



## The Effect of Social Problem-Solving Skills on Reducing Social Anxiety in Medical Students

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### Abstract

**Introduction:** Entering College is an important transition from adolescence to young adulthood, with significant changes in habits and learning methods. These changes can cause social anxiety, especially in competitive fields of study such as medical education. Similar results were found in interviews with first-year medical students at Hasanuddin University, who faced the pressure of adaptation and learning materials. Therefore, social problem-solving skills are needed so that students do not experience social anxiety. Social problem-solving skills are one form of coping that can help adolescents adapt to a new environment. Social problem-solving skills, as one form of coping strategy, are very important for students in dealing with various daily problems and have the potential to cause stress (daily life stressors of problems), especially in the first year of college. This study aimed to examine the magnitude of the influence of social problem-solving skills training on reducing social anxiety in first-year students at Hasanuddin University, Faculty of Medicine.

**Methods:** This study used a quasi-experimental method with a Pretest-Posttest Control Group Design. The respondents in this study were 250 first-year students at the Faculty of Medicine, Hasanuddin University, Makassar. The sample selection in this study was carried out using a purposive sampling method; the experimental and control groups were selected and then categorized into experimental and control groups with low and medium scores on social problem solving skills and high and medium scores on social anxiety as one of the subject criteria. The instrument used in the research was the social anxiety scale developed by Liebowitz. The statistical test was an independent sample t-test using IBM Statistics SPSS 26 edition.

**Results:** The results indicated that training in social problem-solving skills influenced the reduction of social anxiety in first-year medical students. The higher the student's social problem-solving skills, the lower the level of social anxiety, with a mean value for the experimental group pretest of 55.4 and posttest of 46.92. However, for the control group, the mean values of pretest and posttest were 34.0 and 36.6, respectively. The SD values of the experimental group pretest and posttest were 14.84 and 14.69, while for the control group; the SD values of pretest and posttest were 17.2 and 17.9, respectively. While the lower the student's social problem-solving skills, the higher the level of social anxiety, with a p-value (sig. (2-tailed) of 0.001 or  $p < 0.001$ ).

**Conclusion:** Social problem-solving skill training gives a significant impact in reducing anxiety in first-year medical students.

**Keywords:** Problem-solving; Anxiety; Medical students

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## Introduction

Adolescence is a phase of human development with a high level of stress. This is understandable because in this phase teenagers are required to be more responsive and ready to face various changes that occur to themselves and to be well prepared to face situations and environmental conditions that are much more complex than the previous developmental phase (1). Hurlock (1999) states that teenagers will experience a period of transition and change related to emotions, changes in body shape, interests, and behavior patterns (2). The problems experienced by teenagers, as new students, are also increasingly complex due to social and environmental changes that influence them during their adjustment period. If someone can adapt to other people in general or to their group and have pleasant attitudes and behavior, it means that he or she has been accepted by their group or environment. In other words, they can adapt well to their environment (3, 4). However, if new students cannot adapt to these changes, they will be at high risk of experiencing social problems such as social anxiety. The early campus atmosphere, which is relatively different from the school atmosphere, can have an impact on psychological conditions, for example, the emergence of social anxiety (3, 5).

One of the psychological barriers that new students frequently experience is social anxiety, which is more of a cognitive-emotional barrier. Kashdan and Herbert (2004) state that social anxiety is a disorder with the highest prevalence that occurs in teenagers who are studying, especially those who are new students (5). Research by Ahmad, et al. (2014) found that the prevalence of social anxiety disorder was 80% in new students. The impact of social anxiety on life varies from withdrawing because of embarrassment if noticed by other people or skipping lectures because of fear of speaking in the presence of people (6). Purdon, et al. (2001) state that social anxiety has a negative impact on new students because in this phase they tend to compare themselves with other people and feel afraid of being judged as lower and worse by other people or their college friends, wanting to avoid situations and having difficulty expressing themselves (7).

Wilcox, et al. (2005) believe that new students tend to experience shock because the campus situation is relatively new. Living apart from their parents, combined with higher study stressors, makes some students experience difficult times at the start of their studies (8). The relatively different characteristics of campus life, new friends, and

lecturer-student relationship patterns that are also relatively different from their previous lives are situations that have the potential to give rise to social anxiety for new students (9). La Greca (1998) states that there are three aspects of social anxiety: fear of negative evaluation, pressure to be in a new situation, and social avoidance.

