead to nausea, seizures, cardiovascular symptoms and nervousness [3, 7, 8]. Caffeinated drinks are not advisable to be consumed by pregnant women and children (under 16 years) [4].

There are some ingredients whose pharmacology may be known or unknown which when combined with other ingredients increase the toxicity and produce certain adverse health effects. The consumption of such drinks among people with cardiac abnormalities, diabetes, behavioral disorders and other diseases have reported to depict adverse health effects such as obesity and type II diabetes [3, 9]. Once consumed, soft drinks are reported to affect the dental health of humans, especially the children. The low pH (below 5.5) leads to erosion of the enamel and the sugars are utilized by microorganisms of plaque which leads to dental caries. The sugars present in them produce acids which has the ability to decay tooth enamel called as acidogenicity [10, 11]. Some of these drinks are often consumed with alcohol, which further deteriorate the health. Caffeine and alcohol are reported to increase the ability to consume alcohol and cause transient behavioral effects.

With the concerns raised on obesity and its health hazards, there has been a formulation of 'diet soft drinks' which claim to add artificial sweeteners to reduce the caloric content of the drinks. However, these are reported to increase satiety which provokes to take more calories after its consumption and they are reported to show multiple adverse health effects [12, 13]. As it is studied, soft drinks or energy drinks do not contain any nutrients and provide low or no health benefits. Due to its taste, these drinks have substituted the healthier drinks (like milk) which are supposed to be taken by children in their growing years. There has been low intake of calcium, fruits and dietary fibers which contribute to the poorer health. These drinks only contain calories and no traces of calcium; the bone density among girls of 12-15 years has been reported to decline [14, 15].

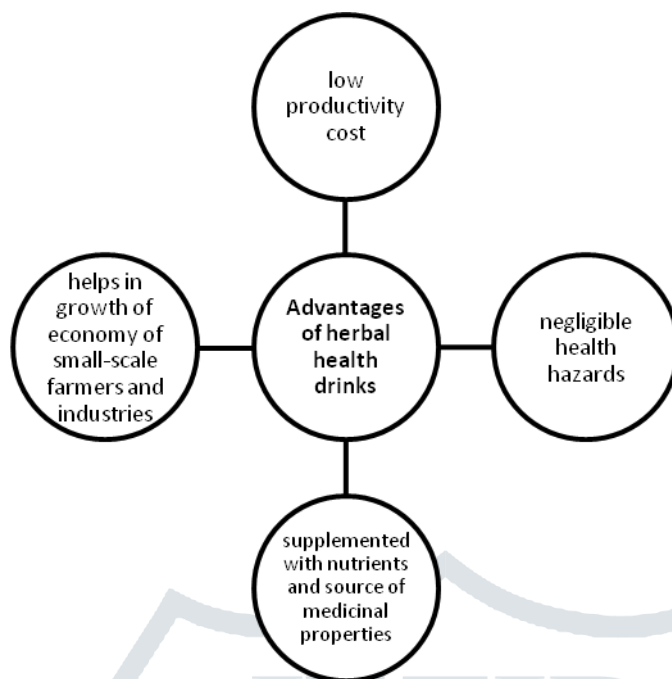
Keeping such adversity in mind, one should follow proper guidelines provided by the manufacturer and switch over to healthier options. The legislature, government, schools and colleges should take up proper action on

sale of such drinks. Countries including Belgium, UK, Australia and Sweden have put up a ban on television advertisements of high sugar containing products during the children show timings. There has been addition of tax on sugar-containing soft drinks and several schools have even banned the sale of such soft drinks.

