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Research Article

To Study the Effect of High Intake of Bakery Products in Causing Obesity among Students

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Abstract

The prevalence of obesity has been observed in progressive measures in the world, for years many researchers have endeavored to find the reasons of obesity. This research also tends to add another attempt to ascertain the effect of bakery products on obesity. According to this research one of the major reasons for obesity is the proliferated intake of bakery products by students. Bakery items are composed predominantly by refined flour which is majorly used in the most merchandized product; white bread. Refined flour contains polysaccharides which are harmful to the body if taken excessively and is one of the most significant causes of obesity. Bakery products are also transcended in trans fatty acids which are very harmful to the body in surpassed amounts. The sweet products that are an important component of the bakery items are high in sucrose or sugar which is not only liable for engendering obesity but many other threatening conditions that are most frequently associated with obesity such as diabetes mellitus, hypertension, hyperlipidemia etc. This research has subsumed a number of obese students from whom the researchers have collected information about their eating patterns, which exhibit an alarming estimation of intake of bakery products by students (73.35 students prefer bakery products over homemade products). The rate of consumption of sweet products from the bakery is also very high (16.6% students have sweet snacks daily) and is most often accompanied with little or no physical activity by the obese students (46.6% students never do exercise). This research concludes that in order to decrease obesity it is necessary to omit or deplete the intake of bakery items which are an endangering factor in causing and increasing obesity.

Keywords: *Obesity; Bakery Products; Refined Flour; Polysaccharides; Trans Fatty Acids; Engendering; Diabetes Mellitus; Hypertension; Hyperlipidemia*

Abbreviations

Spp: Specie; G: Gram; C: Centigrade; CNs: Carbon Nanostructures; %: Percentage; RDI: Recommended Dietary Allowance; hMSCs: Human Mesenchymal Stem Cells; Kcal: Kilocalorie; Kg: Kilogram; AF: Atrial Fibrillation; US: United States; TV: Television; BMI: Body Mass Index; GEMS: Girls Health Enrichment Multi-Site Studies; NHLBI: National Heart, Lung and Blood Institute; NGHS: NHLBI Growth and Health Study; >: Greater than; BP: Blood Pressure; HAS: Hyper Androgenic Syndrome; IR: Insulin Resistance; CRP: C-Reactive Protein

Introduction

The presence of excess body fat represents obesity. It's assumed that all obese persons are overweight, but all overweight persons are not obese, because the excess body weight may be due to the water content in muscle, bone or body. Mostly in the westernized societies, "Thinness" is idealized, in women especially, which results in psychological problems of the obese like stress, anxiety etc. Body weight is regulated by many complex mechanisms which are influenced by many factors like physiological, societal, environmental, genetic and

behavioral. A theory suggests that about two hundred (200) different genes have been linked to obesity in humans but the pattern of inheritance of obesity suggests that the effect is polygenic [1].

Worldwide the excess bodyweight contributes to overall burden of disease and is considered to be the most important risk factor. Almost 1.1 billion adults and 10% of children are now classified as overweight or obese and the average life expectancy is already diminished. The main adverse consequences of the excess body weight are type 2 diabetes, infertility, hypertension, heart attacks, colon cancer, prostate cancer, hyper lipidemia and breast cancer etc. Mechanism for gaining weight is obvious, as when people consume more calories than required, the body stores those calories as fat tissue which results in obesity. However, some genetic factors also play an important part, such as how the body regulates the metabolic rate and appetite [2].

It is observed that over the last decades, food price has decreased relative to income and food has become more affordable to larger numbers of people. Also, the concept of 'food' has changed, as now it is more than a means of nourishment and a source of pleasure [3]. Trend of high junk food use and sedentary lifestyle is also increasing now days. Intentionally or unintentionally people are eating more quantity than quality. Junk foods are a quick but unhealthy, hunger satisfying food (as contains excess of fat), which are easy to make and consume but are low in nutritional value and high in caloric value. They contain high level of refined sugar, white flour, polyunsaturated fats, salts and numerous food additives but lacks in high biological protein, vitamin and fibers, which cause people to put on weight, makes people fat and has a really bad effect on the teeth [4].

Though the mechanism of obesity development is not fully understood, yet it is confirmed that obesity occurs when intake of energy is more than the requirement. Energy imbalance etiologies are multiple; hence, the growing prevalence of obesity cannot be summed by a single etiology [5]. All researchers and clinicians agree that prevention could be the key strategy for controlling epidemic of obesity, which may include primary prevention (of obesity), secondary prevention (avoidance of weight regains) and prevention of additional weight increases in obese that are unable to lose weight. Till now, most of the approaches focus on changing the eating behavior of individuals and exercise but it seems that these strategies have little impact [6].

Nutrition educational strategies need to be developed to increase the awareness of the negative causes of bakery products on the health of students. With the increasing rate of consumption of these bakery products high in sugars and fat, obesity has become a common problem among students. Their high consumption has been associated with many negative effects on health including heart problems, hyperlipidemia, high cholesterol etc. Promoting a healthy and equally balanced nutrient containing diet will cut down the risk of obesity disorders and will increase the overall physical health. This study focuses upon the amount of intake of bakery products and their effect on the health of students.

Literature Review

Bakery products

Chavan [7] conducted a research on nutritional enrichment of ready-to-eat bakery products through supplementation with non wheat flours. The nutritional quality of these products is low because of the inferior nutritional composition of wheat grain and is further accentuated with the use of refined flours in their preparations. The nutritional composition of these products can be improved by using high quality wheat for milling, increased extraction rates, air classification of flours to obtain protein-rich non wheat flours and their products. The flours and protein products of legumes, oilseeds, other cereals, tubers, corn gluten and germ and rice bran can be used effectively as vegetable protein sources for nutritional enrichment of the bakery products. Recent literature, concerning the nutritional composition of major bakery products needs to be reviewed critically in order to improve their quality.

Rodríguez-Artalejo [8] tried to prove the assumption that the high intake of bakery products is linked with higher intake of energy, saturated fats, sugars and overall worse diet quality. The higher consumption of bakery products is associated with greater energy intake

(derived from intake of total carbohydrates and sugars), but not with higher BMI. It was concluded that the impact of the consumption of bakery products, on the quality of the diet children is unsure, although it may aggravates certain unhealthy characteristics. Therefore, conclusion was drawn that the consumption of bakery products should be moderated and priority given to low-fat, low-sugar consumption.

Smith [9] in his research checked the shelf life and saftey concerns of bakery products. Like many other processed foods, bakery products are subject to physical, chemical and microbiological spoilage. The physical and chemical spoilage limits the shelf life of low moisture bakery products, while microbiological spoilage by bacteria, yeast and molds is the concern in high moisture products. Moreover, some bakery products also have been implicated in food borne illnesses involving *Salmonella* spp., *Listeria monocytogenes* and *Bacillus cereus*, while *Clostridium botulinum* is a concern in high moisture bakery products packaged under modified atmospheres. An extensive review is required to increase shelf life without affecting the health of the individuals.

Paryet [10] conducted a research on cookie quality in the bakeries. Many researches have been done to understand the contribution of different constituents of flour to the cookie quality in bakeries. Starch is the main constituent of flour and most authors agree on its role in cookies, but it has a small influence on cookie quality. Flour proteins have a more noticeable role in cookie baking. It was suggested that not only flour, but also other ingredients of the cookie (dough) formula, such as shortening (fat), sugar and water are important for the quality of the end product.

