The Relationship Between Mental Health and Mental Toughness with Meaning in Life in Families of Children with Autism

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A B S T R A C T

Objective: The present study aimed to determine the relationship between mental health and mental toughness with the meaning in life in families of children with autism.

Methods: The statistical population included all families with children with autism registered in the Autism Society of Tehran in 2022 (totaling 2,040 individuals). From this population, 322 participants were selected using convenience sampling based on Morgan's table. Participants were assessed using the General Health Questionnaire (GHQ) by Goldberg (1999), the Mental Toughness Questionnaire by Clough, Earle, and Sewell (2002), and the Meaning in Life Questionnaire by Steger, Frazier, Oishi, and Kaler (2006). Data were analyzed using Pearson's correlation coefficient and multiple regression tests via SPSS version 23.

Findings: The findings revealed a significant relationship between meaning in life and both mental health and mental toughness in families of children with autism. The dimensions of mental health significantly predicted the presence of meaning and the search for meaning in life. Furthermore, the dimensions of mental toughness were also significant predictors of the presence of meaning and the search for meaning ($P < 0.001$).

Conclusion: Based on the results, the role of mental health and mental toughness is crucial in fostering a positive experience of meaning in life for families of children with autism.

Keywords: mental health, mental toughness, meaning in life, autism.

1.   Introduction

Individuals with autism experience significant behavioral challenges that expose both them and their families to serious risks and psychological difficulties. Autism spectrum disorder (ASD), commonly referred to as autism, is characterized by a variety of symptoms, including perceptual, cognitive, and social differences (Márquez, 2024; Moghaddam, 2024). The American Psychiatric Association (2013) defines ASD as a neurodevelopmental

disorder in which the affected individual may face difficulties in social interactions and exhibit restricted, repetitive behaviors (Buchholz et al., 2024; Vuijk, 2024).

Research has shown that families of children with autism experience greater stress compared to families of children with intellectual disabilities or Down syndrome (Portes et al., 2020; Rezaei Dehnavi & Hemmati Almdarloo, 2015; Shafiei Kondjani et al., 2020). Raising a child with autism is complex and introduces significant changes to family dynamics (Altiere & von Kluge, 2009; Amini et al., 2020; Cridland et al., 2013). Findings by Salmon, Leadbeater, Eldred, and colleagues (2018) indicate that the child's intellectual disability, impairments in daily living skills, heightened emotional and behavioral problems, higher education levels of caregivers, and household income below the average significantly affect caregivers' mental health (Salomone et al., 2018).

Lee et al. (2021) found that having a child with autism can lead to reduced mental health among families. Mental health is an essential component for the growth and prosperity of families and societies (Li et al., 2021). According to the World Health Organization's (2015) charter, health is defined as a state of complete physical, social, and mental well-being, and not merely the absence of disease or infirmity. Low mental health among parents of children with special needs is a commonly observed phenomenon. The disability of one child disrupts the optimal functioning of the family and is a major cause of psychological and social challenges among family members (Rezaei Dehnavi & Hemmati Almdarloo, 2015).

The need for constant care, education, and treatment of a child with autism, combined with difficulties in communication, inappropriate behaviors, and comorbidities such as intellectual disabilities and seizures, creates significant stress within families (Broder-Fingert et al., 2020). Additionally, families play a pivotal role in determining the mental health of individuals with autism for whom they care (Papadopoulos et al., 2019). Shafiee et al. (2020) revealed that although parents of children with autism demonstrate healthier personality traits, they experience moderate to severe psychological problems in terms of mental health (Shafiei Kondjani et al., 2020). Mami and Amiryian (2016) reported that mothers of children with autism exhibit lower mental health compared to mothers of other children with special needs (Mami & Amirian, 2015).

Findings from Salmon et al. (2018) suggest that lower mental health in families is significantly correlated with higher emotional and behavioral problems in autistic children (Salomone et al., 2018).

