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**Loma Linda University**

**Department of Nutrition and Dietetics**

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**Nutrition Beliefs and Practices Among Generation Z**

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## **ABSTRACT**

**Background:** Life expectancy is decreasing, and childhood obesity is increasing. Limited research has been conducted on the nutrition beliefs and practices of Generation Z and the potential discrepancies between the two.

**Objective:** Assess the nutrition beliefs and whether these beliefs translate into practices among the 18-24 age group of Generation Z.

**Design:** Anonymous survey (nutrition belief-based and practice-based) provided via QR code accessible through Facebook, E-mails and text message.

**Participants:** There were 74 participants recruited through Facebook, E-mail, flyer and word of mouth. Individuals 18-24 years of age were included in the study. Those majoring in nutrition and currently or pending to be a Registered Dietitian Nutritionist or Diet Technician were excluded.

**Main Outcome Measures:** Nutrition beliefs and practices among Generation Z.

**Statistical Analysis Performed:** Correlational analysis between the beliefs and practices among Generation Z was conducted by the Kendall's Tau test.

**Results:** Significant association was found between the reliability of RDNS and seeking nutrition advice (0.005), food knowledge and reading nutrition labels (0.05), whole grains preventing disease and eating whole grains (0.01), daily breakfast improving health and eating breakfast (<0.0001), importance of caloric awareness and attention to calories (0.01), fruits preventing disease and eating fruit (<0.0001), awareness of hunger and eating when hungry (0.013), awareness of satiety and stopping eating when full (0.0004), and social media influence on what they eat and making changes to their diet based on social media (<0.0001). There was no significant association between the belief of vegetables preventing disease and eating vegetables (0.873).

**Conclusions:** Health professionals will be able to provide more relevant nutrition education and design programs to target the beliefs and practices of Generation Z. This may reduce childhood obesity and improve quality of life by facilitating positive habits.

## **INTRODUCTION**

The population of Americans born during the years of 1995-2010 is known as Generation Z. Currently, that makes members of this generation 7-24 years of age. Exposure to technology from a very young age is what makes this generation unique. A study conducted by the Pew Research Center in 2018, concluded that 95% of teens have access to a smartphone, and 45% say they are online almost constantly.<sup>1</sup> Generation Z has also had a wealth of nutrition and health information at their fingertips. The internet is filled with trendy food, health and wellness, blogs, vlogs, and articles.

Access to health information cannot be looked at in isolation. When, where, and how this health information is accessed, whether this information is accurate, and if it is put into practice must also be assessed. Has this access to health information positively impacted Generation Z's nutrition beliefs and practices? An alarming statistic demonstrated from an analysis of data briefs published by the Centers for Disease Control (CDC) shows that life expectancy in the United States has decreased twice in a three-year period.<sup>2,3</sup> The CDC Director, Robert R. Redfield, M.D. issued a media statement describing that this trend is largely driven by drug overdose and suicide deaths.<sup>4,5</sup> However, many American's are also being lost to other preventable disease often related to obesity.<sup>5</sup>

According to the 2016-2017 National Survey of Children's Health, 15.8% of children ages 10-17 were obese.<sup>6</sup> Data from the 2017 Youth Risk Behavior Surveillance System disclosed that 14.8% of high school students were obese and 15.6% were overweight.<sup>5</sup> Childhood obesity is an uncontrolled nationwide epidemic.<sup>7</sup> Childhood obesity has a significant impact on an individual's overall health with

the possibility of causing chronic diseases such as the number one leading cause of death: congestive heart failure.<sup>7</sup> Additionally, many comorbidities are associated with childhood obesity, such as metabolic syndrome, neurological complications, and hepatic disorders.<sup>5,7</sup>

Childhood obesity is multifactorial. Some of these factors include, but are not limited to, parental influence, government and social policies, genetics, lack of physical activity, nutrition, and income level.<sup>7</sup> Nutrition standards were placed in 2010 by the USDA's Food and Nutrition Services department that required schools to implement the dietary guidelines into the school's Lunch and Breakfast Programs. Team Nutrition also implements School Meals Initiatives for Healthy Children that is intended to motivate children to make healthy choices and help schools to meet dietary guidelines.

