

# Candy Consumption: An Inquiry on the Candy Crush Hypothesis

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Submitted: 18<sup>th</sup> April 2021

Published: 30<sup>th</sup> June 2021

## Abstract

Candy is eaten by people of all ages and all genders. Candy eating behavior can be that, with conscious efforts to lick it to finish, the eater may repeatedly crush it instead. This study examined what could be responsible for candy crushing despite the desire to lick it. A survey design is employed to understand this through questionnaire administered via WhatsApp and Facebook targeting anyone aged two and older across the globe. There were 212 respondents. The data was analyzed using simple descriptive statistics. Results show the prevalence of 89.6% of candy eating across age groups. Majority of the candy eaters put the whole candy in the mouth at once and start by licking and uncontrollably end up crushing it. About a quarter of the candy eaters indicated powerlessness over crushing candy. And the candy crushing can be hypothesized to be due to brain chemical 'dopamine' stimulated by sugar hijacking the decision-making/willpower part of the brain in the frontal lobe. It is recommended that neurological study be conducted to investigate what overrides willpower to not crush candy. This may shed more lights to understanding why people are addicted to certain substance.

**Keywords:** Candy, Candy Crush, Candy Crush Hypothesis, Candy Addiction, Sugar Addiction

## Introduction

I like candy and I found myself crushing it. Many times, I really wish to lick it or enjoy it as it dissolves in my mouth. But I rarely succeed in this. In other words, I have consciously tried without number to lick the candy, but without knowing it, I find myself crushing it. Even when Shure (2018, par. 2) said "sucking, not chewing, is the best way to coax the optimal flavors and textures from almost any candy", I begin to wonder why it is exceedingly difficult for me to suck or lick candy even when I am deliberate, conscious, and intentional about doing so. Are there some things within, perhaps in my brain, that control what I do outside my desire, will, and intention? Is everything I do absolutely in my control? Is this just about me or it happens to some other people? Could this be the same phenomenon with people who struggle with drug addiction? This study, therefore, seeks to further understand what could be responsible for indeliberate candy crushing and how it relates to drug addiction. It

is to generate discussions among addiction professionals if this behavior can be classified as 'candy addiction' and if it can be linked with alcohol and drug addiction. With scant studies and literature in this regard, it is hoped that this study will generate further enquiries to expand the scope of addiction study.

Candy, also known as sweet, bonbon, lollies, or confection, is a small piece of food made from honey or sugar in form of chocolate, nuts, fruit, or nuts. Merriam Webster Dictionary (n.d.) defined it as "crystallized sugar formed by boiling down sugar syrup" or "a confection made with sugar and often flavoring and filling". It is typed chocolates, bite size, bon bons, brittle candy, bubble gum, candy bars, cotton candy, candy buttons, candy canes, candy corn, fruit drops, candy coated popcorn, etc. (Candy Warehouse, n.d.). It is normally casually eaten as a snack between meals or anytime, when stressed, and for health reason to boost sugar level. It can be licked, sucked, chewed, or crushed to enjoy the sweetening sensation.

Since prehistoric times, honey is the earliest sweet which people have eaten (Candy History, n.d.). Candy, however, has its origins in Ancient India where pieces of sugar were generated by boiling sugarcane juice consumed as khanda which is the etymology of the word Candy (Watt, 1893; Snodgrass, 2004). By 13<sup>th</sup> Century, the English word "candy" began to be used (Harper, n.d.). The word "bonbon", however, is of French origin from the 17<sup>th</sup> Century and simply means "candy" (Chef Rich, 2020). The Persians, then Greeks, between the 6<sup>th</sup> and 4<sup>th</sup> centuries BCE, discovered the Indian Khanda. Also, before sugar became readily available, honey was used to produce candy as it was in Ancient China, the Middle East, Egypt, Greece, and the Roman Empire where it was used to coat fruits and flowers to create forms of candy (NPCS, 2013; Toussaint-Samat, 2009). Before the Industrial Revolution and in the Middle Ages, candy made from cloves, ginger, aniseed, almonds, juniper berries, and pine kernels, became a form of medicine to calm the digestive system and treat sore throats (Toussaint-Samat, 2009).