Nanditha [11] observed and explored the use of antioxidants in bakery products. Fats impart taste and texture to the product, but its oxidation may lead to the development of rancidity and off-flavor in products. Antioxidants have been in practice to use in foods since the ancient times. Antioxidants effects in bakery products were reviewed and found to be effective in enhancing the shelf life. Animal experimental studies have shown that some of the synthetic antioxidants had toxigenic, mutagenic and carcinogenic effects. Hence there is an increasing demand for the use of natural antioxidants in foods, especially in bakery products. Some of the natural antioxidants such as alpha-tocopherol, beta-carotene and ascorbic acid were already used in bakery products. These natural antioxidants are found to be effective in enhancing the shelf life of bakery products. Baking processing steps may lower the antioxidative activity but techniques such as encapsulation of antioxidants can retain their activity. Antioxidative activity of the plant extracts such as garcinia, curcumin, vanillins and mint were reviewed but studies on their role in bakery products were limited or very few. Hence there is a wide scope for study under this direction in depth.

Segura [12] led an exploration on gluten free bakery items. The expanding interest for without gluten items has favored the plan of various gluten free bakery shop items which proposed to copy the quality attributes of wheat bakery items. The protein, fat and mineral substance of the without gluten breads demonstrate extraordinary variety, going from 0.90 to 15.5 g/100 g, individually. Without gluten breads have low commitment to the suggested every day protein admission, with a high commitment to the sugar dietary reference consumption. Dietary fiber content likewise indicate incredible variety fluctuating from 1.30 to 7.20 g/100 g. *In vitro* enzymatic hydrolysis of starch demonstrate that the most overwhelming part was the quickly absorbable starch that shift from 75.6 to 92.5 g/100 g. Generally, without gluten breads demonstrate extraordinary variety in the supplement arrangement, being bland based nourishments low in proteins and high in fat substance, with high glycemic record.

Ghosh [13] in his research described that polyols or sugar alcohols are the characteristic and nutritive sweeteners, are the characteristic and nutritive sweeteners. Polyols are neither sugars nor alcohols; rather are a gathering of low-absorbable starches which can be utilized rather than sucrose which happen normally in nourishments and originate from plant items, for example, foods grown from the ground. Polyols are utilized as a part of sustenance as sweeteners and building operators. Polyols have somewhat decreased sweetness and caloric qualities contrasted with sucrose. Polyols accessible as either in strong crystalline frame or syrups are rising as a sugar replacer and in addition a sugar substitute. Low sugar or low calorie is a best positioned showcase drift for pastry kitchen segment. Polyols offer the bread cook a flexible scope of fixings to help the accessible arrangement of items. They would give the useful advantages to pas-

try kitchen products when the sugars utilized are supplanted with polyols. This audit centers around some current examinations did on sucrose supplanting with polyols in heated items.

Koryachkina., *et al*. [14] led an exploration on proficiency of use of the advanced bakery items in youngster sustenance. The aftereffects of which were dedicated to an evaluation of proficiency of utilization of the improved bread shop items in nourishment of school understudies. Creation and innovation of the improved bread kitchen items have been produced. The utilization of 100 g of the improved bread shop items gives a lot of protein- 12.5 - 23% of the prescribed day by day allow (RDI), to fulfill every day need of school understudies in calcium up to 13.4%, in press-up to 20%, iodine- -12.5% and sustenance strands- 17.3%. When looking at blood hemoglobin content in school understudies after consideration in an eating routine of the advanced pastry kitchen items, the absence of noteworthy changes of this pointer in kids with ordinary hemoglobin content has been resolved that is the affirmation of security of utilization of the items enhanced with stitch press.

Pertuzatti [15] in his research inquired about the tangible assessment of bakery and confectionary items. The utilization of bread shop and ice cream parlor items develops each day and customers are ending up progressively requesting. The scan for quality makes this area an extremely aggressive. Among the pastry shop items, the most devoured is bread, which is set up with wheat flour, yeast, water and salt and sugar. Ice cream parlor items, for example, cakes and scones are likewise extraordinarily refreshing. It can be watched that all items assessed brings about acknowledgment rates more noteworthy than 80%, showing that all pastry shop things are very much acknowledged.

Al-Hadi., *et al*. [16] led an examination on fixings ordinarily exhibit in prepared sustenances, which are great substrates for compound responses amid current warm cooking or handling, which could bring about deteriorative carbonization changes interceded by an assortment of warm responses. Unconstrained self-amassing complexation or polymerization of incompletely combusted lipids, proteins and other nourishment macromolecules with manufactured sustenance added substances amid high temperature sustenance handling or heating (200 - 250°C) would bring about the development of carbon nanostructures (CNs). These obscure nanostructures may deliver unfriendly physiological impacts or potential wellbeing dangers. The present work meant to recognize and describe the nanostructures from the coverings of bread. Moreover, a toxicological hazard appraisal of these nanostructures was led utilizing human mesenchymal undifferentiated cells (hMSCs) as a model for cell take-up and metabolic oxidative worry, with uncommon reference to actuated adipogenesis. Our outcomes uncovered that bread coverings contain CNs, which may frame amid the bread-production process.

Domenech., *et al*. [17] did a research and observed carefully the reformulation of fixings in pastry shop items on solid qualities and acceptibility of shoppers. Bread shop items are very devoured by kids and grown-ups and as grain determined sustenances are viewed as a major piece of an adjusted eating routine, however they are normally high in sugar and soaked and Trans fat and low in fiber. This investigation planned to create four diverse bread shop items (treats, croissants, Spanish biscuits and Spanish wipe cake) with more beneficial properties, for example, bring down fat and sugar content, sound unsaturated fat profile and higher fiber content. Margarine and sunflower oil were supplanted with high oleic sunflower oil and inulin was additionally included. After the alterations, a critical lessening of fat substance and kilocalories in all cases, an addition of monounsaturated fat and a diminishing in soaked unsaturated fats in three items were watched. The tactile examination came about comparative outcomes in the two formulas for treats and lower adequacy in wipe cake, croissants and biscuits. Buy expectation just diminished in sponge/wipe cake.

Obesity

Thomas [18] led an examination on the treatment of weight. Late investigations of the treatment of heftiness by direct and serious caloric confinement demonstrate that patients treated in randomized trials utilizing a regular 1200 kcal/d decreasing eating regimen, joined with conduct alteration, lose roughly 8.5 kg in 20 weeks. They keep up around 66% of this weight reduction 1 year later. Patients

treated under medicinal supervision utilizing a low-calorie slim down (400 to 800 kcal/d) lose roughly 20 kg in 12 to four months and keep up one half to 66% of this misfortune in the next year.

Xavier and Pi-Sunyer [19] observed many different therapeutic dangers of weight. In the investigation, the medicinal perils of corpulence are talked about. Dangers incorporate insulin obstruction, diabetes mellitus, hyper-triglyceridemia, diminished levels of high-thickness lipoprotein cholesterol and expanded levels of low-thickness lipoprotein cholesterol. Weight is likewise connected with gallbladder malady and a few types of malignancy and also rest apnea, perpetual hypoxia and hypercapnia and degenerative joint infection. Weight is a free hazard factor for death from coronary illness. A focal circulation of muscle versus fat improves the hazard for the vast majority of these conditions.

Friedman., *et al*. [20] led an exploration that portrayed the correlation amongst hefty and non-corpulent people, the scientists have for the most part neglected to discover contrasts in worldwide parts of mental working (e.g., misery, nervousness). The subsequent conclusion, that corpulence does not convey chance for mental issues, is antagonistic to clinical impression, reports from overweight people and a steady writing indicating solid social inclination and adverse states of mind toward large people.

Duraj and Broncel [21] directed an examination, as per which, atrial fibrillation (AF) and corpulence is a developing issue of general wellbeing in the entire world. AF hazard variables might be abridged as elderliness, male sex, smoking, hypertension, diabetes, corpulence, coronary illness, heart disappointment, valvular coronary illness, cardiovascular medical procedure. The association amongst heftiness and atrial fibrillation is exceptionally avant-garde due to incremental commonness, relatively plague of corpulence in the entire world. The likelihood of AF among corpulent patients increments with accompanying obstructive rest apnea. In any case numerous examines it hasn't been evaluated yet how corpulence itself inclines to AF. It could be an impact of progress in the atrial life systems, the ascent of atrial weight, mechanical extend, interstitial atrial fibrosis and disturbance of atrial electric respectability. An awesome part is credited to aggravation, particularly professional provocative cytokines expanded by adipocytes of left atrial epicardial adiposity.

