The Comparison of Stress, Anxiety, Depression, and Academic Achievement Among Orphaned and Non-Orphaned High School Girls

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ABSTRACT

Objective: This research aimed to compare stress, depression, anxiety, and academic achievement between orphaned high school girls and their non-orphaned peers.

Methods and Materials: The study employed a causal-comparative design. The sample consisted of 30 orphaned girls who volunteered to participate. The statistical population included all orphaned high school girls in Mobarekeh city. Non-orphaned students were matched with orphaned students. The measurements used were the Bern Stress Scale, Spence Children's Anxiety Scale, Kutcher Depression Scale, and the mean of academic scores. Data were analyzed using descriptive statistics (mean and standard deviation) and inferential statistics (MANCOVA).

Findings: The analysis revealed no significant differences between the two groups regarding stress, depression, and anxiety, except for coping with stress by peers and self-stress.

Conclusion: Based on these results, it can be concluded that being orphaned does not significantly affect stress, depression, and anxiety levels. However, it does influence peer stress and self-stress among adolescent girls.

Keywords: Stress, Anxiety, Depression, Academic Achievement, Parental Death.

1. Introduction

Adolescence is a critical period of life, characterized by various risks and challenges. The presence or absence of a father can have significant advantages and disadvantages. Stress is one of the primary issues that orphaned adolescents encounter. Stress is defined as physical, psychological, and emotional responses to demands or life changes. Reactions to stress vary; positive stress can serve as motivation, while negative stress can lead to failure. Stress can also induce anxiety among adolescents (Bhasin et al., 2010; Lawrence, 2022; Mahvash et al., 2024).

According to the DSM-5, anxiety is characterized by severe psychological arousal, including fear, intense worry, and doubtfulness (American Psychiatric Association, 2013). Anxiety is often considered an individual's reaction to stressful situations, influenced by internal and external stimuli beyond the individual's control (Abbasian Hadadan, 2024; Almurumudhe et al., 2024). Anxiety can also be a precursor to depression, with approximately 15% to 20% of adolescents experiencing one or more major depressive episodes. The prevalence of depressive symptoms is rising (Bonnert et al., 2024; Prachi, 2024). Common symptoms include a depressed mood, lack of pleasure or interest, sleep and appetite disturbances, low energy, psychomotor agitation or retardation, feelings of worthlessness or guilt, and cognitive impairments (American Psychiatric Association, 2022). Depression among adolescents can significantly impact academic achievement, which is defined as the attainment of educational goals evaluated through standardized or non-standardized tests. Academic achievement represents the extent to which students meet educational objectives (Markowitz & Ryan, 2016; Tahmasabi et al., 2023). One crucial factor influencing stress, depression, anxiety, and academic achievement in adolescence is the father's presence or absence (Marks et al., 2007; Tahmasabi et al., 2023).

The absence of a father can lead to problems such as instability, increased stress and anxiety, depression, and higher dropout rates among children. Conversely, the family plays a vital role in the healthy physical and psychological development of children. Previous research indicates that the loss of a parent during childhood is associated with significant adverse consequences (Rostila et al., 2012; Rostila & Saarela, 2011). Females without fathers often display a strong desire for male attention, seek more physical contact with boys their age than girls from intact homes, and consistently seek acceptance from men (Krohn & Bogan, 2001).

Several studies have focused on stress, anxiety, depression, and academic achievement among adolescents. For instance, Kouroshnia and Latifian (2007) examined the relationship between family communication and stress and depression among adolescents (Kourosh Nia & Latifian, 2007). Jafari, Yousefi, and Manshaee (2014) explored the role of mothers' characteristics in adolescent depression (Jafari et al., 2014). Ataabadi and Yousefi (2013) investigated the correlations between family relations and academic achievement among adolescents (Ataabadi et al., 2013). Gammon and Morgan-Samuel (2005) studied the relationships among stress, performance, and depression in adolescents (Gammon & Morgan-Samuel, 2005). Saklofske et al. (2012) examined the associations between academic achievement and academic functioning (Saklofske et al., 2012). Belzer et al. (2002) studied the relationship between problem-solving styles, anxiety, and worry among adolescents (Belzer et al., 2002). Legrand (1988) found a correlation between anxiety and depression in adolescents (Legrand, 1990). Oh, Park, and Choi (2009) examined the role of parental communication in adolescent depression (Oh et al., 2008). Lundy et al. (2010) demonstrated negative relationships between anxiety, depression, and academic achievement (Lundy et al., 2010). Potter and Roksa (2013) investigated the relationship between family experiences and academic achievement (Potter & Roksa, 2013).