The results of the initial interviews conducted by researchers with several students confirmed this condition. Based on the results of interviews with several new students at Hasanuddin University, it appears that new students feel very shocked by the situation they are currently experiencing as new students. New students tend to experience pressure, which causes feelings of anxiety and fear during the learning process on campus. The conditions experienced by new students, combined with theoretical concepts and facts from research results, lead to the conclusion that social anxiety requires good problem-solving strategies so that the problems faced can be resolved and not become large, which can ruin the lives of new students as they go through their studies. Thus, they are required to have several skills to overcome them, one of which is social problem-solving skills. Social problem-solving skills can help individuals adapt to new environments they have visited or entered. This adaptability immediately prevents individuals from experiencing social anxiety. Individuals should develop social problem-solving abilities to efficiently adjust to their surroundings. Completing this task will reduce the likelihood of encountering social anxiety (10-12).

D'zurilla and Nezu (1999) emphasized the significance of social problem-solving skills as a coping technique for new students to handle academic and social challenges that may lead to social anxiety (13). The daily stresses of academic work, particularly in the initial year of college, can lead to stress. Abolghasemi and Narimani (2008) found that social anxiety in teenagers, namely new pupils, is rooted in a deficiency in effective social problem-solving skills (14).

Students must possess social problem-solving skills as a coping mechanism to navigate daily stressors, particularly during their initial year of study (13). Abolghasemi and Narimani (2008) and Romano, et al. (2019) demonstrated that social anxiety in teenagers, particularly new students, was primarily attributed to a lack of proficient social problem-solving skills (11, 14). Social anxiety in teenagers, particularly new pupils, is thought to be influenced by a lack of social problem-solving skills (15).

The analysis of the research findings indicates a strong correlation between social problem-

solving skills and the level of social anxiety in new pupils. Nevertheless, additional evidence is needed. Therefore, this research aimed to examine the impact of social problem-solving skills training on decreasing social anxiety in first-year students at the Medical Faculty, Hasanuddin University.

## Methods

### Study Design

This study employed a quasi-experimental method with a pretest-posttest control group design to examine the impact of social problem-solving skills training on decreasing social anxiety in first-year medical students at Hasanuddin University. This study includes two sets of participants: the experimental group and the control group. The experimental group underwent a pretest before the intervention and a posttest following the intervention. The control group underwent pretest and posttest assessments without receiving any intervention.

The acquisition of data or intervention in this study was carried out through the implementation of Social Problem-Solving Skill Training. The experimental group took a pretest before the intervention and a posttest after the intervention. While the control group underwent pretest and posttest assessments without receiving any intervention. The posttest results were a reference to measure how effective Social Problem-Solving Skill Training was a form of intervention program in reducing social anxiety experienced by the participant group. The posttest results also showed the difference in social anxiety between the experimental group who received the intervention and the control group who did not receive the intervention.

### Instrument

The social anxiety scale utilized in this study was created by Liebowitz (15). The scale is a four-

response Likert scale with 20 question items. Ten items measure anxiety related to appearance in different situations, specifically focusing on fear of performance and avoidance of performance. The remaining 10 items measure social anxiety. Social anxiety can manifest in different contexts and is categorized into two assessment aspects: fear of social interaction and avoidance of social interaction. The response scale assessment consists of two types: 1) Fear measurement (fear of performance and fear of social interaction) on a scale of 0-3, with responses ranging from "Not Afraid" [0] to "Very Afraid" [3]; and 2) Avoidance behavior measurement (avoidance of performance and avoidance of social interaction) on a scale of 0-3, with responses ranging from "Never Avoids" [0] to "Definitely Avoid" [3].

The validity test was conducted with product-moment correlation; the results of the Social Anxiety scale validity test can be seen in Table 1. From the 24 question items, 4 question items are canceled because they have a product moment coefficient value  $<0.3$ . Meanwhile, the other 20 items are declared valid because they have a product-moment coefficient value  $>0.3$  in accordance with the provisions of the standard value of validity. Thus, this study only used 20 valid question items. The reliability test results showed a Cronbach's Alpha value of 0.856 ( $>0.6$ , which is the standard reliable value). Therefore, all dimensions of the research variables are reliable.

### Sampling and participants' characteristics

The study sample consisted of first-year medical students at Hasanuddin University. The research sample consisted of 250 subjects selected based on their low scores in social problem-solving skills and high levels of social anxiety, one part should be given as an intervention model and one part as statistical methods, as well as their lack of participation

**Table 1:** Results of Social Anxiety Scale Validity Test

Item	Koefisien r	Keterangan	Item	Koefisien r	Keterangan
p1	-0.020	Invalid	p13	0.467	Valid
p2	0.384	Valid	p14	0.333	Valid
p3	0.300	Valid	p15	0.527	Valid
p4	0.119	Invalid	p16	0.407	Valid
p5	0.674	Valid	p17	0.264	Invalid
p6	0.359	Valid	p18	0.380	Valid
p7	0.545	Valid	p19	0.393	Valid
p8	0.466	Valid	p20	0.368	Valid
p9	0.503	Valid	p21	0.259	Invalid
p10	0.354	Valid	p22	0.354	Valid
p11	0.540	Valid	p23	0.637	Valid
p12	0.469	Valid	p24	0.384	Valid

