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Relationships Between Eating Disorders, Depression and Suicidal Tendencies Among Adolescent Girls from Arab Society

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Abstract

This study aimed to find the possible links between eating disorders among adolescents and the dimensions of depression and suicidal tendencies, as reported by them. The sample consisted of 200 adolescents from Arab society in the north of Israel. The research tools included a socio-demographic questionnaire; the Eating Attitudes and Behaviors Questionnaire; the Beck Depression Inventory; and the Multidimensional Suicidal Tendencies Questionnaire for Adolescents. Findings suggest a positive relationship between eating disorders and depression and suicidal dimensions among female adolescents, and a significant relationship between eating disorders and the attraction and repulsion toward life. In addition, female adolescents reported very high levels of attraction to life and repulsion to death; namely, participants reported very low levels of attraction to death and medium-scale repulsion to life. A positive relationship was also found between the dimensions of depression and suicidal tendencies among the participants. Additional findings indicate that underachiever adolescents reported lower levels of depression and higher levels of attraction to life, compared with the average achievement teenagers. The obvious conclusion is that, since depression is the main predictor of suicidal tendencies among teenagers, rather than focusing on the consequences of depression, we should focus on the causes of depression and treat them.

Keywords: *Eating Disorders, Depression, Suicide, Adolescents, Arab Society*

INTRODUCTION

Adolescence typically involves many changes and challenges. This period is considered problematic and stressful by many adolescents, who find it difficult to cope with social and academic expectations. These difficulties manifest in sadness and irritability, but it is essential to differentiate between these phenomena and depression, which is a mental disorder for all intents and purposes (Duckworth et al., 2010; Mullarkey et al., 2019).

Eating disorders and overweight cause significant dysfunction, decreased quality of life, and difficulties in social adaptation. The frequency of eating disorders has been steadily increasing, especially among girls (Bisset et al., 2019; Galmiche et al., 2019). In our competitive society, we are all exposed to a double message: on one hand, emphasis on physical appearance and slimness, and on the other hand, constant temptation to try the abundance of available food. Eating disorders are an expression of the difficulty to balance the two.

The research literature describes the prevalence of unhealthy dietary habits during adolescence and young adulthood that could cause eating disorders (Bisset et al., 2019), recurrent depression disorder and its consequences, diagnosis and treatment of adolescent depression (McArthur et al., 2019), the frequency of suicide among children and adolescents, the predictors of suicidal tendencies, theories and models of suicide among adolescents, and gender differences in the issue of adolescent suicide (Soor et al., 2012; Stewart et al., 2017).

The following research literature indicates that many varied factors are at the root of depression and suicide tendencies among adolescents and young adults, whereas the potential effect of eating disorders on these outcomes is not directly documented (Bohon, 2019). Eating disorders mainly stem from low self-image and body-image among girls (Terhoeven et al., 2020), and it seems there is a relationship between their perception of their bodies and a certain degree of depression, which could include a suicide risk or tendency. Therefore, this study has set out to explore the possible relationships between eating disorders among adolescent girls from Arab society and depression and suicidal tendencies, as reported by them.

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Eating Disorders

Eating disorders are defined as behavioral conditions characterized by severe and determined disturbance in eating, targeted at losing weight in a way that significantly harms physical and mental functioning. Eating disorders are psychological disorders that cause patients a great deal of pain and suffering (Erskine & Whiteford, 2018), and are a form of self-destructiveness (Bjorck, 2006) that seriously threatens the patient's life. Types of eating disorders include anorexia nervosa, bulimia nervosa, binge eating disorder, avoidant restrictive food intake disorder, other specified feeding and eating disorder, pica and rumination disorder. The mortality rate due to anorexia nervosa is 6% of all patients (Costa-Font & Jofre-Bonet, 2011). People who suffer from eating disorders are characterized by significant deviations from the norm on a number of measures: mood disorders, considerably low self-image, problems with social relationships, various attitudes to sexual issues, impulsivity control, self-perception, body image, in addition to general psychopathology (Bisset et al., 2019; Pilecki & Jozefik, 2008; Terhoeven et al., 2020).

