Investigating the Mediator Role of Self-Efficacy Beliefs in the Relationship between Self-Perception, Peer Support, and Subjective Well-Being in Visually Impaired Teenagers

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Abstract

Background: Subjective well-being is considered as one of the most important measures for the health of a society, and it refers to emotional improvement to be able to enjoy life. The main objective of the current study was to investigate the mediator role of self-efficacy beliefs in the relationship between self-perception, peer support, and subjective well-being in visually impaired teenagers.

Methods: The study was a descriptive correlation performed by path analysis. The statistical population included all female students with visual impairment in Kermanshah city and 176 of which were selected as the sample of the study using convenience sampling. The research instruments included Ryff’s Psychological well-being scales (PWB), the self-concept scale, the peer support questionnaire, and self-efficacy beliefs questionnaire. The proposed model was evaluated using path analysis with AMOS software.

Results: The results showed that all the direct paths, except for the path from self-perception to subjective well-being, were significant (P=0.0001). Moreover, the indirect paths through self-efficacy beliefs to subjective well-being were also significant (P=0.0001).

Conclusions: According to the results of the study, the proposed model had a good fit, and is an important step in identifying the factors affecting the subjective well-being of adolescents with visual impairment.

Keywords: Visual impairment, Subjective well-being, Self-perception, Peer support, Self-efficacy beliefs.

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Introduction

Blindness is one of the most common disabilities in the world.1 According to the educational definitions, blindness refers to a state where the student has to learn using braille or through oral methods.2 Based on the report by the international agency for the prevention of blindness (IAPB), 253 million people around the world are suffering from various degrees of blindness, among which 36 million people are legally blind, while 217 million people are suffering from moderate to severe low vision. In 2020, about 100 million other people will be afflicted by blindness or low vision due to trivial reasons, chief among which are cataracts.3 Regardless of the age when impaired vision develops, it becomes a highly significant factor in inducing distress for the individual. If this disability is present when the individual is a teenager, it can create a large number of problems associated with the interpersonal, educational, and personality-based adaptability.4

Adolescence is the period characterized by explicit cognitive, biological, social, and emotional changes,5 while it is a critical period in terms of cognitive, emotional, physical, and sexual aspects with long-lasting consequences for the future life of the individual.6 Therefore, the issue of subjective well-being and health during adolescence is highly important. Subjective well-being is considered as one of the most important measures for the health of a society, and it refers to emotional improvement to be able to enjoy life and cope with pain, despair, and unhappiness, along with a level of believing in the value and dignity of self and others.7 According to Voci et al. study,8 subjective well-being is a combination of positive feelings (emotional well-being) and positive function (social well-being and psychological well-being). The concept of subjective well-being consists of subjective well-being, self-efficacy, autonomy and independence, and the ability to recognize the emotions of others.9

Various factors affect the subjective well-being of teenagers, one of which seems to be self-perception, indicating that the attitudes and beliefs of an individual can impact his/her behavior. Self-perception in individuals is based on how an individual judge himself/herself. Based on the theory proposed by Bem,10 in order to know oneself, the individual has to interpret ambiguous internal signs by comparing attributive processes in the context of his/her behaviors.11 The self-perception theory indicates that the initial attitude of the individual is not important at all, and inconsistent behavior does not lead to unhappiness. In this theory, attitudes do not change; rather, by observing their own behaviors, individuals infer the type of attitude they must have. This is while impaired self-perception can lead to the development and continuation of social anxiety disorder, and even the development of comorbid disorders, including major depressive disorder (MDD).12 The results obtained by Njad et al.13 showed a positive and significant relationship between the scores for self-perception and psychological well-being.

Another factor that may affect the subjective well-being of teenagers is peer support. Peer support and peer relations are based on mutual consent, and in contrast to family relations, they are not based on attachment.14 According to the definition by Garrick,15 peer support includes mutual social interaction, playing a role in small groups, competition based on the strengths of teenagers, supporting behavioral intervention, and establishing proper educational programs. Peers support teenagers to enter society and play their roles, thereby affecting their subjective well-being and quality of life.16 Peer support increases emotional and social adaptability, engagement in the
classroom, and engagement in the society for teenagers with impaired vision or hearing, helping them perceive their lives and future in a more hopeful manner.15 Hellfeldt et al.16 showed that support from family, friends, and teachers had a positive impact on the psychological well-being of teenagers.

