

Exploring the Link among Eating Problems, Depressive Symptoms, and Help-Seeking Tendencies in Ballet Dancers

Leilani C. Gao^{1,a,*}

¹Choate Rosemary Hall, 333 Christian Street, Wallingford, United States of America

a. lgao26@choate.edu

**corresponding author*

Abstract: Ballet dancers are frequently faced with maladaptive eating behaviors with the intention of retaining a lean body shape, which can cause mental health problems. There are several frequently faced maladaptive eating behaviors in dancers such as anorexia nervosa, bulimia, and reward-related eating. The subsequent mental health disorders that are prevalent include depression and anxiety disorder. Studies conducted on dancers have indicated a high risk for the development of maladaptive eating behaviors, however research between eating behaviors, mental health, and help-seeking tendencies in dancers remains scarce. The aim of this study was to explore the mediating role of depressive symptoms in the relationship between eating behaviors and the need to seek help within ballet dancers. A cross-sectional survey was conducted with 98 ballet dancers of varying ages and levels. Structural equation modeling (SEM) analyzed the relationships between eating problems, depressive symptoms, and help-seeking behavior. These results indicate eating problems are positively associated with depressive symptoms ($\beta = 0.68, p < 0.001$), which in turn predict a greater need to seek help ($\beta = 0.03, p = 0.009$). Mediation analysis revealed a significant indirect effect ($\beta = 0.15, p = 0.018$), suggesting that depressive symptoms partially mediate the relationship between eating problems and help-seeking behavior. These findings depict the importance of addressing eating behaviors within mental health interventions for ballet dancers, as this enhances help-seeking behavior. This study depicts the need for incorporating mental health education within preprofessional and professional ballet programs. Future research should explore these relationships in diverse dance populations.

Keywords: Ballet dancers, Eating problems, Depressive Symptoms, Need to Accept Help

1. Introduction

1.1. Background

Ballet is a highly formalized academic technique and art form celebrated for its elegance and discipline. Historically and culturally, ballet has idealized a specific physique: long limbs, slender build, and lightweight frame. These are often unattainable to perfection for many dancers. This cultural standard has created a pervasive focus on appearance, oftentimes at the expense of health and well-being given the competitiveness of the industry. Dancers may feel pressured to conform to these ideals, which may result in body dissatisfaction and disordered eating behaviors. Another stressor is coveted roles in performances. The competitive atmosphere, linked with the traditional ideals for

body image, fosters both artistic excellence and mental challenges among dancers, such as anxiety, disordered eating, and depression.

However, when addressing these challenges, ballet dancers often find themselves in an environment where discussing personal struggles is neither encouraged nor normalized. Rooted in centuries-old traditions, ballet is heavily discipline-based, emphasizing obedience, resilience, and silence. The hierarchical structure of ballet companies and schools, where authority is mainly in the hands of instructors and directors, further discourages dancers from expressing concerns or seeking help. Many of the traditional ballet schools lack help-seeking measures into their schools. These dynamics foster an environment where vulnerability is a weakness and discuss mental health struggles deemed as unprofessional or detrimental to a dancer's social status and career prospects. Consequently, many dancers internalize their challenges, being stuck in a cycle of suppressed emotions and untreated mental health issues.

The stigma surrounding mental health in ballet not only affects individual dancers but also perpetuates a systemic issue within the art form's culture. Addressing this requires fostering a supportive environment that values dancers' physical and emotional well-being. Critical steps include encouraging open communication, providing accessible mental health resources, and redefining what it means to be a high-achieving ballet dancer.

1.2. Literature Review

Out of dancers with at least one mental problem, 17.3% of female and 7.9% of male dancers exhibited moderate or severe symptoms of either depression or generalized anxiety disorder, and 9.9% of female dancers. Besides, 11.1% female dancers exhibited moderate to severe depression symptoms. In a previous study, moderate to severe symptoms of generalized anxiety disorder was reported in 16.0% in female and 6.4% in male dancers [1]. Professional dancers were more likely than the general population of comparable ages and genders to have symptoms of eating disorders and generalized anxiety disorder. According to these sources, stigma should be lessened, mental health literacy and awareness should be increased, and low-threshold access to quality treatment should be made available[1].

