Clinical Psychiatry
ISSN: 2471-9854

Open access Research Article

The Mediating Role of Emotional Distress in the Relationship between Differentiation of Self and the Risk of Eating Disorders among Young Adults

Ora Peleg[1*], Meyran Boniel-Nissim[2], Orna Tzischinsky[3]

Department of Education, The Max Stern Yezreel Valley College, Emek Yezreel, Israel

ABSTRACT

Background: The prevalence of eating disorders (EDs) is on the rise among male and female young adults. Given that most studies have focused on adolescents and that there is a lack of research regarding EDs among young adults, the current study aimed to examine this age group. In addition, based on findings indicating that emotional distress may increase the risk of EDs, and that it is associated with differentiation of self (DoS), the main goal of the current study was to investigate whether emotional distress mediates the relationship between DoS (emotional reactivity, I-position, emotional cut off, fusion with others) and the risk of EDs.

Methods: A sample of 421 non-clinical participants was recruited to fill out questionnaires. Preliminary analyses examined differences between males and females using t-tests. In addition, Pearson correlations were run to examine the association between background variables and the study metrics among both males and females. Due to a gender moderation effect, two mediation models were examined, one for women and one for men, using path analysis.

Results: Young adult women reported higher levels of risk for developing EDs than young adult men. Among women, emotional distress mediated the relationship between three metrics of DoS (emotional reactivity, I-position, fusion with others) and three metrics of EDs (drive for thinness, bulimic tendencies, and body dissatisfaction). Among men, similar associations were found, except for fusion with others which was not found to be associated with emotional distress.

Conclusion: It is concluded that DoS may increase the risk of EDs through the mediation of emotional distress. It appears that people with a high risk of EDs have difficulties maintaining intimate relationships. When they feel overwhelmed, they rarely share their feelings and stick to their thoughts. The results are consistent with Kerr and Bowen's Family Systems Theory that suggests that DoS dimensions rooted in early family experiences impact one's mental and physical health.

Trial registration: Retrospectively registered.

Keywords: Eating disorders; Differentiation of self; Emotional distress; Emerging adulthood

INTRODUCTION

The prevalence of eating disorders (EDs) is on the rise among male and female young adults. There is evidence that emotional distress is associated with the risk of EDs and with differentiation of self (DoS). Therefore, the main goal of the current study was to investigate whether emotional distress mediates the relationship between DoS (emotional reactivity, I-position, emotional cut off, fusion with others) and the risk of EDs. Due to a gender moderation effect, two mediation models were ex-

Received:	30-May-2022	**Manuscript No:**	IPCP-22-13688
Editor assigned:	01-June-2022	**PreQC No:**	IPCP-22-13688(PQ)
Reviewed:	15-June-2022	**QC No:**	IPCP-22-13688
Revised:	20-June-2022	**Manuscript No:**	IPCP-22-13688(R)
Published:	27-June-2022	**DOI:**	10.35841/2471-9854-8.6.144

Corresponding author Ora Peleg, Department of Education, The Max Stern Yezreel Valley College, Emek Yezreel, Israel; E-mail: orap@yvc.ac.il

Citation Ora P, et al., Boniel-Nissim M, Tzischinsky O (2022) The Mediating Role of Emotional Distress in the Relationship between Differentiation of Self and the Risk of Eating Disorders among Young Adults. Clin Psychiatry. Vol.8.6:144

amined. Findings showed that, among women, emotional distress mediated the relationship between three metrics of DoS (emotional reactivity, I-position, fusion with others) and three metrics of EDs (drive for thinness, bulimic tendencies, and body dissatisfaction). Among men, similar associations were found, except for fusion with others which was not associated with emotional distress. It is concluded that DoS may increase the risk of EDs through the mediation of emotional distress. The results are consistent with Kerr and Bowen's Family Systems Theory that suggests that DoS dimensions rooted in early family experiences impact one's mental and physical health.

Eating disorders (EDs) are defined by the Diagnostic and Statistical Manual of Mental Disorders 5th Edition (DSM-V) as illnesses characterized by severe disturbances in eating behaviors. According to the DSM-V, the following EDs are recognized: anorexia nervosa, bulimia nervosa, binge eating disorder, and other not-specified eating disorders as distinct disorders within this group [1].

It appears that EDs have been on a steep rise in the last five decades and that the percentage of women suffering from EDs is higher compared to men of all ages [2]. Thus, the incidence of EDs among males and females is 10:3 during adolescence and 20:1 in young adults [3,4]. Although EDs are more common among women, epidemiological studies indicate that the prevalence of men at high risk of EDs has increased in recent years [5] and that many similarities have been found between men and women in risk factors for EDs [6]. Yet, it should be noted that the number of men who are reported to have EDs is lower than the actual number, as the social and gender stigma associated with EDs may cause some to deny the presence of symptoms [7].