It should be noted that the main differences between those who suffer from eating disorders and so-called healthy people are their measures of emotional nuances and attitudes to sexuality. Therefore, people with eating disorders can lead quite normative lives, whether functioning in the family, achieving educational goals, or their self-regulation abilities (Pilecki & Jozefik, 2008). On a clinical level, it is very difficult to treat eating disorders, because these people have very little motivation to approach professionals and treat themselves, most commonly due to fear of losing control and gaining weight. Hence, these patients' low self-image satisfactorily explains the difficulty to treat their eating disorders (Bjorck, 2006; Marzilli et al., 2018).

One of the most researched issues related to eating disorders is the complexity of causes and reasons at the root of weight-gaining, which include gender (Kesten et al., 2013; Ma et al., 2014), culture (Latzer et al., 2019; White et al., 2021), and environment (Berge et al., 2013). Notably, regarding sexuality, gender nonconforming adolescents are at greater risk to be unhappy with their bodies and develop eating disorders (Donaldson et al., 2018). It is no wonder that the number of overweight children in schools is increasingly rising. Because of how overweight is perceived in society, it causes not only somatic problems, but also emotional and social problems among children, who are often mocked and even bullied.

The reason to address the issue of eating disorders among adolescents is the increase in weight-gaining rates due to lack of physical activity and over-consumption of fatty, high-sodium fast foods. Overweight youths today are unhealthy adults in the future. In recent years, it seems that adolescents all over the world are gaining weight (Ma et al., 2014). Eating disorders are, at present, one of the main concerns of public health systems throughout the world. Faulty nutrition predicts significant health risks that include cardiovascular diseases, certain types of cancer (Gillison et al., 2014), obesity, hypertension, dyslipidemia, diabetes, and strokes. It was found that male adolescents aged 14-15 are at high risk of cultivating eating habits classified by DSM-5 criteria (Bisset et al., 2019). More so, pre-adolescent girls between the ages 7-11 could be at high risk of negative effects on future fertility (Kesten et al., 2013). In addition, overweight can cause low self-image among boys and girls, being labelled 'fat' and other insulting and offensive descriptions by their peers (Terhoeven et al., 2020). This labelling often brings young girls to a reverse situation such as anorexia, which often involves hospitalizations, medical treatments, family-based treatment (Singh et al., 2018), dyadic therapy (Dor-Haim et al., 2019), and even psychological or psychiatric interventions such as cognitive behavioral therapy (CBT) (Craig et al., 2019). These disorders could also include depression and suicidal tendencies.

Suicidal Thoughts and Behaviors

The research literature has acknowledged that suicidal ideation (thoughts) and behaviors among children and adolescents are an important public issue (Skinner & McFaull, 2012). Most definitions of suicide maintain that it is an action of self-harm intended to cause death, and is an act of one's will (Katz-Shiban, 1995). Avrami (2001) quoted the sociologist Émile Durkheim's definition that "the term suicide is applied to all cases of death resulting directly or indirectly from a positive or negative act of the victim himself, which he knows will produce this result". Suicide is defined by the reason that causes it, so that according to Soor et al. (2012) it is the result of social exclusion. Three separate terms are common in this field of study: suicide – which means self-inflicted death, suicide attempt – which means an unsuccessful act intended to cause one's own death, and suicidality –

which includes both suicide and suicide attempt, and could end up in severe physical and mental harm, and even permanent disability (Tikva & Mei-Ami, 1995). However, none of these definitions supplies an answer to the many questions that arise when attempting to separate the various motivations that bring people to a state of taking their own lives. So that the question whether a terminally ill person or a prisoner of war who does not want to divulge military secrets are the same as a person who is unable to deal with day-to-day difficulties – remains unanswered. Therefore, Shemesh (2003) expanded the definition of suicide to "any instance in which a person, intentionally and knowingly, ends his life by his own hand or by proxy, whatever the circumstances and reasons are" (p. 1).