**Table 2:** Results of the Reliability Test

Variable	Cronbach's Alpha
Social Anxiety	0.856

in social problem-solving skills training. The subjects of this study were then divided into two groups, namely the experimental group of 130 people who received the intervention and the control group that did not attend any intervention but was still analyzed statistically (120 people). The grouping of research subjects was done randomly. Before the research was conducted, the participants were given information related to the research and asked for consent and delivery of the confidentiality of their data. The welfare of the participants was prioritized by providing a sense of security and comfort during the study.

#### Data analysis

The psychometric qualities of this study scale involve evaluating the validity of the scale items by Pearson Product-Moment correlation values and analyzing scale reliability using the Cronbach Alpha coefficient. The validity testing of the social anxiety scale's initial construct, consisting of 24 items (13 for appearance anxiety and 11 for social anxiety), revealed that four items had product-moment correlation coefficients below the standard value of 0.3, indicating the need to remove those items. After validity testing, the 20-item scale construct underwent reliability testing, resulting in an estimated Cronbach Alpha coefficient of 0.856, indicating high reliability ( $\alpha > 0.75$ ). The scale utilized in this research is deemed valid and reliable based on the results (Table 2).

Data were gathered by completing the social anxiety measure before (pretest) and after (posttest) the social problem-solving skills training was carried out. We analyzed the data via the independent sample t-test. Before hypothesis testing, the researcher assesses the assumptions of normality and homogeneity in the data to be analyzed, which is necessary for employing

parametric statistical tests.

#### Ethical approval

The ethical approval process for this study at Hasanuddin University has been finalized with the code of 42IUN4.6.4.5.31/PP36/2A24. Before we conducted the study, the research subjects were given comprehensive information and clarification, along with assurance of the confidentiality of their personal data. The participants then completed a consent form to participate in the research study.

### Results

#### Quantitative Data

The results of research data collection on 250 subjects showed varied demographic data.

Variations in the data include the sex, age, origin, and the status of residence. A summary of this data can be seen in Table 3. As shown in the Table, out of 250 students, 74 were men and 176 were females. There were 83 participants under 17 years old, 132 subjects aged 18, 29 subjects aged 19, and 6 subjects aged 20 or older. 41 participants originated from Sulawesi Island, while 209 subjects came from other regions. 102 respondents were living alone, 93 living with their parents, and 55 living with other family members. Researchers also carried out descriptive statistical analysis for the social anxiety and social problem-solving skills categorization. The results of descriptive statistical analysis are shown in Table 4.

Following the pretest, 47 participants were classified as having low social anxiety, 154 participants were classified as having moderate social anxiety, and 49 participants were classified as having high social anxiety. Posttest results showed that 40 participants had low social anxiety, 170 had moderate social anxiety, and

**Table 3:** Demographic Data and Participants' Social Anxiety and Problem-Solving Skills Baseline Score

	Demographic Data	Quantity	Percentage
Gender	Male	74	30%
	Female	176	70%
Age	≤17 years old	83	33%
	18 years old	132	53%
	19 years old	29	12%
	≥20 years old	6	2%
Origin	Sulawesi Island	41	16%
	Outside of Sulawesi Island	209	84%
Status of Residence	Living alone	102	41%
	Living with parents	93	37%
	Living with other family member	55	22%

**Table 4:** Results of the Subjects' Social Anxiety and Problem-Solving Skills

Score (Category)	Pretest		Posttest	
	Frequency	Percentage	Frequency	Percentage
<b>Social Anxiety</b>				
X≤23 (low)	47	19%	40	16%
23<x≤28 (mid)	154	61%	170	68%
X>28 (high)	49	20%	40	16%
<b>Problem Solving Skills</b>				
X≤157 (low)	41	16%	31	13%
157<X≤194 (mid)	180	72%	176	70%
X>194 (high)	29	12%	43	17%

40 had high social anxiety.

Based on pretest findings, 41 participants were classified as having low social problem-solving skills, 180 as moderate social problem-solving skills, and 29 as high social problem-solving abilities on the social problem-solving skills scale. Posttest results categorized 31 individuals as having poor social problem-solving abilities, 176 as mid-social problem-solving skills, and 43 as high social problem-solving skills.

Normality and homogeneity tests were conducted as requirements for an independent sample t-test. The normality test indicated that the Kolmogorov-Smirnov was significant. The results indicated that the pretest and posttest data for both groups followed a normal distribution.