Research has also extensively examined the role of fathers in child development. For example, Flouri and Buchanan (2003) found that father involvement protects against psychological maladjustment. They also reported that although both mother and father involvement contribute to adolescent happiness, father involvement has a stronger impact on adolescent well-being (Flouri & Buchanan, 2003). Fridman-Teutsch and Attar-Schwartz (2018) demonstrated that father support positively correlates with youth commitment to school and learning, especially among adolescents from married-parent families (Fridman-Teutsch & Attar-Schwartz, 2019).

Despite extensive research on adolescent depression, anxiety, stress, academic achievement, and the role of fathers, there is a paucity of studies on the impact of a father's death on these variables. The death of a father forces mothers to assume paternal responsibilities, altering family dynamics and decision-making power (Hewlett, 2017). In Iranian culture, particularly within Islamic contexts, orphans hold a unique status that mandates special attention. Given

the crucial role of fathers and the prevalence of orphaned adolescents, it is imperative to study the psychological effects of a father's death on female adolescents. This research aims to address this gap and provide insights for prevention and intervention strategies for affected girls. Therefore, this study seeks to answer the question: "Are there differences between orphaned and non-orphaned female adolescents in terms of stress and its dimensions, anxiety, depression, and academic achievement?"

2. Methods and Materials

2.1. Study Design and Participants

This study aimed to compare stress, anxiety, depression, and academic achievement between orphaned and non-orphaned female high school students using a causal-comparative design. The statistical population comprised all orphaned and non-orphaned female high school students. Following Pandey's (1999) approach, 30 girls were selected for each group (Pandey, 1999). Orphaned girls were recruited voluntarily with the assistance of school management personnel, and non-orphaned students were matched with orphans based on social and economic status.

Data were gathered using self-report scales: the Byrne Stress Scale (Byrne, Davenport, & Mazanov, 2007), the Spence Children's Anxiety Scale (Spence, 1997), the Kutcher Adolescent Depression Scale (Kutcher, 2003), and students' GPA.

2.2. Measures

2.2.1. Stress

Developed by Byrne et al. (2007), this scale evaluates life stress in adolescents. It is a self-report measure comprising 50 items, each scored on a five-point Likert scale from "totally agree" (5) to "totally disagree" (1). Byrne et al. (2007) reported internal consistency ranging from $\alpha = 0.62$ to $\alpha = 0.92$ and test-retest reliability of $r = 0.88$. Positive correlations with other anxiety and depression scales and negative correlations with self-confidence provide evidence of differential and concurrent validity (Byrne et al., 2007). In this study, internal consistency was $\alpha = 0.85$.

2.2.2. Anxiety

Developed by Spence (1997), this scale assesses anxiety in children aged 8 to 15. It consists of 45 items and six subscales (panic, agoraphobia, separation anxiety, fear of physical injuries, social phobia, obsessive-compulsive disorder, and generalized anxiety). Items are scored on a four-point Likert scale from 1 (never) to 4 (always). Concurrent validity with the Manifest Children's Anxiety Scale was reported as $r = 0.71$. Spence (1997) found internal consistency of $\alpha = 0.92$ and test-retest reliability of $r = 0.6$ after six months (Spence, 1997). In this study, internal consistency was $\alpha = 0.85$.