Most studies investigating EDs have focused on adolescents (e.g., 2). Recently it was observed that the incidence of EDs in the period of young adulthood had risen sharply [8]. Moreover, young adults' treatment needs are less well met than adolescents' [8,9]. However, there is a paucity of research examining the risk factors of EDs in this age group. Examining the factors that increase the risk of developing EDs in both women and men in young adulthood may be the key to understanding and treating EDs during this age group.

One of the main risk factors of EDs is emotional distress. People who suffer from emotional distress (i.e., stress, anxiety, and depression) are more vulnerable to developing EDs [6,10]. Individuals with high levels of disordered eating attitudes and behaviors have been found to be highly avoidant of emotions, reporting higher levels of sensitivity and intensity to emotional arousal [11]. Thus, for example, one of the negative consequences among people suffering from depression is the development of problematic or pathological thinking and behavior regarding eating [12].

As claimed by Kerr and Bowen [13], who led the Family Systems Theory, emotional distress may stem from family patterns acquired in childhood, affecting intrapersonal and interpersonal functions. They suggested that one of the main patterns is Differentiation of Self (DoS), a personality and family focal pattern passed down from generation to generation and has a significant influence on the development of individuals' emotional and physical health. DoS are expressed on two levels: The interpersonal level describes the ability to balance intimacy and autonomy. The intrapersonal level taps the ability to balance the rational and emotional realms when coping with stressful situations. It includes four metrics: emotional reactivity, I-position, emotional cut off, fusion with others. People who are poorly differentiated tend to be overwhelmed when dealing with stressful situations (i.e., emotional reactivity) and have difficulty expressing their thoughts and feelings and sticking to their desires (i.e., I-position). When emotionally overwhelmed, they try to decrease their anxiety either by disengaging physically and emotionally without facing the difficulty (i.e., emotional cut off) or by creating dependent and symbiotic relationships (i.e., fusion with others).

There is evidence that poorly differentiated people are likely to suffer from high levels of emotional distress [14,15]. These results suggest that low levels of DoS may lead to misinterpretation of stressful situations that can increase mental distress, self-doubt, and depression. In turn, this can lead to distorted self-perception; channel the feelings to extreme weight or eating [16], and increase eating pathologies aimed at improving body image [12]. However, only a few studies have examined the relationship between DoS and EDs. For example, DoS was found associated with EDs in samples of male college students [17] and adolescents [10].

A low level of DoS was found to increase vulnerability to emotional and physiological pathologies by increasing susceptibility to psychological distress among adolescents [6], young adults [18] and adults [14]. However, there is no evidence that emotional distress mediates the relationship between DoS and the risk of EDs among young adults to the best of our knowledge. The sharp increase in the risk of EDs among people in this age group raises the need to examine this issue.

Therefore, the current study was conducted among young adults. Studies have indicated a significant change in how developmental psychologists understand the transition from childhood to adulthood [19]. Historically, it was assumed that adulthood is achieved at the age of 18 [20]. However, due to social and economic changes, many of the critical milestones of adulthood (e.g., marriage, parenthood and homeownership) are being reached much later than in previous decades [19]. According to Arnett [21], the transition to adulthood is characterized by changing feelings and multiple experiences that young people try to explore before deciding about a clear and cohesive way of life. In addition, there is evidence that they face emotional, interpersonal, and familial challenges during this period and often suffer from various emotional disorders, one of which is EDs [8].

Taken together, the findings suggest that DoS may increase vulnerability to EDs by increasing susceptibility to emotional distress among young adults. Thus, and given the evidence of associations between EDs and emotional distress, as well as between emotional distress and DoS, the primary purpose of this study is to map the complex relationships between the risk of EDs, emotional distress and DoS among young adults. Therefore, it is reasonable to hypothesize that emotional distress (stress, anxiety, depression) will mediate the relationship between DoS (emotional reactivity, I-position, emotional cut off, and fusion with others) and risk of EDs (drive for thinness, bulimic tendencies, body dissatisfaction, and perfectionism). In addition, based on findings indicating a higher risk of EDs

among females [4], we aimed to examine whether there are gender differences in the research indices as well as in the mediation model.

