



# The Relationship between Sternberg's Tridimensional Intelligence and Coping Strategies in Facing Trauma in Self-Care Women

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The present study was conducted with the aim of investigating the relationship between Sternberg's three-dimensional intelligence and coping strategies in facing trauma in self-care women. The descriptive research method was correlation type. The statistical population of the research was all female heads of households in Tehran in 2022. The research sample included 150 female heads of households in the 20th district of Tehran, who were supported by the Imam Khomeini Relief Committee. The sampling method was determined voluntarily. The research tools were Grigorenko and Sternberg's (2002) successful intelligence questionnaire and Andler and Parker's (1990) coping strategies questionnaire. The method of data analysis was Pearson's correlation coefficient and multivariate regression analysis using spss software. The research findings showed that there is a weak significant relationship between analytical intelligence, emotion-oriented strategies and avoidance strategies, but there is a strong positive significant relationship between creative and practical intelligence and problem-oriented, emotion-oriented and avoidance strategies. Also, the results of the research showed that the problem-oriented strategy has the ability to predict intelligence. It can be concluded that Sternberg's three-dimensional intelligence can play a positive role in coping strategies in facing trauma in self-care women.

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## **1. Introduction**

Numerous factors, including war, urbanization, divorce, addiction, and the death of a spouse, among others, lead to changes in family structure and an increase in the number of single-parent families headed by women worldwide (Qashqaei et al., 2022). In cases where family headship suddenly transfers from men to women, women face insecure conditions including loss of income, child-rearing, and the dual role of mother and father (Javadian, Haydarpour Yazdi, & Behzadmanesh, 2017, p. 129). The sudden transition of headship from husband to wife leads to a series of insecurities and additional responsibilities, such as loss of income, raising children, and the dual role (father and mother) for women. Eventually, these conditions lead to the formation of personal, psychological, and social stresses and pressures, which can jeopardize the mental and family health of women (The emergence of the Vajih case & Bagheri Neswan Toubi, 2022).

According to the definition of the welfare organization, female heads of households are women who are responsible for the material and spiritual livelihood of themselves and their family members. This group of women can be categorized into: divorced women, widows, women whose husbands are incapacitated or unemployed, women whose husbands are addicted and bear the living costs, women whose husbands are in prison, and women whose husbands have migrated for employment or other reasons (Azamzadeh et al., 2018). Coping with personal, psychological, social, emotional, economic, family, educational, and children's behavioral issues in the future falls on the family head (mother), who must act to maintain the existing emotional relationships in the family, prevent the minimum stresses in the family, and support children materially and spiritually (Azadeh & Tafte, 2014). These women often face damaging factors such as limited access to job opportunities, illiteracy or low literacy, lack of regular income, and psychological problems, which, in the absence of comprehensive support, will impose significant costs on society (Shabanzadeh et al., 2012). Despite all the problems that exist for female heads of households, intelligence can be a factor that leads this segment of society to success and be a factor for growth and advancement.

There have been various and numerous theories about intelligence, which have been extensively reviewed elsewhere. Intelligence theories have had different types (Willis, 2011). The most visible theories have been psychometric theories, which conceptualize intelligence based on some kind of "mental map". Sternberg has

offered something known as the "Triarchic" theory of human intelligence (Johnson & Bouchard, 2015). According to Sternberg, a common set of universal mental processes underlies all aspects of intelligence. Although specific solutions to problems considered "intelligent" in one culture may differ from those in another, the mental processes required to achieve these solutions could be the same. According to this theory, individuals are intelligent to the extent that they: (1) define and achieve goals that help them accomplish what they are after in life in their cultural context; (2) by investing in strengths and compensating or correcting for weaknesses; (3) in order to adapt, shape, and select environments; (4) through a combination of essential skills. As mentioned above, essential skills include: (1) creative skills for generating novel ideas; (2) analytical skills to ensure ideas are good; (3) practical skills to implement their ideas and persuade others of their value; and (4) wisdom-based skills to ensure that ideas help achieve a common good in the long and short term through the injection of positive ethical values. Practical intelligence, as proposed by Sternberg, is sometimes compared to "social intelligence". Being practical means finding solutions that work in everyday life by applying knowledge based on your experiences. This type of intelligence appears to be distinct from the traditional understanding of IQ. People with high practical intelligence may or may not have comparable scores in creative and analytical intelligence (Sternberg, 2019). Analytical intelligence aligns with problem-solving and academic calculations. Sternberg says analytical intelligence is demonstrated by the ability to analyze, evaluate, judge, compare, and contrast (Gardner & Kornhaber, 2018). When solving a challenging mathematical problem, you use analytical intelligence to analyze different aspects of the problem and then solve it piece by piece. Creative intelligence is defined by inventing or imagining a solution to a specific problem or situation. Creativity in this area could include finding a novel solution to an unexpected problem or producing a beautiful artwork or a developed short story (Urbina, 2011). In the meantime, research by Hamidi (2016) showed that the relationship between the intelligence of adolescent girls and boys in deprived areas with a problem-focused coping style is direct, and on the other hand, the relationship between the intelligence of adolescents in deprived areas with an emotion-focused coping style is inverse, considering gender.