As of 2008, suicide was the second leading reason for the death of young people (aged 10-34) in Canada (Skinner & McFaull, 2012). Between the years 2000 and 2008, about 20,000 Canadian citizens committed suicide, including about 1,500 adolescents (aged 11-19) (Soor et al., 2012), or 500 adolescents aged 15-24 (Kostenuik, 2010). As of 2001, suicide was the third cause of death of young people aged 10-19 in the US (Lubell et al., 2004). During the years 1992-2001, there was an insignificant decrease in suicides among 10-19-year-olds in the US from 6.2 to 4.6 cases per 100,000 adolescents (Lubell et al., 2004). It seems that age might moderate findings that impulsivity has an important role in suicide attempts (Stewart et al., 2017). Suicide is twice as common among boys than among girls (Soor et al., 2012). In this context, it was found that bullied girls exhibited lesser suicide thoughts between adolescence and young adulthood, whereas male bullies during the same period showed more suicidal tendencies. Bullying during adolescence is a strong predictor of suicidal behavior and self-harm (Sigurdson et al., 20180. It was also found that early-onset tobacco use related to suicidal behaviors in young adulthood, especially among women (Latvala et al., 2018). But we should differentiate between these phenomena and depression, which is essentially a mental disorder (Duckworth et al., 2010).

Depression

Depression is one of the most distressing mental disorders among children and adolescents but mainly among adults (Stark et al., 2012). Depression is defined as a mental disorder characterized by episodes of sadness and despair accompanied by low self-image, and loss of interest and pleasure in activities once enjoyed, for a period of at least two weeks (American Psychiatric Association (APA), 1994, 2013). Depression is a severe health problem that affects people of all ages including children and adolescents (Ralph, 2004), as well as their families (Brent et al., 2012). An episode of major depression lasts at least two weeks and includes at least five of the following symptoms: sleep disorders (especially many hours of sleep), lack of interest and pleasure in activities once enjoyed, lack of interest in friends, appetite changes, loss of energy, irritability and sadness, concentration problems, helplessness, hopelessness and self-blame, slow physical movement, complaints about physical pain, and suicidal ideation (Duckworth et al., 2010). Depressive symptomatology is related particularly to biased memory of self (Smith et al., 2018). Clinical and diagnostic characteristics are similar among adults and adolescents. Adolescent depression can be viewed as one of the manifestations of adult depression, because of its tight link to recurrence later in life (Thapar et al., 2012).

The negative effects of depression on the adolescent population have become increasingly evident (Jaycox et al., 2008). It seems that the hidden structure of cognitive vulnerability to depression in adolescence is on a continuum of severity rather than a separate clinical entity (McArthur et al., 2019). The frequency of depression among children increases as they grow older, and is significantly more common among girls than among boys (Thapar et al., 2012). The statistics show that one of every four teenagers (25%) suffers from some degree of depression (Black Dog Institute, 2012). 5% of all adolescents suffer from major depressive disorder, whereas 8.3% experience depressive symptoms for at least one year, as opposed to 5.3% of the general population. 30% of adolescents who suffer from depression develop dependency on some form of addictive substance (alcohol, drugs, etc.) (Buckley, 2010). In Israel, 17.3% of adolescents have reported serious suicidal thoughts (After & Haruvi, 2006).

The rate of 8.3% adolescents with depressive symptoms can skyrocket to 11.2% among 13-17-year-olds. And, whereas the numbers of boys and girls who suffer from depression at a young age are similar, the rate of adolescent girls is three times as much as adolescent boys (Stark et al., 2012). About 8% of adolescents will suffer from some degree of depression. Depression is an episodic disease with a tendency to recur with

additional episodes, while each episode increases the risk of another one (Duckworth et al., 2010). Moreover, the chances that children with depression under the age of ten will continue to suffer in adolescence and adulthood are higher compared to children with no depressive symptoms (Ranøyen et al., 2015). In recent years, it has become important to investigate emotion-regulation processes that link peer victimization to anxiety and depression symptoms in adolescence (Adrian et al., 2019).

Adolescent depression can be the cause of changes in normative behavior, deficient academic functioning, damaged communication with the environment, concentration problems, lack of appetite, physical neglect, profound self-criticism, sense of unworthiness and helplessness, overreaction to criticism, unwillingness to be in this world (Buckley, 2010), insomnia and sleeplessness for long periods (Brent et al., 2012), hyper-irritability, suicidal ideation (Ralph, 2004), loss of contact with peers (Black Dog Institute, 2012), and dangerous sexual behaviors (Turner et al., 2011). Depression causes changes in mood, sleep patterns and energy, as well as cognitive changes. Also, depression affects the sense of meaning of life, enjoyment, self-harm' social isolation (Buckley, 2010), frequent absenteeism from school (Ralph, 2004), and low academic achievements (Brent et al., 2012). Finally, it can bring to suicide, which is the number one cause of death among 15-24-year-olds who suffer from depression (Black Dog Institute, 2012).