Xie., *et al*. [22] conducted a research to discover if the pre-birth folic corrosive supplementation or maternal folate adequacy may shield the posterity from corpulence and insulin opposition. This investigation intends to outline the discoveries of relationship between pre-birth folic corrosive supplementation/maternal folate adequacy and heftiness/insulin opposition in the posterity. Twelve databases were scanned for both distributed and unpublished work of pre-birth folic corrosive supplementation/maternal folate status. Exploratory and observational examinations on creatures and individuals were incorporated in view of the qualification criteria. Nine creature studies and five human investigations fulfilled pursuit criteria were incorporated. Five of these nine creature ponders demonstrated a defensive impact of folic corrosive. Of the five human examinations, one demonstrated a defensive impact of folic corrosive, two demonstrated an unsafe impact and two indicated questionable outcomes. Information from both creature studies and human investigations are conflicting.

Obesity in children

David., *et al*. [23] directed an examination on the hazard factors in weight. Albeit overweight and corpulence in adolescence are identified with dyslipidemia, hyperinsulinemia and hypertension, he utilized cutpoints got from a few national investigations to look at the connection of overweight to antagonistic hazard factor levels and hazard factor bunching. The example comprised of 9167 5 to 17-year-olds analyzed in seven cross-sectional examinations. Around 11% of analyzed school kids were viewed as overweight. Chances proportions for different affiliations were 2.4 (diastolic pulse), 3.0 (low-thickness lipoprotein cholesterol), 3.4 (high-thickness lipoprotein cholesterol), 4.5 (systolic circulatory strain), 7.1 (triglycerides) and 12.6 (fasting insulin). A few of these affiliations contrasted amongst whites and blacks and by age. Of the 813 overweight schoolchildren, 475 (58%) were found to have no less than one hazard factor.

Richard [24] led an exploration on the confidence of corpulent youngsters. Despite the fact that youth heftiness may have unfavorable results for youth confidence, the commonness and extent of this issue is disputable. Also, the social and passionate impacts of diminished

confidence in large kids are obscure. As per the investigation Obese Hispanic and white females show fundamentally bring down levels of confidence by early pre-adulthood. What's more, large kids with diminishing levels of confidence exhibit altogether higher rates of misery, depression and apprehension and will probably participate in high-hazard practices, for example, smoking or devouring liquor/alcohol.

Robinson [25] observed that the television (TV) seeing, which is regularly viewed as a standout is the most modifiable reasons for corpulence in kids. Kids spend a considerable piece of their lives before the TV. Late parent-report and self-report information from a broadly illustrative example of 3155 kids show that kids in the United States are spending over 25% of their waking hours before the TV. Moreover, African Americans and Latinos and youngsters from families with bring down financial status, those statistic bunches at most elevated hazard for weight, tend to observe considerably more TV than different US kids.

Williams., *et al*. [26] directed an exploration on the issue of youth corpulence. Overweight and weight in kids is pandemic universally. Roughly 22 million kids under 5 years old are overweight over the world. The quantity of overweight kids and teenagers has multiplied in the last a few decades. Irritatingly, corpulence in youth, especially in immaturity, is a key indicator for heftiness in adulthood. Moreover, late information recommend that changing organic reactions in various racial/ethnic gatherings distinctively add to overweight, weight and their comorbidities. With the solid confirmation that a lifecycle viewpoint is critical in corpulence advancement and its outcomes, thought must be centered around counteractive action of stoutness in ladies of youngster bearing age, unreasonable weight pick up amid pregnancy and the part of bosom bolstering in decreasing later heftiness in kids and grown-ups. Thought must be given to family personal conduct standards, consume less calories subsequent to weaning and the utilization of new strategies for data spread to help diminish the effect of youth heftiness around the world.

Cara., *et al*. [27] looked into the difficulties of heftiness. Amid the previous two decades, the pervasiveness of heftiness in kids has risen extraordinarily around the world. Stoutness in youth causes an extensive variety of genuine inconveniences and expands the danger of untimely sickness and demise further down the road, raising general wellbeing concerns. Aftereffects of research have given new bits of knowledge into the physiological premise of bodyweight control. Notwithstanding, treatment for youth weight remains generally ineffectual. In perspective of its fast advancement in hereditarily stable populaces, the youth weight pandemic can be fundamentally ascribed to unfavorable natural components for which direct, if politically troublesome, arrangements exist.

James and Frederick [28] conducted a research on US kids. The risk of stoutness is more noteworthy than any time in recent memory for US kids and young people. There is each desire that the up and coming age of youngsters is probably going to be fatter and less fit than the present age. In spite of the acknowledgment of the extreme wellbeing and psychosocial harm done by youth stoutness, it stays low on people in general motivation of critical issues confronting strategy producers. Move must be made presently to stem the pandemic of youth stoutness. This activity will require a prioritization of research into the etiology, treatment and counteractive action of youth weight. It is impossible that adequate assets for such research will be accessible from open and private sources until the point when the issue of youth stoutness is moved higher on people in general motivation.

Theresa., *et al*. [29] led an examination on eating examples and heftiness in youngsters, as it is a developing general medical issue. This investigation analyzed the relationship between eating examples and overweight status in kids who took an interest in the Bogalusa Heart Study. A solitary 24-hour dietary review was gathered on a cross-sectional example of 1562 kids matured 10 years over a 21-year time frame. Overweight was characterized as weight list more noteworthy than the 85th percentile utilizing Centers for Disease Control and Prevention reference principles. Multivariate strategic relapse was utilized to examine the relationship between eating examples and overweight. Utilization of sweetened refreshments (58% sodas, 20% natural product enhance drinks, 19% tea and 3% espresso); desserts (pastries, treat and sweetened refreshments); meats (blended meats, poultry, fish, eggs and hamburger); and aggregate utilization of low-quality nourishments were decidedly connected with overweight status. Aggregate sum of sustenance expended, particularly from

snacks, was emphatically connected with overweight status. The percent difference clarified from the eating pattern– overweight models was little. The communication of ethnicity and sexual orientation was altogether connected with overweight status. The chances of being overweight for guys were 1.2 times higher than for females. These outcomes exhibit that various eating designs were related with overweight status, yet the chances of being overweight were little.

James., *et al*. [30] planned an examination to avoid youth heftiness. The target of the examination was to decide whether a school based instructive program went for diminishing utilization of carbonated beverages can avoid unnecessary weight pick up in kids. Group randomized controlled trial configuration was utilized for the investigation. 644 kids matured 7 - 11 years from the six elementary schools in England were chosen. Principle result measures were the drink utilization and number of overweight and corpulent kids. Utilization of carbonated beverages more than three days diminished by 0.6 glasses in the intercession gathering however expanded by 0.2 glasses in the control gathering. At a year the level of overweight and large kids expanded in the control bunch by 7.5%, contrasted and a reduction in the intercession gathering of 0.2%. A focused on, school based instruction program created an unassuming diminishment in the quantity of carbonated beverages expended, which was related with a decrease in the quantity of overweight and hefty youngsters.

Hillary and Robert [31] planned a study to test the speculation that preschool youngsters have a higher commonness of stoutness, invest less energy playing outside and invest additional time sitting in front of the (TV) when they live in neighborhoods that their moms see as risky. In a cross-sectional overview in 20 expansive US urban communities, moms announced the normal day by day time of outside play and TV seeing for their 3-year-old youngsters and the kids' BMI was estimated. Maternal impression of neighborhood wellbeing was evaluated with the Neighborhood Environment for Children Rating Scales; the scale score was utilized to separate kids into tertiles of neighborhood security. Of the 3141 youngsters contemplated, 35% lived in family units with livelihoods underneath the neediness edge. Kids who lived in neighborhoods that were seen by their moms as the minimum safe observed more TV and will probably watch >2 hours/day. Television seeing and outside play minutes were not essentially connected to each other or to BMI.