Given the steady trend in decreasing life expectancy, the childhood obesity epidemic, and the many measures taken to combat it, limited research has been conducted on the nutrition beliefs and practices of Generation Z. Known to be very tech savvy, Generation Z has the capability to obtain information at their fingertips. A report by Mintel Food and Drink, a large scale market research company, found that 25% of teens aged 15-17 worry about staying healthy and 49% agree that drinking soda is unhealthy.<sup>8,9</sup> While these statistics suggest that this generation may be more health conscious, why is life expectancy decreasing and rates of childhood obesity increasing? One possibility is a discrepancy between the knowledge and beliefs of individuals and their actual practices. Much of the current literature focuses on nutrition knowledge, or nutrition knowledge of parents. However, there is a gap in how this relates to actual practices.

Therefore, the purpose of our graduate student research study was to assess the nutrition beliefs and how these beliefs translate into practices among Generation Z. Generation Z has a plethora of nutrition information available through social media and technology, yet it is still predicted that they will have a shorter lifespan than their parents. It is important to assess how this knowledge translates to

Generation Z's beliefs and practices. Our study aims to assess how Generation Z is processing the nutrition information that they receive as well as the current prediction of a shorter lifespan.

## **METHODS**

### **Subjects:**

Seventy-four subjects aged 18-24 were the focus of our study. The subjects were recruited through Facebook, through E-mail, flyer, and word of mouth. All individuals 18-24 years of age were included in the study. Those majoring in nutrition, and those currently or pending to be a Registered Dietitian Nutritionist or Diet Technician were excluded. All methods and procedures were approved by the Institutional Review Board of Loma Linda University.

### **Instruments:**

An anonymous survey, composed by the student investigators, was used as the method. The survey was configured with 4 demographic questions and 16 nutrition belief and practice-based questions. The survey was conducted electronically by Qualtrics link or QR code.

Component 1: There were 4 demographic questions assessing the participants' age, gender, education level, and ethnicity.

Component 2: This component consisted of 8 nutrition belief-based questions and 8 nutrition practice-based questions. The questionnaire was conducted by the student investigators. The questions assessed the participants' current nutrition beliefs and daily nutrition practices. The survey was scored using a scale ranging from "strongly agree" to "strongly disagree" for belief-based questions, and "always" to "never" for practice-based questions.

## PROCUDURES

An online link was provided to the participants through Facebook, E-mails and text message. The subject gave participation consent by clicking on the Qualtrics link. The online survey took the participants approximately 10 minutes to complete. Questions were able to be skipped if desired.

### Statistical Analysis:

We conducted a correlational analysis between the beliefs and practices among Generation Z. This association was completed by the Kendall's Tau test, which is a subversion of the Chi-square test for ordinal data.

### Results:

Seventy-four males and females were enrolled in the study. The frequency of selected demographics is shown in Table 1. Out of 74 participants, 77% were female and 60% reported having some college education. Additionally, 35% of our participants were Caucasian, 33% Asian, and 28% Hispanic/Latinx.

### Data:

**Table 1:** Frequency and Percentage of Selected Demographics (N=74)

Characteristics	Frequency (Percentage)
Gender	
Male	17 (22.97%)
Female	57 (77.03%)
Age	
18	4 (5.6%)
19	6 (8.3%)
20	11 (15.2%)
21	13 (18.0%)
22	11 (15.2%)
23	14 (19.4%)
24	13 (18.0%)
Ethnicity	
Asian	25 (33.78%)

Black/African American	1 (1.35%)
Caucasian	26 (35.14%)
Hispanic/Latinx	21 (28.38%)
Prefer not to answer	1 (1.35%)
Education Level	
High school	4 (5.71%)
Some College	42 (60.00%)
College graduate	24 (34.29%)

Table 2 shows the results of our study. To be significant, this could go one of three ways. First, the subjects could believe in the statement provided them and practice it; second, the subjects do not believe in the statement given them and they do not practice it, or third they somewhat believe in the statement and sometimes or rarely practice it. The majority of significant results were that participants believed and practiced their beliefs or somewhat believed and sometimes or rarely practiced that belief.