According to Candy History (n.d.), the first candy came to America from Britain and France in the early 18<sup>th</sup> century. This was initially enjoyed by the very wealthy. However, with the Cheaper price of sugar and advancement in mechanization, mass manufacturing of the confections became easier, and candy became available to everyone. Joseph Fry introduced the first candy bar in Britain by 1847, and in the 1900, Milton S. Hershey invented Hershey's Milk Chocolate. Many new kinds of candies were introduced in the 20<sup>th</sup> century: Tablerone (1908), Milky Way (1923), Snickers (1930), Mars bar (1932), Bounty (1951), Twix (1967).

The Chief Marketer Staff (2000), citing Simmons Market Research Bureau, reported that 75% of adults regularly buy or eat candy while young adults 18 to 24 years old were the biggest, sweet tooth living in households with five or more people with or without children. It was noted that candy and gum were among the most widely distributed products in an estimated 1.5 million locations where retailers sell about 90% of candies. Consumers were also noted to purchase candies on impulse or as a treat when someone feels stressed.

Although, candy is eaten by people of all ages and all genders, studies show that females more than male eat more candy. In a study by Berbesque and Marlowe (2009), it was found that among the Hadza of Tanzania, hunter-gatherers who derive >90% of their energy from wild food, especially honey, women preferred sweet berries more than meat. The opposite was found in men who preferred meat to berries. In a laboratory study by Foltin, et al. (1983) as cited by Asarian and Geary (2013) in which savanna baboons were offered 75% sucrose fruit-flavored candy and chow pellets, females ate relatively more sugar than males. Also, in a field study of wild Borneo orangutans by Knott (1999), it was found that when sweet fruits were in season, females more than males increased their intake in ratio 2:1.

In the United States, Candy plays an important role in national and cultural traditions and celebrations for thousands of years and it continues to be enjoyed by most people as an occasional treat (Duyff, et al., 2015). Statistics show that 97% of Americans report candy consumption at least once per year (Hornick, et al., 2014). Among the total consumers, 62.8% eat hard candy or breath mints each month, 20% are considered heavy buyers, eating at least six rolls of candy per month, while half of the hard candy and breath-mint consumers eat between two and five rolls of it in a month's time (Chief Marketer Staff, 2000). Children in America consume candy frequently and, in excess (Savage, et al., 2019), and adults are not excluded. This, according to Ouyang (2016), is evident in the U.S. ranking no. 1 in the world in terms of the annual retail volume of consumed candy with the 2016 projection of consumption of more than 5 million pounds of sweet treats, followed by China with the consumption of 4.7 million pounds of candies in 2016. Mexico is also among the top 10.

According to a Statista Research Department report from 2015 on the frequency of chocolate and/or sweets consumption in the United Kingdom, 87 percent of respondents consume chocolate and/or sweets at least once a week, 44 percent consume them several times a week, and around a third consume them every day. Sugar confectionery consumption may have peaked, with better hope for the future as there is a spike in Germany's birthrate (Nieburg, 2017a). This growth, reported Nieburg, is not the same in France where the population which increased 0.8% year-on-year in 2014 slows in 2016. The fall in France's birth rate may affect the consumers consumption of candy. In New England and the Midwest, people tend to eat the most candy with the nationwide consumption peaking around Halloween, Christmas, Valentine's Day and Easter (Chief Marketer Staff, 2000).

African consumption of candy is also on the rise as the trading in sugar confectionery value sales is growing with the rise in medicated candies and soft gummies (Nieburg, 2017b). Yu (2017) also reported that there is a steady growth in the retail value sales of chocolate confectionery in West African countries especially in Nigeria and Cameroon where there is steady growth over the past five years. In Kenya, candy, sweets, and nonchocolate confectionery production expanded with a buoyant increase from 2007 to 2019 (IndexBox, 2021). However, in South Africa where confectionery industry chocolate valued at approximately R6.4bn and sugar confectionery valued between R12.5bn and R13.5bn, the industry has been under pressure during 2018 as a result of increasing imports, a challenging economic climate, low consumer confidence, and the demand for sugar-free products (Research and Markets, 2019).

The main ingredient in candy is Sugar (Singh, et al., 2021). This is mainly sucrose from sugar beets or sugarcane. Sucrose is from two simpler sugars: fructose and glucose (Science of Cooking, n.d.). Other sweeteners used include corn syrup, corn sugar, honey, molasses, maple sugar, and noncaloric sweeteners which can be in dry or liquid form (Singh, et al., 2021). Because candy is mainly sugar, it is linked to sugar addiction.