Anderson and Butcher [32] through their research tried to discover the factor which has result in expanded corpulence in kids. The analysts report inclines in kids' corpulence and look at the conceivable fundamental reasons for the stoutness pandemic. They start by investigating research on vitality admission, vitality consumption and "vitality adjust," noticing that kids who eat more "void calories" and use less calories through physical movement will probably be corpulent than other kids. Next they ask what has changed in youngsters' condition in the course of recent decades to irritate this vitality adjust condition. Among the progressions that influence youngsters' vitality admission are the expanding accessibility of vitality thick, fatty sustenances and beverages through schools. Changes in the family, especially an expansion in double profession or single-parent working families, may likewise have expanded interest for nourishment far from home or pre-arranged sustenances. Or maybe, numerous reciprocal changes have all the while expanded kids' vitality allow and diminished their vitality use. The test in defining arrangements to deliver youngsters' weight is to figure out how best to change the condition that influences kids' vitality adjust.

Puhl., *et al*. [33] led an examination on counteractive action of youth weight. Forestalling youth weight has turned into a best need in endeavors to enhance our country's general wellbeing. Albeit much research is expected to address this wellbeing emergency, it is vital to approach youth heftiness with a comprehension of the social shame that stout youth's face, which is unavoidable and can have genuine outcomes for passionate and physical wellbeing. With these written works amassed, regions of research are illustrated to direct endeavors on weight shame in adolescents, with an accentuation on the significance of concentrate the impact of weight disgrace on physical wellbeing results and recognizing powerful intercessions to enhance states of mind.

Obesity in girls

Obarzanek [34] planned a study on the avoidance of heftiness in youthful African-American young ladies. The Girls wellbeing Enrichment Multi-site Studies (GEMS) is a corpulence counteractive action inquire about program supported by the National Heart, Lung and

Blood Institute (NHLBI). To address the issue of stoutness and its birthplaces in African-American ladies, the NHLBI Growth and Health Study (NGHS) was started to research factors identified with the improvement of corpulence and related cardiovascular malady hazard factors in an accomplice of youthful African-American and White young ladies, matured 9 and 10 years. Discoveries from NGHS and the acknowledgment that corpulence had turned into a noteworthy general medical issue, accordingly prompted a 2-stage, 7-year community oriented stoutness counteractive action inquire about program and the Girls wellbeing Enrichment Multi-site Studies (GEMS). The encounters of the GEMS pilot studies will help direct future mediation look into for corpulence anticipation starting in youth. This report depicts the foundation and justification for the GEMS activity.

Ahmad [35] led an examination on the rate of weight in kids. Corpulence is expanding at a disturbing rate all through the world. Today it is assessed that there are in excess of 300 million stout individuals around the world. Heftiness is a state of abundance muscle to fat ratio frequently connected with an extensive number of incapacitating and perilous issue. It is as yet a matter of verbal confrontation with reference to how to characterize stoutness in youngsters particularly young ladies. Overweight young ladies have an expanded danger of being overweight as grown-ups. Hereditary qualities, conduct and family condition assume a part in youth overweight. Youth overweight builds the hazard for certain medicinal and mental conditions. Urge overweight kids to extend high vitality action, limit low vitality movement (screen watching) and create invigorating dietary patterns. Bosom nourishing is defensive against stoutness. Eating regimen confinement isn't suggested in exceptionally young ladies. Kids are to be looked for pick up in tallness instead of decrease in weight. Weight diminishment of under 10% is an ordinary variety, not noteworthy in corpulence.

Christine [36] did a research on youth corpulence which has turned into a noteworthy wellbeing worry in late decades, particularly with respect to metabolic variations from the norm that confer a high hazard for future cardiovascular ailment. Late information propose that abundance adiposity amid youth may impact pubertal advancement too. Specifically, abundance adiposity amid adolescence may propel pubescence in young ladies and defer pubescence in young men. Stoutness in per pubertal young ladies may likewise be related with hyper-androgenemia and a high danger of youthful polycystic ovary disorder. How weight may irritate different hormonal parts of pubertal improvement stays misty, however potential components are talked about in this. Insulin obstruction and compensatory hyperinsulinemia may speak to a consistent idea contributing excessively numerous of the pubertal changes answered to happen with youth corpulence. Our comprehension of corpulence's effect on pubertal improvement is in its outset and more research into way physiological systems and longer-term continuation is imperative.

Manu Raj [37] directed an exploration on worries of adolescence and adolecent heftiness. As per the analyst, stoutness patterns are causing genuine general wellbeing concern worldwide and in numerous nations debilitating the suitability of essential social insurance conveyance. It is a free hazard factor for cardiovascular ailments and essentially builds the danger of horribleness and mortality. The most recent two decades have seen an expansion in human services costs because of corpulence and related issues among kids and teenagers. Youth weight is a worldwide wonder influencing all financial gatherings, regardless of age, sex or ethnicity. Aetiopathogenesis of youth weight is multi-factorial and incorporates hereditary, neuroendocrine, metabolic, mental, natural and socio-social variables. Numerous co-bleak conditions like metabolic, cardiovascular, mental, orthopedic, neurological, hepatic, pneumonic and renal scatters are found in relationship with youth weight. A comprehensive way to deal with handle the youth weight pestilence needs a gathering of exercises including impacting strategy producers and enactment, activating groups, rebuilding authoritative works on, giving group training and in addition advancing and strengthening singular mindfulness and abilities. The ramifications of this worldwide marvel on future ages will be not kidding unless suitable move is made.

Raj [38] observed that the predominance of overweight and heftiness in kids and young people has expanded considerably, which was finished previously quite a few years ago. These patterns are likewise obvious in creating economies like India. Youth stoutness impacts all the real organ frameworks of the body and is outstanding to bring about huge grimness and mortality. Stoutness in youth and

youthfulness is related with set up hazard factors for cardiovascular illnesses and quickened atherosclerotic procedures, including raised pulse (BP), atherogenic dyslipidemia, atherosclerosis, metabolic disorder; type II diabetes mellitus, heart basic and useful changes and obstructive rest apnea. Adiposity advances cardiovascular hazard grouping amid youth and puberty. Insulin opposition has a solid relationship with youth stoutness. Weight in early life advances atherosclerotic infection in vascular structures, for example, the aorta and the coronary supply routes. Weight bargains pneumonic capacity and expands the danger of rest disarranged breathing and obstructive rest apnea. Ignoring youth and juvenile stoutness will trade off the cardiovascular soundness of the pediatric populace and is probably going to bring about a genuine general wellbeing emergency in future.

Cree-Green [39] in his research explored the insulin obstruction in fat young ladies. As indicated by the exploration, Hyper androgenic disorder (HAS) is related with insulin opposition (IR) and sort 2 diabetes. Muscle IR in type 2 diabetes is connected with deserts in mitochondrial oxidative limit. Mitochondrial work is surveyed with phosphorus spectroscopy previously, amid and after close maximal isometric lower leg exercise and fringe IR was evaluated hyper-insulinemic euglycemic clip. Young ladies with HAS had higher androgens and more IR. HAS young ladies likewise had expanded markers of irritation including CRP, platelets and white platelet tally and higher serum free unsaturated fats amid hyperinsulinemia. Hefty young ladies with HAS have huge fringe IR, which is identified with lifted androgens and free unsaturated fats and diminished mitochondrial oxidative phosphorylation. These may give future alternatives as focuses to restorative intercession.

