



## Research article

# Life skills training: Can it increase self-esteem and reduce student anxiety?

Tulus Winarsunu<sup>\*</sup>, Baiq Sopia Iswari Azizaha, Siti Suminarti Fasikha, Zainul Anwar

University of Muhammadiyah Malang, Indonesia



## ARTICLE INFO

**Keywords:**Anxiety  
Life skills training  
Self-esteem  
Student

## ABSTRACT

Students are always required to have good self-esteem. Still, psychological problems, such as excessive anxiety, will cause discomfort and distress, avoid social situations, and interfere with daily life, made them feel worthless. The purpose of the study was to determine the effect of self-esteem on anxiety through life skills training. The research subjects were 14 students divided into two groups, namely the experimental group and the control group. The measurement uses a self-esteem scale and an anxiety scale. Data analysis used non-parametric analysis, namely Mann Whitney, Wilcoxon, and Spearman's Rank Correlation Test. The results of this study indicate a significant decrease in anxiety with increased self-esteem using life skills training for students.

## 1. Introduction

The spread of Covid-19 causes various psychological problems, one of which is anxiety in people in various countries [1,2]. Individuals who are affected by psychological problems, as many as 16% show symptoms of depression, 29% experience anxiety, and 8% experience stress [3].

Anxiety is a problem that most often occurs in students compared to the general population [4,5]. Students experiencing anxiety tend to be more common in women compared to men [4,6].

Anxiety is directly related to emotions and impacts a person's way of thinking to physical problems. The symptoms of anxiety are excessive tension, unnatural sweating, tense muscles, and excessive restlessness [7,8]. Anxiety is followed by three or more symptoms of restlessness, feeling depressed, easily tired, difficulty concentrating, irritability, muscle tension, disturbed sleep, and irritability [9].

The impact caused by anxiety can be in the form of physical, affective, and cognitive changes [10,11]. Cognitively the impact can be in the form of changes in perception to the existence of cognitive processes that are relevant to avoiding the dangers felt by individuals with anxiety [12]. Someone with anxiety often experiences worry and uncontrollable about an event that happened in the past or will happen in the future, they experience excessive worry about their performance [13]. While the consequences that occur in students who experience anxiety are difficulties in making decisions, including choosing the desired career, in addition to the emergence of problems in education until they are expelled from the lecture bench [14].

The causes of anxiety include being under stress, physical conditions such as diabetes or several comorbidities such as depression, genetics, early stages of generalized anxiety disorder (25%), environmental factors, such as violence in children, and abuse of addictive substances [9]. In addition, anxiety is often found in people who are depressed [15,16].

Low self-esteem, family history of depression, childhood sexual abuse, white race, length of education, number of traumatic

<sup>\*</sup> Corresponding author.

E-mail address: [tulus@umm.ac.id](mailto:tulus@umm.ac.id) (T. Winarsunu).

experiences, and disruptive family environment can increase a person's anxiety [17].

Anxiety levels can affect students' daily functions such as the learning process, daily activities, and social life among students. Students with high levels of anxiety show low academic performance, social relationships, personal relationships, and cause physical and emotional problems [18]. In addition, students with high levels of anxiety show low levels of self-esteem [19]. Low self-esteem is associated with anxiety and somatic symptoms, while high self-esteem is a factor to reduce anxiety [20,21].

Self-esteem is a subjective evaluation of how valuable someone is [21]. Adolescence is a very critical period for changes in the development of self-esteem [22,23]. Many studies reveal that adolescents who have low self-esteem will have an impact on adolescent psychopathology, such as depression, anxiety, and eating disorders [24,25]. When we are children, our self-esteem will be high. However, when we become a teenager, our self-esteem will be decreased [26,27]. Several studies have found that self-esteem decreases more during adolescence and increases as children and adults [22,26,28].

Students with high self-esteem show respect for themselves, have the ambition to complete goals, can survive and solve problems when faced with difficulties, are physically and psychologically good, have good interpersonal relationships, are optimistic, and think positively. This also results in individuals being able to interpret life positively and not easily being frustrated [28]. Conversely, individuals with low self-esteem can lead to increased levels of anxiety, depression, self-affirmation, and other mental disorders [29,30]. In addition, if self-esteem increases, their academic results will also increase [30].

Students who experience stress can lower their self-esteem and cause several problems, both personal and professional problems such as being expelled from campus, unable to work effectively, declining academic grades, poor relationships with others, even suicide [31].

Low self-esteem in students causes them to feel anxious. Therefore, self-esteem must be increased by giving group therapies. Individuals with low self-esteem can be improved through life skills training [32]. In addition, life skills training is also able to increase self-esteem and communication skills [33]. Life skills training is effective in helping individuals improve their communication, cognitive, skills training, and improve efficient life. Life skills training has a positive impact on problem solving, effective communication [34], and adjustment to stress [35]. Therefore, this study aims to determine the effect of increasing self-esteem in students through the life skills training method to reduce anxiety. Therefore, the purpose of this study was to determine the effect of increasing self-esteem in students through the life skills training method on reducing anxiety.

