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Picky Eating in Relation to Avoidant/Restrictive Food Intake Disorder

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Picky Eating in Relation to Avoidant/Restrictive Food Intake Disorder in High School Students

By Zoe Falcone

Abstract:

Eating disorders, like Avoidant/Restrictive Food Intake Disorder (ARFID), are rooted in food phobias, the fear of eating or trying new foods. Some eating disorders go unrecognized in childhood because a child's aversion to food is usually labeled as "just Picky Eating." While this diagnosis is true for a lot of cases, there are many where the Picky Eating persisted into adolescence and adulthood and only got worse with time. A 4-point Picky Eating in Relation to Avoidant/ Restrictive Food Intake Disorder questionnaire was created and given to a handful of teachers who assigned the survey to their online classrooms. Here students could complete the survey virtually and all results were automatically calculated into percentages in the google forms program. Each participant's answers were manually converted to numbers and transferred to a graph where total scores were calculated. Final scores for each sub score were run through SPSS programming to get the group statistic, correlation analysis, and results for the independent samples t-test. All three subscales showed a strong positive correlation, this supported the hypothesis because if someone scored high for Picky Eating they also scored high for ARFID.

Statement of Purpose:

The purpose of this study is to potentially determine if children who do not outgrow picky eating or have severe Picky Eating are at a higher risk of developing ARFID; as well as discern what the predictors of being a picky eater are and how they relate to ARFID.

Introduction:

Many children go through phases of picky eating or selective eating. However, this refusal to eat may escalate into a worsened condition. It is thought that if children who do not outgrow picky eating or suffer from severe picky eating may be at a higher risk for eating disorders such as Avoidant/Restrictive Food Intake Disorder (NEDA, 2018). When Avoidant/Restrictive Food Intake Disorder (ARFID) was introduced into the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), a handbook used by professionals for the diagnosis of mental disorders, in May of 2013. ARFID had been previously known as Selective Eating Disorder. There is limited research on this disorder and even less about adults and adolescents that suffer from this type of restrictive eating disorder.

Avoidant/Restrictive Food Intake Disorder (ARFID) is a restrictive eating disorder characterized by lack of interest in food, avoidance based on sensory characteristics of food or concern about the unpleasant consequences of eating (I.e. choking, vomiting, etc.). This disorder presents as constant failure to meet appropriate nutritional and energy needs, significant weight loss or failure to meet expected weight, significant nutritional deficiency, dependence on nutritional supplements and/or enteral feeding, and/or significant interference in psychosocial functioning (Feillet, 2019). It is thought that pressure from parents to eat, high disgust sensitivity, negative experience with food, and picky eating behavior may be stressors for ARFID (Feillet, 2019).

There are various nutritional, gastroenterological, and psychiatric symptoms associated with ARFID. Some gastroenterological symptoms could be poor weight gain or growth, low or underweight, poor appetite, abdominal pain, acid reflux, and/or nausea. Feeding disorders are often comorbid with other psychiatric disorders, such as, anxiety disorders, Autism Spectrum Disorders, and Attention Deficit Hyperactivity. The psychiatric symptoms that are associated with these disorders and ARFID are obsessive compulsive disorders, emetophobia, food neophobia, and/or choking phobia (Feillet, 2019). The nutritional risks and symptoms of Avoidant/Restrictive Food Intake Disorder vary in severity from person to person. The usual risks are significant or profound vitamin deficiencies, anemia, and disturbances in plasma/folates. In severe cases, malnutrition can be life threatening and cause complications like degeneration of the spinal cord and degeneration of the muscles as well as other severe health complications (Feillet, 2019).

