

# FUNCTIONAL DRINK CONSUMPTION OF BANGKOK RESIDENTS, THAILAND

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## ABSTRACT:

**Background:** Functional drink is a prominent product category under the functional food sector. Health benefit belief from functional foods emerges as the strongest positive determinant of willingness to consume functional drink. Functional food and drink beverages exhibit 62.8 and 61.2%, the largest share value of Thailand health and wellness industry in 1020 and 2012 respectively. Most common ingredients in these functional drinks are sugar, fructose and maltitol which are the source of carbohydrate. These ingredients have some negative effects on human body if consume frequently. Therefore, this study examined the pattern of consumption of functional drinks of Bangkok residents, Thailand.

**Methods:** A descriptive study was conducted. The procedures of data collection were self-reported by using structured questionnaire. The survey was conducted among adult of Thai nationalists (N=568) for both male and female with age range of 18 to 65 years in metropolitan area of Bangkok. Descriptive statistics such as frequency, percentage, mean and standard deviation were measured to investigate the pattern of consumption of functional drinks.

**Results:** Majority of the respondents were female in this study. About half (49.3%) of the study population were moderately interested about functional drinks. Majority of the respondents (89.6%) stated that they learned about the functional drinks from television. As a reason to choose any kind of functional drinks 46.8% of the respondents mentioned "for better health".

**Conclusions:** It has been observed that majority of the respondents (88.4%) consumed functional drinks at least once in their life. Media campaign about these sugary functional drinks would be effective for raising awareness about added sugars in functional drinks, increasing knowledge about health problems associated with excessive sugar consumption.

**Keywords:** Functional drinks; Consumption behavior; Motivational factors; Thailand

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DOI:

Received: June 2017; Accepted: July 2017

## INTRODUCTION

Good health becomes critical to increase human well-being as it makes people get happiness, safety and self-reliance which in turn lead to sustainable economic and social development [1]. Even there are various alternatives to provide vitality, consumers today are searching for super foods or functional foods to keep them healthy, prevent diseases and improve their mental state [2]. Functional drink is a prominent product category

under the functional food sector. In the universe of food, a key area of focus today is functional beverages; the fastest growing sector of the functional food. These has range from drinks that claim to improve athletic endurance, energy, hydration and health (with the latter encompassing general wellness/immunity, bone/joint, cognitive, digestive and other areas) enhance beauty and relaxation and promote weight loss. Generally, it is a non-alcoholic beverages fortified with vitamins A, C, and E or other functional ingredients [3]. In the past recent years, a greater health concern has been growing among Thai people, health and wellness

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Cite this article as:

Sultana F, Taneepanichskul N, Somrongthong R. Functional drink consumption of Bangkok residents, Thailand. J Health Res. 2017; 31(Suppl.1): S121-7. DOI:

food and beverages are perceived to be a better choice, to help create better immune systems and strengthen the body. New categories of functional drinks are formed; several benefits such as vitamins, minerals, collagen, fiber and omega3 were identified and combined into a new product. Labelling for claims of specific health benefit will create an expectation to the consumers prior the consumptions of the products in question [4].

In this study, the definition of functional drink has been addressed by which ingredients with an additional health value have been added to conventional drink, not in the form of pills or capsules but just as normal drink. Non-alcoholic beverage market of Thailand can be divided into various sectors. For example: carbonated drinks, fruit and vegetable juice, bottled water, functional drinks, ready-to-drink (RTD) tea and coffee, powdered concentrates and traditional Thai drinks. Growing health concerns of Thai consumers has driven growth in Green Tea, fruit and vegetable juices; cereal based drinks. Due to an expansion in the number of off- sale outlets such as convenience stores and hypermarkets, functional drinks are available to a larger portion of the population in Thailand. Health benefit belief from functional foods emerges as the strongest positive determinant of willingness to consume functional drink. Functional food and drink beverages exhibit 62.8% and 61.2%, the largest share value of Thailand health and wellness industry in 2010 and 2012 respectively [5]. People think that adding some food ingredients or vitamins in food or drink enhance health benefit beyond their basin nutrition. However, potential health benefit gains due to consumption of well-balanced and healthful diet on a regular basis at the effective levels. Different Opinions exists on functional beverages, both positive and negative ones.

Though functional beverage industry has experienced innovative and economic expansion, yet research into consumer perceptions of functional drink and their associated health claims are limited. Most studies have heavily looked at a general constituent of the functional foods e.g. either consumers' attitudes or perceptions regarding functional foods or food manufacturers' decision to develop functional foods. The advantage of going deeper into a sub category of functional foods; functional drinks has been to some extent overlooked. Despite increases in consumption, there are limited evidence regarding the relationship of functional beverage consumption has with lifestyle

factors [6] and influence of different kind of media. Thus the purpose of this study is to examine the pattern of functional drink consumption and related behavior among adult (18-65 years old) population in Bangkok residents, Thailand.