The research by Hart and Brinson (2012) indicates that post-traumatic stress may affect racial/ethnic variations in depression symptoms in a clinical sample of young women from low-income families. Therefore, it can be

stated that low-income families, such as female heads of households who are under greater economic pressures, are more susceptible to trauma and post-traumatic stress. In this context, coping strategies in dealing with trauma can significantly be influenced by individual intelligence. Coping resources are one of the elements of positive psychology and are an essential tool that can act as a protector in preventing psychological stress for chronic diseases, which may also be true in the case of leprosy stress (Smith, 2016). Coping resources are a very important initial capital for developing coping strategies for problem-solving efforts to ensure psychological well-being, including the availability of personal and environmental resources (Catino & Ronell, 2014). According to the resource conservation model of stress, the size of an individual's resources for dealing with stressors is the most important factor in predicting the level of perceived stress. The coping methods of individuals facing trauma in adopting an acceptable method to deal with a particular problem are entirely dependent on their social norms. Thus, with changing social norms, previous coping methods may become unacceptable, and new methods may replace them. Coping might be considered successful control of a situation (Eldwin, 2000). The strength of the concept of coping lies in its flexibility and ability to respond to environmental and individual needs. Due to individual differences, responses to stressful situations and coping methods, or how individuals cope with problems and control situations associated with negative emotions, vary greatly. Even among those who perceive a situation as stressful, the impact of stress depends on how the individual copes with the event (Lazarus & Folkman, 1984). Murphy (2014) sees coping as an effort to deal with environmental pressures that are not resolved through reactions or organized skills and is associated with effort, trial and experience, and energy expenditure towards achieving a goal (Booth & Neill, 2017). In the agreed classification, coping strategies are divided into problem-focused and emotion-focused styles. The problem-focused coping style includes strategies that directly relate to the problem and strive to solve it (Panjwani et al., 2020). In the emotion-focused coping style, the individual deals emotionally with the problem or issue, focusing on alleviating the emotional symptoms arising from the problem. According to Lazarus and Folkman (1984), problem-focused coping includes: active coping, planning, restraint, seeking social support, and preventing disruptive activities. Positive emotion-focused coping includes: emotional and social support, positive reinterpretation, acceptance, turning to religion, and humor. Negative emotion-focused coping

includes: denial, focusing on emotions and their expression, behavioral indifference, psychological indifference, and misuse of alcohol and drugs (Heffer & Willoughby, 2017). Also, Lazarus and Folkman (1984), through the transactional view of stress, stated that instability between the need to cope with stressors and available resources can stimulate stress, creating excessive demands for coping with stressors that can create a heavy burden. Lazarus and colleagues (1984) argue that people use problem-focused and emotion-focused coping strategies depending on different situations (Kizer & Religioso, 2016). Coping strategies like active coping, planning-based coping, active coping, and patient coping fall under problem-focused coping strategies, while behaviors such as negative thinking, avoidant behaviors, impulsive behaviors, addressing painful feelings, and drug use against stressful situations are included in emotion-focused coping strategies (Marcia et al., 2021). One common coping strategy is avoidance. While avoiding memories, people, places, and situations associated with traumatic events is entirely natural, using avoidance as a strategy can keep a person engaged in trauma, so effective coping with trauma requires processing the perception of existing conditions. Shabanzadeh et al. (2012) in their research suggest that emotion-focused coping, family support, and avoidance coping style were capable of predicting the variance in quality of life. Listiawan et al. (2022) in their research suggest that there is a negative relationship between coping strategies and leprosy stress and a positive relationship with psychological well-being. In addition, stress shows a negative relationship with psychological well-being. The present research, which is about the relationship between Sternberg's triarchic intelligence and coping strategies in dealing with trauma in self-headed women, seeks to determine the relationship between Sternberg's triarchic intelligence and coping strategies in dealing with trauma. Women heads of households, due to experiencing numerous stressful situations in their lives, have the minimum conditions for the development of social skills, while individuals' proficiency in personal and social issues is significantly gained through emotional experiences and how they face and adapt to events. Therefore, gathering more accurate information about the intelligence status and coping skills of women heads of households is of special importance.