On the other hand, both self-perception and peer support can affect self-efficacy beliefs, thereby impacting the subjective well-being of teenagers with impaired vision.19 Self-efficacy beliefs refer to the beliefs an individual has about successful performance of behavior in such a way that he/she trusts in his/her abilities to control his/her emotions, feelings, and behaviors, and that he/she can influence the outcome of events.20 According to Bandura,21 self-efficacy plays a more important role in the motivation and behaviors of individuals compared to other characteristics. People who firmly believe in their abilities show higher levels of effort and perseverance when doing their homework. This is while individuals who doubt their own abilities will cease to perform their duties and homework. Therefore, self-efficacy can be considered as a driving force for individuals.22 In a study, Gholipour23 found that by increasing the level of self-efficacy and happiness of students, their psychological well-being also increased, and vice versa.

In general, the main reason for the incompatibility of blind individuals is rooted in the way society treats them. Understanding the issues and problems of people with impaired vision is one of the prominent responsibilities of consultants, advisors, and experts in the field of education. Due to physical defects and deprivations caused by such defects, disabled teenagers cannot often establish mutual and social relations with their peers and the adults in their lives, creating complications for their subjective well-being and emotional and social adaptability. These teenagers are usually isolated and introverted individuals. In other words, blind teenagers are conflicted between the sense of the need for the help of others and the sense of the need for their autonomy and independence. Moreover, the inability to resolve this conflict has a significant impact on their subjective well-being in the future. Therefore, based on the above considerations, the main objective of the current study was to explore the mediatory role of self-efficacy beliefs in the relationship between self-perception and peer support, and subjective well-being in teenagers with impaired vision.

Materials and Methods

The study was a descriptive correlation performed by path analysis. The statistical population included all female students aged between 13-17 years with visual impairment in Kermanshah city during 2019 and 176 of which were selected as the sample of the study using convenience sampling. In order to collect the required data, 215 questionnaires based on the research variables were administered, where the questions and answers would be read by the author for the participants, and they would select their desired answer. The inclusion criteria were blindness for more than a year, consent to participate in research, age range between 13-17 years, and having no mental disorders. The exclusion criteria included failure to completely answer all the questions. Ultimately, 176 questionnaires filled out by qualified participants were analyzed.

The Instruments were: Ryff’s psychological well-being scale: This scale includes 18 questions and measures 6 factors of self-determination, environmental mastery, personal growth, positive communication with others, purposefulness in life, and the self-acceptance. The test is a self-assessing instrument that is responded in a 6-degree continuum from strongly agree to strongly disagree (one to six).24 The total score for this scale ranges from 18 to 108. Ryff and Singer25 reported that the reliability of the scale was 0.91 using Cronbach’s alpha. In a study by Shokri et al.,26 Cronbach’s alpha coefficients were 0.77, 0.77, 0.72, 0.75, 0.74, and 0.60 for each of the components of self-acceptance, mastery, positive relationships with others, purposefulness in life, personal growth, and independence respectively. Khanjani et al.27 reported Cronbach’s alpha coefficient of 0.76 for this scale. Cronbach’s alpha coefficient was 0.85 in the present study.

The concept of self-concept was developed by Harter28 for identifying the perception of the individual of his/her competency and qualification in various spheres, along with his/her general feelings about his/her worth in individuals aged between 8 and 16 years. This scale includes 36 items, which measure perceived domain-specific competence in scholastics, social acceptance, athletic competence, behavioral conduct, physical appearance, and overall self-worth. This scale is scored based on a four-option Likert scale from 1 to 4. The total score for the scale is obtained by summing up the scores for individual items. Therefore, the total score of the scale ranges from 36 to 144. In a study, Rezayi Jamaloyi et al.29, reported a Cronbach’s Alpha coefficient of 0.85 for the reliability of this scale. In the current study, the Cronbach’s Alpha coefficient for the entire scale was obtained as 0.83.

