The relationship between emotional intelligence and mental health with social anxiety in blind and deaf children

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Abstract: The most important human senses are vision and hearing, and learning, educational, communication, and emotional activities are widely associated with these two senses so the purpose of this study was to determine the relationship between emotional intelligence and mental health. The research method was descriptive-correlational and the study population consisted of all students with visual and hearing impairment aged 12 years and above in Kermanshah Exceptional Centers and Public Schools. They were studied (28 blind and 58 deaf). The instrument used in this study was Shot emotional intelligence questionnaire, mental health and social anxiety. Pearson correlation coefficient was used to investigate the relationship between emotional intelligence and mental health with social anxiety. The results of stepwise regression coefficient showed that the strongest predictors were emotional intelligence, emotional appraisal and emotional productivity, and mental health, anxiety, and insomnia components in social function which predict the variance of social anxiety as 44%. Pearson correlation coefficients showed that the components of physical symptoms, anxiety and insomnia, social dysfunction and depression were positively correlated with social anxiety. However, the relationship between evaluation and expression of emotion, emotion regulation

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PUBLIC INTEREST STATEMENT

The most important human senses are vision and hearing, and learning, educational, communication, and emotional activities are widely associated with these two senses. The impact of their absence on the psychosocial status of the individual is undeniable. Social anxiety disorder is one of the most serious issues of blindness and deafness. The purpose of this study was to investigate the relationship between emotional intelligence and mental health with social anxiety in blind and deaf students. Overall, the results showed that there was a significant relationship between emotional intelligence and mental health with social anxiety. It can be concluded that visual and hearing impairment can be an effective factor in emotional intelligence, mental health and social anxiety, so that blind and deaf students in emotional intelligence and mental health components have negative relationship with social anxiety disorder. It is
and emotional productivity with social anxiety was negative. Emotional intelligence and mental health are psychological constructs that play an important role in the formation of social anxiety disorder and lead to the persistence of symptoms of this disorder.

Subjects: Health Psychology; Cognitive Psychology; Counseling Psychology

Keywords: children; emotional intelligence; mental health; social anxiety

1. Introduction

The various senses of man in terms of their importance in feeling, perceiving and knowing things are in fact the gates of human knowledge. The most important human senses are vision and hearing, and learning, educational, communication, and emotional activities are widely associated with these two senses. Therefore, the impact of their absence on the psychosocial status of the individual is undeniable. In a study comparing the personal and social structures of blind and deaf children, Pringle (1964) found that blind children act socially and personally lower than their visual counterparts (Du Feu & Fergusson, 2003). According to recent WHO forecasts, nearly 45 million people worldwide are blind and 135 million are visually impaired and require economic and social assistance (Hashemi et al., 2017). There are different definitions of blindness. Often, visual impairment is used synonymously with visual impairment (Musarezaie, Ghasemipoor, Momeni-Ghaleghasemi, Khodaei, & Taleghani, 2015). Thus, a person is legally blind when he has a vision less than 20/200 in his superior eye and a range less than 20 degrees (Houston, 1994). Deafness is also a type of neurodegenerative disorder that affects more than 120 million people worldwide (Sadeghi, Sanati, Alasti, Hashemzadeh Chaleshtori, & Ataei, 2005). Most studies have reported social skills deficiencies in the blind and especially deaf (Jarjoura & Karni, 2016). Children with hearing impairments due to physical handicaps and their deprivation are often unable to interact with peers and adults and their emotional adjustment and social skills are difficult (Szymanski, Brice, Lam, & Hotto, 2012).