2.2.3. Depression

Developed by Kutcher (2003), this scale comprises 11 items assessing the frequency of depression symptoms. Items are rated on a four-point scale from "hardly ever" to "all the time," with one item addressing the severity of suicidal ideation. Scores range from 1 to 44, with higher scores indicating more severe depression symptoms. The scale is sensitive to symptom change during treatment, diagnostically valid, and highly reliable (Brooks et al., 2003). In this study, internal consistency was $\alpha = 0.78$.

2.2.4. Academic Achievement

Academic achievement was assessed using students' GPA.

2.3. Data analysis

The data analysis was conducted using both descriptive and inferential statistics to examine the differences between orphaned and non-orphaned high school girls. Descriptive statistics, including means and standard deviations, were calculated to summarize the levels of stress, anxiety, depression, and academic achievement within each group. To test the research hypothesis, Multivariate Analysis of Covariance (MANCOVA) was employed, controlling for demographic variables such as the mother's age and occupation and the years since the father's death. The Shapiro-Wilk test was used to assess the normality of the data, while the Levene test evaluated the equality of variances. Box's M test was utilized to check for the homogeneity of covariance matrices. These statistical tests ensured the robustness and validity of the comparisons between the two groups. Significance was determined at the $p < .05$ level, and effect sizes were reported using eta squared to indicate the proportion of variance explained by the group differences.

3. Findings and Results

Table 1 shows the means and standard deviations of research variables in both groups. As indicated in the table, the means of stress, coping stress with peers, interaction stress with adults and teachers, stress from the future, stress due to lack of leisure time, academic tasks stress, financial stress, context stress, self-stress, anxiety, and depression are higher among the orphan group than the normal group. Additionally, academic achievement among orphans is lower than in the normal group. However, the means of coping with stress with peers and home stress are higher in the normal group.

Table 1

Means and Standard Deviations of Research Variables in Both Groups

Variables	Group	Mean	Standard Deviation
Total stress	Orphan	30.67	30.67
	Normal	25.03	25.03
Coping stress with peers	Orphan	26.73	5.80
	Normal	27.13	4.74
Interaction stress with adults/teacher	Orphan	5.80	5.80
	Normal	4.74	4.47
Home stress	Orphan	7.35	7.35
	Normal	7.78	7.78
Future stress	Orphan	5.59	5.59
	Normal	4.37	4.37
Stress due to lack of leisure time	Orphan	3.86	3.86
	Normal	4.12	4.12
Academic tasks stress	Orphan	3.84	3.84
	Normal	3.36	3.36
Financial stress	Orphan	4.72	4.72
	Normal	4.77	4.77
Context stress	Orphan	11.17	11.17
	Normal	2.64	2.64
Self-stress	Orphan	3.85	3.85
	Normal	3.38	3.38
Anxiety	Orphan	20.56	20.56
	Normal	13.36	13.36
Depression	Orphan	8.86	8.86
	Normal	6.10	6.10
Academic achievement	Orphan	2.11	2.11
	Normal	1.52	1.52

To control for the effects of mothers' age and occupation and the years since the father's death, MANCOVA analysis was used to test the research hypothesis: "There are significant differences in stress and its dimensions, anxiety, depression, and academic achievement between orphaned and non-orphaned adolescent girls in high school." The Shapiro-Wilk test indicated that the scores of the dependent variables in both groups were normally distributed ($p > .05$). The Levene test showed that the variance differences between the dependent variables were not significant ($p > .05$). The Box's M test revealed no differences in the covariance matrices of the dependent variables between the two groups ($p > .05$). Table 2 presents the results of the MANCOVA analysis.