MATERIALS AND METHODS

The main goal of the current study was to test the mediating role of emotional distress in the relationship between DoS and the risk of EDs among both genders in young adulthood. For this purpose, we used a cross sectional analysis design

Participants

A cluster sampling of 421 non-clinical participants was recruited from 2018-2019 in two colleges located in northern Israel. Questionnaires were given to undergraduate students in education, economics, social work, and computers departments. Inclusion criteria were young adults with married parents (or living together). Three hundred nineteen were female (75.8%) and 102 male (24.2%). Participants' mean age was 27.32 (SD=5.40), and the BMI ranged from 15.42 to 39.45 (M=23.68, SD=4.01). 173 subjects lived with their parents (41.1%), and 173 lived with a spouse. Seventy-five participants lived alone (17.8%).

Research Instruments

A personal information questionnaire: was specifically constructed for the present study. This questionnaire includes background information, e.g., religion, age, gender, weight, height.

The eating disorder inventory-2 (EDI-2): Garner DM is one of the most widely used self-report questionnaires for assessing eating disorder pathology among Western populations [22]. The EDI-2 is a multidimensional instrument with demonstrated utility for clinical and non-clinical purposes [23]. It is not intended to be used as a diagnostic instrument but rather provides a profile of specific clusters of symptoms commonly found among individuals with eating disorders. The EDI-2 contains 91 items, which are rated on a six-point scale, and 11 sub-scales. Based on previous studies [4], the current study included four must significant sub-scales tapping EDs: Drive for Thinness (DT); Bulimic Tendencies (B); Body Dissatisfaction (BD); and Perfectionism (P). The EDI-2 has been found to be a valid and reliable instrument in a wide range of different settings and has been translated into many other languages, including Hebrew [24]. In the current study, the alpha correlations were Drive for Thinness (α=0.80); Bulimic Tendencies (α=0.86); Body Dissatisfaction (α=0.89); and Perfectionism (α=0.76)

Differentiation of self-inventory revised: Differentiation of Self Inventory Revised (DSI-R) [25,26] was translated into Hebrew by Peleg [27]. The questionnaire includes 46 items that examine relationships in general and in the family of origin. The questionnaire contains four scales: emotional reactivity, I-position, emotional cut off, and fusion with others. A sample item: "People claim I'm too emotional" (emotional reactivity). A high score means low DoS in all scales, whereas, in the I-position scale, a high score means high DoS. The answers are rated on a Likert scale from 1 (completely incorrect) to 6 (completely true). The mean score ranges from 1 to 6. The internal reliability of the questionnaire in the current study is good: for emotional reactivity, it is 0.87, for I-position 0.85, for emotional cut off 0.73, for fusion with others 0.81. Item 37 in fusion with others was excluded due to low internal consistency (0.66).

The depression anxiety stress scales (dass-21): The Hebrew version of DASS-21 has been validated. This measure was translated and adapted into Hebrew, and the Cronbach's alpha for the scale was .90 [28]. It includes three sub-scales, depression (7 items), anxiety (7 items) and stress (7 items). Sample item: "I felt that life was meaningless" (depression). Scores are summed such that higher scores indicate more depression, anxiety, or stress. In the present study, we used the total score of DASS because there were very strong relationships between the three metrics, stress, anxiety, and depression. Factor analysis for the three scales extracted only one component, Eigenvalues=2.40. Total Variance Explained=80.14. Internal consistency in the current study was high for the total score; it was 0.94, for depression 0.90, for anxiety 0.84, for stress 0.86.

Procedure

The College Institutional Review Board approved the complete study protocol on 9.12.2019 (EMEK YVC 2020-13). All participants signed an informed consent form. Questionnaires were distributed in two colleges in the North of Israel. Completion of the questionnaires was voluntary. Participants were promised anonymity and discretion and were informed that they could stop filling out the questionnaires at any time.

Data Analysis

Preliminary analyses examined differences between males and females using t-tests (Using Holm-Bonferroni Sequential Correction, Holm, 1979). In addition, Pearson correlations between age, BMI, and study variables were calculated for males and females separately. To test the mediation hypotheses, path analysis was conducted using IBM AMOS. We used a multi group analysis to examine differences between males and females in the different paths. A Multi group analysis in structural equation modelling (SEM) is another form of moderation analysis using grouping variables (In our study, males, and females).

RESULTS

Preliminary Analyses

The descriptive research data are shown in **Table 1**. The examination of gender differences in DoS shows that females are significantly higher in emotional reactivity and fusion with others but significantly lower in emotional cut off compared to males. No significant differences were found in I-position. In addition, females are significantly higher in the total score of emotional distress (depression, anxiety, and stress). Finally, t-tests yielded gender differences in EDs. Females were found significantly higher in the drive for thinness, body dissatisfaction and bulimia than males. No significant difference was found in perfectionism.