Social anxiety disorder is one of the most serious issues of blindness and deafness, which means the excessive or irrational fear of the person being examined or evaluated for situations that manifest one’s behavior or performance. This fear is due to the expectation that the individual will be judged negatively and this leads to confusion (Sosic, Gieler, & Stangier, 2008). In terms of prevalence, social anxiety is one of the three most common psychiatric disorders after major depressive disorder and alcoholism (Moitra, Herbert, & Forman, 2008). Young people with social anxiety in general have poorer social interactions and less ability to adapt than their peers. They face more problems when faced with adult expectations (Charmaraman, Chan, Chen, Richer & Ramanudom, 2018). Social anxiety can affect various psychological aspects. The meta-analysis result of Ulatunji et al. showed that people who suffer from social anxiety significantly impair their quality of life and psychosocial functioning. Emotion plays an important role in different aspects of life adaptation to life changes and stressful events. Basically, emotion can be viewed as biological response to situations that we consider to be an important or challenging opportunity, and these biological reactions are coupled with the response we give to environmental events (Olatunji, Cisler, & Tolin, 2007). Although emotions have a biological basis, individuals are able to influence the ways they express these emotions. This ability which is called emotion regulation, is the internal and external processes that are responsible for controlling, evaluating, and modifying one’s emotional reactions in the pursuit of goals (Thompson, 1994). Therefore, emotion regulation is a fundamental principle in initiating, evaluating, and organizing adaptive behavior, as well as preventing negative emotions and maladaptive behaviors (Olatunji et al., 2007). Theorists believe that those who are unable to properly manage their emotions in the face of everyday events are more likely to exhibit diagnostic symptoms, internalizing disorders such as depression and anxiety (Mennin & Farach, 2007). Studies of anxious children and adolescents have shown that effective cognitive assessment reduces the negative emotions of anxious children and non-anxious
children, and does not differ between the two groups (Carthy, Horesh, Apter, Edge, & Gross, 2010). Bar-on et al (2001) considers emotional intelligence as a set of non-cognitive skills, talents, and abilities that enhances one’s ability to succeed in the face of environmental pressures and demands (Nourian & Namvar, 2016). He is one of those who looks at emotional intelligence as a personality trait (Petrides, Pita, & Kokkinaki, 2007). Emotional intelligence covers individual differences in individual emotional (stress control) and interpersonal (stress perception) abilities (Rey, Extremera, & Trillo, 2013). In general, emotional intelligence is predictable from the source of internal control (Keele & Bell, 2008; Song et al., 2010). A psychologist named Goleman, (Modir, 2019) found in a study that cognitive intelligence at best situations causes only 20 percent of successes and the other 80 percent have been caused by other factors and people’s destiny in many situations depends on the skills that constitute emotional intelligence. In Karami’s et al. research (Karami, Zakiei, & Rostami, 2012), there was a negative correlation between metacognitive beliefs and self-efficacy with social anxiety. In a research based on the study of the relationship between emotional intelligence and social adjustment, Faghdani (2003) found that there is a meaningful relationship between these two components. Emotional intelligence has a great effect on people’s happiness and satisfaction. Those who use their emotional intelligence and are more adaptable to their surroundings show high self-esteem and awareness of their ability. The direct relationship between emotional intelligence and a good and healthy life indicates that paying attention to emotions, being aware of and staying aware of them, and using them to guide behavior is very important (Adigwe, 2015). As emotional and social skills are learned in relation to others and many of these skills require visual and auditory power, the blind and deaf are banned from the gain of such experiences through their visual and auditory impairments.