Rationale, Research Questions, And Hypotheses

The rationale of this study is the great importance of early identification and treatment of youths who show signs of depression and suicide intentions (Kostenuik, 2010), with emphasis on reducing risk factors, on one hand, and increasing protective factors, on the other hand (Blum & Ireland, 2004). Also, it should be noted that most extant research was performed on Western populations, with very few among adolescents in Arab society (Melisse et al., 2020). An important contribution of this study is to enrich the literature on this topic. Consequently, the main research question was: Is there a relationship between eating disorders and depression and suicidal intentions among female adolescents in Arab society in Israel?

The literature has indicated many varied issues at the root of depression and suicide ideation among adolescents and young adults, but the potential effect of eating disorders has not been directly documented. Eating disorders stem mainly from low self- and body-image among girls, and we assumed that there was a relationship between these perceptions and some degree of depression, which could entail a risk and tendency to suicide. We attempted to examine the possible relationships between eating disorders among Arab female adolescents in northern Israel and measures of depression and suicide intentions as reported by them.

The following research questions were derived from this rationale:

Is there a relationship between eating disorders among Arab female adolescents and their depression?

Is there a relationship between eating disorders among Arab female adolescents and their suicidal tendencies?

Is there a relationship between depression levels among Arab female adolescents and their suicidal tendencies?

Does depression mediate between Arab female adolescents' eating disorders and their suicidal tendencies?

Consequently, the following hypotheses were formulated:

H1: A positive relationship will be found between eating disorders among Arab female adolescents and their depression – so that the more severe their eating disorders are, the deeper their reported depression is.

H2: A positive relationship will be found between eating disorders among Arab female adolescents and their suicidal tendencies – so that the more severe their eating disorders are, the higher their reported levels of suicide tendencies are.

H3: A positive relationship will be found between depression levels among Arab female adolescents and their suicidal tendencies – so that the deeper their reported level of depression is, the higher their suicidal tendencies are.

H4: Depression will mediate between eating disorders among Arab female adolescents and their suicidal tendencies.

METHOD

Sample

The participants included 200 female adolescents from Arab society in Israel, approached through convenience sampling. Table 1 presents the participants' sociodemographic data.

Table 1. Sociodemographic data of participants (N=200).

Variable	Categories	N	%
Age (in years)	15	56	28
	16	53	26.5
	17	43	21.5
	18	48	24
Religion	Muslim	96	48
	Christian	60	30
	Druze	44	22
Academic achievement	Below average	45	22.5
	Average	83	41.5
	Above average	72	36
Parents' income	Below average	45	22.5
	Average	88	44
	Above average	67	33.5
Place in family	Firstborn	70	35
	Second	62	31
	Third or more	68	34

The table shows that the age range of the girls was between 15 and 18. Most reported average academic achievements, and average parents' income.

Tools

a. Sociodemographic questionnaire: Includes variables as age, religion, academic achievement, parents' income and place in family.

b. Eating Attitudes Test (EAT-26) (Garner & Garfinkel, 1979): This self-report questionnaire examines a wide range of behaviors and attitudes related to eating disorders. The test includes 26 items on a Likert scale of 0-3, and is divided into three categories: 1. *Dieting* – avoidance of fattening foods and preoccupation with losing weight (statements 1, 6, 7, 10, 11, 12, 14, 16, 17, 22, 23, 24, 25). For example, "I'm aware of the calorie content of foods that I eat". 2. *Bulimia* – features of bulimic behavior and obsessive preoccupation with food (statements 3, 4, 9, 18, 21, 26). For example, "I have gone on eating binges where I feel that I may not be able to stop". 3. *Anorexia* – Self-control of food consumption and perception of pressure to gain weight (statements 2, 5, 8, 13, 15, 19, 20). For example, "Other people think that I am too thin". The score is calculated as the total of all the answers (3=always, 2=usually, 1=often, 0=sometimes, 0=rarely, 0=never). A score of over 20 points indicates abnormal eating behavior. Internal reliability (Cronbach's α) = .70.