## 2. Literature review

### 2.1. Anxiety

Anxiety is a condition experienced by everyone, but everyone feels different feelings of anxiety and has different levels. Anxiety is a state of worry that something bad will happen soon [36]. Meanwhile, according to Ref. [37], they describes anxiety as a state of tension and anticipation of a disaster.

The criteria for a person to experience excessive anxiety and worry for at least six months and have difficulty controlling their worries. Anxiety is associated with three or more of the following symptoms for at least six months, including restlessness, feeling depressed, easily tired, difficulty concentrating or the emptiness, irritability, muscle tension, disturbed sleep, and irritability [9]. A person's subjective experience when stress can be in the form of disturbances that accompany sleep, difficulty concentrating, impaired social and or work functions are symptoms that usually occur in individuals who experience anxiety. Symptoms that often appear in students are feeling unable to do something, decreased motivation, and difficulty in doing college assignments [38].

### 2.2. Self esteem

Self-esteem is an overall assessment of their worthiness, expressed in a positive or negative orientation towards themselves [39]. Self-esteem is the totality of individual thoughts and feelings, also refers to himself as an object. Any evaluation made by an individual about himself that is expressed in the form of an attitude or disapproval shows the extent to which the individual believes himself to be capable, meaningful, and worthy [40,41].

Self-esteem is one of the stages of needs in the hierarchy of needs that was initiated by Maslow. When this self-esteem is not met, the individual will feel inferior, weak, powerless, and useless. High self-esteem is related to the fulfillment of interpersonal relationships such as security and closeness [40], and able to manage coping strategies [41]. Meanwhile, individuals with low self-esteem are associated with depression and anxiety disorders [42].

The results of the study indicate that several factors that affect a person's self-esteem are the level of parental education affecting the child's self-esteem, the higher the education level of parents, the higher the child's self-esteem [43]. The level of income can also affect a person's self-esteem, the better a person's income will make that person feel more comfortable, valuable and competent enough in his role in life [43,44]. Rosenberg also explained that the factors that affect a person's self-esteem are social values, personal values and gender [45].

### 2.3. Life skill training

Life skills are abilities that help a person in dealing with life and to maintain a person's health, mental, emotional, well-being and competence. According to the World Health Organization (WHO) life skills are the ability to adapt and positive behaviors that make individuals effectively handle tasks and challenges in everyday life. There are 5 main dimensions of life skills including decision

making and problem solving, creative and critical thinking, communication and interpersonal skills, self awareness and empathy, and coping with emotions and stress [46].

Piere describes life skills as various skills needed for everyday life, by everyone, which helps all develop. The transferability required by individuals consists of individuals who are able to develop skills in one life domain and then utilize the same skills for the purpose of success in a different life domain. For example, if a person gets a team job at the office, but does not use teamwork skills in other life domains, teamwork is not a life skill for that individual. On the other hand, if the individual takes the skills learned from the sport and uses them in one or more domains of life skills [44].

Life skills must be possessed and well understood by everyone to behave positively and adaptively, which enables individuals to deal effectively with everyday needs and challenges. The skills that must be possessed in life skills include problem solving, decision making, creative and critical thinking, effective communication, interpersonal skills, empathy, and self-awareness, coping with stress and emotions. Life skills are grouped into thinking skills, social skills and emotional skills [47].

In addition, WHO also states that life skills can enable a person to behave in a healthy manner and prevent health problems and play a role in improving individual mental health. These results are based on the existence of a psychological construct, namely the dimension of life skills that can be an antidote to the emergence of psychological symptoms so that individual mental health remains optimal [48].

#### 2.4. Life skills training and self esteem for anxiety

Life skills training is an activity carried out to improve individual abilities in decision making and problem solving, creative and critical thinking, communication and interpersonal skills, self-awareness and empathy, and coping with emotions and stress. Also, life skills can improve the ability of adolescents and adults [49].

Life skills training provides an opportunity for individuals to gain new insights, self-realization, and positive and realistic views of the future by increasing knowledge, abilities, beliefs, and motivation [50,51]. Research conducted by Jafarigiv and Peyman found that life skills training can increase self-esteem in individuals [48]. Positive interpersonal relationships between peers can increase self-esteem in adolescents. In addition, teenagers who get acceptance from their peers also have a big influence [50].

The results of the study indicate that the dimensions of self-esteem can affect a person's health risk behavior [52,53]. Someone with an excessive perception of pain will be more prone to anxiety and depression and have low self-esteem. A person with normal self-esteem will avoid physical symptoms [52]. Someone who has low self-esteem will continuously find out about information related to medical conditions, causing anxiety [54].

