

1-18-2019

Association of Dietary Intake with Suicidal Ideation or Suicide Attempts in Adolescents

Zenobia J. Bryant

Association of Dietary Intake with Suicidal Ideation or Suicide Attempts in Adolescents

Zenobia Bryant, PhD

Problem

Adolescent suicide in the United States continues to be a significant cause of death and an increasingly important public health issue. The effect of **poor dietary habits** upon suicidal ideation and suicide attempts is not well understood. If inadequate dietary intake is a risk factor for suicidal ideation in adolescents, then interventions and mental health practitioners may need to focus on building healthy eating habits early in life so that positive eating behaviors will continue into adulthood.

Purpose

The purpose of this retrospective, cross-sectional study was to determine whether fruit and vegetable intake influences suicidal ideation or suicide attempts in adolescents.

Significance

Most of the research conducted regarding the relationship between dietary intake and mental health has focused on adults.

The studies conducted using an adolescent population have been done using participants residing outside the United States.

Very few research studies have focused on the association between dietary intake and suicidal ideation or suicide attempts.

Legislatures, educators, parents, and other stakeholders can use the knowledge from this study for guidance and direction in creating policies that can positively influence the mental health of adolescents.

Social Change Implications

A decrease in suicidal ideation and suicide attempts will increase the quality of life

Theory or Framework

Social cognitive theory (Bandura, 1999) emphasizes the interaction of personal, behavioral, and environmental influences on human behavior. Three of the 9 central concepts are important to highlight: **reciprocal determinism, outcome expectations, self-efficacy**, as they relate to efforts to improve diet and intake of essential nutrients (Chung, 2017; Diep et al., 2014; Thomson & Ravia, 2011).

Relevant Scholarship

Adolescence is a period when children transition into adulthood and lifestyle habits are developed (Cavadini et al., 2000; Yim, 2015). Progression through the adolescent period is also associated with an increased risk of suicidal ideation, suicide attempt, and completed suicide (McLoughlin et al., 2015; Miranda et al., 2014).

Diet and nutrition play an essential role in some of the pathophysiological factors of depressive illness (Allgöwer, Wardle, & Steptoe, 2001; Bodnar & Wisner, 2005; Brody, 2002; Liu, Yan, Li, & Zhang, 2016). In fact, the consistent, daily intake of 1 - 2 servings of fruit and the consumption of 2 green vegetables is significant in decreasing the risk of depression (Kim et al., 2015)

A Western diet may increase the odds of an individual self-reporting depression (Jacka et al., 2010). Intake of fruits and vegetables is a central component lacking in the Western diet. Fruits and vegetables are important because they provide sources of fiber and other nutrients necessary for healthy growth and development (Farvid et al., 2016; Kimmons et al., 2009). Unfortunately, very few adolescents consume the recommended intake of fruits and vegetables.

Research Questions

RQ1: Controlling for confounding variables, is there a relationship between the intake of fruits and vegetables and suicidal ideation in adolescents?

RQ2: Controlling for confounding variables, is there a relationship between the intake of fruits and vegetables and suicide attempts in adolescents?

Participants

The final sample size was 71,776 students in grades 9-12 residing in the U.S. The sampling strategy used was the three-stage cluster sample design (CDC, 2013).

Procedures

Data were obtained from the CDC's **Youth Risk Behavioral Surveillance Survey** (YRBSS) conducted between 2007 and 2017.

The independent variable was dietary intake of fruit and vegetables, defined as the sum of how many times participants ate fruit, green salad, potatoes, carrots, and other vegetables in the past 7 days.

The dependent variables for this study were suicidal ideation and suicide attempts, defined as seriously considering or planning suicide and attempting suicide in the past 12 months.

The confounding variables were age, sex, race, and depression.

Analysis

Hypothesis testing was conducted using complex samples logistic regression.

Findings

These findings indicate that the higher an adolescent's fruit and vegetable intake per week, the greater the odds of suicidal ideation and suicide attempts were.

Variable	Odds Ratio	95% Confidence Interval	
		Lower	Higher
Considered Suicide	1.019	1.010	1.028
Planned Suicide	1.027	1.016	1.037
Attempted Suicide	1.066	1.053	1.078

Interpretation

The results of this study were contrary to previous findings. Perhaps, experiencing withdrawal symptoms due to dietary changes, explains why the participants in this study with a higher intake of fruits and vegetables had greater odds of experiencing suicidal ideation and suicide attempts.

Limitations

Dietary measure of fruit and vegetable intake did not include unhealthy eating habits; measures of caloric intake; or a distinction between the different types of fruits and vegetables.

I did not account for socioeconomic status and cultural preferences in food choices.

Study was retrospective in nature and did not include random assignment into groups or experimentally controlled levels of dietary intake.

Recommendations

Recommendation for future research includes:

- Replicate with a more diverse sample.
- Replicate with close attention to other dietary components.
- Replicate accounting for socioeconomic status and cultural preferences.
- Replicate controlling for BMI.
- Conduct a longitudinal Study.
- Regulate dietary intake in children in order to avoid activating the dopaminergic "reward effect".

Acknowledgements

I would like to acknowledge **Sri Banerjee** (chair), **Zin Htway** (committee member), and **Scott McDoniel** (URR member).