c. Beck Depression Inventory (BDI-II) (Beck et al., 1996): A self-report questionnaire that assesses the level of depression among sick and diagnosed adolescents and adults, and is used to confirm suspicion of depression in the normal population. The questionnaire includes 21 items, each consisting of a list of four statements that relate to a certain aspect of depression. Respondents are asked to mark the statement that best describes their feeling during the last week. The scores were between 0-3. The score total indicates: 0-9=normal, no symptoms; 10-18=slight depression; 19-29=medium depression; and 30-63=severe depression. The authors reported internal reliability .92 for clinical patients and .93 from non-clinical examinees.

d. Multidimensional Suicidal Tendencies Questionnaire for Adolescents (Or-Bach, 1987) is based on the conception that suicidal behavior is determined by the interaction between four forces – attraction to life, repulsion to life, attraction to death, and repulsion to death. The questionnaire includes 30 items on a Likert scale of 1=*completely disagree* to 5=*completely agree*.

Attraction toward life scale: relates to the degree to which one's life is enjoyable and fulfilling (items 1, 5, 6, 13, 18, 19, 25, 29). Cronbach's α=.83.

Repulsion toward life scale: encompasses emotional and physical experiences of suffering (items 2, 9, 14, 15, 16, 21, 30). Cronbach's α=.67.

Attraction toward death scale: includes a variety of cultural and religious beliefs about death that can act as motivation for death (items 8, 17, 22, 23, 26, 27, 29). Cronbach's α=.76.

Repulsion toward death scale: relates to the degree to which death invokes anxiety and fear that serve as a barrier against intentional death such as suicide (items 3, 4, 10, 11, 12, 20, 24). Cronbach's α=.83.

Procedure

The researchers approached three middle- and high-schools in the Arab sector in the north of Israel, explained the aims of the present research and the academic framework in which it was being conducted, and requested permission to retrieve the appropriate sample. The requests were approved. The researcher went to each school on a separate day, met with the class educators, and asked for their cooperation distributing and collecting the questionnaires. The class educators received the questionnaires, distributed them to the students with the necessary clarifications, and informed the students that participation was voluntary and for research purposes only. The girls who decided to participate were assured full anonymity. The received data was encoded for future analysis.

FINDINGS

The distribution of the participants' eating disorders is presented in Table 2.

Table 2. Distribution of eating disorders (N=200).

Type of disorder	N	%
No disorder	66	33
Diet	101	50.5
Bulimia	3	1.5
Anorexia	30	15

About one third (66) of the adolescents did not suffer from any eating disorder, 101 (50.5%) were on diets, 30 reported anorexia, and three reported bulimia. The most common eating disorder was extreme dieting that did not go as far as bulimia or anorexia.

The distribution of the participants by levels of depression is presented in Table 3. Over 70% of the adolescents in this study suffered from medium or severe depression.

Table 3. Distribution of participants by level of depression (N=200).

Level of depression	N	%
Normal	35	17.5
Light	22	11
Medium	65	32.5
Severe	78	39

Examination of hypotheses

The first three hypotheses (H1, H2, H3) postulated relationships between the variables. Table 4 summarizes the correlations between the various research variables.

Table 4. Pearson correlations between the research variables (N=200).

Variable	Attraction to life	Repulsion to life	Attraction to death	Repulsion to death	Depression
Entire scale of disorders	-.42***	.48***	.05	.02	.65***
Diet	-.36***	.42***	.009	.02	.58***
Bulimia	-.26***	.29***	.11	.07	.43***
Anorexia	-.15*	.14*	.01	-.04	.16*
Depression	-.74***	.78***	.11	.01	

*p<.05; **p<.01; ***p<.001

A significant negative relationship was found between eating disorders and attraction to life (r=-.42, p<.001), and a significant positive relationship between eating disorders (diet, bulimia, anorexia) and repulsion toward

life (r=.48, p<.001). A significant positive relationship was found between eating disorders and depression (r=.65, p<.001). A significant negative relationship was found between depression and attraction to life (r=-.74, p<.001), and a significant positive relationship between depression and repulsion toward life (r=.78, p<.001). No significant relationships were found between eating disorders and attraction or repulsion toward death, or between depression and attraction or repulsion toward death.

Next, to examine the fourth hypothesis (H4) that depression would mediate between eating disorders among Arab female adolescents and their suicidal tendencies, we first performed a linear regression (see Table 5). The data show that the only variable that predicts suicidal tendencies is depression, with an explained variance of 55.9% (B=-1.35, t=-12.97, p<.001), which means that H4 was not corroborated. In other words, the only predictor of suicidality among the adolescents was depression, but not eating disorders of any kind.