Table 2 presents Pearson correlations between the study variables by gender. Among men, age is not significantly associated with any of the variables. Age was significantly negatively associated with emotional cut off, emotional distress, drive for thinness, and bulimia among women. BMI was found positively associated with the drive for thinness and body dissatisfaction for both genders. Among women, BMI was positively associ-

ated also with emotional distress and bulimia. Emotional reactivity and emotional cut off were positively associated with emotional distress among men and women, and I-position and fusion with others were found negatively related to emotional distress. Emotional distress was found positively associated with the drive for thinness, body dissatisfaction and bulimia (but not with perfectionism).

Table 1: Differences in the Study Variables by Gender (N=421)s

	Gender				t (419)	Adj p
	Males (n=102)		Females (n=319)			
	M	SD	M	SD		
	Differentiation of Self Inventory Revised (DSI-R)					
Emotional Reactivity	3.12	1.09	3.66	1.01	-4.6	<.001
I-Position	2.53	0.99	2.53	0.93	-0.02	0.982
Emotional Cut-off	3.74	0.76	3.5	0.77	2.7	0.007
Fusion with Others	3.9	0.83	4.16	0.87	-2.68	0.008
DASS Scale	0.68	0.6	0.88	0.59	-3.01	0.003
	Eating Disorder Inventory (EDI)					
Drive for Thinness	2.98	1.04	3.65	1.14	-5.27	<.001
Body Dissatisfaction	2.68	1.04	3.31	1.18	-4.82	<.001
Bulimia	2.08	0.94	2.32	0.97	-2.16	0.031
Perfectionism	3.84	1.07	3.76	1.01	0.75	0.452

Note. Significant levels shown in the table were corrected using Bonferroni correction for 9 comparisons (=.0057).

Table 2: Correlations between Study Variables by Gender (N=421)

	1	2	3	4	5	6	7	8	9	10	11
Age	-	0.08	0.07	0.11	-0.01	-0.1	-0.02	0.06	-0.05	-0.05	-0.02
BMI	0.05	-	-0.09	-0.01	-0.14	0.11	-0.11	.24*	.31**	0.11	0.11
Emotional Reactivity	-0.08	-0.02	-	.67**	.65**	-.46**	.63**	.41**	.28**	.41**	0.16
I-Position	0.01	0.02	.41**	-	.50**	-.53**	.76**	.34**	.34**	.50**	0.08
Emotional Cut-off	-.14*	-0.01	.67**	.32**	-	-.29**	.44**	.32**	.20*	.32**	.20*
Fusion with Others	0.1	-0.04	-.37**	-.27**	-.22**	-	-.43**	-.42**	-.32**	-.47**	-0.1
DASS	-.15**	.15**	.54**	.53**	.34**	-.39**	-	.35**	.38**	.58**	-0.06
Drive for Thinness	-.13*	.33**	.13*	.11*	.22**	-.13*	.21**	-	.63**	.49**	.25*
Body Dissatisfaction	-0.05	.49**	.26**	.21**	.20**	-.29**	.33**	.64**	-	.56**	-0.01
Bulimia	-.16**	.38**	.19**	.29**	.23**	-.36**	.37**	.56**	.53**	-	-0.03
Perfectionism	-0.07	0.05	0.08	0.03	.21**	-0.05	0.11	.31**	.12*	0.09	-

* p<.05, ** p<.01.

Note. The correlations appearing above the diagonal were calculated among males (n=102), the correlations appearing below the diagonal were calculated among women (n=319).

Path Analysis Model

Multigroup path analysis was conducted to explore the potential moderating role of gender in the hypothesized mediation model. According to the hypothesis, the association of DoS with EDs is mediated by emotional distress (depression, anxiety, and stress). The results showed a significant decrease in the goodness of fit indices in the constructed model (which constructs the model paths so that they are equal among males and females), compared to the unconstructed model (which separate the path for males and females), [χ^2 (16)=38.54, p=.001]. In other words, these results indicate that the goodness of fit in-

dices of the model that calculate separate paths for males and females are better [χ^2 (26)=1.91, p=.003, GFI=.98, AGFI=.90, CFI=.98, RMSEA=.047], compared to the model that includes both genders [χ^2 (42)=2.10, p<.001, GFI=.96, AGFI=.89, CFI=.97, RMSEA=.051]. Following this, separate models are presented. According to modification indices, among men we have added direct paths between DoS and EDs (I-position->drive for thinness, I-position->body dissatisfaction, I-position->bulimia, fusion with others->perfectionism). See **Table 3** for standardized parameter of the final model). Among women we have added direct paths between DoS and EDs (I-position->body dissatisfaction, I-position->bulimia, fusion with others->perfectionism). See **Table 3** for standardized parameter of the final model.