Hypothesis: Self-esteem increases through life skills training and anxiety decreases in students.

### 3. Methods

The Ethical Commission of Experimental Research of the Faculty of Psychology, University of Muhammadiyah Malang approved the study (approval number research ethics: E.6.m/299/FPsi-UMM/X/2021). The authors assured the participants that the study data would be presented anonymously, and they agreed in writing to participate.

#### 3.1. Research design

This study used a quasi-experimental type with a control group pre-test and post-test design; two groups were selected randomly, then given a pre-test to determine the initial state of the experimental group and the control group. After being manipulated, the dependent variable was re-measured with the same measuring instrument in two groups with two different situations.

#### 3.2. Research subject

The subjects of this study were female students aged 19–22 years who had anxiety. The subjects of this study were students who had excessive anxiety (in the high category) during the Covid-19 pandemic, did not experience Covid-19 and during the pandemic, had to move outside the home, and were willing to participate in the program, and sign informed consent. The number of subjects was 14 students from public and private universities, which were divided into two groups, namely seven experimental groups and seven control groups.

#### 3.3. Research instruments

The instrument used to measure the self-esteem variable is the Coopersmith Self Esteem Inventory (CSEI) which was developed by Coopersmith with a total of 58 items and used the Guttman scale model with yes and no answer choices. This scale comprises four aspects: strength, significance, policy, and competence. This scale has been tested with good reliability results between 0.80 and 0.82.

Anxiety was measured using the Beck Anxiety Inventory (BAI) which consisted of 21 items, using a Likert scale model with a 4-point scale from 0 to 3. This scale consisted of 4 aspects, namely subjective, neuropsychological, autonomic, and panicked. This scale has been tested for reliability with good results between 0.847 and 0.876.

### 3.4. Research procedures and data analysis

This research begins by determining the research problem, conducting a literature review, determining the relevant method, compiling modules and testing modules, and adapting measuring instruments. The implementation of the treatment uses a meeting application in the form of zoom, which lasts for 1–2 h each meeting. After the research, subjects were given a pre-test to see students' anxiety and self-esteem levels and interviews were conducted to find out qualitative information related to the conditions before being given treatment. Furthermore, the experimental group will be given life skills training carried out in groups. During the implementation of the treatment, all participants were given tasks in each session. After completing the treatment, a post-test was carried out on the experimental and control groups using the same scale as the pre-test and also conducted interviews in the experimental group to determine the effect. The last procedure is to analyze the results.

The data analysis is a non-parametric analysis using the Wilcoxon test to see the difference in results between the pre-test and post-test in the control and experimental groups. The next analysis of the data used is to perform the Mann-Whitney test to compare results between the control and experimental groups in this study. The data obtained is then processed using SPSS 22.

## 4. Results

The results showed that the comparison of pretest and posttest on the anxiety variable in each group to answer the research hypothesis was as follows:

Table 1 shows that the experimental group received treatment in life skills training and had an anxiety pretest score of ( $M = 40.00$  with  $SD = 7.071$ ). The anxiety posttest score after being given treatment was ( $M = 13.40$  with  $SD = 4.722$ ). Thus, the post-test average value is smaller than the pretest average on the anxiety variable,  $13.40 < 40.00$ , and the significance value is  $0.041 < 0.05$ . It can be concluded that there is a significant difference in the pretest and post-test scores of the anxiety variable in the experimental group, given the treatment.

In addition, Table 1 also shows the results of the control group, the pretest score ( $M = 35.71$  with  $SD = 7.342$ ), the posttest score ( $M = 36.43$  with  $SD = 5.318$ ). Thus the post-test value is greater than the average pretest value, which is  $36.43 > 35.71$ , and the significance value is  $0.863 > 0.05$ . It can be concluded that there is an increase in anxiety in the control group that is not given treatment, but it is not significant.

The Mann Whitney *U* test was used to determine the difference between the experimental and the control group. The Mann-Whitney test was carried out on both variables, namely the self-esteem variable and the anxiety variable. The results of the Mann-Whitney test on the self-esteem variable showed a value of 0.000 and a p-score of 0.002 ( $p < 0.05$ ). It can be concluded that there are significant differences in self-esteem between the control group and the experimental group. While the anxiety variable shows a value of 0.000 with a p score of 0.002 ( $p < 0.05$ ). This indicates that there are differences in anxiety in the control and experimental groups.

Furthermore, the Spearman rank correlation test used the relationship between self-esteem and anxiety. From the results of the correlation test between self-esteem and anxiety variables, it is known that the correlation coefficient between self-esteem and anxiety variables is  $-0.899$  with a p-value of 0.000 ( $p < 0.05$ ). It can be concluded that self-esteem has a significant negative relationship with anxiety. That is, the higher a person's self-esteem, the lower the anxiety he has.

