

Relationships between Dietary Behaviors and Suicidal Ideation among Korean Adolescents

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Abstract

The purpose of this study was to identify the dietary behaviors and suicidal ideation and to examine relevance between the dietary behaviors and suicidal ideation among Korean adolescents. This study conducted with a secondary data analysis using the Ninth Korea Youth Risk Behavior Web-based Survey 2013 in South Korea. The study participants selected 72,435 Korean adolescents who were recruited through the national web-based survey. Data were analyzed using descriptive statistics and logistic regression analysis. As the result of multiple logistic regressions, suicidal ideation was significantly associated with breakfast, fruit, carbonated beverages, fast food, ramen, and confectionery intake. Findings of this study show that it is important to consider dietary behaviors in order to improve the mental health status of Korean adolescents. It leads to a conclusion that effective nutrition interventions should be offered for Korean adolescents.

Keywords: Adolescent, Dietary Behavior, Suicidal Ideation

1. Introduction

Between childhood and adulthood, adolescence stage is very important. The physiological changes occurring are extensive, and have an impact on adolescent's psychosexual, psychosocial, and cognitive development. Most of adolescence experience rapid physical changes that frequently lead to confusion concerning personal identity and body image. So, they engaged in many risk-taking behaviors that the annual physical examination for adolescents was a opportunity for primary care providers to offer preventive service such as to counsel adolescents about abuses, depression, suicide, and violence, as well as to determine to risks for pregnancy, cigarette smoking, and use of drugs, but assessments of dietary behaviors were poor¹.

Also, adolescence is a time rapid growth, these physical changes mean increased nutritional needs. Failure to consume an adequate nutrition at adolescence stage can delay secondary sexual development and also balanced nutrition during this time to help prevent adult diet-related chronic diseases, such as cardiovascular disease, cancer, osteoporosis². But they prefer snack foods

that are easy to prepare, popular with their peers, and often full of empty calories³ and Yim HR⁴ was household characteristics are influence on skipping diets, BMI negatively. Fast food calories were weighted, animal fats and protein food was the problem of excess and disparity of nutrition and diet period associated with lifetime health to young people, considered a risk factor for health⁵. And, skipping breakfast from adolescent's bad eating habit was impeding learning ability and concentrating on impacts, adolescent nutrition to support the desired in diet, what formation was more important. To promote mental and physical health and help prevent disease the future direction of food production should be towards greater production of high protein, high water content, high fiber, high potassium-low sodium chloride, bioavailable nutrient-rich brain food, for example, DHA, EPA, I, Fe, Cu, Zn, and Se-aquatic food⁶. And a proper amount of stress life keep ours going well, but between stress and dietary was significantly associated, lower stress group showed lower rate of skipping breakfast, more affordable meal time, and better snacking habit, and higher intake of calcium, vitamin B2 than the stress group⁷.

Adolescents may experience stress due to feelings

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of overwork, future, and it is highly linked with the depression mood that lead to reduce a quality of life, to be associated with suicidal ideation⁸. Suicidal ideation refers to thoughts of harming or killing oneself, and suicide among the adolescents has emerged as a significant global public health problem, one of the leading causes of death than the traffic accident, cancer. The risk factor for adolescent suicide and suicidal behavior with the mental and physical disorder, personality and psychological traits, family factors, biology, contagion, access to lethal agents, clinical management⁹. Depression was the most commonly identified predictor for both suicidal ideation and attempts, substance use predicted suicidal ideation in some studies¹⁰, diet and nutrition modulate the pathophysiological factors underpinning mental illness, and there are plausible reasons for examining the potential role of diet in mental health¹¹. However, nearly as many studies found no association between dietary behaviors.

Therefore, the purpose of this study was to examine relevance between the dietary behaviors and suicidal ideation among Korean adolescents, in order to provide the baseline data to develop the intervention program in relation to healthy dietary behaviors of Korean adolescents.

2. Study Methods

This study conducted with a secondary data analysis using the Ninth Korea Youth Risk Behavior Web-based Survey 2013 in South Korea¹². The study participants selected 72,435 Korean adolescents who were recruited through the national web-based survey. Data were analyzed using descriptive statistics and logistic regression analysis.