Table 3: Path Analysis Summary by Gender

		Direct effect				Differences between paths by gender	
		Female		Male			
Exogenous variables	Endogenous variables	Beta	p	Beta	p	chi (1)	p
Emotional Reactivity	DASS	0.37	<.001	0.23	0.02	1.79	0.181
I-Position		0.34	<.001	0.63	<.001	6.96	0.008
Emotional Cut-off		-0.04	0.453	-0.03	0.68	0	0.95
Fusion with Others		-0.16	<.001	0.01	0.87	3.59	0.058
DASS	Drive for Thinness	0.14	0.012	0.25	0.01	0.56	0.454
	Body Dissatisfaction	0.18	<.001	0.33	<.001	1.15	0.283
	Bulimia	0.22	<.001	0.47	<.001	5.93	0.015
	Perfectionism	0.06	0.334	-0.16	0.14	3.02	0.082
I-Position	Drive for Thinness	-0.07	0.21	-0.34	<.001	6.05	0.014
	Body Dissatisfaction	-0.21	<.001	-0.23	0.01	0.02	0.903
	Bulimia	-0.26	<.001	-0.3	<.001	0.2	0.653
Fusion with Others	Perfectionism	0.16	0.005	0.23	0.03	0.52	0.472
BMI	DASS	0.14	<.001	-0.09	0.13	8.9	0.003
	Drive for Thinness	0.3	<.001	0.29	<.001	0.02	0.893
	Body Dissatisfaction	0.45	<.001	0.38	<.001	0.82	0.365
	Bulimia	0.33	<.001	0.21	0.01	1.48	0.224

Emotional reactivity is positively associated with emotional distress (DASS), and I-position is negatively associated with emotional distress. However, the association between I-position and emotional distress is stronger among men than among women. In addition, fusion with others was found negatively associated with emotional distress in women only. Emotional distress was found positively associated with the drive for thinness, body dissatisfaction and bulimia. However, the association between emotional distress and bulimia is stronger among men than among women.

In addition, direct negative associations were found between I-position and drive for thinness (among men only), body dissatisfaction and bulimia (with no significant difference between genders). Moreover, a direct positive effect of fusion with others was found on perfectionism (with no gender differences). Consistent with these results, among women, emotional distress significantly mediated the associations between fusion with others, I-position and emotional reactivity (but not emotional cut off) and drive for thinness, body dissatisfaction and bulimia (but not perfectionism). Similar associations were found among men, apart from the connection between fusion with others and emotional distress, which was not found to be significant (see indirect analyses summary by gender in **Table 4** (**Figures 1 and 2**).

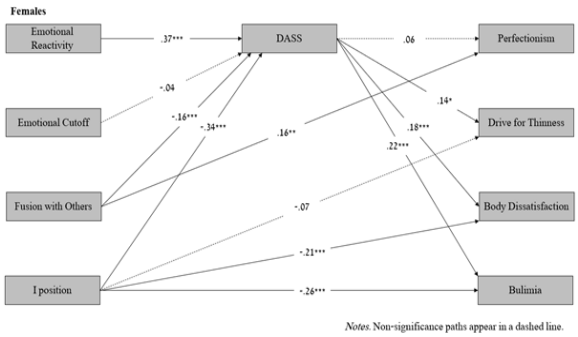

Figure 1: Emotional distress between the metrics of DoS and EDs among Females

Table 4: Indirect Analysis Summary by Gender

Exogenous variables	Endogenous variables	Standardized Indirect Effects			
		Females		Males	
		Beta	p	Beta	p
BMI	Drive for Thinness	0.02	0.002	-0.02	0.054
	Body Dissatisfaction	0.03	0.001	-0.03	0.045
	Bulimia	0.03	0.001	-0.04	0.042
	Perfectionism	0.01	0.137	0.02	0.048
Fusion with Others	Drive for Thinness	-0.02	0.003	0	0.386
	Body Dissatisfaction	-0.03	0.003	0	0.408
	Bulimia	-0.04	0.003	0.01	0.413
	Perfectionism	-0.01	0.11	0	0.356
Emotional Cut-off	Drive for Thinness	-0.01	0.192	-0.01	0.239
	Body Dissatisfaction	-0.01	0.199	-0.01	0.292
	Bulimia	-0.01	0.206	-0.02	0.297
	Perfectionism	0	0.119	0.01	0.193
I-Position	Drive for Thinness	0.05	0.006	0.16	0.005
	Body Dissatisfaction	0.06	0.004	0.21	0.004
	Bulimia	0.08	0.01	0.3	0.003
	Perfectionism	0.02	0.142	-0.1	0.063
Emotional Reactivity	Drive for Thinness	0.05	0.005	0.06	0.006
	Body Dissatisfaction	0.07	0.002	0.08	0.008
	Bulimia	0.08	0.002	0.11	0.011
	Perfectionism	0.02	0.142	-0.04	0.057