The idea of "sugar addiction" has been debated for many years (Avena, et al., 2008). On one hand, it may not fit strictly into substance addiction like cocaine, heroin, and alcohol, and on the other hand, it may not fit perfectly into behavioral addiction. This has led to many clinical accounts of "sugar addiction" to feature in many best-selling books (Appleton, 1996, DesMaisons, 2001, Katherine, 1996, Rufus, 2004 as cited by Avena, et al., 2008). Yet, sugar researchers and nutritionists have suggested that sugar has addictive properties and may be as addictive as cocaine (Schaefer & Yasin, 2020; Murray, 2021).

Sugar consumption, as Murray (2021) noted, can create a short-term high and a spark of energy in the body. Also, sugar intake releases opioids and dopamine in our bodies (Schaefer & Yasin, 2020). In other words, sugar is said to fuel every cell in the brain which sees sugar as a reward, and keeps wanting more (Ratini, 2020). Also, the escalation of substance intake,

also known as bingeing, is a characteristic of drugs of abuse (Avena, et al., 2008). This is present in sugar intake. All these point to the probability of sugar addiction and invariably candy addiction even though there is no such classification in the Diagnostic Statistical Manual of Mental Disorders, Fifth Edition (DSM-V). Also, the behavioral findings with sugar (or candy) are similar to those observed with substance abuse as stated by Avena and colleagues.

There seems to be a connection between the brain and candy intake. When candy is consumed, the sugar goes into the stomach and then quickly enters the bloodstream. From the bloodstream, it finds its way to the brain. And there, it works its magic (Warrell, 2016). Candy is like an incentive to the brain and incentive processing is part of a host of cognitive processes including attention, motivation, and learning (Luking & Barch, 2013). Decades of animals and human's studies have recognized the roles of the striatum, orbitofrontal cortex (OFC), prefrontal cortex (PFC), and other regions of the limbic system in the incentive processing (Haber & Knutson, 2010 as cited by Luking & Barch, 2013). So, when candy is taken, the glucose (sugar) in the candy fuels the brain cells called neurons (Reichelt, 2019).

According to Reichelt (2019) who is a neuroscientist, when sweet food is eaten, the mesolimbic dopamine system which is the brain's reward system gets activated. Dopamine is a brain chemical (neurotransmitter) released by neurons to signal that an event was positive. A behavior is reinforced when the reward system fires. Apart from the fact that eating candy releases dopamine in the brain, it also releases endogenous opioids which are responsible for the wonderful surge of pleasure felt when candy is eaten (Warrell, 2016). The brain then wants to experience this repeatedly. That is, the brain constantly remodels and rewires itself in the reward system through a process called neuroplasticity (Reichelt, 2019). The repeated eating of candy causes repeated activation of the reward pathway causing the brain to adapt to the frequent stimulation in order to achieve the initial effects, leading to tolerance, and resulting in dependence (DSM-IV; Egunjobi 2016; Egunjobi, 2010). This is a classic feature of addiction (Reichelt, 2019). Although not only dopamine is involved in the reward process. Serotonin also plays a part. For example, serotonergic neurotransmission plays vital roles in both satiation and food reward, although it is not clear whether there are male-female differences in the serotonergic control of eating (Asarian & Geary, 2013).

Not only is candy addictive, but it has also been noted for its health implications. Holland (2019) cited Dr Ken Berry stating that sugar addiction is a measurable, physiological phenomenon many people suffer from as it makes it difficult for many people to make the dietary improvements needed to improve their health. This is evident in several epidemiologic studies concerning the potential effects of candy consumption on health risk factors in children and adults, also, body weight and markers of disease risk like blood cholesterol, blood pressure, and blood glucose (Pei, et al., 2014; Duyff, et. al., 2015). Also, it is said that the best candy for the teeth is no candy at all because of the high sugar content (University General Dentists Team Member, 2019). This is because sugar feeds the bacteria in the mouth that causes tooth decay. The stickier the candy is, the worst it is for the teeth. Research has shown that a group of harmful bacteria produce acid in the mouth whenever they encounter and digest sugar. These acids, through the process called demineralization remove minerals from the tooth enamel causing decay (Tan, 2017).