### 4.1. Treatment result description

Giving treatment showed an increase in self-esteem scores in all experimental group subjects. An increase in self-esteem scores is indicated by a change in the subject's self to become more capable of evaluating himself. All subjects are more capable and confident in themselves that they are capable, meaningful, and valuable. After implementing life skills training, participants become aware of themselves, so they don't feel worried about their current condition. The results of interviews before and after treatment are as follows:

In Table 2, the changes that occur impact an increase in self-esteem in each subject. This happens because each subject has a desire to reduce the anxiety they feel. These changes are related to aspects of self-esteem, namely in the form of strength, significance, virtue, and ability.

Table 3 shows changes in anxiety in the subject, the changes that occur are related to aspects of anxiety, namely subjective, neurophysiological, autonomic and panic.

**Table 1**  
Comparison of pretest scores and posttest anxiety scores.

Groups	Mean		SD		Sig.
	Pretest	Posttest	Pretest	Posttest	
Experiment	40.00	13.40	7.071	4.722	0.041
Control	35.71	36.43	7.342	5.318	0.863

**Table 2**

Table of changes in self-esteem before and after treatment.

Before Treatment	After Treatment
<ul style="list-style-type: none"> <li>- Always doesn't have the strength to express what he feels all this time</li> <li>- They think that they do not get the attention of the people around him</li> <li>- Never do the tasks given because they feel unable to do it</li> <li>- Often violates applicable rules</li> </ul>	<ul style="list-style-type: none"> <li>- Dare to express what they think and want</li> <li>- They feel the attention and affection of those closest to them</li> <li>- They begin to be able to organize himself and do the tasks given to him</li> <li>- They begin to learn to obey the applicable regulations</li> </ul>

**Table 3**

Changes in anxiety before and after treatment.

Before Treatment	After Treatment
<ul style="list-style-type: none"> <li>- It's easy to get nervous about the information they get about Covid-19 and lectures</li> <li>- Fear that they will be exposed to Covid and interfere with their daily activities</li> <li>- Fear of dying from exposure to Covid-19</li> <li>- After returning from outdoor activities, they feel that their body temperature increased or had a fever</li> <li>- Easily dizzy</li> <li>- Easy to feel congested</li> </ul>	<ul style="list-style-type: none"> <li>- Able to control and filter information obtained related to the spread of the virus</li> <li>- They are not too afraid of being exposed because anyone can get Covid-19</li> <li>- They understand better that the cause of death is not caused by Covid-19 but by other severe diseases</li> <li>- They assume that the increase in body temperature is due to the body's adjustment to the temperature in the room</li> <li>- Dizziness is reduced because they are less worried about the spread of the virus</li> <li>- They understands that shortness of breath occurs when they think too much about the information they get</li> </ul>

## 5. Discussion

The results showed a significant decrease in the anxiety variable due to the increase in self-esteem after being given treatment in the form of life skills training to students. The experimental group that was given the treatment had higher self-esteem than the control group, so a significant anxiety reduction occurred in the experimental group. The effect of increasing self-esteem on decreasing anxiety is also explained in previous research. When students have high self-esteem, their anxiety levels will decrease, and vice versa; anxiety levels will increase when they have low self-esteem [55,56].

Students better understand themselves and those around them when they have good self-esteem so that they can carry out their daily activities and are not easily anxious in living life as students. Individuals with high self-esteem show that they can accept themselves and others so that they can understand their abilities and strengths and will feel more secure and awake [57].

This research found that when students have low self-esteem, it will increase anxiety. This is following research that explains that when individuals have weak self-esteem, individuals will isolate themselves more often so that social relationships and support from others do not occur [56]. Whereas social groups and social relationships have a positive impact on psychological well-being in reducing anxiety [57]. Conversely, if you have high self-esteem, the individual will get more positive results [58], and individuals will be more successful in challenging themselves to do anything [59].

Increased self-esteem in students occurs because of the provision of training in the form of life skills training. Previous research has also shown that providing life skills training will increase one's self-esteem [48]. *Life skills training showed better results in several competencies such as understanding interpersonal relationships, interpersonal skills, self-esteem, and the meaning of a relationship* [60]. In addition, life skills training also has a positive impact on problem solving, effective communication [34].

This research has limitations in its implementation due to the COVID-19 pandemic, such as not being able to meet face-to-face with research subjects and having to go online; the internet network is not always stable; and not all research subjects are familiar with the application, so its implementation is both a challenge and a limitation in this research.

The provision of life skills training in this study uses the zoom application. During the Covid-19 pandemic, many applications were used in learning, training, or therapy. Some group-based applications such as WhatsApp and social media-based applications such as Twitter are also used as a medium for learning during the pandemic [61]. In addition, the Zoom application is also used as a medium for learning or training during the Covid-19 pandemic [62]. By utilizing an online application, the provision of life skills training can be made and this is one of the findings in this study.