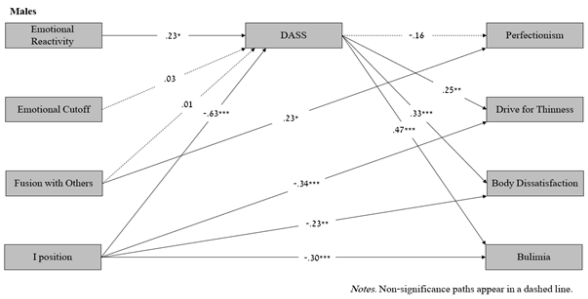

Figure 2: Emotional distress between the metrics of DoS and EDs among Males

DISCUSSION

The goal of the current study was to examine the role of emotional distress as a mediator between DoS and the risk of EDs among young adults. Due to a gender moderation effect, two mediation models were examined, one for women and one for men. Overall, the findings indicate that young adult women reported higher levels of risk for developing EDs than young adult men, supporting previous studies conducted among adolescents [10]. In addition, emotional distress mediated the relationship between three metrics of DoS (emotional reactivity, I-position, and fusion with others) and three metrics of EDs (drive for thinness, bulimic tendencies, and body dissatisfaction).

On the whole, among women, we found that higher levels of fusion with others and I-position were associated with lower levels of drive for thinness, bulimic tendencies, and body dissatisfaction through lower levels of emotional distress. In addition, higher emotional reactivity was found associated with a higher drive for thinness, bulimic tendencies, and body dissatisfaction through higher emotional distress. Unexpectedly, emotional distress did not mediate the associations between emotional cut off and the risk of EDs. Similar results were found among men, except for one measure, fusion with others, which was found related to neither emotional distress nor EDs.

The results are consistent with the Family Systems Theory (13), which suggests that DoS dimensions rooted in early family experiences impact one's ability to cope with stressful situations, namely, upon one's emotional distress mental and physical health in young adulthood. Moreover, our findings are consistent with recent studies demonstrating low DoS in adolescents with a high risk of EDs (e.g., 10), as well as a negative association between DoS and emotional distress. However, they reinforce and expand previous results by addressing emotional distress from a broader perspective, examining three dimensions: stress, anxiety, and depression among young adults.

As mentioned above, emotional reactivity and I-position were found associated with EDs through the mediation of emotional distress. The mediating role of emotional distress support a growing body of research suggesting that emotional distress plays an essential role in the risk of developing EDs (e.g., 6). The association found between I-position and EDs through the mediation of emotional distress may show that a low level of I-position indicates a tendency to avoid direct communication in interpersonal relationships. This leads to increased psychological distress and difficulty in verbalizing, which might increase the risk of EDs. I-position also had a direct bearing on three indices of EDs (drive for thinness, bulimic tendencies, and body dissatisfaction) among both genders. A possible explanation for the direct association is that a person's ability to express his/her

opinions and emotions without feeling a strong need to please significant others has a powerful effect on his/her functioning and, specifically may decrease the risk of EDs.

A gender difference was found in the relationships between DoS and EDs through emotional distress: among males, emotional distress did not mediate the relationship between fusion with others and EDs. This interesting result is in line with recent studies in which it has been observed that fusion with others is not related to emotional distress [14]. It is assumed that very close and even dependent relationships do not increase distress, contrary to Kerr and Bowen's [13] theoretical assumption. This is likely because in Israel, in most families, enmeshed relationships are perceived as a source of support. Another possible explanation is that the fusion with other sub-scale may not describe dependent relationships but rather close ones. Among women, low emotional distress mediated the association between high fusion with others and low EDs, i.e., high fusion with others may decrease EDs, refuting Kerr and Bowen's [13] assumption. This issue merits further investigation. Additionally, it bears mentioning that the perfectionism dimension has been found to be positively related only to fusion with others. Presumably, in families with enmeshed relationships, offspring feel that they need to meet their parents' expectations optimally even when they reach young adulthood.

These findings are innovative since the age group studied in the current research, young adulthood, lacks mental and physical health data, specifically on EDs. They show that the EDs not only characterize adolescents but rather have expanded to young adulthood [8]. Considering the results, a question arises as to whether today's young adults suffer from high levels of risk for developing EDs because they are still preoccupied with identity and body image, which historically used to characterize mainly adolescents. Young adults may spend a lot of time in social media similarly to adolescents and therefore are prone to social and emotional distress [29]. For instance, the appearance related behaviors underlying selfie-posting may be critical as influencing one's body image [30]. Though our study did not examine social media behaviors, it is strongly recommended to investigate this issue in future studies further.