There was a significant association between the reliability of RDNS and seeking nutrition advice (0.005), food knowledge and reading nutrition labels (0.05), the belief of whether social media has an impact on their diet and making changes to their diet based on social media (<0.0001), and the importance of caloric awareness and attention paid to calories (0.01). There was also a significant association between the belief of whole grains’ ability to prevent disease and eating whole grains (0.01), and fruits’ ability to prevent disease and eating fruit (<0.0001). Additionally, a significant association was found between the belief that daily breakfast improves health and eating breakfast (<0.0001), the importance of eating when hungry and eating only when hungry (0.013), and the importance of satiety awareness and stopping eating when full (0.0004). There was no significant association the belief of vegetables ability to prevent disease and the practice of eating vegetables (0.873).

**Table 2:** Association Between Nutrition Beliefs and Practices (N=74)

Beliefs	Practices	P- value
Q1: I believe that Registered Dietitian Nutritionists are the	Q9: I have/would seek nutrition advice from a	<b>0.005</b>



most reliable source of nutrition information	Registered Dietitian Nutritionist	
Q2: I believe it is important to know the ingredients of the foods I eat	Q10: I read the nutrition label before I buy food	<b>0.05</b>
Q3: I believe eating whole grains, such as whole wheat, brown rice, oatmeal, can help prevent diseases	Q11: I eat whole grains, such as whole wheat, brown rice, oatmeal, can help prevent diseases	<b>0.01</b>
Q4: I believe eating breakfast daily is an important meal for my health	Q12: I eat breakfast	<b>&lt;0.0001</b>
Q5: I believe it is important to know the number of calories a food provides before I eat it	Q13: I eat according to calorie amount	<b>0.01</b>
Q6: I believe eating a variety of fruits can help prevent diseases	Q14: My meals contain a variety of fruits	<b>&lt;0.0001</b>
Q22: I believe eating a variety of vegetables can help prevent diseases	Q 24: My meals contain a variety of vegetables	0.873
Q 7: I believe it is important to eat only when I am hungry	Q 15: I eat only if I am hungry	<b>0.013</b>
Q23: I believe it is important to stop eating when I am full	Q25: I stop eating when I am full	<b>0.0004</b>
Q8: I believe social media affects what I eat	Q16: I have made changes to my diet based off something I saw/ read on social media	<b>&lt;0.0001</b>

### Discussion:

This study aimed to determine whether Generation Z practices the nutritional beliefs that they have. The study participants, aged 18-24, are at an age where they are gaining more liberty to practice the nutritional beliefs they may have. The results from this study indicated that the subjects practiced what they believed. We suggest this may be due to the increased awareness through social media access and popularity of nutrition among this generation as they seek trendy food options and snacks. In addition, Generation Z has grown up with more information about the benefits of fresh foods versus processed foods. Furthermore, the population we surveyed had a higher education level. These factors may have contributed to stronger beliefs, which led them to make active choices based upon these

beliefs. Generation Z also has access to more food choices than past generations and may have more freedom to pick the foods that align with their nutrition beliefs.

This generation may see Registered Dietitians as more reliable and be willing to seek out their advice because of the growing popularity of nutrition articles, blogs, and social media accounts run by Registered Dietitians. The internet has made it easier to access the expertise of RDNs and has additionally increased the public's awareness of Registered Dietitian. Ninety five percent of Generation Z have access to a smart phone and forty five percent are online constantly.<sup>1</sup> It is likely that they have come across information online that was written by or mentions a Registered Dietitian. Furthermore, this statistic regarding smartphone and online access could account for the significance found with social media influences.