## **MATERIALS AND METHODS**

### **Study area and study population**

A descriptive study was used to study the adult of Thai nationals for both male and female with age range of 18 to 65 years in metropolitan area of Bangkok in May 2017. This study consisted of 568 participants. The convenience sampling method was used for sampling to choose the study population. All the respondents have been living in Bangkok at least 3 months and were capable in reading and writing Thai language.

Various criteria for the inclusion of respondents were adapted. Age of the respondents was considered as one of the criteria. Therefore, age limit for the respondents was ranged between 18-65 years. Apart from the age limit, competency of the respondents in terms of education and mental maturity was also considered. They were competent having communicating ability to understand the questionnaires and able to self-report. They were also capable in reading and writing of Thai language. Respondents were having willingness to take part in the survey without any force. Respondents were Thai nationals and have been living in Bangkok for at least 3 months.

Various exclusion criteria were also adapted. Respondents having any kind of communication problem were avoided. Any person or his relative who have been working in the company of any kind of functional drinks was avoided.

### **Data collection**

The procedure of data collection was self-reported. The participants were selected randomly in the public places and requested to fill the questionnaires once agreed. According to a report, around 200,000 people used to visit daily to a biggest shopping mall situated in Pathum Wan, Bangkok. Sixty percent among the visitors are local or domestic [7]. It, therefore, was easy to find the required number of samples. Since the duration of sampling was one month and as per the formula, the sample was at least 440 and considering the number of research assistants, who were only three, at least 3 sample were required to collect per day.

Assistants were advised to approach the sample

people about the subject clarifying them that the study will be conducted on behalf of the Chulalongkorn University. The respondents/sample people were ensured that all the given information would be kept confidentially and data would only be used for academic purposes only. Once agreed, the respondents were requested to fill a self-administered questionnaire. The assistant researchers explained questions asked during the questionnaire filling process in Thai. The duration of each report was 15 to 20 minutes on average.

The questionnaire was divided into two parts. Part-I was for the sociodemographic and lifestyle characteristics of the respondents. Part-II was for the respondents' behavior towards consumption of functional drinks. The questionnaire was created by the researcher. The questionnaire was revised for validity and reliability according to the expert comments and suggestions. For validation of the questionnaire, twenty questions were reviewed by the experts to ensure the validity and completeness of the questionnaire and Index of Item Objective Congruence was 0.78. Please add Cronbach alpha for reliability to estimate the reliability of questionnaire. Cronbach's alpha coefficient was applied. The Cronbach's alpha coefficient was 0.88.

#### **Statistical analysis**

The software named Statistical Package of Social Science of version 16 (SPSS v.16) was used for data analysis in this study. To assess the pattern of consumption of functional drinks among Bangkok residents, descriptive statistics such as frequency, percentage, mean and standard deviation were measured.

#### **Ethical consideration**

This study received an approval from The Research Ethics Review Committee for Research Involving Human Research Participants, Health Science Group, Chulalongkorn University by COA 116/2017.

## **RESULTS**

#### **Sociodemographic and life style characteristics**

Table 1 represents sociodemographic and lifestyle of participants. The majority of the respondents were female (61.8%) in this study. About half (47.5%) of the respondents age was between 18 to 33 years and only 17.6% were between age 50 to 65 years. Regarding respondent's occupation, one-third of them were company employee (36.5%) and government officer (26.9%),

only 14.8% were students. In case of respondent's education level, 42.1% reported that they had bachelor degree, 19.4% had Master's degree, and only 6.3% respondents' education level was primary or lower. The majority (53.2%) had monthly income of between 10,001-30,000 baht and only 0.7 % had income more than 100,000 baht/month.

In this study, majority of respondents were moderately concerned about their health (58.6%) and moderately interested in functional drink (49.3%). It was found that one fifth of the respondents were 'a lot' concern about health whereas only 8.8% was not interested about functional drinks. More than half of the respondents (54.9%) reported that they usually spent their leisure time by doing house chores. Majority of the respondents (56.9%) face stress daily in moderate level and only 2.6% said that they do not face any stress in their daily life.

#### **Consumer behavior about consumption of functional drinks**

Table 2 shows the percentage of functional drink consumption and consumer behavior. It has been observed in the study that majority of respondents 88.4% had consumed functional drinks at least once in a life.