To identify risk variables and create and assess preventative measures for professional dancers' poor mental health, prospective studies are necessary[1]. Sixty percent of the dancers met the requirements for clinical referral to a psychologist or psychiatrist. Almost half (45%) reported a mental health problem, and 29% reported it as their most severe health problem[2]. Despite the high prevalence of mental health issues, ballet dancers are less likely to seek help due to societal stigma. Many dancers fear that acknowledging mental health problems could be perceived as a weakness, potentially affecting their careers. This stigma is compounded by the culture within ballet, which often prioritizes physical appearance and performance over mental well-being[3]. It is also true that the barriers to seeking treatment are multifaceted. Dancers usually lack access to mental health resources tailored to their specific needs. Ballet's culture of discipline and perfection fosters the belief that physical and emotional resilience is key to success, leading dancers to suppress vulnerabilities. A study on the mental health of dancers emphasized the need for interventions that address ballet's physical and psychological demands[4]. Additionally, the lack of awareness and understanding of mental health issues within the dance community further hinders help-seeking behavior. Breaking this stigma is essential to ensuring that dancers can seek help, creating a healthier and more supportive ballet community. However, it is also true that social support plays a critical role in helping dancers cope with stress, which can be the first step towards removing the stigma around mental health issues in ballet. A supportive environment can buffer against the negative effects of stress and promote better psychological health[5]. Ultimately, there is a lot of room for improvement within ballet communities

to mitigate the highly prevalent mental health issues in ballet dancers and lessen the prejudice that prioritizes physical appearance and performance over mental well-being.

Eating issues have furthermore been a point of pressure for many ballet dancers. Many ballet schools pose pressure due to cultural links between leanness and high-performance ballet dancers. A lean figure provides adolescent and prepubertal appearances, which in and of itself acts as an issue with gender identity acquisition. The dancers' desire to lose weight or stay underweight seems to be enhanced by a complex body image problem that is stronger than in non-physically active subjects. Dancing time and body negativity were found to be positively correlated[2]. To find out if ballet performers' mean eating psychopathology scores are greater than those of the general population, a meta-analysis of observational studies on eating disorders in ballet dancers was conducted. A few years ago, a meta-analysis of cross-sectional research found that the overall prevalence of eating disorders was higher among ballet dancers than in matched control groups. Although maturity fear scores did not significantly differ between ballet dancers and controls, the study found that ballet dancers confront a notably increased risk of eating disorders, along with higher desire of thinness, bulimia, body dissatisfaction, social difficulties, perfectionism, and feelings of inadequacy. In one study, the Anorexia Nervosa Inventory of Self-Rating (ANIS) ratings of 105 female ballet dancers were significantly higher than those of 237 normal controls, although they were still lower than those of 84 women with AN. The elevated levels of restriction and drive for thinness among ballet dancers are consistent with a higher prevalence of perfectionism. Sustaining lean body shape could be an essential part in ballet performance[6]. Within focus groups, participants in a mixed-method study on eating attitudes and body image in female ballet dancers reported concerning eating attitudes, including the regular practice of several restrictive popular diets, constant restriction of foods considered "heavy," overeating instances due to stress and anxiety, feeling guilty about breaking their typical diet, categorizing foods as "good" and "bad" or "lean" and "fat," and eliminating some of those foods from their usual diets[7]. These statements can be confirmed in the questionnaire, where 50% of the ballerinas showed bulimic symptoms indicative of an unusual eating pattern. Additionally, individuals reported feeling unsatisfied with their physique in the "classical ballet" context, although being content with their bodies in ordinary situations. These results were consistent with the Stunkard's Scale, which showed that 57.1% of the sample said they wanted a slimmer figure than what they regarded healthy, and 50% of the sample were unhappy with their existing body shape[7]. The results indicated that the repeated use of restrictive diets and various weight-loss strategies to obtain a leaner body were linked to symptoms of EDs and body dissatisfaction.