On the other hand, mental toughness is crucial for families of children with autism. Mental toughness refers to the ability to effectively cope with stress and crises, maintaining optimal functioning, rebounding from setbacks, persisting in the pursuit of success, competing with oneself and others, having strong self-belief in controlling one's destiny, and overcoming pressure (Bagheri, 2014).

Several models of mental toughness exist, but the most widely accepted model is proposed by Clough, Earle, and Sewell (2002). This model defines mental toughness as comprising four main components:

1. **Control**: Demonstrating sufficient control over one's emotions and actions.
2. **Commitment**: Fully dedicating oneself to completing tasks effectively.
3. **Challenge**: Viewing life challenges as opportunities for self-growth.
4. **Confidence**: Exhibiting self-assurance in interpersonal interactions and belief in one's abilities (Gucciardi et al., 2015).

Mental toughness has garnered significant attention due to its explanatory power regarding psychological constructs such as stress management, self-confidence, and motivation, as well as its relevance to a broad range of health-related behaviors (Sadeghi Bahmani et al., 2016). Gold, Griffiths, and Carson (2011) argue that mental toughness is the outcome of positive growth, enabling individuals to navigate obstacles, overcome anxiety and fears, and maintain control.

Research has consistently reported that mothers of children with special needs exhibit higher psychological stress and lower mental toughness compared to typical groups (Seltzer et al., 2004). Furthermore, prior studies have highlighted a positive and significant correlation between mental health and mental toughness (Brand et al., 2014; Naji et al., 2017; Yıldırım & Arslan, 2020).

Among the factors that support families with autistic children in coping with stressful and challenging situations is having a sense of meaning in life. Meaning in life refers to a sense of connection with the Creator, having a purpose in life, pursuing valuable goals, and achieving personal growth. It encompasses individuals' beliefs about the existence of an ultimate purpose in life (Ho, Cheung, & Cheung, 2010) and is a predictor of quality of life and mental health (Shiah et al., 2015).

Research has shown that a meaningful life is an important predictor of mental health (Halama & Dedova, 2007; Ryff,

1989) and life satisfaction (Yee Hoo et al., 2010). It also strengthens the immune system (Bower et al., 2003), reduces depression (Westerhof et al., 2010), and enhances quality of life (Wu, 2009).

Thus, individuals with a sense of meaning in life tend to have better mental health, experience less anxiety and stress, and demonstrate higher levels of mental toughness and resilience. Therefore, this study seeks to answer the question: Is there a relationship between mental health and mental toughness with meaning in life among families of children with autism?

2. Methods

2.1. Study Design and Participants

The present study was applied in its aim, descriptive in data collection, and correlational in methodology. The statistical population included all families with children with autism registered in the Autism Society of Tehran in 2022 (n = 2,040). Using Morgan's table, 322 participants were selected through convenience sampling. Participants were evaluated using the General Health Questionnaire by Goldberg (1999), the Mental Toughness Questionnaire by Clough, Earle, and Sewell (2002), and the Meaning in Life Questionnaire by Steger, Frazier, Oishi, and Kaler (2006).

Inclusion criteria included a minimum education level of high school diploma to ensure comprehension of the questions and the ability to complete the questionnaires online. Exclusion criteria included incomplete or invalid responses and the presence of physical or mental illnesses.

Standardized questionnaires were used to measure variables. Data were collected online from eligible families who voluntarily agreed to participate. After explaining the study objectives and ensuring confidentiality, participants completed the questionnaires anonymously.

The criterion variable was meaning in life, while the predictor variables were mental health and mental toughness. The study utilized analytical resources, psychology journals, medical and psychotherapy publications, and related theses. Families meeting the inclusion criteria and willing to participate completed the online questionnaires. Data collection occurred in the spring and summer of 2022.