The independent sample t-test revealed significant differences ( $p<0.001$ ) in the posttest results between the experimental and control groups. The average posttest score for the experimental group was 233.55, while the average posttest score for the control group was 209.56. The values showed that the posttest score of the experimental group was significantly greater than that of the control group. Although difference between the experimental group score with the control group was not significant, the t-test results showed that there was a difference in score changes after the training was provided.

## Discussion

This research discusses the hypotheses generated by utilizing pertinent ideas and past research findings that align with the obtained research outcomes. In addition to incorporating pertinent theories and existing research findings, the researcher also presents and interprets the study results through his own analysis. The integration of ideas, prior research findings, and the researcher's analysis will enhance the depth of the debate in this study.

This study showed that providing social problem-solving skills training led to a decrease in social anxiety among first-year students at Hasanuddin University in Makassar. There was an

inverse relationship between the students' social problem-solving skills and their level of social anxiety, as indicated by a significant p-value of 0.000. A p-value less than 0.05 indicates a statistically significant difference between the experimental and control groups. The research hypothesis in this study was that providing social problem-solving skills training could reduce social anxiety. This discovery aligns with the theory proposed by Romano, et al. (2019) and Winarsunu, et al. (2023), indicating that social problem-solving skills are strongly linked to the development of various mental diseases (11, 16).

Abolghasemi and Narimani (2008) propose a notion that correlates greater social problem-solving skills in early-year kids with lower social anxiety levels. They asserted that teens' social anxiety is mostly linked to their lack of effective social problem-solving skills (14). In essence, proficient social problem-solving skills in teenagers can decrease their anxiety levels. Proficient social problem-solving skills can shield teenagers from heightened anxiety and suicidal tendencies (17). Thoits (1994) posited that stress, anxiety, and various psychiatric disorders in teenagers stem from their failure to address the challenges they encounter (18).

The research findings suggest a negative correlation between social problem-solving skills and social anxiety in teenagers, which can be logically explained. D'zurilla and Nezu (1999) define social problem-solving as the cognitive and behavioral skills individuals have to adjust to daily life occurrences (13).

Social problem-solving is a crucial coping method for individuals to manage daily life stressors and potential sources of stress, as highlighted by D'zurilla and Nezu (1999) (13). Frye and Goodman (2000) assert that addressing social issues is fundamental for developing the skills and talents required to tackle the diverse challenges encountered in daily life (19). Research by Utaminingsih (2009) indicates that addressing social issues is impacted by social support and optimism in teenagers, facilitated

by family, teachers, and peer groups (20). Social support plays a significant role in influencing social problem-solving. The outlined notion of social issue solving indicates that individuals, particularly teens, with proficient social problem-solving skills find it easier to resolve the challenges they encounter. A person who can effectively solve problems is less likely to experience stress compared to someone who struggles with problem-solving (16).

Reducing stress can be a significant tool in preventing social anxiety. Simply put, the likelihood of experiencing stress is closely linked to that of experiencing social anxiety, both of which are influenced by strong social problem-solving talents and capabilities.

Magnuson and Ohman (in Kashdan and Herbert, 2004) suggest that social anxiety can result from the interplay of biological, psychological, and social elements that were previously capable of causing worry. Psychological issues encompass insufficient coping mechanisms, low self-esteem, IQ, and personality traits (5). Lazarus (1969) explained that social anxiety was caused by two things: environmental circumstances known as stimulus conditions, and human dispositional characteristics. Environmental stimuli are strongly linked to several aspects of an individual's surroundings, including family, friends, crowded areas, and other characteristics. Individual dispositional characteristics are linked to psychological aspects within a person, like motivation, beliefs, hopes, and other psychological qualities (20).

Students at Hasanuddin University in Makassar are instructed to employ social problem-solving abilities directly to address issues causing physical and psychological diseases and affecting daily activities in research subjects. The techniques involve honing the skills of observation and problem analysis, reflecting on actions, and comprehending the consequences of addressing societal issues through constructive thinking (21).

## Conclusion

The research analysis and discussion indicate that training in social problem-solving abilities leads to a decrease in social anxiety among first-year students at Hasanuddin University in Makassar. This study demonstrates a significant change in social anxiety levels before and after receiving social problem-solving skills training, with a p-value of less than 0.000. First-year students at Hasanuddin University who received training had a higher anxiety score with a mean value of 233.55 compared to early-year students in the control group with a mean value of 209.56.

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## Authors' Contribution

All authors contributed to the discussion, read and approved the manuscript, and agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

## Conflict of interest

The authors did not have a conflict of interest to declare in this study.

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