After evaluation there are different medical and psychological treatments for Avoidant/ Restrictive Food Intake Disorder (ARFID). Depending on the severity of a patient's condition, treatment can span between an outpatient multidisciplinary team (medical provider, mental health clinician, dietician, pediatric gastroenterologist, occupational therapist, and/or speech pathologist), to inpatient medical hospitalization in more severe cases (Brigham, 2018). If a patient becomes medically unstable, certain measures are taken to ensure healthy nutrition. Depending on the extent of the patient's state they may require oral nutritional supplements, nasogastric tube feeding, or gastrostomy tube feedings. The treatment goal is to gain stable nutritional levels via oral intake. It can take some time in inpatient or day treatments settings under close supervision to wean off tube feeding. If a patient isn't medically compromised then other programs may be warranted like outpatient psychotherapy, intensive outpatient treatment, or day treatment eating programs (Brigham, 2018). Psychological treatment can last between 20 to 30 sessions depending on degrees of nutritional compromise. Intervention structures around exposure therapy targeting main issues like sensory sensitivity, fear of aversive outcomes, and lack of interest in food and eating. Unfortunately, there aren't any approved psychotropic medications that can treat ARFID specifically, but some medications can be used to treat certain symptoms like anxiety and cognitive rigidity (Brigham, 2018).

This disorder is similar to Anorexia Nervosa in limitations on what is eaten, but sufferers with Avoidant/Restrictive Food Intake Disorder (ARFID) are not concerned about body shape/size or fears of being overweight (Nicely, 2014). Sufferers with ARFID are more likely to be younger, have a lower weight, and have an already existing psychiatric disorder (e.g. Anxiety Disorders, Mood Disorders, Personality Disorders, Psychotic Disorders, and Post Traumatic Stress Disorder) than those with Anorexia Nervosa (Keery, 2019). People who have ARFID are also mostly male; this could be due to the fact that patients with this eating disorder are not concerned about being overweight or have a negative body image, and mostly limit their eating based on food sensitivity. People with this disorder are at higher risk for comorbid anxiety disorders and other psychiatric disorders (Tharner, 2015). However, according to Keery they are less likely to suffer from depression. Additionally, patients who suffer with Avoidant/ Restrictive Food Intake Disorder usually do not manifest the same degree of bradycardia and hypotension seen in Anorexia patients. This may be because ARFID patients have been underweight for a much more extended period of time allowing their bodies to develop a level of homeostasis (Brigham, 2018).

It is thought that Avoidant/Restrictive Food Intake Disorder (ARFID) is significantly related to picky eating. Picky eating has been found to be characterized by high food pickiness, slowness when eating, and less satiety responsiveness in conjunction with low enjoyment of food and low food responsiveness (Tharner, 2015). In the study done by Tharner in 2015, it was also found that picky eaters had a lower intake of vegetables, but higher intake of savory snacks at fourteen months of age. They were also more likely to be under average weight at four years old. These findings may prove that there is an overlap between the two conditions when the results from Dovey, 2019 are examined. Dovey characterized ARFID by low body weight, slowness in eating, and low food responsiveness when compared to children with Autism Spectrum disorder and Picky eating, as well as a typically developing group for comparison. It is seen here that there are more similarities than differences between picky eating and Avoidant/Restrictive Food Intake Disorder.

One main prediction in the present experiment was that there were specific predictors to picky eating like gender, open-mindedness, outlook on body image, sensory issues, and willingness to attend social functions. The second prediction in the present study was that people who are severe picky eaters or do not grow out of picky eating are at higher risk for developing the eating disorder Avoidant/Restrictive Food Intake disorder. This was thought to be true because the longer someone lives with disordered eating the more solidified in their mind it becomes, and untreated disorders worsen overtime.

Methodology:

This study uses a four-point survey to examine the predictive factors of Picky Eating and how they relate to an eating disorder called Avoidant/Restrictive Food Intake Disorder (ARFID). The questions in this survey were hoped to confirm the hypothesized predictors and their relation to and how they influence ARFID.

➤ Setting and Participants—

The setting of this experiment was New Paltz Central High School in New Paltz, New York. The survey was given to all grade levels (Freshmen, Sophomores, Juniors, and Seniors). All participants are aged roughly 14-18 years. Each grade level has roughly 100-150 students and the average student to teacher ratio is 19 to 1. There were four high school teachers participating in this study. Due to the recent outbreak of Covid-19 all high school classes were moved to online and the school was closed. In response the current questionnaire was recreated in Google Forms and sent to participating teachers, who in turn assigned it to their students on Google Classroom. 146 students participated and completed the survey. Of the 146 participants 62.8% (91) were female, 35.2% (51) were male, 1.4% (2) were non-binary, and 0.7% (1) preferred not to say what their gender was. In terms of grade level 11.7% (17) participants were freshmen, 20% (29) were sophomores, 39.3% (57) were juniors, and 29% (42) were seniors.