Table 5. Linear regression of relationships between eating disorders, depression, and suicidal tendency (N=200).

Variable	B	SD	β	t	R^2
Eating disorders	.29	.17	.10	1.72	.559
Depression	-1.35	.10	-.81	-12.97***	

***p<.001; Dependent variable: suicidal tendency

To establish the differences between the adolescents on eating disorders, depression and suicidal tendencies – by their sociodemographic variables, we performed an ANOVA test. The results showed a significant difference in levels of depression (F=3.79, p<.05) and attraction to life (F=5.63, p<.001) between adolescents with different academic achievements. No differences were found for depression or attraction to life by any other variable (religion, place in family, parents' income, or age). See Table 6.

Table 6. Distribution of differences between participants on eating disorders, depression and suicidal tendencies by sociodemographic characteristics (N=200).

Variables	Eating disorders	Depression	Attraction to life	Rejection of life
Religion	2.69	.81	1.76	.40
Academic achievement	1.33	3.79*	5.63**	2.30
Place in family	.92	.80	.82	.69
Parents' income	.14	.01	.33	.04
Age	.65	.36	.18	.63

*p<.05; **p<.01

To examine the source of the differences in the distribution by academic achievement, we performed a Tukey test. Table 7 presents the results. We found a significant difference (p<.05) in the levels of depression reported by participants with average achievements (M=1.47, SD=.81) compared to participants with below average achievements (M=1.08, SD=.67). Also, a significant difference (p<.01) was found for attraction to life reported by girls with average achievements (M=2.76, SD=1.27) versus girls with below average achievements (M=3.53, SD=1.23). In other words, adolescents with below average academic achievements reported lower levels of depression and higher level of attraction to life than adolescents with average achievements.

Table 7. Tukey test of source of differences in depression and attraction to life between participants with various achievement levels (N=200).

Variable	Achievement	Mean	SD	Significance
Depression	Average	1.47	.81	.01
	Below average	1.08	.67	
Attraction to life	Average	2.76	1.27	.003
	Below average	3.53	1.23	

DISCUSSION

The purpose of this study was to examine the possible relationships between eating disorders among female Arab adolescents and measures of depression and suicide tendencies, as reported by them. The sampling method was a convenience sample, because of the availability of the sample. Nevertheless, the representability of the sample to the general population can be argued, because of the diversity of the sociodemographic aspects.

The first hypothesis (H1), which proposed that a positive relationship would be found between eating disorders among Arab female adolescents and their depression, was supported. Namely, the more severe their eating disorders were, the deeper their reported depression was. This hypothesis is in line with the literature. One of the more widely researched aspects of eating disorders is the numerous factors at the root of overweight, including gender aspects (Kesten et al., 2013; Ma et al., 2014), eating habits (Kenney et al., 2014), and environment (Berge et al., 2013). It is no wonder that the number of overweight children at school is rising steadily. Because of how obesity is perceived in society, it causes not just somatic problems, but also emotional and social problems. Overweight and obese children are ridiculed and often bullied. Adolescents and young women might perceive that adopting an intense diet regime could bring swift weight-loss results, and they thus significantly improve the insecurity and discomfort they feel among their peer group (Costa-Font & Jofre-Bonet, 2011). It should be noted that the participants' main eating disorder was dieting (rather than bulimia or anorexia), probably because the food culture in Arab society prevents severe situations in which young women become bulimic or anorexic (Melisse et al., 2020). The cultural differences between various populations and groups are at the root of potential self-image differences between people who suffer from various types of eating disorders and healthy people in general (Pilecki & Jozefik, 2008; Sfeir et al., 2021).

