

# Consumption of Green Tea in Professionals and Non-Professionals

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## ABSTRACT

**Introduction:** Green tea is a beverage made up of the leaf buds, stem and leaf of the plant “Camellia sinensis”. It has several health effects. It is healthier than black tea; black tea is a fermented product of the same plant but with reduced activity. Polyphenols prevent inflammation and swelling. It also protects the bones, and prevents the joint degeneration. It is a potent carcinogenetic and also able to fight different viral infections. Green tea also contains 2% to 4% caffeine, which may improve brain messengers functions, important in Parkinson’s disease. Caffeine is potent CNS stimulant. It also stimulates heart and muscles, which result in the excess release of some chemicals in brain known as “neurotransmitters.” Caffeine can increase the urination. Antioxidants are also present in green tea that helps to protect the blood vessels and heart.

**Objective:** Our study aims to find out the consumption of green tea in different age groups and genders belonging to different professions.

**Method:** A cross-sectional method was used to collect data from different offices, banks, educational institutes and other public place in Karachi city.

**Result:** According to our survey green tea consumption is prevalent among all age groups. People (around 67%) mostly consume green tea, daily. The consumption of green tea is more prevalent in males than in females. Green tea consumption in the professional class is greater as compared to the non-professionals. People mostly take green tea for refreshment, and for weight loss. According to our survey 33% people had never take green tea. They had no awareness about the health effects and benefits of green tea. Although, there are many brands of green tea available in market with different flavors but still some people do not like its taste.

**Conclusion:** After our survey we have concluded that the use of green tea is very popular in our society, especially in people belong to different professions and house wives it is a part of our daily life and now become a need. People use it for refreshment and weight loss. Green Tea use is more common in males than in females. Professionals are more likely to take green tea than non-professionals

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because professionals are well aware about its health effects and benefits.

**Keywords:** Green tea, *Camellia sinensis*, Polyphenols, Caffeine, Antioxidants.

## INTRODUCTION

Tea is made up of leaf and bud of a plant *Camellia sinensis*. Tea is the second mostly consumed beverage in all around the world.<sup>1,2</sup> Approximately, the overall black tea production and consumption is 76–78%, green tea is 20–22% and oolong tea is less than 2%.<sup>3</sup> Black tea is a fermented product of the same plant but due to this process, some chemical compounds present in the plant reduces their activity. Foodstuff may regard as functional if it affects beneficially one or more target functions in the body except nutritional effects.<sup>3-5</sup>

Tea was originated in China, about 5000 years ago. It was originally used as a medicine due to presence of catechins for various illnesses.<sup>6</sup> Various excellent references are present to cover the chemical constituents present in the tea and also the pharmacological properties of tea.<sup>7,8</sup> Leaf bud, stem and leaf are the useful parts of green tea. Green tea can be prepared by steaming fresh leaves of the plant at higher temperature but leaves should not be fermented. In this process, during the step of steaming, polyphenols remain unaffected. Polyphenols are responsible for various benefits of green tea. Many substances have been identified in green tea by Scientists that can provide the majority of its health benefits. The major polyphenol belonging to the family of catechins and found in green tea is (-)-epigallocatechin gallate (EGCg), with lesser amounts of catechin (C), epicatechin (EC), gallic catechin (GC), epigallocatechin (EGC), gallic catechin gallate (GCG), and epicatechin gallate (ECG). Other substances like caffeine,

theophylline, theobromine, theanine, theaflavins, and phenolic acids such as gallic acid are present in very small quantities.<sup>9</sup>

A natural ACE inhibitor is green tea. Green tea is rich in catechins, polyphenols, particularly EGCG which is secret of its health benefits. The EGCG is a very powerful anti-oxidant, and it also inhibits the cancer cell growth. Green tea can kill cancer cells of the body with no harmful effects to the healthy cell or tissue of the body. Green tea is also effective in lowering the LDL cholesterol levels of the body. Green tea also inhibits the blood clot's abnormal formation. It is also helpful in reducing the aggregation of platelet. Regulation of lipids in the body and the inhibition of migration and proliferation of smooth muscle cells are also important functions of the green tea. It also inhibits the abnormal blood clotting in the body (the formation of abnormal blood clots) thus it prevents the heart attacks and stroke. These all factors are somehow useful in reducing cardiovascular diseases. The major and most chemo-preventive constituent in green tea responsible for these biochemical or pharmacological effects is “(-)-epigallocatechin-3-gallate (EGCG)”<sup>10</sup>