The peer support questionnaire: This self-report questionnaire was developed by Rigby and Slee30 to explore the relationships among peers. This questionnaire includes 20 items, scored based on a Likert scale from 1 to 5, and it includes three subscales, i.e., bullying (7 questions), victimization (7 questions), and acceptable social behavior (6 questions). The overall score for each subscale is obtained by adding up the scores for individual items in that subscale. The reliability of this questionnaire, using Cronbach’s Alpha coefficient, was reported as 0.73 by Esteki Azad and Amiriz.31 Cronbach’s alpha coefficient was 0.84 in the present study.

Self-efficacy beliefs questionnaire: The general self-efficacy questionnaire was developed by Sherer et al.32. This scale includes 17 items, measuring three aspects of behavior, i.e., the desire to initiate behavior, continuing to strive to complete the behavior, and resistance in the face of obstacles. This questionnaire is scored based on a five-option Likert scale from 1 to 5. Questions 1, 3, 8, 9, 13, and 15 are scored as 5 (completely agree), 4 (agree), 3 (neither agree nor disagree), 2 (disagree), and 1 (completely disagree), while the other items are scored in reverse. The minimum score for this questionnaire is 17, while the maximum score is 85. Higher scores indicate a high sense of self-efficacy. The validity and reliability of this questionnaire have been confirmed in Iran. In a study,
Bahramiyan, reported a Cronbach’s Alpha coefficient of 0.86 for the reliability of this questionnaire. In the current study, the Cronbach’s Alpha coefficient for the entire questionnaire was obtained as 0.82.

Data were analyzed by descriptive and inferential statistics such as mean, standard deviation, minimum and maximum scores, and Pearson correlation coefficient. The path analysis was used to assess the proposed model. SPSS and AMOS were further used for analyzing the data.

**Results**

The findings related to demographic variables show that 43 percent of the participants are in the age group of 13 to 15 years, and 57 percent were 16 to 17 years old. With regards to the duration of the blindness, 48 percent of the participants were blinded after birth through various accidents, while 52 percent were blind at birth. Descriptive statistics including mean and standard deviation (SD) of study variables are presented in table 1.

<table>
<thead>
<tr>
<th>Variables</th>
<th>M</th>
<th>SD</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subjective well-being</td>
<td>52.36</td>
<td>22.86</td>
<td></td>
</tr>
<tr>
<td>Self-perception</td>
<td>78.63</td>
<td>21.21</td>
<td></td>
</tr>
<tr>
<td>Peer support</td>
<td>44.45</td>
<td>12.67</td>
<td>176</td>
</tr>
<tr>
<td>Self-efficacy beliefs</td>
<td>44.00</td>
<td>16.24</td>
<td></td>
</tr>
</tbody>
</table>

According to table 2, there was a significant correlation between the correlation coefficients obtained for the research variables at the level of Pvalue<0.01. An initial proposed model was obtained to explain subjective well-being based on self-perception, peer support, and self-efficacy beliefs (figure 1).

According to the data presented in table 3, the root means square error of approximation (RMSEA) is equal to 0.287, indicating that the initial model requires correction. To correct the model, the insignificant relationship from self-perception to subjective well-being was eliminated. The final model is depicted in figure 2.

The findings in table 4 showed that there was no significant relationship between self-perception and subjective well-being (β=0.076, Pvalue=0.157). The relationship between peer support and subjective well-being was positive and significant (β=0.208, Pvalue=0.0001). There was a positive and significant relationship between self-perception and self-efficacy beliefs among the visually impaired teenagers (β=0.319, Pvalue=0.0001). There was a direct and significant relationship between peer support and self-efficacy beliefs (β=0.303, Pvalue=0.0001). The relationship between self-efficacy beliefs and subjective well-being was positive and significant (β=0.302, Pvalue=0.0001). In order to determine the significance of the mediating-based relations, the bootstrap method has been utilized.