## 6. Conclusion

Based on the research that has been done, it can be concluded that there is a decrease in anxiety due to increased self-esteem by using life skills training for students. Giving life skills training can increase self-esteem in students so that the anxiety felt by students decreases. In addition, the development of training methods or psychological interventions does not always have to look young but can also be done online with certain applications. The world of education, such as universities, can also apply this program to prepare students to face various problems, especially the Covid-19 pandemic.

## Author contribution statement

Tulus Winarsunu: Conceived and designed the experiments; Analyzed and interpreted the data; Wrote the paper.  
 Baiq Sopia Iswari Azizaha: Performed the experiments; Contributed reagents, materials, analysis tools or data; Wrote the paper.  
 Siti Suminarti Fasikha; Zainul Anwar: Performed the experiments; Contributed reagents, materials, analysis tools or data.

## Funding statement

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

## Data availability statement

Data included in article/supp. material/referenced in article.

## Declaration of interest's statement

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

## References

- [1] P. Hyland, et al., Anxiety and depression in the Republic of Ireland during the COVID-19 pandemic, *Acta Psychiatr. Scand.* 142 (3) (2020) 249–256, <https://doi.org/10.1111/acps.13219>.
- [2] N. Ozamiz-Etxebarria, M. Dosal-Santamaria, M. Picaza-Gorrochategui, N. Idoiaga-Mondragon, Levels of stress, anxiety and depression in the first phase of the COVID-19 outbreak in a sample collected in the north of Spain, *Cad. Saúde Pública* 36 (4) (2020) 1–9, <https://doi.org/10.1590/0102-311X00054020>.
- [3] J. Yang, et al., Prevalence of comorbidities and its effects in patients infected with SARS-CoV-2: a systematic review and meta-analysis, *Int. J. Infect. Dis.* 94 (2020) 91–95, <https://doi.org/10.1016/j.ijid.2020.03.017>.
- [4] H. Mautong, et al., Assessment of depression, anxiety and stress levels in the Ecuadorian general population during social isolation due to the COVID-19 outbreak: a cross-sectional study, *BMC Psychiatr.* 21 (1) (2021) 212, <https://doi.org/10.1186/s12888-021-03214-1>.
- [5] P.G. van der Velden, C. Contino, M. Das, P. van Loon, M.W.G. Bosmans, Anxiety and depression symptoms, and lack of emotional support among the general population before and during the COVID-19 pandemic. A prospective national study on prevalence and risk factors, *J. Affect. Disord.* 277 (2020) 540–548, <https://doi.org/10.1016/j.jad.2020.08.026>.
- [6] W. Gao, S. Ping, X. Liu, Gender differences in depression, anxiety, and stress among college students: a longitudinal study from China, *J. Affect. Disord.* 263 (2020) 292–300, <https://doi.org/10.1016/j.jad.2019.11.121>.
- [7] E. McElroy, P. Fearon, J. Belsky, P. Fonagy, P. Patalay, Networks of depression and anxiety symptoms across development, *J. Am. Acad. Child Adolesc. Psychiatry* 57 (12) (2018) 964–973, <https://doi.org/10.1016/j.jaac.2018.05.027>.
- [8] İ. Seçer, S. Ulaş, An investigation of the effect of COVID-19 on OCD in youth in the context of emotional reactivity, experiential avoidance, depression and anxiety, *Int. J. Ment. Health Addict.* 19 (6) (2021) 2306–2319, <https://doi.org/10.1007/s11469-020-00322-z>.
- [9] A.N. Amray, K. Munir, N. Jahan, F.B. Motiwala, S. Naveed, Psychopharmacology of pediatric anxiety disorders: a narrative review, *Cureus* 11 (8) (2019) 1–8, <https://doi.org/10.7759/cureus.5487>.
- [10] F. Bakıoğlu, O. Korkmaz, H. Ercan, Fear of COVID-19 and positivity: mediating role of intolerance of uncertainty, depression, anxiety, and stress, *Int. J. Ment. Health Addict.* 19 (6) (2021) 2369–2382, <https://doi.org/10.1007/s11469-020-00331-y>.