Antioxidants can also prevent or reduce the severity of symptoms of rheumatoid arthritis. Recent study suggests the role of catechins in promoting weight loss.<sup>11</sup> The anti-obesity effect of green tea has been evaluated by feeding different levels of green tea in animals (from 1% to 4% of their diets) to female mice for 4 months. Result proved that the mice fed

green tea in their diets had a significant body weight loss with the suppression of fat tissue accumulation. Cholesterol and triglycerides levels were also lower in those mice.<sup>12</sup> Green tea also decreased the serum leptin levels which indicates that it have a direct beneficial effect leading to weight loss. Green tea also helps in lowering the blood sugar or glucose level of its consumer. Mental alertness and thinking is also improved by green tea. Green tea inhibits carcinogenesis of the skin, oral cavity, lung, esophagus, liver, stomach, kidney, prostate and other organs of the body, this is proved by animals' studies.<sup>13-17</sup> As an antioxidant, green tea acts by inhibition of the redox sensitive transcription factors. It also inhibits of 'pro-oxidant' enzymes. Catechins present in green tea exhibit a protective effect against human immunodeficiency virus (HIV) infection, by inhibiting virions to target the surface of the cells where it has to bind.<sup>18,19</sup> There have been several animal studies that support the use of green tea in the prevention of ultraviolet (UV)-induced skin carcinogenesis and as topical skin protection against UV radiation.<sup>20-23</sup>

## METHODOLOGY

A cross-sectional survey was conducted for the collection of data about the green tea consumption practice in professionals and non-professionals in Karachi. Data were collected between September to October, 2014 from different public places, offices, banks, educational institutes, and hospitals in Karachi city. A specially designed questionnaire was used for data collection. Data from 50 professionals and 50 non-professionals were collected. Different questions were asked from the professionals and non-professionals belonging to different age groups and genders like do you take green tea? If yes then why you take green tea? If no then you don't take green tea? The questionnaire was

designed in order to check the daily consumptions of green tea and its reason in non-professional people and people belonging to different professions.

## Data analysis

We have used pie charts and graphical representation for the statistical analysis of data obtained.

## RESULT

According to our survey, 33% people belonging to different age groups and different professions never consumed green tea. Other 67% people consume green tea in different frequencies. We also analyzed that male consume more green tea than that of females. Our analysis also revealed that professionals (males and females) consume more green tea than that of non-professionals. The common reasons for the consumption of green tea are weight loss, refreshment and to improve strength.

## DISCUSSION

Green Tea is a healthy beverage, and is now commonly consumed all around the world. We surveyed 100 people, to check green tea consumption across different age groups, genders, and professions. The reason to consume green tea is for refreshment and weight loss mostly.

Data was collected from 50 professionals and 50 non-professionals to check their daily consumption of green tea. The survey revealed that 33% people never take green tea, out of which 24 are non-professionals and only 9 are professionals. Total 67% use green tea daily, out of which 27 are non-professionals and 40% are professionals. This proved that tea use is more common in professionals than in non-professionals.

In our survey 100 people were asked question about their green tea consumption

habit. 54 male and 46 females were asked about their habits. According to our survey, 17 male and 16 female answered that they do not use green tea. Whereas 37 males and 30 females answered that they take green tea daily. We have analyzed that male use more green tea than that of females.

Tea is used in people of different age groups belonging to different professions. In the age group of 15-25 years, 62 people were questioned about their green tea intake habit. The study reflected that in this age group, 24 people never drink green tea, while 38 people take green tea daily.

In the age group of 26-35 years, 24 people were questioned about their green tea intake habit. The study reflected that in this age group, 7 people never drink green tea, while 17 people take green tea daily. In the age group of 36-45 years, 7 people were questioned about their green tea intake habit. The study reflected that in this age group, 1 person was there who never drink green tea, while 6 people take green tea daily. In the age group of 46-55 years, 4 people were questioned about their green tea intake habit. The study reflected that in this age group, all 4 people take green tea daily. In the age group of 56-65 years, 3 people were questioned about their green tea intake habit. The study reflected that in this age group, 1 person was there who never drink green tea, while 2 people take green tea daily in this age group. On usage of chi square test, we find that there is a significant difference between the green tea user and non-user in professionals and non professionals. The chi square value is .002 with degree of freedom 1, while in case of gender we have non-significant difference between user and non user with p value .445 that is greater than 0.005.

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#### Conflict of interest

There is no conflict of interest.