The indirect path from self-perception to subjective well-being through the mediating role of self-efficacy beliefs was significant (β=0.100, Pvalue=0.0001). Moreover, the indirect path from peer support to subjective well-being through the mediating role of self-efficacy beliefs was significant (β=0.162, Pvalue=0.0001) (table 5).

![Figure 1. Initial proposed model](image-url)
Table 3. Proposed and final model fit indicators

<table>
<thead>
<tr>
<th>Fit indicators</th>
<th>χ²</th>
<th>df</th>
<th>(χ²/df)</th>
<th>GFI</th>
<th>IFI</th>
<th>TLI</th>
<th>CFI</th>
<th>NFI</th>
<th>RMSEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial model</td>
<td>0.000</td>
<td>0</td>
<td>0</td>
<td>1.00</td>
<td>-</td>
<td>-</td>
<td>1.00</td>
<td>1.00</td>
<td>0.287</td>
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<tr>
<td>Final model</td>
<td>1.992</td>
<td>1</td>
<td>1.992</td>
<td>0.930</td>
<td>0.994</td>
<td>0.964</td>
<td>0.994</td>
<td>0.988</td>
<td>0.054</td>
</tr>
</tbody>
</table>

Figure 2. Final modified model

Table 4. Path coefficients of direct effects between research variables in the initial and final model

<table>
<thead>
<tr>
<th>Path</th>
<th>Initial model</th>
<th></th>
<th></th>
<th>Final model</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Path type</td>
<td>β</td>
<td>P</td>
<td>Path type</td>
<td>β</td>
<td>P</td>
</tr>
<tr>
<td>Self-perception to subjective well-being</td>
<td>Direct</td>
<td>0.076</td>
<td>0.175</td>
<td>Direct</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Peer support to subjective well-being</td>
<td>Direct</td>
<td>0.202</td>
<td>0.0001</td>
<td>Direct</td>
<td>0.208</td>
<td>0.0001</td>
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<td>Self-perception to self-efficacy beliefs</td>
<td>Direct</td>
<td>0.319</td>
<td>0.0001</td>
<td>Direct</td>
<td>0.319</td>
<td>0.0001</td>
</tr>
<tr>
<td>Peer support to self-efficacy beliefs</td>
<td>Direct</td>
<td>0.303</td>
<td>0.0001</td>
<td>Direct</td>
<td>0.303</td>
<td>0.0001</td>
</tr>
<tr>
<td>Self-efficacy beliefs to subjective well-being</td>
<td>Direct</td>
<td>0.275</td>
<td>0.0001</td>
<td>Direct</td>
<td>0.302</td>
<td>0.0001</td>
</tr>
</tbody>
</table>

Table 5. Results of the Bootstrap method for investigating indirect and intermediary paths

<table>
<thead>
<tr>
<th>Predictor variable</th>
<th>Mediator variable</th>
<th>Criterion variable</th>
<th>Initial model</th>
<th>Final model</th>
</tr>
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<tbody>
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<td></td>
<td></td>
<td></td>
<td>Bootstrap</td>
<td>P</td>
</tr>
<tr>
<td>Self-perception</td>
<td>Self-efficacy beliefs</td>
<td>Subjective well-being</td>
<td>0.091</td>
<td>0.0001</td>
</tr>
<tr>
<td>Peer support</td>
<td>Self-efficacy beliefs</td>
<td>Subjective well-being</td>
<td>0.148</td>
<td>0.0001</td>
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</tbody>
</table>