The second hypothesis (H2), that a positive relationship would be found between eating disorders among Arab female adolescents and their suicidal tendencies, was partially corroborated. Only the relationship between eating disorders and attraction/repulsion toward life was found to be significant. The respondents reported very high levels of attraction toward life and repulsion toward death, very low levels of attraction toward death, and a medium level of repulsion toward life. These results are most likely due to the participants' belonging to Arab society, in which suicide is considered an irredeemable sin (Sfeir et al., 2021). Suicide among children and adolescents has many varied associations. One factor at the root of suicide ideation and attempts is the erratic mood fluctuations of youths and adolescents (Shahnaz & Klonsky, 2020). In addition, aggressive and impulsive behavior disorders increase suicide rates among adolescents, as do psychopathological disorders such as anxiety, borderline personality disorder and other psychosomatic symptoms (Ranta et al., 2017). Depressive states among children and youths can create negative situations of suicide ideation (Duffy et al., 2021; Saltzman et al., 2006). Tikva and Mei-Ami (2005) listed the factors that are typical of adolescent suicide attempts: increased access to suicide means such as drugs and weapons; psychiatric disorders, affective disorders and mainly clinical depression are more common among adolescents. Personal features could explain an individual's inclination to commit suicide, but cannot explain suicide as a social phenomenon.

Katz-Shiban (1995) quote Durkheim (1897) who maintained that suicide rates of various social groups are related to two factors – one, cultural (i.e., value structure) and two, social (i.e., the basis of the social relationships between individuals and their environment). Or-Bach (2001) proposed a theoretical model that links the individual's mental state and self-destructive behavior, clarifying the range of factors and variables at the core of suicidal behavior. Research has postulated that suicide and suicide attempts are not related solely to a specific mental state, and that factors at the core of clinical depression (such as a sense of being unloved or unhappy, a desire to punish one's surroundings, and parental loss) increase suicidal tendencies. Among men, one could add interpersonal conflicts, unemployment, legal problems, declining employment status, and business-related stress. Among women and girls, it is mainly feelings of hopelessness and disinterest in life, social isolation, lack of self-control, loss of personal freedom, lack of communication with significant others, an oppressed childhood, and rejection by parents or spouse (Erskine & Whiteford, 2018; Katz-Shiban, 1995).

The third hypothesis (H3), that a positive relationship would be found between depression levels among Arab female adolescents and their suicidal tendencies, was partially substantiated, because significant relationships were found only between depression and attraction/repulsion toward life. First, it should be clarified that the participants in this study reported a medium level of depression. These findings are in line with the literature concerning the increasing recognition of the negative effects of depression on adolescents (Jaycox et al., 2008; Pharris et al., 2023). The frequency of depression among children increases the older they get, and depression is significantly more frequent among girls (Thapar et al., 2012). Statistics indicate that one of every four adolescents (25%) suffers from some degree of depression (Black Dog Institute, 2012). 5% of all adolescents suffer from major depression, whereas 8.3% of adolescents experience symptoms of depression for one year

at least as opposed to 5.3% of the general population. 30% of the adolescents who suffer from depression develop some form of substance abuse (alcohol, drugs, etc.) (Buckley, 2010). In Israel, 17.3% of adolescents report serious suicidal thoughts (After & Haruvi, 2006). The rate of adolescent girls who suffer from depression is three times that of boys (Stark et al., 2012). About 8% of adolescents will suffer from some degree of depression sometime during adolescence. Depression is an episodic illness, with a tendency to recur, and each episode increases the risk for more such episodes (Duckworth et al., 2010).

The partial corroboration of H3 is in line with the literature, which contends that adolescent depression can cause changes in normative behavior, academic malfunction, communication problems with others, problems with concentration, lack of appetite, neglect of appearance, harsh self-criticism, a sense of worthlessness and helplessness, unwillingness to be in this world (Buckley, 2010), sleep disruption and insomnia for extended periods (Brent et al., 2012), heightened irritability, suicidal ideation (Pharris et al., 2023; Ralph, 2004), and suicide – the main cause of death among 15-24-year-olds who suffer from the syndrome (Black Dog Institute, 2012).

The fourth hypothesis (H4), that depression would mediate between eating disorders among Arab female adolescents and their suicidal tendencies, was refuted. In other words, the only predictor of suicidal tendencies among the participants was depression, but not eating disorders of any kind. This finding is in line with the literature, which determined that depression among adolescents is one of the main risk factors of suicide (Thapar et al., 2012). Depression among adolescents requires diagnosis and treatment; otherwise, its consequences could be devastating for adolescents (Duckworth et al., 2010). Therapy encourages the patients to examine their negative thoughts, urges them to take action, and reinforces their personal success in dealing with daily challenges (Spijker et al., 2020). Most mental problems of adolescents are undiagnosed and, therefore, untreated. Adolescent depression is actually harmful to all of society, because it is a syndrome that encompasses many negative behaviors such as alcohol or drug abuse (Buckley, 2010). It should be noted that suicidal behavior expresses a wide range of behaviors from suicidal thoughts to actual actions that end in death (Weissblei, 2012). According to the psychoanalytic approach, suicide is explained as an individual's ambivalent depressive reaction to loss, which is affected by personal factors and various life events. The frustration that accompanies loss exposes the individual's aggressive side, but the aggression is directed inwards towards oneself rather that outwards to others (Katz-Shiban, 1995). One of the most significant causes of depression among adolescents is their low self-image (Ranøyen et al., 2015). Not only does a poor communication style between adolescents and their parents increase the former's risk of depression, but especially the communication style with the mother can produce the negative outcome of suicide tendencies (Stark et al., 2012).