Table 2

Results of MANCOVA Comparing Variables Based on Groups After Controlling for Demographic Variables

Source of Variation	Variable	Sum of Squares	df	Mean Square	F	Sig.	Eta Square	Power
Mother's job	Stress	271.082	1	271.082	.372	.545	.007	.092

	Interaction stress with adults/teachers	1.221	1	1.221	.041	.840	.001	.055
	Coping stress with peers	3.990	1	3.990	.148	.702	.003	.067
	Home stress	27.438	1	27.438	.498	.483	.009	.107
	Future stress	5.384	1	5.384	.222	.705	.004	.224
	Stress due to lack of leisure time	23.258	1	23.258	1.487	.228	.026	.144
	Academic tasks stress	10.768	1	10.768	.814	.371	.015	.107
	Financial stress	.479	1	.479	.479	.883	.000	.052
	Context stress	449.486	1	449.486	449.486	.009	.119	.763
	Self-stress	42.070	1	42.070	42.070	.047	.070	.516
	Anxiety	848.205	1	848.205	848.205	.093	.050	.389
	Depression	1.023	1	1.023	1.023	.894	.000	.052
	Academic achievement	1.146	1	1.146	1.146	.515	.008	.099
Mother's age	Stress	801.775	1	801.775	.122	.399	.043	.399
	Interaction stress with adults/teachers	3.224	1	3.224	3.224	.742	.002	.062
	Coping stress with peers	18.703	1	18.703	.408	.130	.012	.130
	Home stress	265.008	1	265.008	.032	.578	.080	.578
	Future stress	16.264	1	16.264	.416	.127	.012	.127
	Stress due to lack of leisure time	3.109	1	3.109	.657	.720	.004	.720
	Academic tasks stress	7.270	1	7.270	.462	.130	.010	.462
	Financial stress	69.190	1	69.190	.082	.413	.082	.413
	Context stress	2.4471	1	2.4471	.625	.410	.004	.410
	Self-stress	164.035	1	164.035	.564	.456	.010	.456
	Anxiety	229.216	1	229.216	.050	.546	.068	.546
	Depression	8.631	1	8.631	.078	.312	.055	.312
	Academic achievement	1908.461	1	1908.461	.112	.334	.045	.334
Years since father's death	Stress	465	1	465	.901	.433	.000	.433
	Interaction stress with adults/teachers	181.286	1	181.286	.012	.541	.109	.541
	Coping stress with peers	58.807	1	58.807	.109	.306	.019	.306
	Home stress	83.881	1	83.881	.068	.466	.050	.466
	Future stress	26.119	1	26.119	.202	.341	.029	.341
	Stress due to lack of leisure time	4.53	1	4.53	.560	.343	.006	.343
	Academic tasks stress	4.25	1	4.25	.656	.241	.004	.241
	Financial stress	60.348	1	60.348	.322	.321	.018	.321
	Context stress	151.265	1	151.265	.000	.813	.021	.813
	Self-stress	184.981	1	184.981	.429	.342	.011	.342
	Anxiety	7.731	1	7.731	.714	.813	.002	.813
	Depression	28.665	1	28.665	.002	.809	.163	.809
	Academic achievement	200.32	1	200.32	.602	.711	.005	.711
Group	Stress	33.487	1	33.487	.292	.561	.020	.561
	Interaction stress with adults/teachers	144.442	1	144.442	.024	.830	.086	.830
	Coping stress with peers	80.630	1	80.630	.694	.299	.003	.299
	Home stress	6.523	1	6.523	.606	.321	.005	.321
	Future stress	1.486	1	1.486	.759	.218	.002	.218
	Stress due to lack of leisure time	.351	1	.351	.871	.119	.000	.119
	Academic tasks stress	10.161	1	10.161	.500	.671	.008	.671
	Financial stress	4.563	1	4.563	.785	.431	.001	.431
	Context stress	50.794	1	50.794	.029	.071	.083	.071
	Self-stress	403.486	1	403.486	.244	.057	.025	.057
	Anxiety	191.768	1	191.768	.058	.099	.058	.099
	Depression	.018	1	.018	.000	.0543	.000	.0543
	Academic achievement							

After controlling for demographic variables, the results show that significant differences exist only in coping with stress with peers and self-stress. The eta coefficient indicates that the death of a father explains 8.9% of the variance in coping stress with peers and 8.3% of the variance in self-stress. Therefore, normal girls exhibit significantly higher coping stress with peers, while orphaned girls exhibit significantly higher self-stress.