Furthermore, eating problems are correlated with depressive symptoms, which has been proposed in previous studies[8][9]. Eating problems may lead to a decrease in self-efficacy and self-esteem[10] and predict the development of social anxiety as well as other emotional behavior problems[11]. In comparison, little study has directly examined the co-existence of eating problems and depressive symptoms in ballet dancers. Given the high levels of pressure, the interaction between eating problems and depressive symptoms in ballet dancers may be more complex. Eating problems can have multiple effects on ballet dancers' physical and mental state, creating a greater cycle of strain. Compared with eating problems, which are more likely to be identified as self-management difficulties due to body shape pressure, the presence of depressive symptoms may be the direct cause of the ballet dancer's need for help. Depressive symptoms, such as isolation, difficulty bearing emotional distress, health problems, and interference with daily living functions and dance practice, may directly trigger the dancer's need for help.

There are many different challenges we face in mitigating these issues around eating and mental health in the ballet community. Mental health has been associated with a high level of perfectionism and eating psychopathology. Few studies have evaluated the severity of mental health issues among male and female dancers, included male dancers, or looked at differences in mental health issues by

academic year and performance level. Mental health issues like low resilience and low self-esteem are common among dancers of all sexes and genres. Health services seem to be neglected despite the high frequency of mental health problems. Many seemingly disparate issues could compound one another and ultimately lead to issues that were believed to have their roots in dance.

1.3. Current Study

The current study aims to explore the relationship among eating behaviors, depressive symptoms, and the need to accept help in ballet dancers. This study hypothesizes that higher levels of eating problems in dancers may lead to increased depressive symptoms, which affects the performance and function of dancers and prompts them to ask for help.

This study will provide insight into the mental challenge of ballet dancers, focus on the interplay between eating problems and depressive symptoms, and identify the necessity to take specific assistance measures.

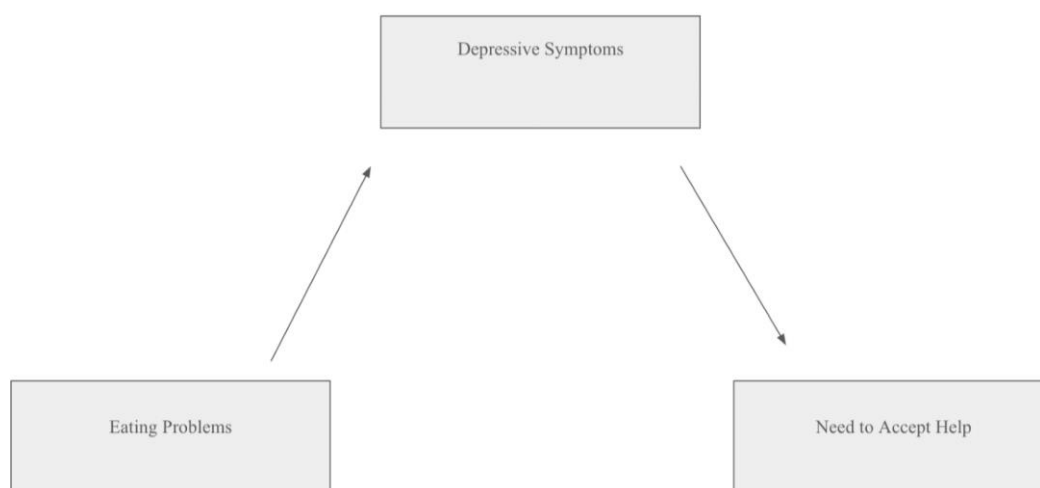


Figure 1: Path Diagram of Variables in the Study

2. Methodology

2.1. Participants

Ninety-five people participated in this research study. The participant selection relied on asking all ballet dancers, past and current. Gender was not a criterion. However, the majority of these participants were female due to the cultural norms of the art form. Many of the participants were asked through connections with the survey collector and the connections of the research conductor. Many of these dancers were asked from highly reputable, internationally renowned ballet summer intensives. This meant that recruitment was mainly through in-person contact. All the participants are informed that their answers will be used only for data analysis, the results will not involve any personal information.