Three types of functional drinks were considered in this study fruit/vegetables juice, green tea/herbal drink and beauty drinks. Among respondents who consumed functional drinks, 96.2% of the respondents consumed fruit /vegetables juice, the percentage for green tea/herbal was 95%, whereas only 61.0% respondents had ever drunk beauty drinks. Frequency of consumption of functional drinks had been categorized into five groups :1) drink every day, 2) 2-3 times /week, 3) once a week, 4) once a month, and 5) less than once a month for who consumed functional drinks. The percentage of consumption for 2-3 times/per week was quite similar for both fruit/ vegetable and green tea/herbal drinks which are 31.0% and 33.8% respectively. But for beauty drinks the percentage for 2-3 times/week consumption was only 21.5%. It was noted that 40.6% of the respondents consumed beauty drinks less than once a month, where they were only 24.6% and 19.7% for fruit /vegetables juice and green tea/herbal drinks respectively. Majority (46.8%) of the respondents mentioned "for better health" as the reason of drinking functional drinks. 12.9% mentioned media/advertisement as the reason for drinking. In the event of spending money for consuming functional drinks 30.9% and

**Table 1** Distribution of respondents by sociodemographic characteristics

<b>Characteristics</b>	<b>Number (N=568)</b>	<b>Percentage</b>
<b>Gender</b>		
Male	217	38.2
Female	351	61.8
<b>Age (years)</b>		
18-33	270	47.5
34-49	198	34.9
50-65	100	17.6
Mean 36.26, SD. 11.56		
<b>Marital status</b>		
Single	333	58.6
Married	211	37.2
divorced	24	4.2
<b>Occupation</b>		
Student (below university level)	84	14.8
Company employee	207	36.5
Govt. officer/State	153	26.9
House wife	36	6.3
Trading/personal business	37	6.5
Unemployed	17	3.0
Others	34	6.0
<b>Education</b>		
Primary/lower	36	6.3
Secondary	94	16.5
Vocational/diploma	73	12.9
Bachelor	239	42.1
Master	110	19.4
Doctoral/higher	16	2.8
<b>Average income/month (Baht)</b>		
<5000	55	9.7
5001-10,000	87	15.3
10,001-30,000	302	53.2
30,001-50,000	88	15.5
50,001-100,000	32	5.6
Above 1000,000	4	0.7
<b>Health concern level</b>		
No	10	1.8
Little	103	18.1
Moderate	333	58.6
A lot	122	21.5
<b>Interest about functional drink</b>		
No	50	8.8
Little	181	31.9
Moderate	280	49.3
A lot	57	10.0
<b>Most leisure activity</b>		
Activity/housework	312	54.9
Sport/indoor exercise	81	14.3
Sport/outdoor exercise	47	8.3
Eating out	42	7.4
Travel to other provinces	59	10.4
Others	27	4.7
<b>Daily life facing stress</b>		
No	15	2.6
Little	131	23.1
Moderate	323	56.9
A lot	99	17.4

**Table 2** Consumption of functional drinks and consumer behavior about functional drinks

Characteristics	Number	Percentage
<b>Ever consumed functional drink (n=568)</b>		
Yes	502	88.4
No	66	11.6
<b>Ever drink fruit juice (n=502)</b>		
Yes	483	96.2
No	19	3.8
<b>Frequency of consumption of fruit/vegetables juice (n=467)</b>		
Everyday	18	3.9
2-3 times/week	145	31.0
once a week	110	23.6
once a month	79	16.9
less than once a month	115	24.6
<b>Ever drink tea/herbal drinks (n=502)</b>		
Yes	477	95.0
No	25	5.0
<b>Frequency of consumption of tea/herbal drinks(n=456)</b>		
everyday	30	6.6
2-3 times/week	154	33.8
once a week	107	23.5
once a month	75	16.4
less than once a month	90	19.7
<b>Ever drink beauty drinks (n=502)</b>		
Yes	306	61.0
No	196	39.0
<b>Frequency of consumption of beauty drinks (n=293)</b>		
Everyday	12	4.1
2-3 times /week	63	21.5
Once a week	46	15.7
Once a month	53	18.1
Less than once a month	119	40.6
<b>Reason to choose functional drinks (n=502)</b>		
For better health	235	46.8
Media/advertisement	65	12.9
Other advised	30	6.0
Favorite flavor	138	27.5
Others (specify)	34	6.8
<b>Spent for drinks (n=502)</b>		
<20 baht	46	9.2
20-29 baht	155	30.9
30-39 baht	85	16.9
40-49 baht	62	12.4
>50 baht	154	30.6
<b>Drinking time (n=502)</b>		
Drink in the morning	96	19.1
Drink with meal	86	17.1
Drink when feels tired	246	49.0
others	74	14.8

30.6% of the respondents spent 20-29 baht and more than 50 baht respectively. Majority of the respondents (49.0%) reported “drink when felt tired” as their drinking time.