In conclusion, it seems then that the current findings partially support the hypothesis that individuals' emotional distress mediates the relationship between DoS and EDs, indicating that young adults with EDs are poorly differentiated. These results suggest that individuals with a high risk of EDs tend to have more significant difficulties maintaining a defined sense of self and adhering to their beliefs instead of acting according to significant others' expectations. Moreover, based on the present findings and previous research on the relationship between emotional distress and EDs [31], it can be speculated that people who find it challenging to maintain their self, identity and beliefs are likely to feel frustrated, stressed, and even fear the responses of significant others. Shaped by family patterns during development, DoS entails people's capability of effectively balancing between emotional and rational functioning and between intimacy and independence. Thus, well differentiated young adults can preserve a solid sense of self in stressful situations and intense emotional relationships and use tranquil and rational thinking.

The results should be taken with caution, considering a few study limitations. First, given the correlational nature of the study design, it is not possible to assume causality. Indeed, the possibility that EDs lead to low DoS is less likely, since this pattern is usually stable and cohesive in a person who reaches young adulthood. Nevertheless, longitudinal studies are needed to provide more extensive knowledge for the suggested associations between DoS, emotional distress and EDs. Second, other factors related to EDs (e.g., body image, social media use, improper diet, etc.) were not examined in the current study. These factors are the subject of follow up research.

CONCLUSION

Notwithstanding the limitations, the current study sheds new light on risk factors for EDs and the likelihood that familial and emotional factors are involved in the aetiology of EDs among young adults. While the association between severity of emotional distress and EDs is well documented, the present study is the first to indicate that high DoS, particularly high I-position, may decrease and perhaps even prevent vulnerability to emotional distress and, hence, to EDs. The novelty and strength of the present study lie in the investigation of a separate model for each gender. It appears that young men, similarly to young women, may suffer from EDs due to emotional distress. These findings align with a previous study examining EDs in men (5) and are essential for increasing awareness of the issue.

The findings may have important clinical implications and outline strategies for treating EDs. Thus, it is suggested to initiate intervention programs tailored to address the difficulties associated with low DoS among males and females. These intervention programs among young adults are necessary and important because this age group is usually not treated, unlike adolescents. Furthermore, it is advisable to emphasize strengthening the I-position since it has been found to be associated with EDs both through the mediation of emotional distress and directly. When people with EDs learn to share their feelings and difficulties, they may feel relief and thus deal more effectively with their condition. Moreover, sharing may promote family support, improving the situation and preventing deterioration

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The College Institutional Review Board approved the complete study protocol on 9.12.2019 (EMEK YVC 2020-13). All participants signed an informed consent form.

CONSENT FOR PUBLICATION

Not applicable

AVAILABILITY OF DATA AND MATERIALS

All data analysed conducted during this study are included in this published article

COMPETING INTERESTS

The authors declare that they have no competing interests

FUNDING

The Max Stern Yezreel Valley College's research grant.

AUTHORS' CONTRIBUTIONS

OP constructed the research plan, selected the research tools, and was responsible for data collection, analysis, and interpretation. OP was a major contributor in writing the manuscript. MBN was a major contributor in interpreting the data and writing the manuscript. OT helped in interpreting the data. All authors read and approved the final manuscript.

ACKNOWLEDGEMENTS

Michael Egozi, for his contribution to the statistical analysis. Alla Kuyanov for her contribution in editing the manuscript.