Todd [40] did a research on the significance of sensible eating and movement practices in adolecent young ladies. As per explore, the immature period is related with changes in eating and movement practices in young ladies. Less dependence on parental arrangement and decision of sustenance, combined with a diminishing in support in physical action and game, can make a vitality irregularity, inclining to weight pick up. Physiological changes to body sythesis, decrease in insulin affectability and mental alterations may additionally enhance the danger of getting to be overweight and keeping up an undesirable level of muscle to fat ratio into childbearing years. Amid pregnancy abundance muscle versus fat is a hazard factor for poor pregnancy results and may incline a newborn child to a long lasting increased danger of being overweight and creating endless sickness. Support, instruction and opportunity at home and at school, are regularly connected with the achievement of way of life intercessions and may empower young people to settle on constructive decisions and participate in wellbeing advancing practices amid youthfulness and childbearing years.

Research Methodology

Type of research

This is a Quantitative type of research as it is used to quantify the problem by generating the numerical data.

Population

Population of Islamabad was targeted in this research. The study was conducted at the girls college of Home Economics and Management Sciences, F-7/2 Islamabad.

Sample

Total 30 girls who were willing to participate in the study were asked to fill the questionnaires.

Sampling techniques

Data was collected randomly from the girls in college of Home Economics.

Research technique

Data was collected through closed ended questionnaires.

Statistical analysis

The data collected in this study was analyzed through Microsoft Excel, which help in the calculations and the representation of data in tabular form. The data was analyzed statistically and the result is represented in the form of tables and graphs below.

Results and Discussions

Results

Name

Background characteristics

Residence: Urban

Age Group: 14 - 22 years

Weight: 60 - 85 kg

BMI: 25 - 38

Education: Literate

Work Status: Students

What do you like to have as an evening snack mostly?

The results indicate that 20% students like to have fruits, 43.3% students like to have bread and 36.6% students like to have savories as their evening snacks mostly.

Sr. No	Characteristics	Actual no.	Percentage
1.	Fruit	6	20%
2.	Bread	13	43.3%
3.	Savories	11	36.6%

Table 1

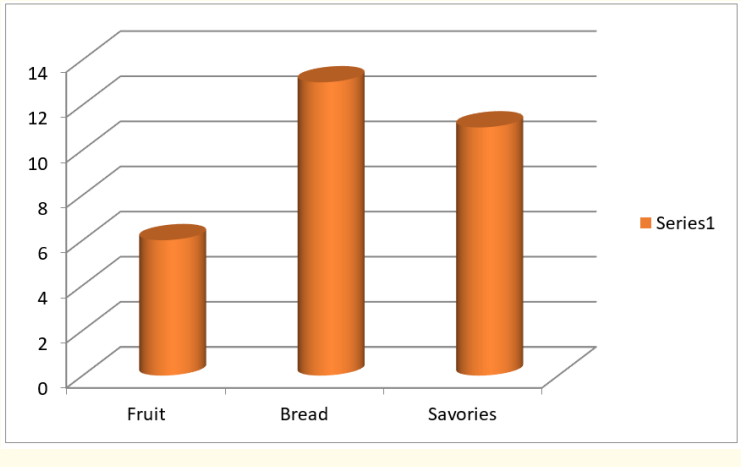

Figure 1

Do you prefer bakery products over homemade food?

The results indicate that 73.3% students prefer bakery products and 26.6% students donot prefer bakery products over homemade food.

Sr. No	Characteristics	Actual no.	Percentage
1.	Yes	22	73.3%
2.	No	8	26.6%

Table 2

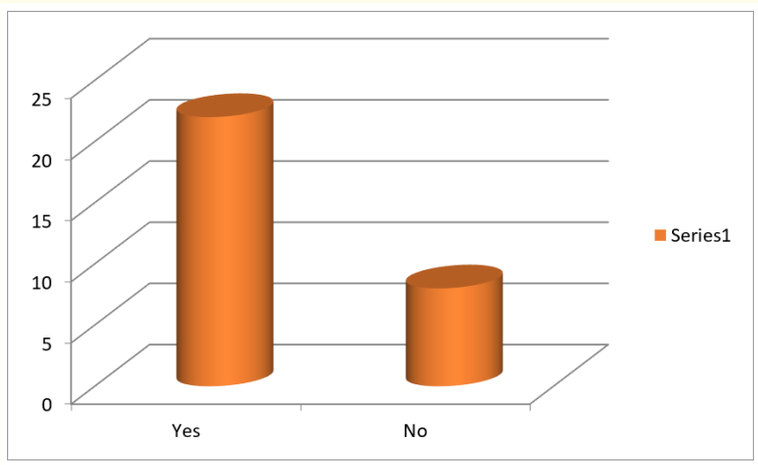

Figure 2

How often do you like to eat bakery products?

Sr. No	Characteristics	Actual no.	Percentage
1.	Daily	7	23.3%
2.	Weekly	14	46.6%
3.	3 Times a day	9	30%

Table 3

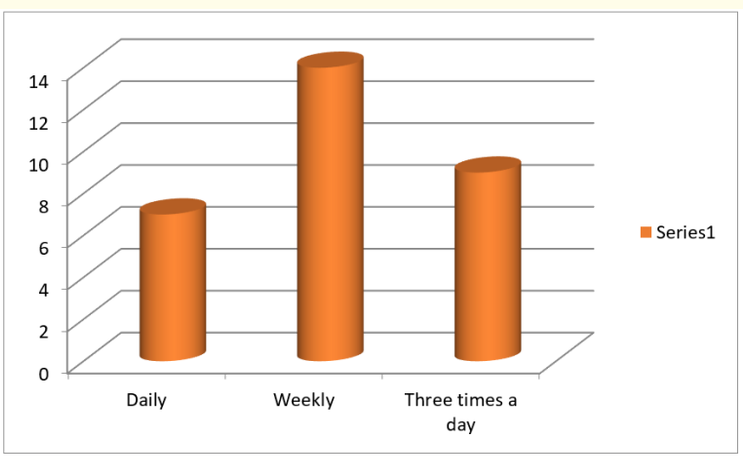

Figure 3

The results indicate that 23.3% students like to eat bakery products daily, 46.6% students like to eat bakery products weekly while 30% students like to eat bakery products 3 times a day.

During college hours, do you prefer to eat bakery products (from cafeteria) over home brought lunch?

Sr. No	Characteristics	Actual no.	Percentage
1.	Yes	23	76.6%
2.	No	7	23.3%

Table 4

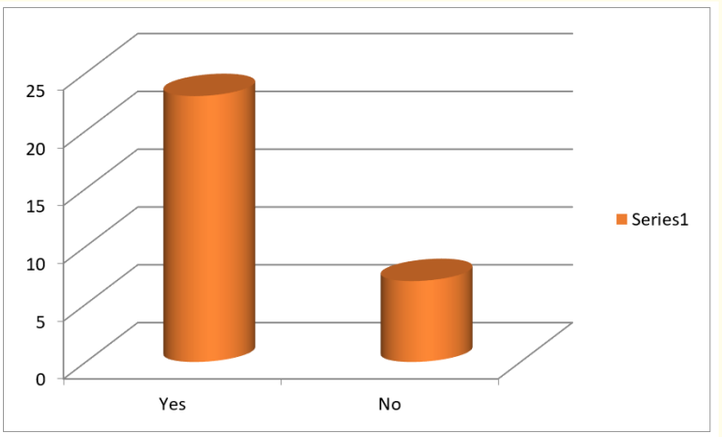

Figure 4

The results indicate that 76.6% students prefer to eat bakery products from cafeteria over home brought lunch while 23.3% prefer to eat home brought lunch.

How often do you have sweet snacks (cookies, pies pastries, cakes) bought from the bakery?