3. Results

3.1 Characteristics of Subjects

Table 1 showed the characteristics among 72,345 subjects in this study. The gender exclusively showed male adolescents were 52.3% and female adolescents, 47.7%. The grade level of the subjects consisted of 48.7% middle school students, 51.2% high school students. The level of the school achievement showed 10.9% high, 23.7% medium-high, 28.1% medium, 24.9% medium-low, 12.4% low. The types of the living arrangement were 96.1% living with family, 1.0% living with relatives, 2.5%

boarding or living in a dorm, 0.5% living in a care facility. The areas of living were 6.9% country, 49.1% middle and small city, 44.0% big city. The family affluence scales were 11.3% low, 51.7% medium, 37.0% high.

Table 1. General Characteristics of Korean Adolescent

N = 72,345		
Variables	n	Weighted %
Gender		
Boy	36,655	52.3%
Girl	35,780	47.7%
Grade Level		
Middle school 1st grade	12,199	16.2%
Middle school 2nd grade	12,113	16.0%
Middle school 3rd grade	12,218	16.5%
High school 1st grade	12,028	17.1%
High school 2nd grade	11,865	16.9%
High school 3rd grade	12,012	17.2%
School Achievement		
High	7,942	10.9%
Medium-high	17,053	23.7%
Medium	20,148	28.1%
Medium-low	18,107	24.9%
Low	9,185	12.4%
Living Arrangement		
Living with family	69,006	96.1%
Living with relatives	776	1.0%
Boarding, living in dorm	2,250	2.5%
Living in care facility	403	.5%
Living Area		
County area	8,858	6.9%
Middle and small city	31,037	49.1%
Big city	32,540	44.0%
Family Affluence Scale		
Low	8,541	11.3%
Medium	37,767	51.7%
High	26,127	37.0%

3.2 The Effect of Dietary Behaviors on Mental Health

Prevalence of suicidal ideation was 16.6% in this study. 13.4% of participants did not have breakfast. 9.9% of participants did not have fruit at all for a week. 73.5% of participants ingested carbonated beverage more than once or twice a week. 69.4% of participants ingested fast food more than once or twice a week. 72.9% of participants

Table 2. The Effect of Dietary Behaviors on Mental Health Status in Korean Adolescent

N=72,345

Variables	n	Weighted %	Odds Ratio*	Confidence Interval
Suicidal Idea				
No	60,365	83.4%		
Yes	12,070	16.6%		
Dietary Behaviors				
Breakfast Intake				
None	9,808	13.4%	1.208	1.134-1.287
1 times/week	4,242	5.9%	1.212	1.110-1.324
2 times/week	5,267	7.2%	1.311	1.213-1.417
3 times/week	5,300	7.2%	1.262	1.165-1.368
4 times/week	4,414	6.0%	1.303	1.196-1.420
5 times/week	7,877	10.7%	1.210	1.131-1.294
6 times/week	6,771	9.5%	1.064	.985-1.149
7 times/week	28,756	40.1%	1.000	
Fruit Intake				
None	7,351	9.9%	1.320	1.165-1.495
1-2 times/week	23,244	31.1%	1.056	.935-1.193
3-4 times/week	20,740	28.8%	.937	.830-1.057
5-6 times/week	7,350	10.5%	1.018	.891-1.163
1 times/day	7,553	10.8%	.995	.876-1.130
2 times/day	3,723	5.4%	1.050	.916-1.203
≥3 times/day	2,474	3.5%	1.000	
Carbonated Beverages Intake				
None	7,351	26.5%	1.000	
1-2 times/week	23,244	48.0%	1.664	1.389-1.988
3-4 times/week	20,740	17.2%	1.408	1.174-1.692
5-6 times/week	7,350	4.2%	1.316	1.087-1.592
1 times/day	7,553	2.0%	1.309	1.048-1.634
2 times/day	3,723	.9%	1.364	1.033-1.799
≥3 times/day	2,474	1.2%	1.704	1.425-2.041
Fast Food Intake				
None	22,638	30.6%	1.000	
1-2 times/week	40,354	56.3%	1.326	0.922-1.905
3-4 times/week	7,305	10.1%	1.105	0.768-1.587
5-6 times/week	1,234	1.7%	0.972	0.664-1.425
1 times/day	493	.7%	1.024	0.676-1.550
2 times/day	183	.2%	0.949	0.592-1.520
≥3 times/day	228	.3%	1.357	0.944-1.949
Ramen Intake				
None	19,422	27.1%	1.000	
1-2 times/week	36,364	50.4%	1.842	1.321-2.571
3-4 times/week	12,839	17.5%	1.667	1.196-2.320
5-6 times/week	2,450	3.3%	1.335	0.947-1.880
1 times/day	902	1.2%	1.250	0.862-1.815
2 times/day	191	.3%	0.999	0.642-1.555
≥3 times/day	267	.4%	1.873	1.344-2.611