- [11] A. Ströhle, Physical activity, exercise, depression and anxiety disorders, *J. Neural. Transm.* 116 (6) (2009) 777–784, <https://doi.org/10.1007/s00702-008-0092-x>.
- [12] O. Robinson, K. Vytal, B. Cornwell, C. Grillon, The impact of anxiety upon cognition: perspectives from human threat of shock studies, *Front. Hum. Neurosci.* 7 (2013) [Online]. Available: <https://www.frontiersin.org/articles/10.3389/fnhum.2013.00203>.
- [13] S.J. Bishop, C. Gagne, Anxiety, depression, and decision making: a computational perspective, *Annu. Rev. Neurosci.* 41 (1) (2018) 371–388, <https://doi.org/10.1146/annurev-neuro-080317-062007>.
- [14] M.E. Pritchard, G.S. Wilson, Using emotional and social factors to predict student success, *J. Coll. Student Dev.* 44 (1) (2003) 18–28, <https://doi.org/10.1353/csd.2003.0008>.
- [15] C.L. Niedzwiedz, L. Knifton, K.A. Robb, S.V. Katikireddi, D.J. Smith, Depression and anxiety among people living with and beyond cancer: a growing clinical and research priority, *BMC Cancer* 19 (1) (2019) 943, <https://doi.org/10.1186/s12885-019-6181-4>.
- [16] M.W. Eysenck, M. Fajkowska, Anxiety and depression: toward overlapping and distinctive features, *Cognit. Emot.* 32 (7) (2018) 1391–1400, <https://doi.org/10.1080/02699931.2017.1330255>.
- [17] M.D. Cabral, D.R. Patel, in: Y.-K. Kim (Ed.), *Risk Factors and Prevention Strategies for Anxiety Disorders in Childhood and Adolescence BT - Anxiety Disorders: Rethinking and Understanding Recent Discoveries*, Springer Singapore, Singapore, 2020, pp. 543–559.
- [18] A.I. Herrero, C. Sandi, C. Venero, Individual differences in anxiety trait are related to spatial learning abilities and hippocampal expression of mineralocorticoid receptors, *Neurobiol. Learn. Mem.* 86 (2) (2006) 150–159, <https://doi.org/10.1016/j.nlm.2006.02.001>.
- [19] S. Ntensia, S. Triadafyllidou, E. Papageorgiou, K. Roussou, Self-esteem and anxiety level of students at the technological educational institute of athens planning of interventions, *Health Sci. J.* 11 (3) (2017) 1–8, <https://doi.org/10.21767/1791-809X.1000512>.
- [20] D.T. Nguyen, E.P. Wright, C. Dedding, T.T. Pham, J. Bunders, Low self-esteem and its association with anxiety, depression, and suicidal ideation in Vietnamese secondary school students: a cross-sectional study, *Front. Psychiatr.* 10 (2019) [Online]. Available: <https://www.frontiersin.org/articles/10.3389/fpsy.2019.00698>.
- [21] U. Orth, R.W. Robins, Understanding the link between low self-esteem and depression, *Curr. Dir. Psychol. Sci.* 22 (6) (2013) 455–460, <https://doi.org/10.1177/0963721413492763>.
- [22] M. Masselink, E. Van Roekel, A.J. Oldehinkel, Self-esteem in early adolescence as predictor of depressive symptoms in late adolescence and early adulthood: the mediating role of motivational and social factors, *J. Youth Adolesc.* 47 (5) (2018) 932–946, <https://doi.org/10.1007/s10964-017-0727-z>.
- [23] U.K. Moksnes, R.J. Feidunsdatter, Self-esteem and mental health in adolescents – level and stability during a school year, *Nor. Epidemiol.* 28 (2) (2019) 59–67, <https://doi.org/10.5324/nje.v28i1-2.3052>.
- [24] P. Muris, C. Meesters, P. Fijen, The Self-Perception Profile for Children: further evidence for its factor structure, reliability, and validity, *Pers. Individ. Differ.* 35 (8) (2003) 1791–1802, [https://doi.org/10.1016/S0191-8869\(03\)00004-7](https://doi.org/10.1016/S0191-8869(03)00004-7).
- [25] M. (Michelle) Mann, C.M.H. Hosman, H.P. Schaalma, N.K. de Vries, Self-esteem in a broad-spectrum approach for mental health promotion, *Health Educ. Res.* 19 (4) (2004) 357–372, <https://doi.org/10.1093/her/cyg041>.