2.2. Measures

2.2.1. Self-Harming

The General Health Questionnaire (GHQ), developed by Goldberg (1999), contains 24 questions across four subscales: somatic symptoms (questions 1–7), anxiety (questions 8–14), social dysfunction (questions 15–21), and depression (questions 22–28). Two scoring methods are available: traditional bimodal scoring (0-0-1-1), with a maximum score of 28, and Likert scoring with a 4-point scale (0 = more than usual, 1 = as usual, 2 = less than usual, 3 = much less than usual), yielding a maximum score of 84. Reliability scores reported include split-half reliability of 0.95 (Goldberg & Williams, 1988), Cronbach's alpha of 0.93, and test-retest reliability of 0.90 over 8 months. Validity and reliability studies in Iran (Nourbala et al., 2002) demonstrated coefficients ranging from 0.84 to 0.93 using different scoring methods.

2.2.2. Mental Toughness

The Mental Toughness Questionnaire, designed by Clough, Earle, and Sewell (2002), includes 48 questions and six subscales: challenge, emotional control, life control, commitment, self-confidence, and interpersonal confidence. Scoring follows a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). Several items are reverse-scored. Psychometric studies have reported adequate validity and reliability, with Cronbach's alpha ranging from 0.60 to 0.80 for subscales and test-retest reliability of 0.90 (Perry et al., 2012; Sheard & Golby, 2006). Studies in Iran (Afsaneh Pourk & Vaezi Mousavi, 2012) reported an overall Cronbach's alpha of 0.93.

2.2.3. Meaning in Life

The Meaning in Life Questionnaire, developed by Steger, Frazier, Oishi, and Kaler (2006), evaluates two dimensions: presence of meaning in life and search for meaning in life. Scores are calculated using a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). Questions 1, 4, 5, 6, and 9 are reverse-scored. Reliability coefficients for subscales range from 0.70 to 0.87. Construct validity studies in Iran (Talebzadeh Shoushtari & Pourshafaei, 2011) reported a Cronbach's alpha of 0.92.

2.3. Data Analysis

Data were analyzed in two stages. In the descriptive statistics phase, measures such as mean and standard deviation were calculated. In the inferential statistics phase, hypotheses were tested using simultaneous multiple regression analysis via SPSS software version 24.

3. Findings and Results

This study was conducted with the participation of 322 individuals with children diagnosed with autism, with a mean age of 48.66 (SD = 9.30). Table 1 presents the mean, standard deviation, skewness, kurtosis, and Cronbach's alpha values for the research variables.

Table 1

Descriptive Statistics for Research Variables

Variables	Mean	SD	Skewness	Kurtosis	Cronbach's Alpha
Search for Meaning	20.74	5.653	-0.426	-0.44	0.812
Presence of Meaning	19.95	4.067	-1.091	1.139	0.870
Total Meaning in Life	40.69	8.993	-0.787	0.365	0.890
Somatic Symptoms	11.85	3.757	1.053	1.109	0.787
Anxiety Symptoms	12.67	4.804	0.649	-0.25	0.747
Social Dysfunction	13.62	3.551	0.799	0.744	0.796
Depression Symptoms	14.88	4.068	1.464	1.891	0.784
Total Mental Health	53.02	12.872	0.918	0.308	0.813
Challenge	24.73	4.538	-0.773	0.393	0.924
Commitment	27.92	7.415	-0.172	-0.116	0.791
Emotional Control	25.69	5.109	-0.253	0.001	0.832
Life Control	18.38	5.906	0.141	-0.612	0.940
Self-Confidence	22.38	4.498	0.025	1.342	0.892
Interpersonal Confidence	16.01	2.947	0.263	0.496	0.761
Total Mental Toughness	135.19	20.136	-0.266	0.040	0.920

The mean and standard deviation for the variables indicate appropriate data dispersion, and the skewness and kurtosis indices suggest that the distribution of the research variables is normal. An analysis of the data shows that the skewness and kurtosis values for the variables fall within the range of ±2, indicating an acceptable distribution of the data.

The correlation matrix of the research variables, along with their correlation coefficients and significance levels, is presented in Table 2 to explore the relationships among the variables.