## **Methodology**

This descriptive correlational study was conducted with the statistical population comprising all female heads of households in Tehran city in the year 2022-2023. The

sample included 150 female heads of households from district 20 of Tehran, who were under the support of the Imam Khomeini Relief Committee and voluntarily participated in the study after receiving a text message call. The inclusion criteria for the study were that at least 3 years had passed since the death of their spouse or their divorce, they were not addicted to drugs or alcohol, did not use specific psychiatric medication, and were not psychologists or counselors. Ethical considerations were rigorously observed in the research, and since the questionnaires pertained to trauma, participants were assured that the information would be confidentially kept by the researcher (the questionnaires were also anonymous); participants were also reminded that they were free to withdraw from filling out the questionnaires at any stage. The following questionnaires were used for data collection:

**Successful Intelligence Questionnaire:** Grigorenko and Sternberg designed the Successful Intelligence Questionnaire in 2002. This questionnaire includes three dimensions: analytical intelligence, creative intelligence, and practical intelligence, with a total of 36 questions. Responses are rated on a 5-point Likert scale (from 1 = strongly disagree to 5 = strongly agree). Of the questionnaire items, 12 measure analytical intelligence, 12 measure creative intelligence, and 12 measure practical intelligence. In the research by Arab Shibani and Akhundi (2016), the Cronbach's alpha for the questionnaire was calculated as 0.79, 0.85, 0.78 for each subscale, and 0.84 for the total score.

**Coping Strategies Questionnaire:** To assess students' coping strategies, the short form of the Coping Strategies for Psychological Stress Questionnaire by Endler and Parker will be used. Endler and Parker (1990) developed this questionnaire to evaluate various coping methods in stressful situations. Suitable for both adult and adolescent forms, it consists of 21 items, rated on a 5-point Likert scale ranging from 'never' (1) to 'very much' (5). This questionnaire identifies three coping styles: avoidant, problem-focused, and emotion-focused. It is based on the theoretical constructs of Endler and Parker's coping strategies theory (1990) and its validity is confirmed by content and construct methods. The internal consistency of the subscales measured by Cronbach's alpha in the research by Hosseini Dolatabadi et al. (2013) was 0.64 for problem-focused coping strategies, 0.67 for emotion-focused coping strategies, and 0.57 for avoidant coping strategies. Bahadri Khosrowshahi and Khanjani (2012) also estimated the Cronbach's alpha for the questionnaire as 0.89 for problem-focused strategy, 0.85 for emotion-focused strategy, and 0.80 for avoidant strategy.

## Findings

The research samples in this study consisted of 276 individuals, including faculty members, educational group managers, school principals, students, and graduates of primary education. The distribution of samples by campus type and place of service is presented in Table 1.

**Table 1.** Mean, Standard Deviation, and Determination of Normal or Non-normal Distribution of Research Variables

Component	Mean	Standard deviation	K-S	p
Problem-focused strategy	24.03	3.06	0.625	0.200
Emotion-focused strategy	25.22	3.48	0.414	0.200
Avoidance strategy	21.48	3.63	0.382	0.200
Analytical intelligence	34.10	4.15	0.425	0.200
Creative intelligence	35.54	4.48	0.523	0.200
Practical intelligence	32.56	4.06	0.308	0.200
Total intelligence score	102.02	10.35	0.442	0.200

The table above shows the mean, standard deviation, and determination of normal or non-normal distribution of research variables. It can be said that the total intelligence score is 102.02 with a deviation of 10.35, the problem-focused strategy score is 24.03 with a deviation of 3.06, the emotion-focused strategy score is 25.22 with a

deviation of 3.48, and the avoidant strategy score is 21.48 with a deviation of 3.63. The status of the scores also indicates that the distribution of scores is normal, allowing the use of parametric statistics.

**Table 2.** Correlation coefficients between the variables of Sternberg's Triarchic Intelligence components and coping strategies in dealing with trauma

	7	6	5	4	3	2	1
1. Problem-focused strategy	0.895**	0.413**	0.446**	0.391**	0.784**	0.869**	-
2. Emotion-focused strategy	0.668**	0.353**	0.283**	0.256*	0.538**	-	0.869**
3. Avoidance strategy	0.552**	0.330**	0.397**	0.202*	-	0.538**	0.784**
4. Analytical intelligence	0.506**	0.516**	0.598**	-	0.202*	0.256*	0.391**
5. Creative intelligence	0.497**	0.429**	-	0.598**	0.397**	0.283**	0.446**
6. Practical intelligence	0.457**	-	0.429**	0.516**	0.330**	0.353**	0.413**
7. Total intelligence score	-	0.457**	0.497**	0.506**	0.552**	0.668**	0.895**

The table above shows the correlation coefficient between Sternberg's triarchic intelligence and coping strategies in dealing with trauma. It can be said that there is a significant positive relationship at the 95% confidence level ( $p < 0.05$ ) between analytical intelligence and emotion-focused and avoidant strategies, and a

significant positive relationship at the 99% confidence level ( $p < 0.01$ ) between creative and practical intelligence and problem-focused, emotion-focused, and avoidant strategies.