REFERENCES

1. American Psychiatric Association (2013) Diagnostic and Statistical Manual of Mental Disorders. 5th ed. Washington DC. Am Psychiatric Assoc.
2. Zohar AH, Lev-Ari L, Bachner-Melman R (2021) Two to tango? The dance of maternal authority and feeding practices with child eating behavior. Int J Environ Res and Public Health. 18(4):1–10.
3. Hoek HW, Williams L, Wilkins (2016) Review of the worldwide epidemiology of eating disorders. Curr Opin Psychiatry.29(6):336-9.
4. Latzer Y, Tzischinsky O, Spivak-Lavi Z, Chen I, Weinberger-Litman S, et al. (2018) The relationship between disordered eating pathology, sense of coherence and body image among adolescent boys in Israel. Isr J Psychiatry; 55(1):66-72,83.
5. Limbers CA, Cohen LA, Gray BA (2018) Eating disorders in adolescent and young adult males: prevalence, diagnosis, and treatment strategies. Adolesc Health Med Ther. 10; 9:111-116.
6. Peleg O, Tzichinsky O, Spivak Z (2021) Depression and social anxiety mediate the relationship between parenting styles and risk of eating disorders: A study among Arab adolescents. Int J Psychol. 56(6): 853-864.
7. Goldstein MA, Alinsky R, Medeiros C (2016) Males With Restrictive Eating Disorders: Barriers to Their Care. J Adolesc Health. 59(4):371-2.
8. Potterton R, Richards K, Allen K, Schmidt U (2020) Eating disorders during emerging adulthood: a systematic scoping review. Front Psychol. 10:3062.
9. Mitrofan O, Petkova H, Janssens A, Kelly J, Edwards E, et al. (2019) Care experiences of young people with eating disorders and their parents: qualitative study. BJPsych Open. 5(1).
10. Doba K, Berna G, Constant E, Nandrino JL (2018) Self-differentiation and eating disorders in early and middle adolescence: A cross-sectional path analysis. Eat Behav. 29:75–82.
11. Merwin RM, Moskovich AA, Wagner HR, Ritschel LA, Craighead LW, et al. (2013) Emotion regulation difficulties in anorexia nervosa: Relationship to self-perceived sensory sensitivity. Cogn Emot.27(3):441-52.
12. Tasca GA, Szadkowski L, Illing V, Trinneer A, Grenon R, et al. (2009) Adult attachment, depression, and eating disorder symptoms: The mediating role of affect regulation strategies. Pers Indiv Dif. 47(6):662–7.
13. Kerr ME, Bowen M (1988) Family evaluation. Norton.
14. Cohen A, Peleg O, Sarhana A, Lam S, Haimov I, et al. (2019) Depressive symptoms mediate the relationship between emotional cutoff and type 2 diabetes mellitus. Int J Behav Med. 26(6):591–9.
15. Peleg O, Tzischinsky O. (2016) Assessing satisfaction with differentiation of self through circle drawing: Validation of a revised self-report instrument (SFI-R). J Psych Psychotherapy. 5:1-10.
16. Hooper LM, Doehler K (2011) The mediating and moderating effects of differentiation of self on body mass index and depressive symptomatology among an American college sample. Cou Psyc Quar. 24(1):71–82.
17. Buser JK, Gibson S (2014) Differentiation and eating disorder symptoms among males. Fam J. 22(1):17–25.
18. Peleg O (2022) The relationship between type 2 diabetes, differentiation of self, and emotional distress: Jews and Arabs in Israel. Nutrients. 14(1):39.
19. Ledford H (2018) Who exactly counts as an adolescent? Nature. 554(7690): 429-432.
20. Dahl RE, Allen NB, Wilbrecht L, Suleiman AB (2018) Importance of investing in adolescence from a developmental science perspective. Nature. 554(7693):441-450.
21. Arnett JJ (2004) Emerging adulthood: The winding road from the late teens through the twenties. Am Psychol. 55(5):469-80
22. Garner DM (1991) Eating Disorder Inventory-2: Professional Manual. Adolescentology 23(3), 310-317
23. Lee S, Lee AM, Leung T (1998) Cross-cultural validity of the eating disorder inventory: A study of chinese patients with eating disorders in hong kong. Int J Eat Disord. 23(2):177-88
24. Niv N, Kaplan Z, Mitrani E, Shiang J (1998) Validity study of the EDI-2 in Israeli population. Isr J Psychiatry Relat Sci. 35(4):287-92
25. Skowron EA, Friedlander ML (1998) The Differentiation of Self Inventory: Development and Initial Validation. J Couns Psychol 45(3), 235–246.
26. Sloan D, van Dierendonck D (2016) Item selection and validation of a brief, 20-item version of the Differentiation of Self Inventory-Revised. Pers and Ind Diff97:146–50.
27. Peleg O (2008) The relation of differentiation of self and marital satisfaction: What can be learned from married people over the life course?American J of Fam Ther 36(5):1-14.
28. Alon-Tirosh M, Hadar-Shoval D, Asraf K, Tannous-Haddad L, Tzischinsky O, et al. (2021) The association between lifestyle changes and psychological distress during covid-19 lockdown: The moderating role of covid-related stressors. Int J Environ Res Public Health18(18), 9695.

29. Vannucci A, Ohannessian CMC, Gagnon S (2019) Use of multiple social media platforms in relation to psychological functioning in emerging adults. Emer Adult 7 (6), 501-506.
30. McLean SA, Paxton SJ, Wertheim EH, Masters J (2015) Photoshopping the selfie: Self photo editing and photo investment are associated with body dissatisfaction in adolescent girls. Int J Eat Disord. 48(8):1132–40.
31. De Oliveira J, Cordás TA (2022) The manifestation of emotional distress: Correlations between self-compassion and self-mutilation in Brazilian women with disordered eating behavior. Encephale. 48(1):20–5.