Notwithstanding, there are health benefits of candy as well. Candy has some physical health benefits such as decreasing the risk of stroke and heart attack. For instance, dark chocolate is rich in antioxidant flavonoids which are healthy for the heart. Hence, eating this candy regularly can decrease the risk of stroke and heart attack by 39 percent (Warrell, 2016). In the same wave, and contrary to the finding of Pei, et al. (2014), consuming a fairly small

amount of some types of candy, like cocoa, dark chocolate, and chewing gum, has been associated with positive effects on cardiovascular health and weight (USDA, 2014). Also, a research investigated over 15,000 US adults and found a moderate increase in energy, and candy intake not associated with increased weight or BMI, cardiovascular risk factors, or risk of metabolic syndrome (O'Neil, et al., 2011). In another longitudinal study, O'Neil, et al. (2013) examined associations between consumption of candy during childhood with health endpoints in adulthood. They followed the dietary habits, including candy consumption (chocolate, nonchocolate candy, and chewing gum), of some 355 10-years-old children from 1973 to 1984 and for a period of 23 years. It was found that there was no association between the candy consumption during childhood and their BMI and cardiovascular risk factors as adults. By implication, candy consumption in childhood was not predictive of health risks later in adulthood.

## Methodology

To investigate the candy crushing behavior, an online survey design was employed. The infinite population size of the study involved any candy eater, aged two years and older. The sample size was 385 derived from the infinite population with 0.95 confidence level and margin error of 0.05. A voluntary sampling method was used to sample the participants. An online questionnaire developed on Google Forms was administered via Facebook and WhatsApp for data collection. For the minor respondents, the willing parents got the minor to participate in the study. It was hoped that parents would help the participating minor to understand the questions. Simple descriptive statistics were used for the data analysis.

## Results

From the questionnaire distributed via Facebook and WhatsApp, 212 persons from across the globe responded. This makes the response rate 55% which was appropriate for an online survey. A response rate of 20% for an online/mail survey is regarded strong, while a response rate of 30% is considered extremely good, according to Dessel (2013). This was in keeping with Baruch and Holtom's (2008) conclusion that in a typical survey administration, a response rate of 55% or above is sufficient for data analysis. The data collected are presented and analyzed.

## Demography

The demographical information of the respondents collected were the age and the gender. These were used to understand the prevalence of candy eating across age and gender.

Table 1 shows that the respondents were from all age groups such as children (ages 2 - 12), teenagers (ages 13 - 19), and adults (ages 20 and above). However, the majority (80.6%) of the respondents were adults. It also shows that both male and female respondents were well represented in the survey with most of them (63.7%) identifying as female.

## The Prevalence of Candy Eaters

The prevalence of candy eaters and the manner or pattern of eating candy were also investigated. The respondents were asked about the frequency of their candy eating. Result (Table 2) showed that 89.6% of the respondents eat candy either seldomly, often, or always with most (62.2%) indicating that they eat candy seldomly. Children aged 2 - 6 years old eat more frequently than any other age group in the study.

The prevalence was also considered in terms of gender of the respondents. Female more than male eat candy more frequently (Table 3). This is evident in the case that the population of

female respondents is almost twice that of male yet more male than female indicated never eaten candy, and female four times more than male indicated eating candy always.

In line of prevalence of candy eating, the number of candy eating was investigated by age and gender. The results were presented in Table 4 and Table 5. Table 4 shows that all children aged 2 to 12 years old eat between 1 to 6 candies a day. Meanwhile, most respondents (84.7%) eat between one to three candies on a given day. Higher number of candies (7 and above) are found among teenagers and adults with higher frequency among the teenagers.

When considered with gender as shown in Table 5, male more than female consumed seven to nine candies a day; and female more than male consumed 10 or more candies a day. There is no much gender disparity among those who consume between one and six candies per day.

### Pattern of Candy Eating

The candy eaters in the survey were asked about their patterns and manners of eating candy. Respondents were asked whether they bite a little, bite in half, lick from hand, and put the whole candy in the mouth at once. Majority of the candy eaters (72%) put the whole candy in the mouth at once, bite a little (14.5%), bite in half (7%), while (6.5%) lick it from hand (Figure 1). They were also asked if they lick the candy to finish, begin by licking then unconsciously crush it, or crush it at once. The findings show that majority of them (59.1%) begin by licking it and then unconsciously crush it to finish, 29% lick it to finish, while 11.8% crush it at once (Figure 2).