Discussion

The present study aimed to investigate the mediatory role of self-efficacy beliefs in the relationship between self-perception, peer support, and subjective well-being in visually impaired teenagers. According to the results, there was no direct relationship between self-perception and subjective well-being. This finding contradicts the findings of Najd et al., where the relationship between self-perception and subjective well-being was evaluated using the correlation coefficient and regression, showing that the relationship was significant. In contrast, the current study evaluated the hypotheses using path analysis. In this study, the relationship between self-perception and subjective well-being was significantly based on Pearson’s correlation test; however, due to the presence of a mediatory variable in the model, the total share and effect of the variable of self-perception on subjective well-being were explained through the mediatory variable, i.e., an indirect relationship. In other words, in this model, the variable of self-perception affects subjective well-being indirectly. Therefore, it can be said that this finding is somewhat in line with the results of previous studies, i.e., self-perception affects subjective well-being indirectly. This means that the presence of self-perception among teenagers with impaired vision has an important impact on their self-efficacy beliefs, which will in turn influence their subjective well-being. On the other hand, it seems that there are some mediatory variables in the relationship between self-perception and subjective well-being of teenagers with impaired vision, which have not been analyzed. For instance, the individual himself/herself can be a personal factor involved in receiving self-efficacy beliefs to impact subjective well-being, i.e., to increase it. Therefore, it is possible that if the effects of previously studied variables are more carefully evaluated, some mediatory variables can be
found, thereby casting doubt on the direct impact on self-perception on subjective well-being. In general, it can be said that self-perception of teenagers is influential in the process of social acceptance and the subjective well-being of these teenagers. With his/her internalized values and his/her perception of self (self-concept), the teenager nurtures the sense of self-worth and social acceptance, or lack thereof, in himself/herself, which will have an impact on his/her subjective well-being. The system of values and the perception someone has of himself/herself (self-perception) impacts the behaviors of the individual more than any other factor.13

There was a positive and significant relationship between peer support and subjective well-being. This finding is in contrast to the findings of studies carried out by Hellfeldt et al.38, Wang et al.39, Aboutaleb et al.40, Behroozi et al.41, and Savi Cakar & Tagay.37 To explain this finding, it can be said that one of the predictors of mental health and subjective well-being is the relationship between the individual and others, and the extent of social support he/she receives. Companions, as sources of support, can have a major impact on the sense of well-being of the teenagers through various types of support. In other words, one of the factors influencing subjective well-being is the social network the individual is engaged in and supported by. The support received from this network plays a major role in determining the type of the response the individual has toward self and the environment.18 With regards to teenagers, friends and peers are the most important elements in this network, and they will in turn impact subjective well-being and having a positive evaluation of themselves and their lives. Various studies have shown the importance of perceived social support about many positive psychological and physical characteristics, and its importance in helping to improve the problems and complications of children and teenagers whose parents are divorced, or those with learning disabilities, those exposed to dangers, those who are dysfunctional, and even those who are gifted.35

There was a positive relationship between self-perception and self-efficacy beliefs. This finding is in contrast to the findings of studies carried out by Naeimi et al.42. Experiential evidence shows that people with high levels of self-efficacy beliefs have a high level of self-perception, and due to using comparative attributes, even after facing the experiences of failure, they are not willing to use some behavioral patterns such as negative self-evaluations and negative self-talk since they are less exposed to harm caused by negative emotional experiences. In contrast, these individuals are more characterized by features such as overvaluation, engagement in academic and social activities, and satisfaction with doing their homework.36 In general, the presence of self-perception can provide a framework for reacting to and processing difficulties and sufferings of life. Low levels of self-perception are associated with low levels of self-efficacy beliefs in individuals. Therefore, the presence of self-perception can act as a shield against low levels of self-efficacy beliefs and other mental pressures.

There was a positive relationship between peer support and self-efficacy beliefs. This finding is in contrast to the findings of studies carried out by Behroozi et al.41. In other words, by increasing peer support, it can be expected that their self-efficacy beliefs increase as well. To explain this finding, it can be said that the quality of the friendship relation with peers in teenagers with impaired vision can help them understand their disability is not exclusive to them, and other people are also dealing with similar problems. Therefore, they can share their experiences and have a more positive perspective towards the future, while pursuing their potentials and capabilities in terms of their other senses. Therefore, the quality of the friendship with peers is considered as an important variable for self-efficacy.36 Thus, close and warm relations between two individuals, which is considered as friendship, will increase the peace of mind of both parties, pave the way for supporting each other when needed, and it can increase their sense of security and belonging. These factors will increase the level of self-efficacy beliefs in these individuals.