**Table 3.** Coefficients of multivariate regression analysis

Component	$\beta$	Beta	t	P	R	R <sup>2</sup>	F	P
Constant	58.389		5.516	0.001				
Problem-focused strategy	2.700	0.578	2.437	0.017	0.547	0.299	8.037	0.001
Emotion-focused strategy	1.318	0.273	1.485	0.141				
Avoidance strategy	0.938	0.495	1.131	0.261				

According to the data in the table, it is clear that the predictor variables (problem-focused strategy, emotion-focused strategy, avoidant strategy) and the criterion variable (intelligence) are entered into the model, and this variable is capable of explaining 29% of the variance ( $R^2 = 0.29$ ). As seen in the table, the obtained F-value is significant at the 0.01 level ( $p = 0.001$ ,  $f = 8.037$ ). Therefore, with 99.9% confidence, we conclude that the problem-focused strategy has high explanatory power and is able to explain the variations and variance in intelligence well. The data from Table 3 of regression analysis show that the standardized regression coefficient for the problem-focused strategy variable predicts intelligence with a small error level of less than 0.01. Based on the slope coefficient score, the strongest predictor is the problem-focused strategy.

## Conclusion

The objective of this research was to examine the relationship between Sternberg's triarchic intelligence and coping strategies in dealing with trauma among self-sufficient female heads of households. The findings of this study indicated that there is a weak significant

relationship between analytical intelligence and emotion-focused and avoidance strategies, but a strong positive significant relationship exists between creative and practical intelligence with problem-focused, emotion-focused, and avoidance strategies. Furthermore, the research findings demonstrated that the problem-focused strategy could predict intelligence. These findings suggest that Sternberg's triarchic intelligence, encompassing analytical, creative, and practical intelligence, can impact coping strategies in dealing with trauma among female heads of households. This finding aligns with the results of studies by Hamidi (2016), Shabanzadeh et al. (2012), and Listiawan et al. (2022). To explain the findings, it can be stated that when women encounter stressful situations and experience mental turmoil and decision-making difficulties, Kisa, Zeyneloglu, and Sergek (2019) found that half of the women who take over family responsibilities experience moderate hopelessness in the first year of their new role, and it was evident that after two years, they experienced higher levels of hopelessness along with a higher level of psychological distress. It can be noted that possessing high intelligence may reduce exposure and experiences

of traumatic events in life. As Bersalo et al. (2016) suggest, avoiding stressful and tense situations can reduce the risk of severe mental disorders and even suicide in individuals. Although women are less exposed to traumatic events than men throughout their lives, the risk of developing post-traumatic stress disorder is higher in them. Overcoming post-traumatic stress disorder in women may be attributed to factors other than the type of trauma, such as sensitization of stress hormone systems in response to early adverse experiences. While researchers declare that the protective effects of high intelligence quotient against the impacts of post-traumatic stress due to trauma exposure are unclear (Robert et al., 2020), the current research findings revealed that the advantage associated with high intelligence levels might be greater in individuals who experience mild to moderate trauma than in those who succumb to post-traumatic stress, and these individuals are less likely to develop pervasive distress. Thus, these findings emphasize the importance of examining cognitive processes in individual responses to challenging and potentially harmful experiences and the role of general intelligence in shaping them.

A limitation of this study is that it was conducted only among women in district 20 of Tehran city and is not generalizable to other areas of Tehran. Furthermore, based on the research findings, it is recommended that physicians, especially those serving low-income families and female heads of households, should be aware of the high rate of women at risk of depression among their patients and that these high rates may be influenced by trauma. Future research should assess traumatic events when women face trauma or post-traumatic stress and consider whether there are racial/ethnic differences in increased trauma among self-sufficient women.

### **Ethical Considerations**

This study made efforts to adhere to ethical standards.

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### **Authors' Contributions**

The first author was responsible for data collection and analysis, while the other authors contributed to the writing of the article.

### **Conflict of Interest**

There was no conflict of interest among the researchers in this study.

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