This generation may be more aware of the importance of whole grains and fruit due to the National School Lunch Program. This program sets certain requirements for servings of fruit and whole grains in meals served in public schools. Additionally, the Team Nutrition and their school meal initiatives encourage the consumption of daily breakfast, which may have contributed to the significance found regarding the belief and practice of daily breakfast. This generation has thus been more exposed to and been educated on the importance of eating fruits, whole grains and daily breakfast.

The participants in our study were highly educated, which may have contributed to the belief and practice of reading nutrition labels as well as being aware of ingredients and eating according to calorie count. In addition to being highly educated, according to Pew Research, 25% of this generation worries about staying healthy.<sup>8,9</sup> With access to unlimited information online, it is very likely they have sought out nutrition advice and intuitive eating guidance. This may contribute to them being more aware of their hunger and satiety when eating.

**Limitations:**

There were two limitations of our study. One limitation was the missing age group of 7-17 years, among the total ages of 7-24 years who make up Generation Z. This limits the conclusions that we can draw from the entire generation. Additionally, our study is limited by the small sample size of 74 participants. This small sample size may not be representative of the 18-24 age group among Generation Z.

**Conclusion:**

Health professionals will now be able to provide more relevant nutrition education and design programs to target the beliefs and practices of Generation Z. With a more appropriate educational approach from health professionals, childhood obesity and the burden of chronic diseases may be reduced, and quality of life may improve. Directing nutritional beliefs and practices may facilitate positive habits. A future study to examine the nutritional beliefs and practices among the 7-17 age group of Generation Z would be beneficial.

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## Appendix

### Beliefs

1. I believe that Registered Dietitian Nutritionists are the most reliable source of nutrition information

Strongly agree

Somewhat agree

Undecided

Somewhat disagree

Strongly disagree

I do not know what a Registered Dietitian is

2. I believe it is important to know the ingredients of the foods I eat

Strongly agree

Somewhat agree

Undecided

Somewhat disagree

Strongly disagree

3. I believe eating whole grains, such as whole wheat, brown rice, oatmeal, can help prevent diseases

Strongly agree

Somewhat agree

Undecided

Somewhat disagree

Strongly disagree

4. I believe eating breakfast daily is an important meal for my health

Strongly agree

Somewhat agree

Undecided

Somewhat disagree

Strongly disagree

5. I believe it is important to know the number of calories a food provides before I eat it

Strongly agree

Somewhat agree

Undecided

Somewhat disagree

Strongly disagree

6. I believe eating a variety of fruits and vegetables can help prevent diseases

Strongly agree

Somewhat agree

Undecided

Somewhat disagree

Strongly disagree

7. I believe it is important to eat only when I am hungry and stop when I am full

Strongly agree

Somewhat agree

Undecided

Somewhat disagree

Strongly disagree

8. I believe social media affects what I eat

Strongly agree

Somewhat agree

Undecided

Somewhat disagree

Strongly disagree

Practices

1. I have/would seek nutrition advice from a Registered Dietitian Nutritionist

Strongly agree

Somewhat agree

Undecided

Somewhat disagree

Strongly disagree

I don't know what a Registered Dietitian is

2. I read the nutrition label before I buy food

Always

Majority of the time

About half the time

Rarely

Never

3. I eat whole grains, such as whole wheat, brown rice, oatmeal, can help prevent diseases

Always

Majority of the time

About half the time

Rarely

Never

4. I eat breakfast

Never

1-2 days per week

3-4 days per week

5-6 days per week

Everyday

5. I eat according to calorie amount

Always

Majority of the time

About half the time

Rarely

Never

6. My meals contain a variety of fruits and vegetables

Always

Majority of the time

About half the time

Rarely

Never



7. I eat only if I am hungry and I stop when I am full

Always

Majority of the time

About half the time

Rarely

Never

8. I have made changes to my diet based off of something I saw/ read on social media

Always

Majority of the time

About half the time

Rarely

Never

Demographics:

1. What is your age?
2. What is your gender?
  - a. Male
  - b. Female
  - c. Prefer not to say
3. What is your ethnicity? [[scroll down]]
4. Education level

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