These experiences can have a profound effect on the emotional development and social interaction of the blind and deaf (Peter, 2010). In a study of the social and emotional development of blind infants, Tröster and Brambring (1992) found that blind or semi-blind children have many limitations in facial expressions and rarely attempt to make contact or meet the simple demand of others. Other research has shown that reappraisal as an emotion regulation strategy is associated with high well-being and mental health (Gross, 2013). Despite the high prevalence of social anxiety and serious interference with one’s personal and professional life, people with disabilities are unlikely to seek treatment. In the study of early developmental stages of psychopathology, only 19% of people with social anxiety and in the in the study of national detection of pathogenic hominids found only 2.5% of people with social anxiety during their lifetime sought professional help (Heimberg & Becker, 2002). Considering the role and importance of emotional intelligence in private and interpersonal life, numerous studies indicate that human life is today plagued by multiple and complex stressors and the ability to cope with these stressors are essential to maintaining physical and mental health. It yields that emotion and the inability to regulate emotions provides the basis for numerous physical and mental illnesses. Such methods of enhancing emotional intelligence can be considered as an important factor in shaping individuals' physical and mental health. General health is the complete physical, mental, and social well-being of the individual that exists between these three aspects of interaction and dynamics. Therefore, mental health is considered as one of the determinants of people’s general health, which means feeling well and being confident of their efficacy, self-reliance, competitiveness, intergenerational belonging and self-efficacy, potential intellectual, emotional, etc. (World health organization [WHO], 2001) Also, mental health attitudes are associated with the mental state associated with relatively emotional well-being free from symptoms of anxiety and the inability to establish constructive relationships, as opposed to the stressful demands and stimuli of life. A review of the literature suggests that many researchers have studied emotional intelligence with mental health. Here are some of them. In a study by Ciarrochi, Deane, and Anderson (2002) they examined the role of emotional intelligence in modulating stress and mental health. For this purpose, 302 students (232 female and 70 male) were selected. All subjects responded to the 33-item Emotional Intelligence Shoot, Beck Depression Scale, and Suicide Thought Questionnaire. The results showed that emotional intelligence moderates the relationship between stress and mental health variables. In addition, people with high emotional intelligence had less effects on stress and
showed lower levels of depression. Another study found that high emotional intelligence may be a supportive factor for mental and physical health (Parker, Taylor, & Bagby, 2001). According to the importance of emotional intelligence and mental health in blind and deaf students, it seems that students with visual and hearing impairment have problems with personal and social adjustment and relationship with others. Such problems may affect social anxiety and its components in blind and deaf students. On the other hand, according to the very high importance of social anxiety disorder in blind and deaf students, based on research conducted on students with visual and hearing impairment, which indicates high levels of social anxiety, The question of this study is whether there is a relationship between emotional intelligence and mental health with social anxiety in blind and deaf students?

2. Materials and methods

2.1. Study design and population
This study was a descriptive correlational study. The study population was all blind and deaf students with 12 or greater than 12 years old in Kermanshah Exceptional Centers and Ordinary Schools in the academic year 2017–2018.

2.2. Methods

2.2.1. They were studied in full (28 blind and 58 deaf)
Inclusion criteria: Congenital blindness and hearing loss and not caused by injury. Their blindness and hearing loss are specified in the approved educational criteria and these children are educated in exceptional children’s schools. Exclusion criteria: The child does not have a mental disability or other childhood disorders.

2.3. Measuring tools: validity and reliability

2.3.1. Shoot emotional intelligence scale
The Shoot Emotional Intelligence Scale. was developed in 1998 by Shout et al based on the original model of Meyer and Salvo’s emotional intelligence. The scale consists of 33 descriptive sentences with three components: the emotion regulation component and the evaluation component and the expression of emotion and emotion utilization component. Since this tool has been used in many researches, it has an acceptable validity and reliability. Its reliability has been reported by Searuchi –0.84 for the whole scale and –0.76 for the subscales and emotion expression, –0.66 for emotion regulation and –0.55 for emotion regulation (Ghorbanshouri, Khalatbari, Maddahi, Sadodin, & Keikhayfarzaneh, 2011). In this study, Cronbach’s alpha was 0.79.