Sr. No	Characteristics	Actual no.	Percentage
1.	Daily	5	16.6%
2.	Twice a day	2	6.6%
3.	Weekly	23	76.6%

Table 5

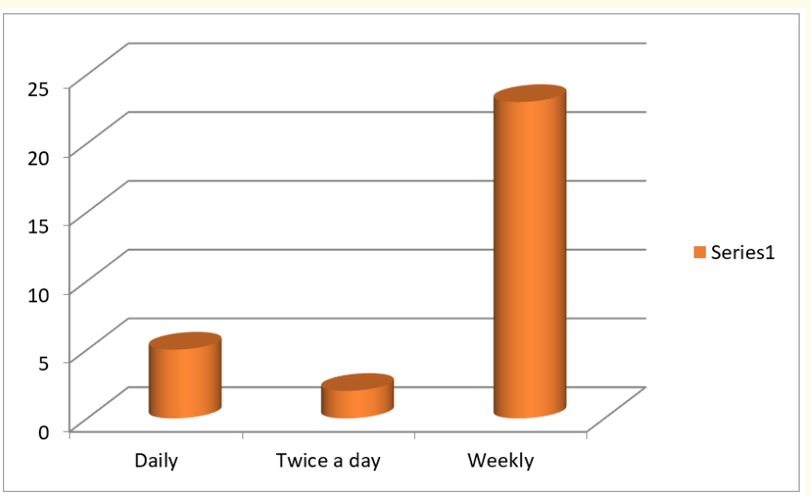

Figure 5

The results indicate that 16.6% students have sweet snacks daily, 6.6% students have them twice a day while 76.6% students have sweet snacks brought from the bakery weekly.

How often do you eat noodles (instant/ normal)?

Sr. No	Characteristics	Actual no.	Percentage
1.	Daily	6	20%
2.	Weekly	14	46.6%
3.	Monthly	10	33.3%

Table 6

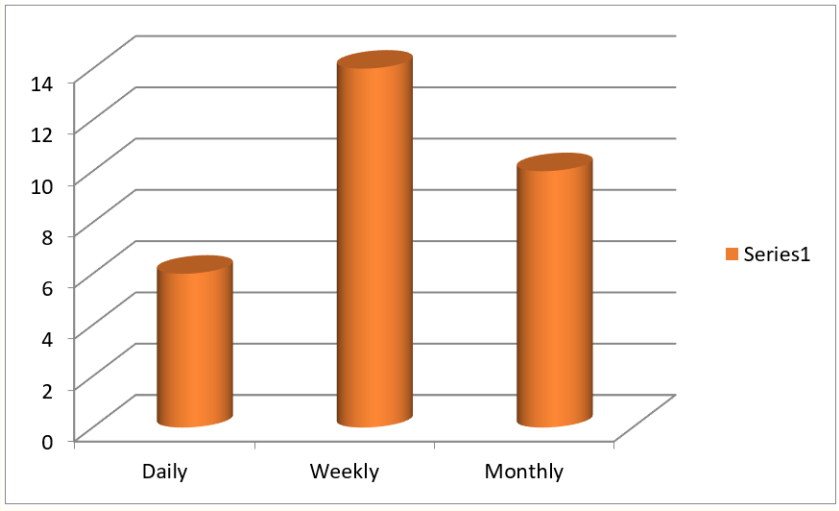

Figure 6

The results indicate that 20% students eat instant noodles daily, 46.6% students eat noodles weekly and 33.3% students eat noodles monthly.

What do you prefer to have for breakfast?

Sr. No	Characteristics	Actual no.	Percentage
1.	White bread	13	43.3%
2.	Cereals	14	46.6%
3.	Fruits	3	10%

Table 7

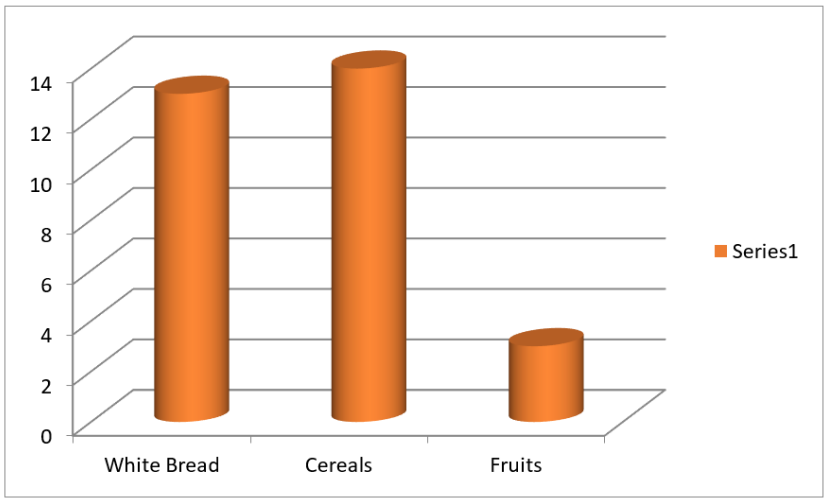

Figure 7

The results indicate that 43.3% students prefer white bread, 46.6% students prefer cereals while only 10% students prefer fruits to have for the breakfast.

Do you prefer burgers and pizzas over proper meals?

Sr. No	Characteristics	Actual no.	Percentage
1.	Yes	24	80%
2.	No	6	20%

Table 8

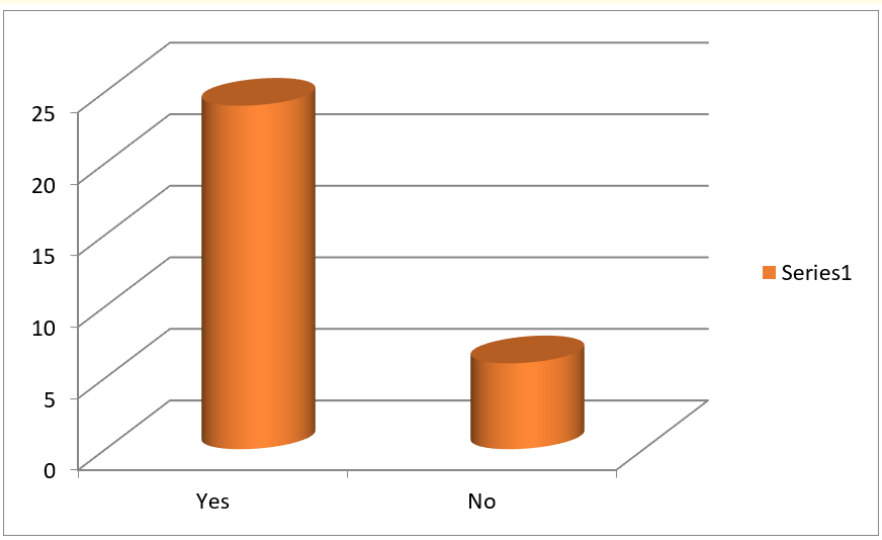

Figure 8

The results indicate that 80% students prefer burgers and pizzas over proper meals and only 20% students prefer proper meals.

How often do you exercise?