### Behavior and Attitude of Candy Eaters

This study also sought to understand the behavior and attitude of candy eaters to see the likelihood of unhealthy behavior or addiction. Table 6 shows that about half of the candy eaters (50.3%) indicated that they 'sometimes' or 'always' hide candy to eat it later, and 44.6% 'sometimes' or 'always' secretly eat candy. While indulging in candy, 41.2% of the candy eaters have, at least, 'sometimes' or 'always', made efforts to stop and 25.8% indicated that they were 'sometimes' or 'always' powerless over candy eating. Also, when it comes to crushing candy instead of licking it, 70% of the candy eaters said they have 'sometimes' or 'always' made efforts to lick candy and not crush it. However, all of them reported that they 'sometimes' or 'always' do not succeed. Also, 20.2% of the candy eaters indicated that persons like doctors, nurses, family members, and friends have raised concerns about their candy eating habit, yet they did not stop eating candy.

### Candy Eating and Holistic Health

The study also investigated if eating candy interferes with the eater's holistic health (dental, medical, psychological, and social-religious). The results show that 39.1% of candy eaters indicated that candy affects their dental health, medically (16.7%), psychologically/emotionally (9.1%), and socio-religiously (5.4%) (Table 7). However, comparing the data of the different health categories, candy eating has more dental challenges than any other health challenges. In general, the candy eaters were asked if they consider candy as good for their health (Figure 3). More than half of the candy eaters (58.2%) believed that candy is not good for their health and about 33.9% held a middle view. Only 7.9% held the view that candy that can has health benefits.

### Discussions

This study investigated the prevalence and the manner of candy eating among children, teenagers, young adults, and adults. It was found that candies are eaten by people of

different age groups from childhood (from 2 years old) to adulthood. Almost all the survey respondents reported eaten candy either seldomly or always. Children aged 2 – 6 years old eat more frequently than any other age group in the study and female more than male are candy eaters. The prevalence of candy eaters is consistent with Hornick, et al. (2014) who found that 97% of American candy eat candy at least once a year. Also, with the reports published in the United Kingdom by the Statistical Research Department (2015) where there was 87% prevalence of candy eating at least once a week. This is because candy plays an important role in national and cultural traditions and celebrations as well as being enjoyed by most people as an occasional treat (Duyff, et al., 2015). This study also validates the general opinion that candy is for children who rejoice over it and prefer it to any other useful healthy foods (Ministry of Health, n.d.). Also, that candy is eaten by females is supported by studies by Eckel and Geary (2001) and Bernstein (1999). This may be, as Eckel and colleague noted, that the female hormone estradiol indorses longing for sweets.

This study also show that some candy eaters may be addicted to it. Although this study did not conduct a diagnosis for candy addiction, some aspects of the survey reflected some characteristics of addictive behavior. These characteristics of addictive behaviors include eating candy secretly, making efforts to stop eating candy, loss of control of candy eating, concerns of a significant others or professionals on candy eating habit, and the health consequences. The finding of this study shows that about half of the candy eaters have at one time or the other hidden candy to eat it later, about a half secretively eat candy and have tried to stop eating candy, and more than a quarter admitted that they feel powerless over candy eating. Most of the candy eaters believed that candy is unhealthy. Yet, they still eat it anyway. These are all signs found with someone struggling with addiction. Of course, powerlessness over a behavior or loss of control (American Psychiatric Association, 1994; Egunjobi, 2010) coupled with hiding the behavior like drinking in secret (McCann, 2021) are strong indications of addiction. From this study, it may not be wrong to say that 1 in 4 candy eater is addicted to it.

Some candy eaters can be prone to candy addiction because candy itself is addictive. Although, this is debatable just as in the case of sugar addiction (Avena, et al., 2008). It may also be rare to find the word "candy addiction". For instance, if one types "candy addiction" or "candy is addictive" in Google search, what will pop up are likely to be studies and articles on sugar addiction. Does that mean candy addiction is the same as sugar addiction? It may be rightly so. Because candy contains a lot of sugar and sugar researchers and nutritionists have suggested that sugar has addictive properties and may be as addictive as cocaine (Schaefer & Yasin, 2020; Murray, 2021). The sugary nature of candy contributes to the manner or pattern of eating.