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**Table 1.** Use of green tea in professional and non professionals

		Non professionals	Professionals	
Use of green tea	NO	24	9	33
	YES	27	40	67
Total		51	49	100

**Table 2.** Use of green tea in different genders

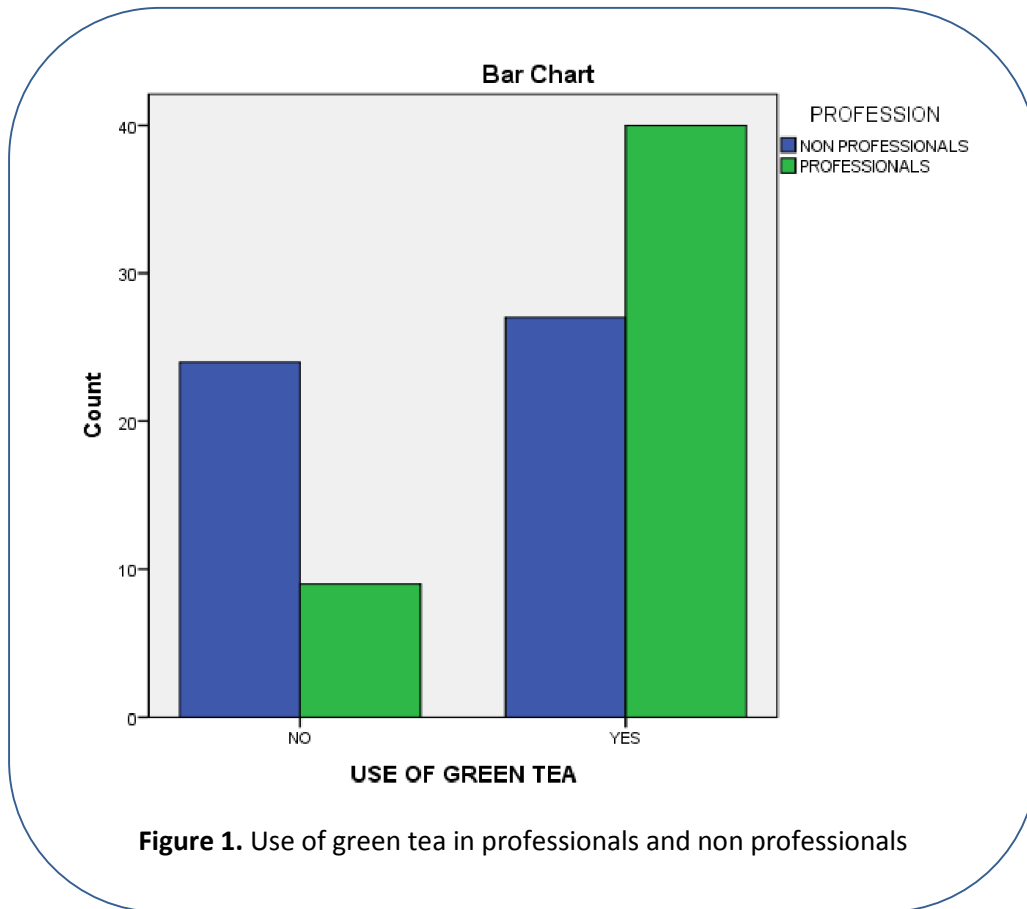
		Gender		Total
		Male	Female	
Use of green tea	No	17	16	33
	Yes	37	30	67
Total		54	46	100

**Table 3.** Use of green tea in different age groups

		Age groups (Years)					Total
		15-25	26-35	36-45	46-55	56-65	
Use of green tea	No	24	7	1	0	1	33
	Yes	38	17	6	4	2	67
Total		62	24	7	4	3	100

**Table 4.** Chi-square tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Professional and non professionals	9.304	1	.002	.003	.002
Different genders	.122	1	.726	.832	.445