2.4. Mental health questionnaire (GHQ)
The 28-item General Health Questionnaire developed by Goldberg and Hiller (4) and has four subscales and was designed and developed for screening non-psychotic psychological disorders in treatment centers and other communities. Any scale has 7 questions. The scales are:

2.5. a. Physical symptoms
Anxiety and sleep disorders

   Disruption of social action,
   Severe depression.
There are few psychometric studies in Iran regarding the psychometric quality and functional structure of GHQ-28. Taghavi performed GHQ-28 psychometric properties with a sample of 92 students from Shiraz University. The coefficient of retest validity, and Cronbach’s alpha, were calculated 70%, and 90%, respectively. The coefficient of validity coincided with Middlesex questionnaire 55% and construct validity between 72% and 87% has been calculated. He also analyzed four factors: depression, anxiety, social and physical dysfunction, which explained 58% of the
variance. In this study, four factors were extracted and the total score ranged from 35% to 87%. In a study entitled “Standardization of General Health Questionnaire (GHQ) on Male and Female undergraduate students, Cronbach’s alpha coefficient which reflecting internal consistency, for sub-scales of physical symptoms, 0.37, Anxiety symptoms, 0.87, social dysfunction, 0.79, and major depression symptoms, 0.91 and 0.83 for the whole scale indicating general health were found (Hoaman, 1997). Cronbach’s alpha was 0.88 in the present study.

2.6. Social phobia scale (SPIN)
It was first developed by Connor et al. (2000) to assess social phobia. This tool, with its psychometrically stable features, is a valid tool for measuring the severity of social phobia symptoms and is a 17-item self-report scale with three subscales of fear (6 item), avoidance (7 item) and physiological discomfort (6 item). This questionnaire has high validity and reliability. In Iran, construct validity was compared between the two groups of subjects with diagnosed social phobia disorder and normal subjects without psychiatric diagnosis, which showed a significant difference. This indicates high construct validity. Its validity was tested by retest method in groups with a diagnosis of social phobia disorder, ranging from 0.78 to 0.89 and its internal consistency coefficient (Cronbach’s alpha) in a normal group was reported to be 0.94. Also, Cronbach’s alpha was reported 0.89, 0.91 and 0.80 for fear, avoidance and physiological distress, respectively. In this study, Cronbach’s alpha was 0.83.

2.7. Procedure
The study was conducted through census method and included all blind and deaf students (n = 86) (28 blind and 58 deaf) studying in exceptional schools in Kermanshah in the academic year 2017–2018 and the process lasted 2 months. The age range of these children was 12–15 years. Like ordinary schools, all students lived with their families in non-school hours. Then, the questionnaires were administered with the consent of their parents.

2.8. Ethical consideration
2.8.1. 1) The ethical considerations of this study were as follows
All parents received written information about the study and upon its willing they participate in the study.

2) Parents were assured that all information is confidential and will be used for research purposes

3) Participants’ names and surnames were not recorded for privacy considerations.

2.9. Data analyses
To analyze the data, statistical indices and methods such as mean, standard deviation, Pearson correlation and stepwise regression analysis with SPSS-22 software were used.

3. Results
In this study, the mean age of children was 13 years and the highest frequency of blindness and deafness was in boys. The total number of blind girls was 12 and the number of blind boys was 16. The number of deaf boys was 34 and the number of deaf girls was 24.

The mean score of emotional intelligence, mental health and social anxiety in the blind were 99.56, 85.30, 101.55 and their standard deviation were 22.12, 20.16 and 29.33, respectively. Also, the mean score of emotional intelligence, mental health and social anxiety in the deaf were 77.25, 91.47, and 11.19, respectively, and their standard deviation was 25.11, 21.19, and 31.87, respectively. (Table 1) Pearson correlation coefficient was used to investigate the relationship between emotional intelligence and cognitive emotion regulation with social anxiety. The results showed that there was a correlation between emotional intelligence and cognitive emotion regulation with
social anxiety $-0.75$ and $-0.70$, respectively, which were significant at $P \geq 0.001$. (Table 2) Regression analysis was used to predict social anxiety (criterion variable) based on the variables of emotional intelligence and mental health. The results showed that the applied regression model was significant ($F = 5.79$). This model is capable of explaining the relationship between variables with a coefficient of determination of 0.61. Also, the results showed that among the predictor variables, emotion evaluation, anxiety and insomnia, social dysfunction and emotional productivity were respectively with beta coefficients of $-0.32$, 0.46, 0.67 and 0.23, respectively. To predict the criterion variable (social anxiety). Stepwise regression was used to investigate the extent of variance in students’ social anxiety by emotional intelligence and their mental health. For this purpose, social anxiety variable as the criterion variable and the components of emotional intelligence and mental health in the third step as the predictor variable were entered into the regression model. The results of regression model showed that from the components of emotional intelligence, emotional evaluation and emotional productivity, and from the components of mental health, anxiety and insomnia and social dysfunction entered into the regression model and were able to explain about 44% of the variance of social anxiety. (Table 3)