Table 2

Correlation Matrix for Research Variables

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	1														
2	0.847*	1													
3	0.816*	0.704*	1												
4	-0.417*	-0.355*	-0.429*	1											
5	-0.435*	-0.372*	-0.446*	0.697*	1										
6	-0.335*	-0.303*	-0.319*	0.415*	0.451*	1									
7	-0.378*	-0.326*	-0.382*	0.564*	0.537*	0.328*	1								
8	-0.476*	-0.413*	-0.478*	0.835*	0.860*	0.665*	0.753*	1							
9	0.402*	0.349*	0.404*	-0.025	-0.112*	-0.088	-0.132*	-0.048	1						
10	0.320*	0.258*	0.349*	-0.015	-0.030	0.004	-0.044	0.001	0.451*	1					
11	0.407*	0.366*	0.392*	-0.169*	-0.195*	-0.254*	-0.162*	-0.243*	0.384*	0.372*	1				
12	0.391*	0.425*	0.275*	-0.163*	-0.094	-0.080	-0.173*	-0.033	0.267*	0.448*	0.277*	1			
13	0.349*	0.379*	0.244*	-0.187*	-0.110*	-0.132*	-0.169*	-0.155*	0.214*	0.196*	0.201*	0.440*	1		
14	0.303*	0.253*	0.317*	-0.205*	-0.230*	-0.155*	-0.195*	-0.250*	0.348*	0.206*	0.389*	0.166*	0.181*	1	
15	0.517*	0.481*	0.474*	-0.198*	-0.139*	-0.149*	-0.186*	-0.143*	0.646*	0.764*	0.636*	0.710*	0.540*	0.484*	1

*$p<.01$.

1. Meaning in Life; 2- Search for Meaning; 3- Presence of Meaning; 4- Somatic Symptoms; 5- Anxiety Symptoms; 6- Social Dysfunction; 7- Depression Symptoms; 8- Total Mental Health; 9- Challenge; 10- Commitment; 11- Emotional Control; 12- Life Control; 13- Self-Confidence; 14- Interpersonal Confidence; 15- Total Mental Toughness

The findings in Table 2 demonstrate that the relationship between meaning in life and mental health, as well as its components, is negative and significant at the 0.05 level. Furthermore, the correlation between meaning in life and mental toughness, along with its components, is positive and significant at the 0.05 level. Specifically, the correlation between meaning in life and mental health is negative and significant ($r = -0.476$, $p < 0.01$), while the correlation between meaning in life and mental toughness is positive and significant ($r = 0.517$, $p < 0.01$).

To examine the predictive power of the independent variables, multiple regression analysis was conducted using the simultaneous entry method. Table 3 shows how much of the variance in the dependent variable (meaning in life) is explained by mental health and mental toughness.

Table 3

Multiple Regression Analysis for Predicting Meaning in Life Based on Mental Health and Mental Toughness

Predictor Variable	F	R	R²	Adjusted R²	b	SE	β	t	p
Constant					28.071	3.261		8.608	0.001
Mental Health	121.280	0.657	0.432	0.428	-0.29	0.03	-0.410	-9.62	0.001
Mental Toughness					0.207	0.019	0.458	10.749	0.001

The model is statistically significant ($F(2, 321) = 121.280$, $p < 0.01$). The multiple correlation coefficient for predicting meaning in life based on mental health and mental toughness is 0.657, with an R² of 0.432, indicating that 43.2% of the variance in meaning in life is explained by these predictors. Mental health negatively predicts meaning in life ($\beta = -0.410$, $p < 0.01$), while mental toughness positively predicts it ($\beta = 0.458$, $p < 0.01$).

4. Discussion and Conclusion

The results indicate a negative and significant relationship between meaning in life and mental health, and a positive and significant relationship between meaning in life and mental toughness. Multiple regression analysis using the simultaneous method revealed that 43.2% of the variance in meaning in life can be explained by mental health and mental toughness. The findings suggest that for every standard deviation increase in mental health scores, there is a 0.410 standard deviation decrease in meaning in life scores. Conversely, for every standard deviation increase in mental toughness scores, there is a 0.458 standard deviation increase in meaning in life scores. Therefore, the main hypothesis of the study is confirmed. These results align with previous research (Gucciardi et al., 2015; Khari, 2014).