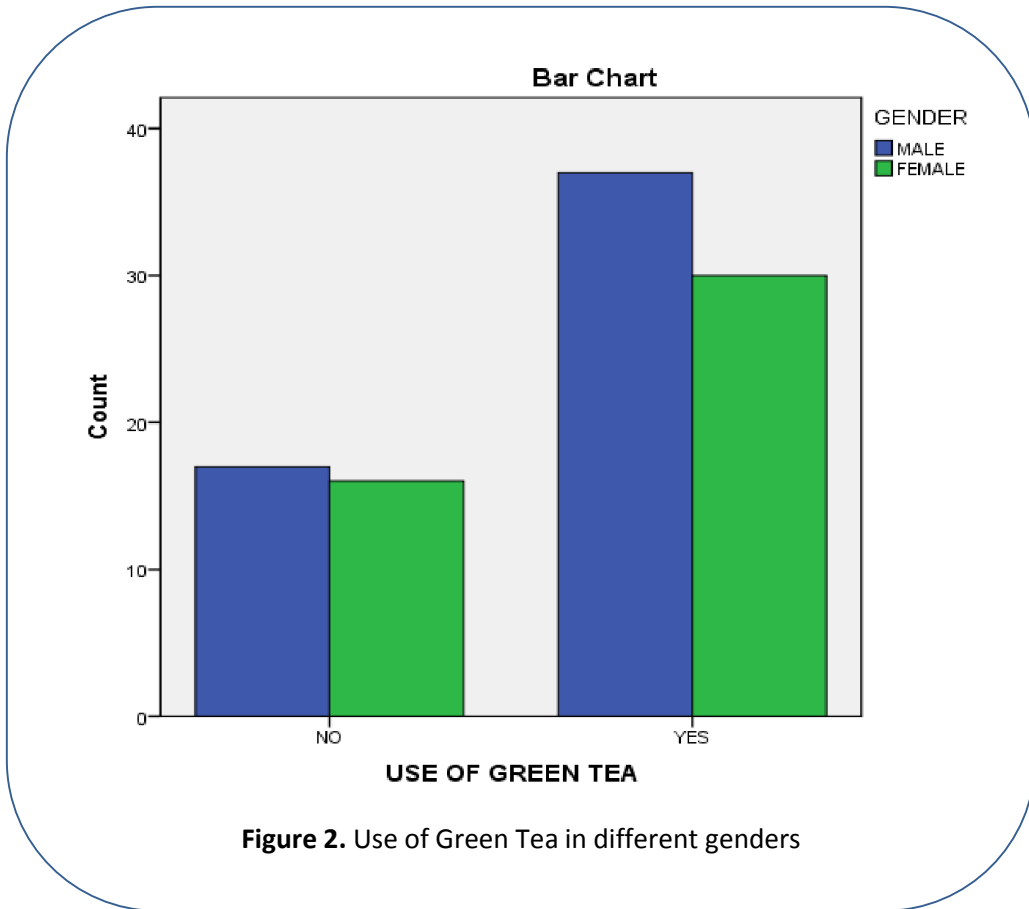


Figure 2. Use of Green Tea in different genders

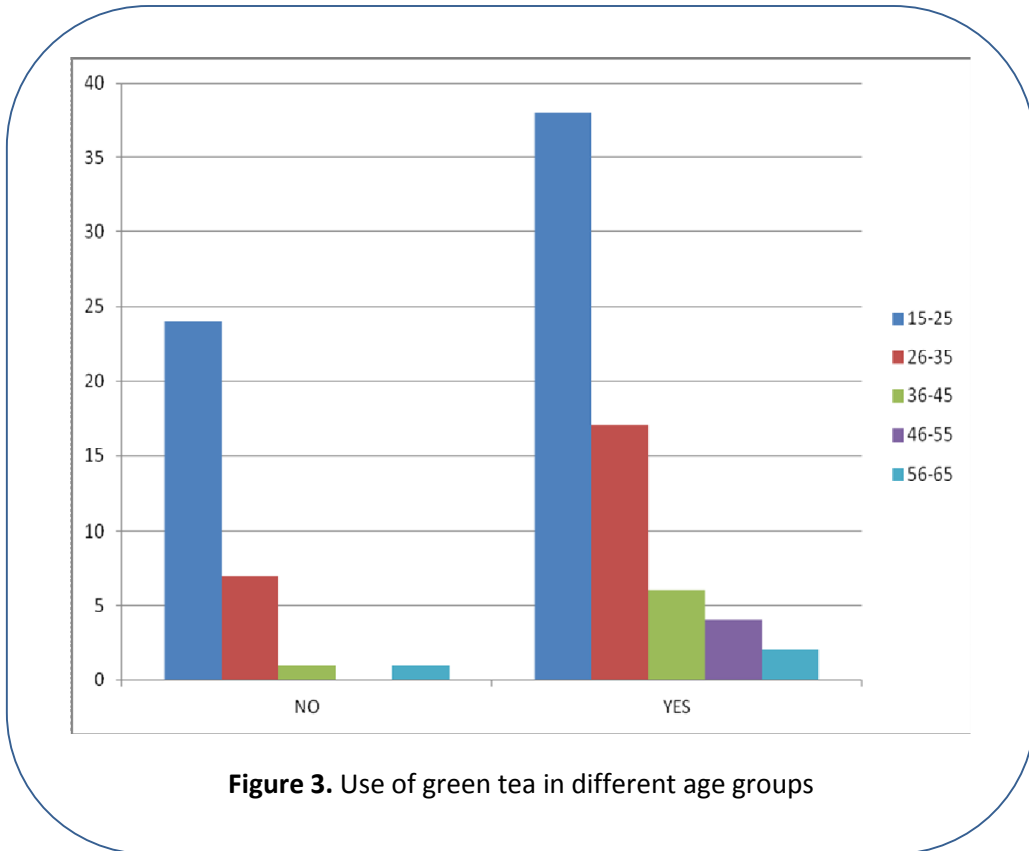


Figure 3. Use of green tea in different age groups