There are different manners of eating candy such as biting a little at a time, biting it in half, licking it from the hand, and putting the whole candy in the mouth. This study shows that most candy eaters put the whole candy in the mouth with an effort to lick it and not crush it. However, majority 'sometimes' or 'always' ended up crushing it. This goes back to the questions raised in the introduction if there is something within a person, perhaps in the brain, that controls the crushing of candy outside one's desire, will, and intention. As Eckel and Geary (2001) noted, there is something besides willpower -- or lack of it -- at work. This can be identified as dopamine rush. The kind which occurs when playing a game called Candy Crush (The Virginian-Pilot, 2014).

Candy is an incentive to the brain (Luking & Barch, 2013) that when it is consumed the brain is the target (Warrell, 2016) where it stimulates the brain chemical called "dopamine".

As Reichelt (2019) puts it, when sweet food is eaten, the mesolimbic dopamine system, the brain's reward system gets activated. Many studies have focused on the dopamine reward system which is responsible for the likelihood to repeat a rewarding (pleasurable) behavior, until it becomes tolerance (DSM-IV; Egunjobi 2016; Egunjobi, 2010).

There is the possibility of the dopamine stimulation by candy (sugar) in the brain. This may influence the roles of the striatum, orbitofrontal cortex (OFC), prefrontal cortex (PFC), and other regions of the limbic system in the incentive processing (Haber & Knutson, 2010; Luking & Barch, 2013). There is also the possibility that the crushing of candy when the eater has decided not to, is the result of the highjack of the decision-making part of the brain. In other words, it can be hypothesized that candy crushing is involuntarily based on the brain overcoming the willpower or human desire and determination. This call for further research to have better understanding of why we do what we do not want to do.

## Conclusions

The study shows that people of all ages eat candy, but it is more common among females than among males. People who eat candy prefer to put the whole of the candy in the month, start by licking it but end up crushing it. The candy crushing can be, in part, a sign of candy addiction. The candy crushing can be hypothesized to be due to brain chemical 'dopamine' stimulated by sugar hijacking the decision-making/willpower part of the brain in the frontal lobe.

There is need for a neurological study to investigate the part played by the brain in the loss of control over candy crushing. Understanding this may shed more light into the mysteries surrounding addiction and addiction treatment.

## Tables

Table 1

### Age and Gender of Respondents

Gender	Female	Male	Total	Percentage
<b>Age</b>				
2-6	3	0	3	1.5
7 - 12	8	7	15	7.1
13 - 19	16	7	23	10.8
20 - 39	44	35	78	37.2
40 and above	64	28	93	43.4
<b>Total</b>	<b>135</b>	<b>77</b>	<b>212</b>	<b>100</b>
<b>Percentage %</b>	<b>63.7</b>	<b>36.3</b>		<b>100</b>

Table 2

### Prevalence of Candy Eater by Age

Frequency	Never	Seldom	Often	Always	Total
<b>Age</b>					
2-6	0	0	2	1	3

7 - 12	3	5	4	3	15
13 - 19	1	10	10	2	23
20 - 39	4	53	17	4	78
40 and above	14	64	14	1	93
<b>Total</b>	<b>22</b>	<b>132</b>	<b>47</b>	<b>11</b>	<b>212</b>
<b>Percentage %</b>	<b>10.4</b>	<b>62.2</b>	<b>22.2</b>	<b>5.2</b>	<b>100</b>

Table 3

## Prevalence of Candy Eater by Gender

Frequency	Never	Seldom	Often	Always	Total	Percentage
<b>Gender</b>						
Female	8	84	34	9	135	63.7
Male	14	48	13	2	77	36.3
<b>Total</b>	<b>22</b>	<b>132</b>	<b>47</b>	<b>11</b>	<b>212</b>	<b>212</b>

Table 4

## Number of Candy Eaten per day by Age

Age	1 - 3	4 - 6	7 - 9	10 +	Total
2-6	1	2	0	0	3
7 - 12	10	2	0	0	12
13 - 19	16	2	1	3	22
20 - 39	62	9	1	3	75
40 and above	72	5	1	0	78
<b>Total</b>	<b>161</b>	<b>20</b>	<b>3</b>	<b>6</b>	<b>190</b>
<b>Percentage %</b>	<b>84.7</b>	<b>10.5</b>	<b>1.6</b>	<b>3.2</b>	<b>100</b>