Sr. No	Characteristics	Actual no.	Percentage
1.	Daily	7	23.3%
2.	Weekly	9	30%
3.	Never	14	46.6%

Table 9

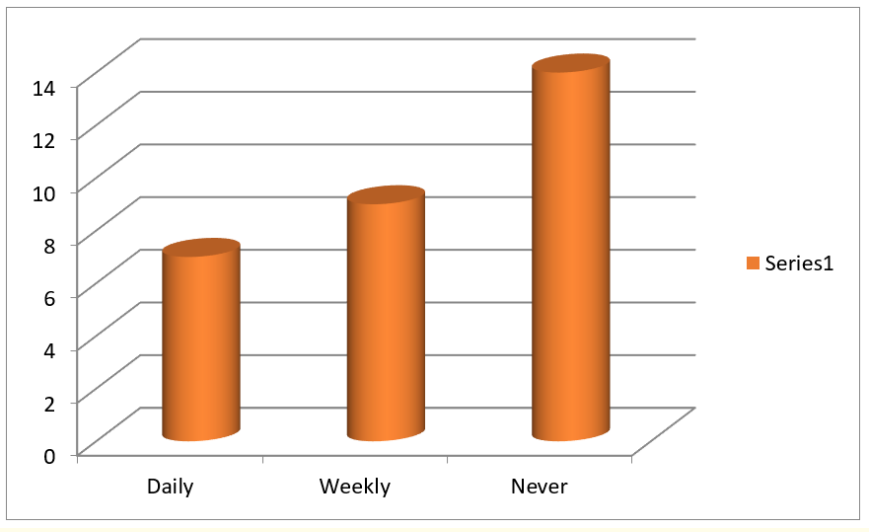

Figure 9

The results indicate that 23.3% students do exercise daily, 30% do weekly and most of the students i.e 46.6% students never do exercise.

What is your most preferred food at parties or gatherings?

Sr. No	Characteristics	Actual no.	Percentage
1.	French fries	4	13.3%
2.	Pizza	22	73.3%
3.	Chicken	4	13.3%

Table 10

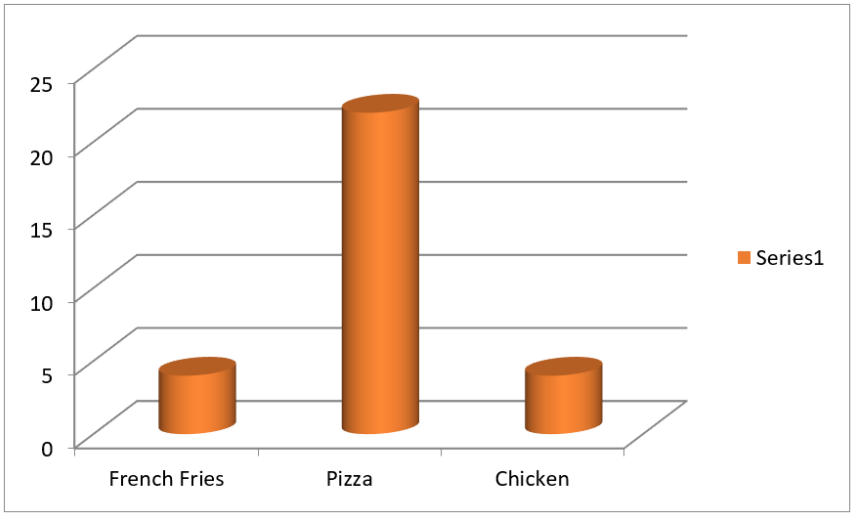

Figure 10

The results indicate that 13.3% students prefer French fries and 13.3% prefer chicken while 73.3% students prefer pizza at parties or gatherings.

Do most of your meals consist of bakery items?

Sr. No	Characteristics	Actual no.	Percentage
1.	Yes	15	50%
2.	No	15	50%

Table 11

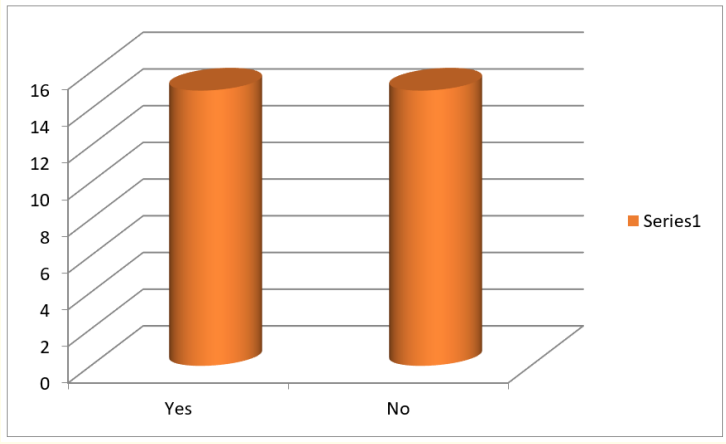

Figure 11

The results indicate that 50% students think that most of their meal consists of bakery items and 50% think that their most of the meal does not consists of bakery items.

What do you like to eat when you are traveling a long distance?

Sr. No	Characteristics	Actual no.	Percentage
1.	Fruits	3	10%
2.	Crisps	18	60%
3.	Anything from bakery	9	30%

Table 12

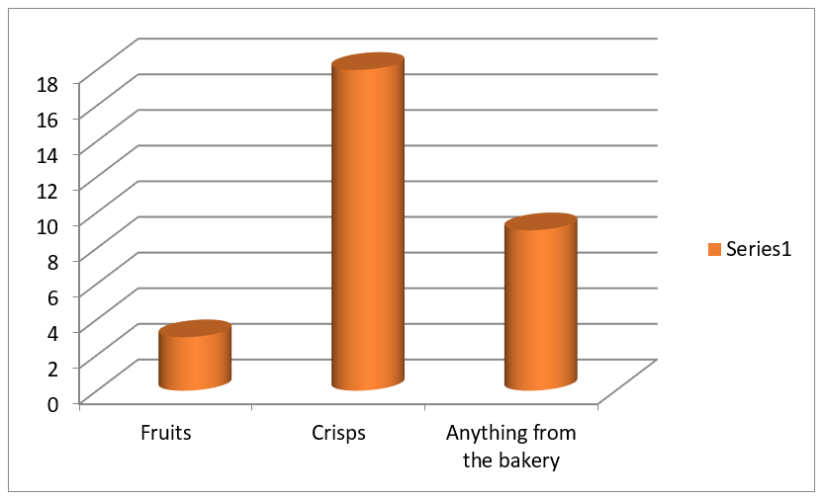

Figure 12

The results indicate that 10% students like to eat fruits, 60% like to eat crisps and 30% students like to eat anything from the bakery while traveling a long distance.

When you go to the bakery what is your preferred food among these snacks?

Sr. No	Characteristics	Actual no.	Percentage
1.	Drumsticks	8	26.6%
2.	Cakes	11	36.6%
3.	Sandwich	11	36.6%

Table 13

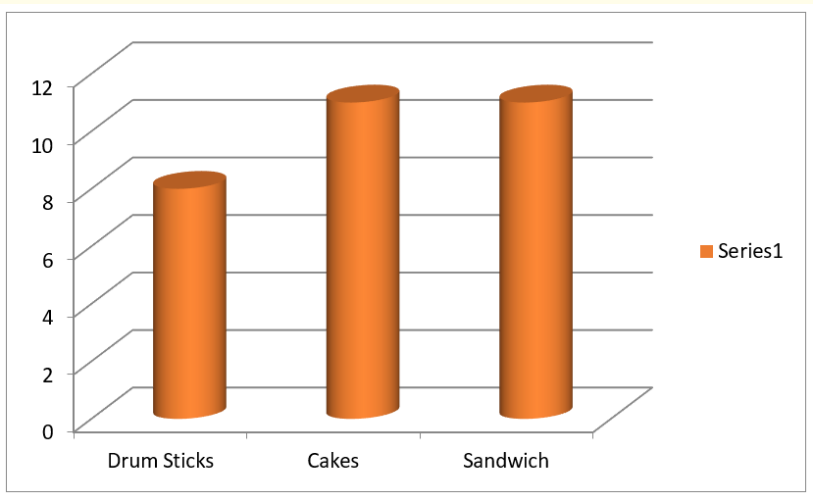

Figure 13

The results indicate that 26.6% students prefer drumsticks, 36.6% prefer cakes and 36.6% students prefer sandwiches over other snacks whenever they go to the bakery.

What do you eat commonly when you go out for a meal?