Variables	n	Weighted %	Odds Ratio ^a	Confidence Interval
Confectionery Intake				
None	12,771	17.9%	1.000	
1-2 times/week	31,228	43.3%	1.656	1.340-2.041
3-4 times/week	19,620	26.9%	1.555	1.258-1.927
5-6 times/week	4,937	6.7%	1.346	1.085-1.669
1 times/day	2,527	3.3%	1.389	1.096-1.761
2 times/day	799	1.1%	1.181	0.905-1.541
≥3 times/day	553	.8%	1.548	1.245-1.923

ingested ramen more than once or twice a week. 82.1% of participants ingested confectionery more than once or twice a week. As the result of multiple logistic regression, suicidal ideation was significantly associated with breakfast, fruit, carbonated beverages, fast food, ramen, and confectionery intake Table 2.

4. Conclusion and Discussion

Adolescents may experience a variety stress due to feelings of overwork, future, peer stress, and it is highly linked with the depression mood that lead to reduce a quality of life, to be associated with suicidal ideation, but the successful transition from adolescence to adult hood was marked by the acquisition of competence in decision-making responsibilities and sense of accountability for their action¹³, so recently it was emphasized the balanced nutrition diet and nutrition modulate associated physical and mental health in adolescent, the role of nutrition was recognized not simply though to the composition of foods and the effect of diets on health, to management regimens utilizing diet therapies¹⁴.

The results of this study suggested that, suicidal ideation was significantly associated with breakfast, fruit, carbonated beverages, fast food, ramen, and confectionery intake in Korean adolescents. The habit of skipping breakfast was particularly in adolescents, was found to be inversely associated with increasing BMI, overweight¹⁵. The factor of causes in skipping breakfast was the recent increase in the economy and standard of living, nuclear families, youth's sense of structure change, rising educational levels, women and employment. And eating habit of carbonated beverages and fast food, ramen appeared to play a critical role in obesity, to reduce a quality of life and life expectancy. Furthermore, breakfast consumers ate fewer sweet diet and fast food. Above all, Adolescent stage was a sensitive in a body image, body

image dissatisfaction was highly prevalent, affecting more than 80 percent of women, it had been consistently found to be an important risk factor for mental illness, disordered eating behaviors, depression¹⁶. It was noticed a necessary balanced diet, like this, vitamins, minerals, and dietary fibers. Recently evidence suggested the World Health Organization considers mental health problems to a main issue in adolescence, thus identifying factors contributing to mental health problems, a link dietary patterns, mainly red meat and confectionary food, higher intake of fruits and green vegetables was associated with better mood and cognition in adolescents¹⁷.

Otherwise, it is important to consider dietary behaviors in order to improve mental health status of Korean adolescents. Poor nutritional quality is associated with symptoms of internalizing behaviors, represently depressive symptoms, anxiety, leading to suicidal ideation. Some studies provided evidence supporting the consume breakfast, and particularly a healthy, high protein diet to lead a long-term reductions in hunger feeling and to increas in perceived fullness, so to keep a normal weight continously. Importance of adequate nutrition for brain development was also related to depression in adolescents, it reported that cognitive behavioral health promotion intervention including fruit and vegetable lead to decrease the initiation of negative health behavior, including smoking and alcohol use.

The results of this study were supported would provide valuable information and baseline data to develop a adolescences health program. The limitation the finding of this study, derived from a representative sample in Korea adolescents, not including several variables associated with suicidal ideation, like a routine mealtime, preference food, chance of eating maked in house. Recently some of studies shows that sex, grade, stress, depressive symptom, violence experience, educational background of parents, and economical status were associated with suicidal

ideation¹⁸ and evidence-based approaches that include family in the treatment of a young man who was suicidal include attachment-based family therapy and cognitive behavior therapy for suicide prevention¹⁹. However, currently it is focused family-centered intervention programs for suicide prevention.

Further, this study suggested that we evaluated the effectiveness of preventive intervention program to reduce suicide ideation, it was necessary revised adolescences health empowerment program including adolescence balanced nutrition dietary habit.

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