Table 5

## Number of Candy Eaten per day by Gender

Gender	Number of candy per day				Total
	1 - 3	4 - 6	7 - 9	10 +	
Female	109	12	1	5	127
Male	52	8	2	1	63
<b>Grand Total</b>	<b>161</b>	<b>20</b>	<b>3</b>	<b>6</b>	<b>190</b>

Table 6

*Candy Eating Behavior and Attitude*

Categories	Never (%)	Sometimes (%)	Always (%)
Do you hide candy (sweet) to eat it later?	49.7	48.7	1.6
Do you ever eat candy (sweet) secretively?	55.4	41.9	2.7
While indulging in candy (sweet), have you ever told yourself that this is the "last time" you'll ever eat it?	58.8	31	10.2
Do you ever feel powerless (out of control) in your candy (sweet) intake?	74.2	21	4.8
Have you ever told yourself that you will lick the candy (sweet) this time, but you ended up crushing (chewing) it?	30	52.9	17.1
When you determined to lick the candy (sweet) and not crush (chew) it, did you succeed?	30	47	23
Has anyone (doctor/nurses/family/friend) show concern about your candy (sweet) intake, yet you did not stop?	79.8	12.8	7.4

Table 7

*Candy Eating and Health*

Categories	Yes	No
Have you experienced any dental problem due to eating candy (sweet)?	39.1	60.9
Have you experienced any medical problem due to eating candy (sweet)?	16.7	83.3
Have you experienced any emotional/psychological problem due to eating candy (sweet)?	9.1	90.9
Have you experienced any social-religious challenges due to eating candy (sweet)?	5.4	94.6

## FIGURES

Figure 1

### The Manner of Eating Candy

How do you put candy (sweet) in your mouth?  
186 responses

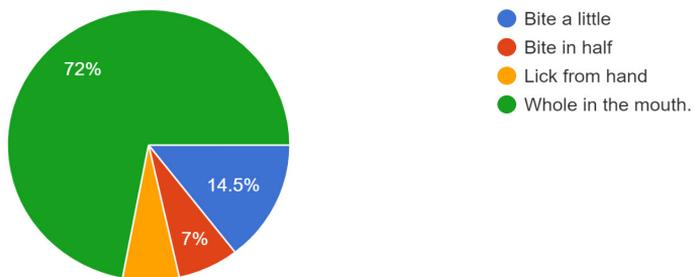


Figure 2

### Pattern of Candy Consumption

Which of these best described your pattern of consuming candy (sweet)?  
186 responses

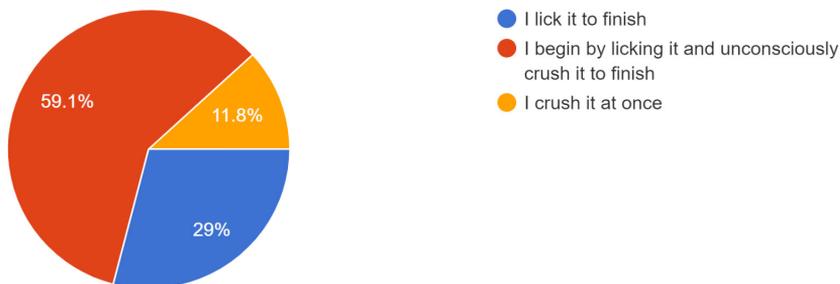
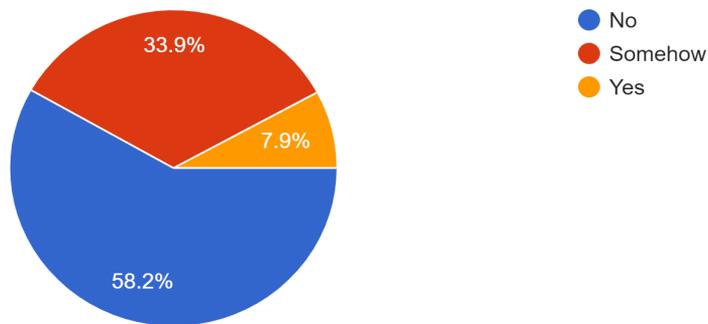


Figure 3

*Do you Think Candy is Good for your Health?*

Do you think candy is good for your health?

189 responses



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