2.2. Measures

The following instruments were used to assess the key variables of this study: (1)The Patient Health Questionnaire-9 (PHQ-9) is a self-administered tool that assesses the severity of depression symptoms[12]. (2)Eating Attitudes Test 8 (EAT-8) [13] . (3) Need to accept help. Participants were asked to answer yes or no to give feedback on whether they thought they needed help.

The total score for each participant was calculated based on the PHQ-9 based upon severity level (Not at all = 0, Several days = 1, More than half the days = 2, Nearly every day = 3), Total scores of 5, 10, 15, and 20 correspond to the thresholds for mild, moderate, moderately severe, and severe depression. EAT-8 consists of 8 entries, rated on a scale from 0 to 3 (Never = 0, Sometimes = 1, Often = 2, Always = 3), and the total score is calculated to indicate how many eating problems there are.

2.3. Procedure

Participants were asked to provide their answers on an online questionnaire provided through a secure survey platform (surveysparrow.com). They were asked about their basic biographical information, PHQ-9, EAT-8 questionnaires, and help tendency, as well as if they had any comments about their perception of ballet's effect on their mental health. Data collection took place over 3 months. The participants were told that this was a completely anonymous survey.

2.4. Data Analysis

Data was cleaned through a selective process of removing confounding variables such as male and non-binary data due to little data on these two groups. Furthermore, one question regarding eating habits was removed due to data that was not complete. Outliers were removed to ensure the quality and integrity of the data. Data was analyzed using descriptive statistics, which were then calculated for all key variables. To examine the relationship between eating problems, depressive symptoms, and help-seeking tendencies, hierarchical multiple regression was used to test the hypothesis that depressive symptoms mediate the relationship between eating problems and help-seeking tendencies.

3. Results

3.1. Descriptive Statistics and Demographic information

Eighty-eight questionnaires were retained, with 100% female participants. In terms of age distribution, 12 aged 14-15(13.6%), 36 aged 16-17(40.9%), 31 aged 18-24(35.2%), 1 aged 25-34(1.1%), 4 aged 35-44(4.5%), 2 aged 45-54(2.3%), 1 aged 55-64(1.1%), and 1 aged 65+(1.1%). Regarding skill level, there was 1 participant who considered herself a beginner (1.1%), 6 beginner intermediate (6.8%), 24 intermediate advanced (27.3%), 30 considered pre-professional (34.1%), 6 considered professional (6.8%), and 20 used to dance ballet less than 5 years ago (22.7%). 1 did not reply (1.1%).

3.2. Correlation Test

According to the result of the Kendall correlation test, there was a significant correlation between depression and eating problems ($r=0.375$, $p<0.001$), as well as depression and the need to accept help ($r=0.244$, $p=0.01$). No significant correlation was found between eating problems and depression ($r=0.134$, $p=0.159$).

3.3. SEM: mediation test

Structural Equation Modeling (SEM) was used to examine the mediating role of depressive symptoms in the relationship between eating problems and the need to accept help. Table 1 depicts the cause-effect relationship between eating problems, impacting depressive symptoms, leading to the need to accept help, respectively. The model fits well with a chi-square of 0.005 ($p=0.945$), CFI = 1.000, TLI = 1.102, RMSEA = 0.000 (90% CI: 0.000–0.049), and SRMR = 0.003. The results show that eating problems significantly predict depression ($\beta=0.686$, $p<0.001$), and depression, in turn, significantly predicts the need to accept ($\beta=0.031$, $p=0.009$). The mediation analysis reveals a

significant indirect effect of eating problems on the need to accept depression (indirect effect = 0.021, $p = 0.018$, standardized indirect effect = 0.148). These findings suggest that depression partially mediates the relationship between eating problems and the need to accept help.