### Herbal health drinks

With the increasing concerns on health, green teas and herbal teas have been in demand over the past few years. The type of tea can be distinguished on the level of oxidation of tea leaves. Green tea containing caffeine (from *Camellia sinensis*) has taken the limelight as it is anti-oxidant rich and helps in speedy weight loss. The major polyphenols present in tea are flavanoids which provide anti-carcinogenic and anti-inflammatory effects. It has wide range of applications in boosting the metabolism, reducing blood-sugar levels and cancer, liver diseases, skin disorders, heart diseases, weight and hair loss etc. Herbal teas are infusion of leaves, roots, bark, stem, flower or nuts of any non-tea plant. These are now commercialized by various companies as herbal tea bags. More than 600 plants have been found to be medicinally useful and boost with calmness and spiritual awareness. Some of the herbal teas like chamomile, hibiscus, peppermint and rooibos are naturally caffeine-free occurring plants. These teas are known to relieve stress and anxiety. Some of the popular herbal teas are mentioned as (1) Hibiscus tea is rich in minerals and Vitamin C; (2) Turmeric tea relieves from aches and disorders like arthritis and migraines. It boosts the level of serotonin which uplifts the mood and enhances sleep and appetite patterns; (3) Tulsi tea offers antibacterial and antifungal properties; (4) Ginger tea is anti-oxidant rich which is used to cure nausea and motion sickness as well as boosts immunity; (5) Dandelion tea which eradicate toxins and has strong diuretic properties. Many such herbal teas are marketed today which have valuable medicinal properties and very low caffeine content [16].

Medicinal plants have always been the part of human culture in curing certain diseases and ailments. They have been in use for long by local and tribal people to treat disorders and as a nutritional supplement. In such a study carried in Pakistan, there are 217 plant species including *Arnebia benthamii*, *Aloe vera*, *Allium cepa*, *Coccinia grandis*, *Artemisia fragrans*, *Alternanthera sessilis*, *Senegalia catechu*, *Malva ludwigii*, *Cichorium intybus* and *Dalbergia sissoo* which have been used in preparation of herbal health drinks through decoction, infusion, juices and tea [17]. The involvement of microorganisms in fermentation of foods has been through a long run. There are several drinks and beverages which are produced through fermentation. Basically, the alcoholic beverages like wines and beer have been the important formulations through fermentation. The non-alcoholic cereal based drinks have been formulated which are indigenous to their respective origins. 'Mahewu' is such non-alcoholic fermented drinks which are locally consumed in Africa and Arabian Gulf countries. It is a sour beverage prepared from corn meal. The fermentation carries out at ambient temperatures by microorganism *Lactococcus lactis* subsp. *Lactis* [18, 19].



**Fig. 2** Advantages of herbal health drinks.

One more such drink is consumed in turkey, Romania, Albania and Bulgaria by the fermentation of rye, maize, millet, wheat and other cereals mixed with saccharides with the help of lactic acid bacteria and yeasts [20, 21]. The nutritious value and taste of these drinks have paved their ways to industrial production and commercialization [22].

With the help of traditional knowledge and local herbs available, there is preparation of herbal health drinks which just remains restricted to the place from where they are originated. In a study of indigenous health drinks from India, it was found that ‘kokum’, ‘buransh’ and ‘nannari’ are the exclusive herbal health drinks from the Western Ghats, Uttarakhand and Andhra Pradesh, respectively. The juice obtained from the dried rind of fruits of *Gracinia indica* (kokum) which is commonly found in the rainforests of Western Ghats is a cardi tonic, anti-ulcer, antihelmenthic, anti-obesity, relieves sunstroke and possess antioxidant properties. The red colored flowers of *Rhododendron arboretum* (state tree of Uttarakhand) is used to prepare buransh juice. It is an important ethno-medicine which is used by the people of Raji tribe. The jelly from the petals is used in curing cold, cough, dysentery and diarrhea. The roots of *Hemidusmus indicus* are used to prepare nannari drink which is diaphoretic, demulcent and diuretic in nature [23]. Figure 2 shows some of the advantages from the herbal health drinks on health and economy. The knowledge of such traditional drinks is essential to commercialize them so that the health hazards of the currently marketed soft drinks can be restricted.

## Conclusion

Drinks are the potent source of energy and are stamina boosters. The ongoing trend of drinks which includes soft drinks and energy drinks has many adverse affects on health. The traditional and indigenous knowledge of drinks which are produced locally using herbs and medicinal plants containing all the natural ingredients should



be pharmacologically studied so that they can be used as an alternative to the current drinks. However, the acceptability tests (tests for taste) are a pre-requisite before marketing. The development of these drinks would indirectly assure the economic benefits to small-scale industries and farmers.

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