Sr. No	Characteristics	Actual no.	Percentage
1.	Meat/Chicken	9	30%
2.	Rice/Bread	5	16.6%
3.	Both	16	53.3%

Table 14

Figure 14

Results indicate that 30% students eat meat/chicken, 16.6% eat rice/bread while 53.3 % eat both meat/chicken and rice/bread when they go out for a meal.

Which food do you prepare for yourself when you are in a hurry?

Sr. No	Characteristics	Actual no.	Percentage
1.	Eggs	6	20%
2.	Milk products	6	20%
3.	Breads	18	60%

Table 15

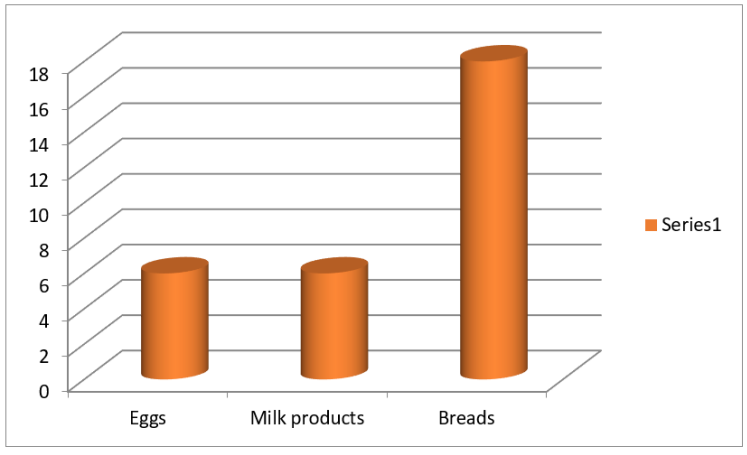

Figure 15

The results indicate that 20% student's eggs, 20% students prepare milk products while 60% students prepare breads for themselves when they are in a hurry.

Discussion

It has been often reported that high intake of bakery products is in close relation with factors that cause obesity. Many researches have been conducted to dissociate the means through which obesity is caused and many cases seem to report that high intake of not only fats but carbohydrates as well cause cellulite deposits which in turn increases weight causing many diseases in an individual. In this research a sample of young teenage obese female students has been taken who are between the ages of 14 and 22 years, weight 60 - 85 kg and having between 25 - 38 BMI.

The deduction of results from intake of bakery products indicates that students are very prone to be obese due to high intake of hazardous food and low rate of physical activity. Domenech., *et al*. (2016) conducted a research in which the researcher and fellow workers concluded that bakery products are usually very high in trans fat and sugar and low in fiber, which are not healthy in higher percentages. It was tried to replace high fatty component with less disastrous ingredients which was accepted by consumers effctively with just a slight drop in purchase.

Pertuzatti., *et al*. [15] in his research observed that the demand of that the demand of bakey items is increasing day by day. It was aslo shown that the most widely and increasingly consumed bakery product was bread. Although all bakery products are well accepted in any society. This research also indicates that 43.3% of students included in the study like to have bread as an evening snack and 73.3% results have indicated that bakery products are preffered over homemade food.

Rodríguez-Artalejo [8] introduced a hypothesis that the impact of the consumption of bakery products, sweetened soft drinks and yogurt on the quality of the diet children is only modest, although it may contribute to aggravating certain unhealthy characteristics of their diet, particularly excess energy, saturated fats and sugars. Therefore, consumption of bakery products and sweetened soft drinks should be moderated and priority given to consumption of low-fat, low-sugar yogurt. However according to this study 76.6% of the students included in the study would prefer to eat bakery items over home prepared lunch providing the unhealthiest of calories to students. The facts prevailing in this study also state that white bread and processed cereals are preferred by students by a percentage of 43.3% and 46.6% respectively which supports the hypothesis presented in this research which states that bakery item do have an effect on obesity.

Chavan [7] states that bakery items consist majorly of highly processed wheat products that includes refined flour and starch which are of less nutritional value than whole grain products, normally bakeries do not focus on providing nutritionally high quality products to the consumers but rather on the value of flavor in a product. The most preferred bakery item according to this study is Pizza which is preferred by 73.3% students in gatherings, these results also show a turnout of 80% students preferring fad foods such as pizzas and burgers etc. over nutritionally excellent food products.

Duraj and Broncel [21] explained in their study that atrial fibrillation (AF) and obesity is a growing problem of public health in the whole world. AF risk factors may be summarized as elderliness, male sex, smoking, hypertension, diabetes, obesity, coronary heart disease, heart failure, volvuli heart disease, cardiac surgery. Obesity is treatable according to Thomas [18] in whose study it is stated that dietary interventions are associated with increasing weight regain over time, although regain can be minimized with the recognition that obesity, in many cases, is a chronic condition that requires continuing care. Patients who participate in a formal weight-loss maintenance program, exercise regularly, or both are likely to achieve the best long-term results. Obesity is treatable by lessening intake of bakery products and more physical activity which according to this research is alarming as 46.6% of students eat bakery products weekly and 30% of them three times a week and the physical activity is also down to only 23.3% students who exercise daily and 46.6% students who never exercise.

Cara., *et al*. [27] conducted research on the complications of obesity. During the past two decades, the prevalence of obesity in children has risen greatly worldwide. However, treatment for childhood obesity remains largely ineffective. In view of its rapid development in genetically stable populations, the childhood obesity epidemic can be primarily attributed to adverse environmental factors for which straightforward, if politically difficult, solutions exist.

Theresa., *et al*. [29] explored about the childhood obesity, as it is a growing public health problem. Consumption of sweetened beverages (58% soft drinks, 20% fruit flavor drinks, 19% tea and 3% coffee); sweets (desserts, candy and sweetened beverages); meats (mixed meats, poultry, seafood, eggs and beef); and total consumption of low-quality foods were positively associated with overweight status. Total amount of food consumed, specifically from snacks, was positively associated with overweight status, which is confirmed by the study performed in this research which shows that consumption of low nutritional quality foods is more common as more students (60%) eat crisps while traveling and only 10% prefer fruits during journeys. The intake of sweets is also 76.6% per week by the sample of students included in this study.

Summary and Conclusion

By comparing these results and the results of researches by different researchers, the adverse capacity of bakery products in causing obesity is evident. Bakery products subsume insalubrious conditions, critical amounts of trans fats and starch in the form of refined flour which if taken extravagantly cause low intestinal motility, high deposition of cellulite and adipose which in turn causes severe obesity. The sample of obese students taken in this research validate that high intake of sweets and savories as well as white bread and starchy products from the bakery accompanied with low exertion and nearly zero exercise rate is one of the substantial reasons of obesity.

Bakery products are very high in trans fatty acids, polysaccharides which are in the form of refined flour and nutritionally low in quality. Thus it is recommended to replace bakery products with nutritionally high quality foods that are low fat so that it reduces obesity. The high amounts of trans fats and refined flour present in bakery products are hazardous to the health and even more harmful to obese persons as they can increase obesity, thus through this research it is recommended to decrease the intake of bakery products if they are taken in multiple amounts.

Sugars are present in liberal amounts in all the products that come from the bakery which include, cakes, doughnuts, cookies, pies, croissants etc. thus it is recommended to decrease or completely inhibit the intake of sweet products from the bakery to decrease obesity which is largely dependent on high intake of sugars. Most of the bakery products do not contain good quality proteins, the quality of which may be spoiled through immense processing and chilling. Therefore the bakery is only providing starchy and fatty products as compared to healthy nutrients such as proteins, whole wheat, vitamins and minerals etc. thus it is recommended to replace bakery products with homemade and nutritionally beneficial eatables.

Obesity is a worldwide problem which is very much curable with healthy eating habits, it is proven that bakery products contain not only high amounts of fats but also liberal polysaccharides which are also known to be a cause for obesity, thus it is recommended to cure obesity and the various diseases that are associated with obesity with favorable foods that contain quality nutrients.

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