Table 1: Structural Equation Model.

	lhs	rhs	B	beta	z	pvalue	CI Lower	CI Upper
1	Depression_Total	EatingProblem_Total	0.686	0.528	5.522	0	0.442	0.929
2	NeedToAcceptHelp	Depression_Total	0.031	0.281	2.605	0.009	0.008	0.055

4. Discussion

4.1. Key Findings

Eating problems significantly impact depressive symptoms, supporting the hypothesis that depressive symptoms mediate the relationship between eating problems and help-seeking tendencies. Control variables such as age, gender, current health issues, ballet pedagogy, and years of dance experience were included in the survey to account for their potential impacts and upbringing. Depressive symptoms significantly influence help-seeking tendencies. Eating problems indirectly affect help-seeking tendencies through the causal effect of depressive symptoms, indicating a mediating mechanism. These results align with previous research using empirical evidence suggests that eating problems are a leading factor for ballet dancers who have mental health issues[14]. This concept is furthermore consistent with research as depicted in another study[15], which suggests that dancers who have mental problems may not report their mental problems and demonstrate a similar relationship in clinical populations.

4.2. Theoretical Explanations

According to the stress-vulnerability model, individuals who are more vulnerable to emotional distress are more likely to develop maladaptive coping mechanisms. Our findings are consistent with this framework as eating behavior problems can lead to depression, which in turn can influence help-seeking behavior.

This study reports that depressive symptoms are associated with intrinsic need to accept help. The self-determination theory states that human motivation and behavior rely upon three needs: autonomy, competence, and relatedness. These are inherent desires depict the importance of social contexts in shaping a population's optimal motivation[16]. Depressive symptoms often weaken an individual's motivation level and sense of efficacy, causing them to develop a need to be helped. This will lessen the efficiency and performance of dancers, specifically, there will be a negative correlation for those without self-determination between high-level performance and outcome. The social support theory notes that individuals with higher levels of depression may have higher feelings of loneliness and want to relieve their depressed feelings by seeking help for emotional comfort and support in problem-solving.

4.3. Practical Implications

There are various real-world implications that this research can be applied in the ballet field. Psychological counseling addressing eating problems could indirectly alleviate depression and promote help-seeking behavior; many of the more traditional ballet schools do not offer mental health or psychological help services. Furthermore, mental health education and having an environment that

promotes speaking up about mental health and prioritizing it are two important steps toward promoting a healthier environment that is less prone to maladaptive eating and mental problems.

4.4. Limitations and Future Directions

As participation in the questionnaire response was voluntary, the distribution of dancers across the studied factors was not uniformed. Factors, including age, training intensity, and career stage, could all influence the relationships examined in this study, while limited by the sample, these distributions of factors were not diverse enough. The sample size of 95 participants, as well as the distribution of the sample, limits generalizability.

The PHQ-9 is one extremely trustworthy disorder-specific screening tool. However, a diagnosis should be determined through professional consultations with qualified medical specialists, and questionnaires should only be referred as screening tools. It is impossible to completely rule out the possibility that some questionnaire responses were skewed by social desirability bias, stigma, a lack of knowledge about mental health, or anxiety about possible repercussions. Although confidentiality was guaranteed, this restriction applies to all studies on mental health in the arts and sports.

Since this study employed a cross-sectional design, it is not reliable to conclude cause-and-effect. Although we verify the mediating role, we cannot rule out other possible influence paths. In addition, cross-sectional design can only capture the state at a specific point in time and cannot reflect the dynamic changes between variables. This study furthermore allowed participants to fill out the form at any time of the year and any time of the day, and the answers could vary depending on their social surroundings and feelings at the moment of taking the questionnaire. These limitations should be considered when understanding and generalizing the results of this study.

5. Conclusions

The present study showed that eating problems indirectly affect help-seeking tendencies due to the mediating mechanism of depressive symptoms of the same gender. Empirical evidence suggests possible paths of understanding for mental challenges and intervention strategies for ballet dancers. Therefore, greater emphasis should be placed on mental health awareness and literacy in ballet schools and companies; stigma should be reduced, and low-threshold pathway to appropriate treatment should be ensured.

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