4. Discussion and Conclusion

The research aimed to compare stress and its dimensions, anxiety, depression, and academic achievement between

orphaned and non-orphaned high school girls. The results showed that normal girls had significantly higher coping stress with peers, while orphaned girls had significantly higher self-stress. Other variables did not show statistically significant differences, but the results reveal significant differences between the two groups in all variables.

No published research specifically examines the impact of a father's death on stress, anxiety, depression, and academic achievement among adolescents. However, previous studies have shown the role of the family in various psychological aspects of adolescence (Ataabadi et al., 2013; Gammon & Morgan-Samuel, 2005; Jafari et al., 2014; Kourosh Nia & Latifian, 2007; Saklofske et al., 2012; Yousefi, 2012).

Several points can explain the statistically insignificant results: 1) Due to the limited orphan population, matching groups were based on some demographic variables, neglecting important factors such as child abuse, which could reduce group differences; 2) Orphaned girls might have knowingly filled out self-report measurements to portray themselves better; 3) Self-report measurements have inherent limitations. Interviews might have provided deeper insights; 4) Other variables during adolescence might diminish the father's role; 5) Orphaned girls might experience more depression, anxiety, and stress but be conservative in expressing these internal states due to life experiences related to their father's death; 6) Control variables, such as the mother's age or job, might mitigate the impact of the father's death.

Normal girls exhibited significantly higher coping stress with peers than orphaned girls. This might be because orphaned girls perceive family as their primary support source due to their father's death. They might feel a responsibility to support their family, viewing peers as potential barriers to family cohesion. Conversely, normal girls, with the support of their fathers, have fewer stressors and more concerns about their peers.

The mean self-stress among orphaned girls was significantly higher than in the normal group. This dimension evaluates quitting bad habits and following goals. The absence of a father might make girls more self-reliant and concerned with self-development and managing life tasks, leading to higher self-stress.

In conclusion, although a father's death did not significantly change total stress, its dimensions, depression, anxiety, or academic achievement, it significantly affected coping stress with peers and self-stress, differentiating the two groups. These findings suggest that orphaned girls and

their families strive to achieve conditions similar to those of normal girls but require additional psychological support to improve their circumstances.

5. Limitations & Suggestions

This study has several limitations that should be acknowledged. The sample size was relatively small, which may limit the generalizability of the findings. Additionally, the study relied on self-report measures, which are subject to social desirability bias and may not accurately reflect the participants' true experiences. The cross-sectional design of the study does not allow for causal inferences to be made. Moreover, important variables such as child abuse, which could significantly impact the outcomes, were not considered. The matching of orphaned and non-orphaned participants was based on limited demographic factors, potentially overlooking other significant influences. Finally, cultural factors specific to the Iranian context may limit the applicability of the findings to other settings.

Future research should consider using larger and more diverse samples to enhance the generalizability of the findings. Longitudinal studies would be beneficial to understand the causal relationships between the variables and how they develop over time. Incorporating qualitative methods, such as in-depth interviews, could provide richer and more nuanced insights into the experiences of orphaned adolescents. Future studies should also include a broader range of variables, such as the quality of the mother-child relationship, socioeconomic status, and exposure to traumatic events, to provide a more comprehensive understanding of the factors influencing stress, anxiety, depression, and academic achievement. Additionally, comparative studies across different cultural contexts would help determine the universality of the findings.

The findings of this study have several important implications for practitioners, educators, and policymakers. Interventions aimed at supporting orphaned adolescents should focus on enhancing their coping strategies and providing psychological support to address self-stress and peer-related stress. Schools can play a crucial role by offering counseling services and creating supportive environments that foster peer relationships and academic success. Policies should aim to provide financial and social support to families of orphaned children to mitigate the impact of stressors associated with the loss of a parent. Training programs for educators and caregivers on the specific needs of orphaned adolescents could further

enhance their ability to support these individuals effectively. By addressing these areas, it is possible to improve the overall well-being and academic outcomes of orphaned adolescents.

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