Autism spectrum disorder imposes significant psychological pressures on families due to its diverse characteristics, including a range of linguistic, behavioral, social, and communicative abnormalities, late and difficult diagnosis, symptoms manifesting after a typical period of development, lack of definitive treatments, and often unfavorable prognosis. The presence of a child with autism

in the family, particularly for mothers, creates substantial psychological burdens. Providing care for a child with autism can result in financial, social, and physical strains for caregivers, making it a challenging experience. Autism affects every aspect of caregivers' lives, including their mental, physical, economic, and social well-being.

Studies show that the negative effects of raising a child with autism create stress and tension in family members, particularly mothers, as they are the primary caregivers. Feelings of guilt, frustration, and deprivation resulting from the child's atypical development can lead to social withdrawal, a lack of interest in engaging with others, low self-esteem, feelings of worthlessness, sadness, and, ultimately, depression and impaired mental health. The study by Alizadeh and Zarei (2020) found that mothers of children with autism report lower levels of hope and meaning in life compared to mothers of children with intellectual disabilities or neurotypical children. Consequently, families of children with autism often experience psychological effects such as anxiety, depression, social isolation, and marital conflict, which undermine their personal sense of meaning in life (Alizadeh & Zarei, 2020).

Mental toughness plays a crucial role in enabling individuals to cope with these challenges. Mental toughness is defined as the effective handling of stress and crises with minimal disruption to functioning, resilience after setbacks, persistence toward success, and strong self-belief in controlling one's destiny and overcoming pressure (Bagheri, 2014). Individuals with low mental toughness often suffer from psychological issues such as depression and other emotional, motivational, cognitive, physical, and even motor

problems. A lack of mental toughness may contribute to depression, as maladaptive thoughts and behaviors conflict with the characteristics of mental toughness. Conversely, individuals with high mental toughness tend to have lower levels of anxiety, higher self-confidence, and greater social interactions, which help them rely on interpersonal relationships and social support, thus experiencing fewer psychological issues (Naji et al., 2017).

In interpreting the findings, it can be concluded that dimensions of mental toughness—commitment, control, and challenge—predict meaning in life for families of children with autism. Mothers of children with autism face psychological and social challenges, often manifesting as emotional distress, stress, and perceived inadequacy in coping with these stressors. The findings suggest that acceptance and commitment within these families significantly influence their meaning in life. Instead of struggling against circumstances and generating negative thoughts and emotions, focusing on acceptance of the situation and striving for their child's improvement can enhance meaning in life. Additionally, the mental health of these families plays a crucial role in fostering meaning in life.

5.   Suggestions and Limitations

One limitation of this study is its reliance on self-reported data, which may be subject to biases such as social desirability or inaccurate recall, affecting the validity of the findings. Additionally, the cross-sectional design of the study does not allow for causal inferences between mental health, mental toughness, and meaning in life. The sample was limited to mothers of children with autism, which restricts the generalizability of the results to other caregivers or populations, such as fathers or caregivers of children with other disabilities. Furthermore, the study did not account for potential moderating variables, such as socioeconomic status or the severity of the child's condition, which could influence the relationships observed. Finally, the study's findings are context-specific and may not be applicable to families from different cultural backgrounds or regions.

Future research could benefit from utilizing longitudinal designs to examine causal relationships between mental health, mental toughness, and meaning in life over time. Including a more diverse sample, such as fathers, other caregivers, or families with children who have different disabilities, would enhance the generalizability of the findings. Additionally, future studies could explore the impact of external factors, such as socioeconomic status or the severity of the child's condition, on the relationship between mental toughness and meaning in life. It may also be valuable to investigate interventions aimed at enhancing mental toughness and meaning in life in families of children with autism, to assess whether such programs can improve caregivers' mental health and overall well-being. Cross-cultural comparisons could provide further insight into the role of cultural values and social support in shaping caregivers' experiences and coping strategies.

Authors' Contributions

All authors have contributed significantly to the research process and the development of the manuscript.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

The authors report no conflict of interest.

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Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

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