- [26] H. Pullmann, J. Allik, A. Realo, Global self-esteem across the life span: a cross-sectional comparison between representative and self-selected internet samples, *Exp. Aging Res.* 35 (1) (2009) 20–44, <https://doi.org/10.1080/03610730802544708>.
- [27] S.A. Baldwin, J.P. Hoffmann, The dynamics of self-esteem: a growth-curve analysis, *J. Youth Adolesc.* 31 (2) (2002) 101–113, <https://doi.org/10.1023/A:1014065825598>.
- [28] N. Gurhan, A.A. Ozbas, N. Ugurlu, H. Dogan, E. Kabatas, Self-esteem and psychological symptoms for the students of vocational high school of health services, *Procedia – Soc. Behav. Sci.* 47 (2012) 2237–2242, <https://doi.org/10.1016/j.sbspro.2012.06.979>.
- [29] K. Liu, Y. Zhang, S. Qu, W. Yang, L. Guo, L. Zhang, Prevalence and correlates of anxiety and depressive symptoms in patients with and without multi-drug resistant pulmonary tuberculosis in China, *Front. Psychiatr.* 12 (2021) [Online]. Available: <https://www.frontiersin.org/articles/10.3389/fpsy.2021.674891>.
- [30] M.M. Jirdehi, F. Asgari, R. Tabari, E.K. Leyli, Study the relationship between medical sciences students' self-esteem and academic achievement of Guilan university of medical sciences, *J. Educ. Health Promot.* 7 (2018) 52, [https://doi.org/10.4103/jehp.jehp\\_136\\_17](https://doi.org/10.4103/jehp.jehp_136_17).
- [31] F. Sharif, P. Armitage, The effect of psychological and educational counselling in reducing anxiety in nursing students, *J. Psychiatr. Ment. Health Nurs.* 11 (4) (2004) 386–392, <https://doi.org/10.1111/j.1365-2850.2003.00720.x>.
- [32] V. Moulrier, et al., Effects of a life-skills-based prevention program on self-esteem and risk behaviors in adolescents: a pilot study, *BMC Psychol.* 7 (1) (2019) 82, <https://doi.org/10.1186/s40359-019-0358-0>.
- [33] R. Kazemi, S. Momeni, A. Abolghasemi, The effectiveness of life skill training on self-esteem and communication skills of students with dyscalculia, *Procedia – Soc. Behav. Sci.* 114 (2014) 863–866, <https://doi.org/10.1016/j.sbspro.2013.12.798>.
- [34] J. Brunelle, S.J. Danish, T. Forneris, The impact of a sport-based life skill program on adolescent prosocial values, *Appl. Dev. Sci.* 11 (1) (2007) 43–55, <https://doi.org/10.1080/10888690709336722>.
- [35] G.R. Deckro, et al., The evaluation of a mind/body intervention to reduce psychological distress and perceived stress in college students, *J. Am. Coll. Health* 50 (6) (2002) 281–287, <https://doi.org/10.1080/07448480209603446>.
- [36] S.P.H. Whiteside, et al., A meta-analysis to guide the enhancement of CBT for childhood anxiety: exposure over anxiety management, *Clin. Child Fam. Psychol. Rev.* 23 (1) (2020) 102–121, <https://doi.org/10.1007/s10567-019-00303-2>.
- [37] K.A. Knowles, B.O. Olatunji, Specificity of trait anxiety in anxiety and depression: meta-analysis of the state-trait anxiety inventory, *Clin. Psychol. Rev.* 82 (2020), 101928, <https://doi.org/10.1016/j.cpr.2020.101928>.
- [38] N.R. Mutalik, S. Momi, G.S.B.S.B. Choudhari, Depression, anxiety, stress among college students in bagalkot: a college based study, *Int. J. Indian Psychol.* 3 (4) (2016) 180–186, <https://doi.org/10.25215/0304.210>.
- [39] M. Minev, B. Petrova, K. Mineva, M. Petkova, R. Strebkova, Self-esteem in adolescents, *Trakia J. Sci.* 7 (8) (2018) 114–118, <https://doi.org/10.15547/tjs.2018.02.007>.
- [40] S.L. Murray, Regulating the risks of closeness: a relationship-specific sense of felt security, *Curr. Dir. Psychol. Sci.* 14 (2) (2005) 74–78, <https://doi.org/10.1111/j.0963-7214.2005.00338.x>.
- [41] S. Birmendorf, S. Ryan, P. Auinger, M. Aten, High self-esteem among adolescents: longitudinal trends, sex differences, and protective factors, *J. Adolesc. Health* 37 (3) (2005) 194–201, <https://doi.org/10.1016/j.jadohealth.2004.08.012>.
- [42] Y. Liu, Z. Wang, C. Zhou, T. Li, Affect and self-esteem as mediators between trait resilience and psychological adjustment, *Pers. Individ. Differ.* 66 (2014) 92–97, <https://doi.org/10.1016/j.paid.2014.03.023>.
- [43] A.P. Savoji, K. Ganji, Increasing mental health of university students through life skills training (LST), *Procedia – Soc. Behav. Sci.* 84 (2013) 1255–1259, <https://doi.org/10.1016/j.sbspro.2013.06.739>.