Other findings of this study indicated that adolescent girls with less than average academic achievements reported lower levels of depression and higher levels of attraction to life compared to their counterparts with average achievements. The reason is that adolescence involves many changes and challenges, and is considered a problematic and stressful period by many adolescents who find it hard to cope with the various social and academic expectations. This difficulty often causes sadness and irritability, but we must differentiate it from depression, which is a mental disorder (Duckworth et al., 2010). Young people who had tried repeated suicide attempts were characterized by a relatively low education level compared to non-repeating adolescents, and a troubled family background. In many cases, they had alcoholic parents, had experienced many problems at school, and were often unemployed. Their self-esteem was very low, they felt helpless, and they were more hostile, depressive and isolated that non-repeating suicide attempters (Katz-Shiban, 1995). The experience of total failure is very dominant in creating a state of mind that leads to suicide. There are many types of failure. One type that children encounter at a young age is related to coping with an unsolvable problem. Such a situation is severe, and could be fatal, for the adolescent, because it creates a residue not just of failure and loss of self-worth, but also of guilt and helplessness (Or-Bach, 1993).

The findings have steered the researchers to three main conclusions: 1. It is important to examine the reasons that led the adolescent girls to eating disorders, so that the problem itself rather than just the symptoms is treated; 2. Families and schools should cooperate to prevent a situation in which eating disorders deteriorate and become active suicidal attempts; and 3. Because depression is the main predictor of suicide attempts among adolescent girls, it would be right to focus on the causes of depression and not necessarily its implications.

LIMITATIONS

First, the sampling method was convenience sampling. One of its key shortcomings is lack of representability. In other words, we cannot say unequivocally that the present sample represents the entire population of Arab adolescents in Israel, and cannot provide external validation of our findings. Second, the correlative research method indicates relationships and correlations between the variables, but not causality. That is to say, we cannot determine that the adolescents' suicidal tendencies were caused by depression. Nor can we determine the direction of the relationship between the variables; namely, depression might be the precursor of eating disorders rather than the other way around. Third, this study focused on a small part of possible reasons for adolescents' suicidal tendencies, ignoring many other variables that were reported in the literature.

CONTRIBUTION

First, research has indicated that adolescents' low self-image is at the root of their eating disorders. As such, it is necessary to instill a school culture that promotes and improves the girls' self-image in a way that helps them accept themselves as they are, and forgo extreme diets that could cause depression. Second, the significant relationship found between eating disorders and attraction/repulsion toward life means that it is possible that the adolescents develop suicidal tendencies according to the characterization of their eating disorder. Since the main eating disorder was dieting, it manifested in only these two measures of suicidal tendencies. We believe that if the eating disorders were more extreme, the suicidal tendencies would match. Third, the study highlights the need for an inclusive intervention program to treat the problem; namely, to stop suicidal tendencies from becoming actual suicide. An informed intervention program should include psychological, sociological and cultural elements. Each adolescent population has unique characteristics, whether cultural or religious, and requires an appropriately adapted intervention, which should include stakeholders from various sectors with a direct affinity to the population's culture.

FUTURE RESEARCH

Based on this study, we recommend possible future research. For example, an additional study that includes a more representative sample of female Arab adolescents, to provide external validity of the findings. Also, a study that examines the various factors at the root of the adolescents' suicidal tendencies through qualitative research based on characterization of interviews, which could provide first-hand information on these factors. Furthermore, additional quantitative research could serve two main goals – to examine the mediating and moderating effects of other variables on the Arab adolescents' suicidal tendencies, and to examine the causality of these relationships.

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