➤ Assessment and Measures—

This study uses an anonymous questionnaire that was given out to New Paltz high school students. The survey asked questions about the predictive factors of Picky Eating like outlook on own body image, open-mindedness, willingness to attend social functions, gender, and sensory issues. The next section of the survey asked questions relating to the symptoms of Picky Eating. The third section asked questions about the warning signs and symptoms of Avoidant/Restrictive Food Intake Disorder. All together this was a 4-point survey with 1 being “not at all”, 2 being “not really”, 3 being “somewhat”, 4 being “very much”. The completed survey included a combination of questions from other eating behavior questionnaires that had been modified to better fit the experiment at hand. Some questions weren’t taken from surveys and instead were created based on Picky Eating criteria, as well as the diagnostic criteria and symptoms of ARFID. Questions such as “do you refuse to eat new foods when you are introduced to them?” examined a participant's open-mindedness to trying new foods. There were also three background questions that asked if a participant had ever been considered a picky eater, if they ever considered themselves a picky eater, or if they thought they had any tendencies towards ARFID (after it was explained what ARFID was).

➤ Data Analysis—

The data analysis portion was done by creating three subscales to determine whether Picky Eating, along with predictors of Picky Eating, in combination, significantly predict tendencies toward Avoidant/Restrictive Food Intake Disorder (ARFID). The questions were divided into three groups: Predictors of Picky Eating, Picky Eating, and ARFID. Within these subscales all reverse score items (questions where numerical scoring runs in the opposite direction) were reversed. After getting back the completed surveys, a correlation analysis was made with the three subscales to determine how closely related they are to one another. Correlation analysis was done by collecting the total scores for each participant, and then observing how close the score is for each group. This was done by running an Independent Means t-test, a statistical test that examines whether means from two different samples are significantly different from one another. From this it could be seen which subscales had a direct relation; and how they were related in terms of positive or negative correlation.

Results:

➤ Independent Samples t-test

The Independent Samples t-test examines the averages of two independent groups to determine if the scores are significant and relevant. In this Independent Samples t-test, the Predictive Factors subscale p score was lower than 0.5 making the scores for this group relevant. However, the Picky Eating and ARFID subscales had p values slightly above 0.5 meaning the scores from this group could be by chance. This shows that the odds of the Predictive Factor's scores to be by chance are slightly lower compared to the Picky Eating and Avoidant/ Restrictive Food Intake Disorder subscales.

Independent samples t-test:

	Mean difference
Predictive Factors	1.12885
Picky Eating	.28830

ARFID	.38074
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Table 1

➤ Group Statistics

For the group statistics the mean and standard deviation of the data were calculated and put into a table. The Predictive Factors subscale, data showed that female participants scored slightly higher (M= 13.2857 SD= 3.71868) than males (M= 12.1569 SD= 3.5951). For the Picky Eating subscale females had a slightly higher mean score and slightly lower standard deviation score (M= 11.5824 SD= 3.50576) than male participants (M= 11.2941 SD= 4.00647). For the third subscale, Avoidant/ Restrictive Food Intake Disorder, female participants had a slightly higher mean score and slightly lower standard deviation score (M= 13.4396 SD= 3.90501) than the male participants (M= 13.0588 SD= 4.07633). However, there were only slight, not significant differences in the gender scores.