Table 3 presents the frequency and percentage about the places from where respondents usually

preferred to buy functional drinks. In the event of convenience store 84.3% of the respondents reported that they used to buy therefrom. About the departmental stores/supermarket 53.4% respondents said that they used to buy from these type of places. Only 4.2% and 2.6% respondents reported that they

**Table 3** Places from where respondents usually used to buy functional drinks

Place	Number	Percentage
Convenience store	423	84.3
Departmental store/supermarket	268	53.4
Grocery shop	62	12.4
Drug store	21	4.2
Beauty center	13	2.6

Note: Respondents answered multiple

**Table 4** Type of media from where respondents received information about functional drinks

Source of information	Number	Percentage
Television	509	89.6
Media online	237	41.7
Advertisement board	218	38.4
Newspaper	188	33.1
Social media	152	26.8
Magazine	149	26.2
Radio	71	12.5
Google	57	10.0
Facebook	49	8.6
Instagram	30	5.3
Never received	8	1.4

Note: Respondents answered multiple

bought from drug store and beauty center respectively.

Table 4 presents the frequency and percentage about the type of advertisement media from where respondents learned about functional drinks. As seen in the table, 89.6% learned about the functional drinks from television, next major sources of information were media online and advertisement board with 41.7% and 38.4% respectively. One fourth (26.8%) respondents reported that they got information from social media. Only 8.6% got information from Facebook and 5.3% from Instagram. Only 1.4% said that they never heard about functional drinks from any kind of media.

## DISCUSSION

In this study more than half (61.8%) of the respondents were female and 38.2% were male. Among the study population about three-fifths (58.6%) were single. It is interesting to observe that service holders (government or private service) comprises 56% (36.4% & 26.9%) of the total respondents. It is encouraging that highest proportion (42.1%) of respondents in the sample were bachelor degree holder. In this study the respondents with monthly income between 10,001 to 30,000 baht (53.2%) were over represented. This high level income could be due to the reasons majority of the respondents were government/

private service holders and bachelor degree holders and also the study was conducted in departmental store area. In this study majority of respondents were moderately concerned about their health and moderately interested in functional drinks. It was found that one fifth of the respondents were 'a lot' concerned about health whereas, only 8.8% was not interested about functional drinks. It could be suggested from the findings that the respondents who were more health concerned might be significantly associated with more functional drinks consumption. Similarly, Landström et al. in 2009 [8] suggested that significant predictors of functional food consumption are related to consumers' health motivation.

Among respondents who consumed functional drinks, 96.2% of the respondents consumed fruit /vegetables juice, the percentage for green tea/herbal was 95%, whereas only 61.0% respondents had ever drunk beauty drinks. The percentage of consumption for 2-3 times/per week was quite similar for both fruit/ vegetable and green tea/herbal drinks which are 31.0% and 33.8% respectively. But for beauty drinks the percentage for 2-3 times/week consumption was only 21.5%. Majority (46.8%) of the respondents mentioned "for better health" as the reason of drinking functional drinks. Among respondents who consumed functional drinks once in a life, 49% reported "drink when felt tired" as

drinking time. The way of marketing strategy of functional drink is to convey the insisting message to the consumers that the functional drinks are having various positive impacts on health. The findings of this study also showed the impact of marketing strategies applied by the manufacturer.

About 84.3% of the respondents reported that they used to buy functional drinks from convenience stores. 89.6% learned about the functional drinks from television. Now-a-days most of the people are active in social media, but surprisingly one fourth (26.8%) respondents reported that they got information from social media. Only 8.6% got information from Facebook and 5.3% from Instagram. This could be implied that majority of the Thai people still focus on television channels and influenced by television commercials rather than social media. Because usually television commercials are endorsed by the celebrities.

Several limitations of this work must be taken into consideration .In this study the data collected by convenience sampling represented views of 15 to 65 years old peoples of Bangkok not the entire population of Thailand i.e. it did not cover all possible age groups and other cities. Thus, our findings do not represent the entire population and there is a possibility of being biased. The trend of functional drink consumption can be identified, but the rules or laws cannot be formulated. The statement about functional drink consumption behavior can also not be made as they are not the representatives of the entire population of Thailand.

## CONCLUSION

In this study 88.4% of the total 568 residents of Bangkok, who responded in the self-administered questionnaire, had consumed functional drinks at least once in a life. Forty-nine percent of the respondents, who consumed functional drinks once in their life, reported that they drank functional drinks when felt tired. It has also been revealed that most of respondents learned about the functional drinks from television. Therefore, television channels could be the effective way for raising awareness about added sugars in functional drinks, increasing knowledge about health problems associated with excessive sugar consumption. So, it is recommended that awareness of the need to focus on the essential role of both diet and physical activity as key determinants of health and reduced risk of chronic disease that may have from over consumption of functional drinks. The scope of

future research should be broadened to include a larger representative sample size and sample area. Moreover, it would be useful to study further separately each group of consumer who uses functional drinks for different purposes.

## ACKNOWLEDGEMENT

This research was funded by Biopharm Chemical Co. Ltd. The publication was supported by Chulalongkorn Academic Advancement into its 2<sup>nd</sup> Century Project (CUAASC).

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