### 4. Discussion

The purpose of this study was to investigate the relationship between emotional intelligence and mental health with social anxiety in blind and deaf students. Overall, the results showed that there was a significant relationship between emotional intelligence and mental health with social anxiety. It can be concluded that visual and hearing impairment can be an effective factor in emotional intelligence, mental health and social anxiety, so that blind and deaf students in emotional intelligence and mental health components have negative relationship with social anxiety disorder. It is noteworthy that visual and hearing disabilities affect emotional intelligence. This finding is in line with the findings of medical research (Dehghan & Nazari, 2014) regarding the difference in emotional intelligence in blind and deaf students.

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**Table 1. Descriptive indicators of emotional intelligence, mental health and social anxiety scores**

| Score                   | Blind Children |          | Deaf Children |          |
|-------------------------|----------------|----------|---------------|----------|
|                         | Mean | SD      | Mean | SD      |
| Emotional Intelligence  | 99/56| 22/12   | 77/25| 25/11   |
| Mental Health           | 85/30| 20/16   | 91/47| 21/19   |
| Social Anxiety          | 101/55| 29/33   | 111/19| 31/87   |

**Table 2. Correlation coefficients between emotional intelligence, mental health and social anxiety components**

| Score                          | Fear | Avoid | Physical discomfort |
|--------------------------------|------|-------|---------------------|
| Emotional Web Evaluation       | 0/33**| -0/37**| -0/29**             |
| Emotion regulation             | -0/41**| -0/35**| -0/36**             |
| Emotional Productivity         | -0/42**| -0/38**| -0/41**             |
| Physical symptoms              | 0/33**| 0/27**| 0/36**              |
| Anxiety and insomnia           | 0/37**| 0/48**| 0/40**              |
| Dysfunction in social functioning | 0/51**| 0/50**| 0/46**             |
| Depression                     | 0/34**| 0/38**| 0/32**             |