Group Statistics:

	Gender	Mean	Standard Deviation
Predictive Factors	1 (female)	13.2857	3.71868
	2 (male)	12.1569	3.59651
Picky Eating	1	11.5824	3.50576
	2	11.2941	4.00647
ARFID	1	13.4396	3.90501
	2	13.0588	4.07633

Table 2

➤ Correlation Analysis

A correlation analysis examines the strength of the relationship between two variables. In Table 3 the correlations between the three subscales (Predictive Factors, Picky Eating, and ARFID) are

shown. Predictive Factors and Picky Eating have a strong positive correlation ($r(146) = .666, p < .05$). Predictive Factors and ARFID also have a strong positive correlation ($r(146) = .705, p < .05$). The Picky Eating and ARFID subscales have a strong positive correlation ($r(146) = .699, p < .05$). All three subscales had an r value close to 1 meaning they have a strong positive correlation with each other. If someone scores high on one subscale, they will also score high on the other two subscales. Similarly, if someone scores low on one subscale, they will most likely score low on the other two subscales as well.

Correlations:

	Predictive Factors	Picky Eating	ARFID
Predictive Factors	1	.666	.705
Picky Eating	-	1	.699
ARFID	-	-	1

Table 3

Discussion:

Picky Eating and Avoidant/Restrictive Food Intake disorder (ARFID) have many overlapping symptoms and diagnostic criteria. Children usually go through phases of Picky Eating and ultimately grow out of it. However, when that is not the case Picky Eating devolves overtime and can develop into an eating disorder called Avoidant/Restrictive Food Intake Disorder (ARFID). ARFID is an eating disorder characterized by lack of interest in food, avoidance based on sensory characteristics of food or concern about the possible negative consequences of eating. It is a restrictive eating disorder that can manifest in many ways. Avoidant/Restrictive Food Intake Disorder can present as not meeting energy and nutritional needs, significantly low weight or never meeting expected weight averages, significant nutritional dependency that requires taking nutritional supplements or other treatments that would create nutritional stability, and disturbance in psychosocial functioning. The present experiment aimed to determine what the possible predictors of picky eating were and if they were also related to ARFID. From this it could be distinguished how closely related the two disorders are.

According to the main prediction in the present experiment there are specific predictors to picky eating like gender, open-mindedness, outlook on body image, sensory issues, and willingness to attend social functions. The findings from this survey supported the hypothesis that Picky Eating, along with predictors of Picky Eating, in combination, significantly predict tendencies toward Avoidant/Restrictive Food Intake Disorder (ARFID). Results were calculated using an Independent Samples t-test in SPSS program. This test showed that the p score for the Predictive Factors subscale was below 0.5 which means the scores for this group were relevant. However, the Picky Eating and ARFID subscales had p values slightly above 0.5 meaning the scores from this group could be by chance.

Results from the group statistics and correlations were also analyzed. From the analyses it is seen that there are strong and significant positive correlations between all three subscales. The group statistic showed that females scored slightly higher on average than males for all three subscales and had slightly lower standard deviation scores than males on the Picky Eating and Avoidant/Restrictive Food Intake Disorder subscales. What this means is that there is more variation in the male scores and contrary to the hypothesis, females scored higher on each subscale. The correlation analysis was represented in table 3. This demonstrated that all three subscales had an r value close to 1, meaning they have a strong positive correlation with each other. Having a strong positive correlation meant that if a person scored high on one subscale, they also scored high on the other two subscales. Similarly, if someone scored low on one subscale they also scored low on the other two subscales.

Working in the middle of a global pandemic was not much of a setback but it did affect when the survey was able to be administered and the number of participants. Looking back, more questions about anxiety surrounding meal times should have been included in the questionnaire; seeing as how anxiety and depression are common comorbid diagnosis of eating disorders. It's possible that picky eating can be confirmed as a pre cursor for ARFID and there for be taken more seriously instead brushed off as just picky eating.

Conclusion:

Avoidant/Restrictive Food Intake Disorder (ARFID) can be easily treated if caught early on in childhood, and if the patient is willing to undergo treatment. The predictive factors here (Gender, outlook on body image, willingness to attend social functions, open mindedness, and sensory issues) are supported to be true by the results of this experiment, meaning there is a significant overlap or relationship between Picky Eating disorder and ARFID; and the ability to distinguish Picky Eating and ARFID in adolescents may be easier and can be diagnosed quicker. Furthermore, since Picky Eating may be a precursor for ARFID then it can be recognized and treated at an earlier stage before the disorder can progress further; potentially seriously impairing someone's social, mental, and physical functioning. However further experimentation is needed to support this claim.

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