There was a positive relationship between self-efficacy beliefs and subjective well-being. This finding is in contrast to the findings of studies carried out by Demirtas,39 Sabri et al.40, Behroozi et al.41, and Tommasi et al.42. In other words, by increasing self-efficacy beliefs of teenagers with impaired vision, it can be expected that their subjective well-being be improved as well. Self-efficacy is a factor which acts as a cognitive mediator, impacting the cognition, thoughts, and emotions of the individual. When teenagers with impaired vision are exposed to negative events and/or stressful situations, a high level of the sense of self-efficacy will help them manage and control those events and situations, thereby protecting themselves from many mental and physical problems.43 When people have accurate judgments of their own abilities, they can correctly and precisely evaluate situations and conditions in order to cope with problems in such a way that vulnerabilities and diseases are not developed. On the other hand, high levels of self-efficacy beliefs in the course of the treatment will help the individual express higher levels of effort, participation, and engagement; therefore, these beliefs can be highly useful in the process of healing. Belief and the ability to adapt to a situation will result in a reduced level of tension.56 Accordingly, teenagers with weak self-efficacy will destroy all their hope in the future when facing their disability, which will in turn cause a larger number of problems related to subjective well-being.

Self-efficacy beliefs play a mediatory role in the relationship between self-perception and subjective well-being. In general, self-perception helps individuals understand their abilities and limitations to be able to overlook their limitations and disabilities to increase their other capabilities, thereby developing self-efficacy beliefs in themselves.58 By increasing self-efficacy beliefs, it can be expected that the mental health and subjective well-being of such individuals improve as well. Therefore, it can be concluded that self-efficacy beliefs were able to accurately play a mediatory role in the relationship between self-perception and subjective well-being.

Self-efficacy beliefs play a mediatory role in the relationship between peer support and subjective well-being. To explain this finding, it can be said that peer support plays an important role in increasing self-efficacy beliefs. Accordingly, a positive environment and positive relations with peers will help the individual in terms of interpersonal and social relations to be able to control his/her problems and tensions from a...
cognitive, emotional, and physiological perspective, while helping him/her to take responsibility for his/her thoughts and behaviors in conflicts and struggles, and to try to change those thoughts and behaviors. These individuals will have higher levels of self-efficacy beliefs, and they will in turn have a higher level of subjective well-being. Therefore, it can be concluded that self-efficacy beliefs were able to accurately play a mediatory role in the relationship between peer support and subjective well-being.

Impaired vision affects all the existential and personality aspects of the individuals. This is more apparent during the teenage years when the individual is looking for his/her identity. Due to vision problems, people with impaired vision have a different understanding of their surrounding world, causing numerous emotional, social, behavioral, and psychological problems. One of the most important problems of blind individuals involves failure to adapt to the limitations and disabilities caused by this complication, which results in reduced subjective well-being and mental health. In general, the results of the current study show that all the direct paths, except for the path from self-perception to subjective well-being, were significant. Moreover, indirect paths through self-efficacy beliefs to subjective well-being were also significant. Based on the results of this study, the proposed model has a satisfactory fit, and it can be considered as an important step towards understanding the factors affecting the subjective well-being of teenagers with impaired vision. Since the statistical population of this study included female teenagers with impaired vision in Kermanshah City of Iran, caution must be exercised when generalizing the results to female and male teenagers and other populations. Therefore, it is recommended that future studies repeat the process in other cities and for the male teenagers as well to increase the confidence for generalizing the results. Moreover, organizing workshops for teaching the effects of self-perception and self-efficacy beliefs for individuals with impaired vision can increase their hope and subjective well-being. Furthermore, it is recommended that studies similar to the current one be performed for other educational levels, and their results be compared with the results of the current study.

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Conflict of Interest

The authors declare that they have no conflict of interest.

References