- [44] S. Pierce, D. Gould, M. Camiré, Definition and model of life skills transfer, *Int. Rev. Sport Exerc. Psychol.* 10 (1) (2017) 186–211, <https://doi.org/10.1080/1750984X.2016.1199727>.
- [45] F.R. Rosenberg, M. Rosenberg, J. McCord, Self-esteem and delinquency, *J. Youth Adolesc.* 7 (3) (1978) 279–294, <https://doi.org/10.1007/BF01537978>.
- [46] M.N.R. Hadjam, W. Widhiarso, Pengujian model peranan Kecakapan Hidup terhadap Kesehatan mental, *J. Psikol.* 38 (1) (2011) 61–72 [Online]. Available: <https://journal.ugm.ac.id/jpsi/article/view/7665>.
- [47] R. Dhingra, K.S. Chauhan, Assessment of life-skills of adolescents in relation to selected variables, *Int. J. Sci. Res. Publ.* 7 (8) (2017) 201–212 [Online]. Available: <https://tinyurl.com/yuyr3dn4>.
- [48] S. Jafarigiv, N. Peyman, The effect of life skills training with health literacy strategies on self-esteem and self-efficacy in female students during puberty, *J. Int. J. Adolesc. Med. Heal.* 34 (1) (2022), <https://doi.org/10.1515/ijamh-2019-0121>, pp. 2019–0121.
- [49] S. Kingsnorth, H. Healy, C. Macarthur, Preparing for adulthood: a systematic review of life skill programs for youth with physical disabilities, *J. Adolesc. Health* 41 (4) (2007) 323–332, <https://doi.org/10.1016/j.jadohealth.2007.06.007>.
- [50] J. Block, R.W. Robins, A longitudinal study of consistency and change in self-esteem from early adolescence to early adulthood, *Child Dev.* 64 (3) (Jun. 1993) 909–923, <https://doi.org/10.1111/j.1467-8624.1993.tb02951.x>.
- [51] J. Arsandaux, I. Montagni, M. Macalli, V. Bouteloup, C. Tzourio, C. Galéra, Health risk behaviors and self-esteem among college students: systematic review of quantitative studies, *Int. J. Behav. Med.* 27 (2) (2020) 142–159, <https://doi.org/10.1007/s12529-020-09857-w>.
- [52] T. Garrick, E. Ostrov, D. Offer, Physical symptoms and self-image in a group of normal adolescents, *Psychosomatics* 29 (1) (1988) 73–80, [https://doi.org/10.1016/S0033-3182\(88\)72424-X](https://doi.org/10.1016/S0033-3182(88)72424-X).
- [53] A. Millings, R. Buck, A. Montgomery, M. Spears, P. Stallard, School connectedness, peer attachment, and self-esteem as predictors of adolescent depression, *J. Adolesc.* 35 (4) (2012) 1061–1067, <https://doi.org/10.1016/j.adolescence.2012.02.015>.
- [54] B. Bajcar, J. Babiak, Self-esteem and cyberchondria: the mediation effects of health anxiety and obsessive-compulsive symptoms in a community sample, *Curr. Psychol.* 40 (6) (2021) 2820–2831, <https://doi.org/10.1007/s12144-019-00216-x>.
- [55] V. Apaolaza, P. Hartmann, C. D'Souza, A. Gilsanz, Mindfulness, compulsive mobile social media use, and derived stress: the mediating roles of self-esteem and social anxiety, *Cyberpsychol., Behav. Soc. Netw.* 22 (6) (May 2019) 388–396, <https://doi.org/10.1089/cyber.2018.0681>.
- [56] M. Lasgaard, A. Elklit, Prototypic features of loneliness in a stratified sample of adolescents, *Interpersona Int. J. Pers. Relationships* 3 (Jun. 2009) 85–110, <https://doi.org/10.5964/ijpr.v3isuppl1.70>. SE-Research Articles.
- [57] V. Saladino, D. Algeri, V. Auriemma, The psychological and social impact of covid-19: new perspectives of well-being, *Front. Psychol.* 11 (2020) 1–6 [Online]. Available: <https://www.frontiersin.org/articles/10.3389/fpsyg.2020.577684>.
- [58] M. Arshad, S.M.I.H. Zaidi, K. Mahmood, Self-esteem & academic performance among university students, *J. Educ. Pract.* 6 (1) (2015) 156–162 [Online]. Available: <https://iiste.org/Journals/index.php/JEP/article/view/22058>.
- [59] T.F. Heatherton, N. Ambady, in: R.F. Baumeister (Ed.), *Self-Esteem, Self-Prediction, and Living up to Commitments BT - Self-Esteem: the Puzzle of Low Self-Regard*, Springer US, Boston, MA, 1993, pp. 131–145.
- [60] P.K. Nair, M. Fahimrad, A qualitative research study on the importance of life skills on undergraduate students' personal and social competencies, *Int. J. High. Educ.* 8 (5) (2019) 71–83 [Online]. Available: <https://eric.ed.gov/?id=EJ1226614>.
- [61] A. Kochar, J. Rymer, Z. Samad, Disrupting fellow education through group texting, *J. Am. Coll. Cardiol.* 72 (25) (2018) 3366–3369, <https://doi.org/10.1016/j.jacc.2018.11.007>.
- [62] Z.I. Almarzooq, M. Lopes, A. Kochar, Virtual learning during the COVID-19 pandemic, *J. Am. Coll. Cardiol.* 75 (20) (2020) 2635–2638, <https://doi.org/10.1016/j.jacc.2020.04.015>.