****: sig = 0/01.
normal students (Mohammadi, Hematiahaouei, & Kiani, 2018) on the low level of emotional intelligence in children with hearing disabilities. Various studies have pointed to numerous psychosocial problems and low levels of adaptation in the blind and deaf (Papadopoulos, Metsiou, & Agaliotis, 2011). In general, sensory disabilities, especially visual impairments, can be effective in developing social skills, especially those that require visual power. Troster and Brambring also showed that blind children have limited access to facial expressions due to their visual impairments and make less effort to make motor contact and meet others’ demands. Also, the present study is in line with the research of Karami et al. (2012), which in their research has shown that there is a negative correlation between metacognitive beliefs and social anxiety in general. Throughout the research based on the study of the relationship between emotional intelligence and social adjustment, Faghdani (2003) found that there is a meaningful relationship between these two components. The results of the present study are in line with previous theological and cognitive theories such as Beck’s theory and Clark and Wells’ research. Also, the result of the present study is in line with the research of Jacobs et al. (2008), which showed that high emotional perception, good use of emotions and positive emotional experience have a significant negative relationship with severity of social anxiety in people with social anxiety. Overall, the present study showed that emotional intelligence plays an important role in explaining social anxiety, so that emotional intelligence can be an independent predictor of social anxiety in the blind and deaf. Also, Mennin and Farach (2007) showed that people who are not able to properly manage their emotions in the face of everyday events show more diagnostic symptoms, internalizing disorders such as depression and anxiety, which are consistent with the results of this study. It can be said that bias in the interpretation of social environment events leads to false assumptions about oneself and the social environment. This leads to a negative evaluation of social situations and the result of this negative evaluation is anxiety. Fisher, Masia-Warner, and Klein (2004) stated that one’s deficiency in a skill invokes negative expectations about the situation and causes anxiety. Also, in the present study, there was a significant negative relationship between mental health and social anxiety, namely, with increasing mental health, the level of social anxiety decreased. In explaining this finding, it can be said that people with higher mental health are more capable of controlling their emotions, have more ability to compensate for negative emotional states by participating in pleasant activities, and establishing positive social relationships, and emotional abilities to control stress. Overall, the findings of this study, while identifying the emotional intelligence and mental health status of blind and deaf students, emphasize that these people face coping problems, such as anxiety, depression, stress and having a relaxed, independent and successful life requires emotional intelligence training and mental health improvement, as the positive relationship between emotional intelligence with academic achievement (Alavi & Rahimi, 2011), job success (Wong & Law, 2002), depression and anxiety control, and social adjustment has been confirmed. Importantly, numerous studies have confirmed the impact of emotional intelligence training on improving and enhancing emotional intelligence (Slaski & Cartwright, 2003). On the other hand, deaf and blind children suffer from lower mental health, as well as greater stress and depression.

| Table 3. Results of stepwise regression analysis for predicting social anxiety by emotional intelligence and mental health |
|---------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| R     | R²   | F     | sig  | Scores                      | B   | β    | t    | sig  |
|-------|------|-------|------|-----------------------------|-----|------|------|------|
| 0.61  | 0.44 | 5.79  | 0.001| Emotion evaluation           | 0.88| -0.32| -4.11| 0.001|
|       |      |       |      | Anxiety and insomnia        | 3.11| 0.46 | 2.78 | 0.002|
|       |      |       |      | Dysfunction in social functioning | 3.34| 0.67 | 2.45 | 0.003|
|       |      |       |      | Emotional Productivity      | 0.77| 0.23 | 4.77 | 0.001|
5. Conclusion
According to the results of this study, it seems that emotional intelligence and mental health can predict social anxiety. It is suggested that the psychological components examined in this study be investigated in other anxiety disorders such as panic, generalized anxiety, and obsessive-compulsive disorder. Given the higher social anxiety among blind students, it is suggested that parents and guardians reduce their anxiety by cultivating a sense of positivity, daring, and intimacy. In the present study, the sample included blind and deaf students of 12 years and older, which makes it difficult to generalize the results to other age groups. Therefore, further research on other samples is important to generalize the results. Therefore, based on the preliminary results of this study, the researchers can conduct a research with a large sample size and compare their findings with those of the present study, in order to make an appropriate decision about the generalization of the research findings. Since overall health in the school environment, which is one of the most basic social situations of any individual, special attention should be paid to the discussion of anxiety disorders, especially social anxiety in students, as social anxiety becomes more and more damaging. Given the high prevalence of social anxiety among blind and deaf students, it seems that reducing social anxiety in these students should be at the forefront of the goals of special education children. Accordingly, providing training programs for these individuals, their families, and their educators can be effective in enhancing emotional intelligence and reducing social anxiety in them, thereby preventing future emotional-psychological-social problems and addressing them. Prepared with problems.

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Competing Interests
The authors declare that they have no conflict of interest.

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Authors’ Contributions
MK contributed to the design, FD statistical analysis, ZA participated in most of the study steps.
P.H and FD prepared the manuscript, assisted in designing the study, and helped in the interpretation of the study. All authors have read and approved the content of the manuscript.

Availability of data and materials
Datasets are available through the corresponding author upon reasonable request.

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