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## THE EFFECT OF INTERPERSONAL THERAPY ON DEPRESSION AND ANXIETY AMONG ADOLESCENT INMATES IN ACEH: A PRE-EXPERIMENTAL STUDY

Miftahurrahmi<sup>1</sup>, Syarifah Rauzatul Jannah<sup>2</sup>, Dara Febriana<sup>3</sup><sup>1</sup>Master of Nursing Program, Universitas Syiah Kuala, Banda Aceh, Indonesia<sup>2</sup>Department of Psychiatric and Mental Health Nursing, Universitas Syiah Kuala, Banda Aceh, Indonesia<sup>3</sup>Departement of Gerontological Nursing, Universitas Syiah Kuala, Banda Aceh, Indonesia

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### CORRESPONDING AUTHOR

\*Corresponding author, email:

Syarifah\_rauzatul\_jannah@usk.ac.id

### ABSTRACT

Juvenile inmates are highly vulnerable to mental health disorders, particularly depression and anxiety. Factors such as the prison environment, limited social support, and restricted access to mental health services contribute to this vulnerability. If left untreated, these conditions can adversely impact their psychological well-being and rehabilitation process. Interpersonal Therapy is a psychotherapeutic approach focusing on interpersonal relationships, proven effective in treating affective disorders among adolescents. This study aimed to assess the effectiveness of Interpersonal Therapy in reducing depression and anxiety among juvenile inmates at the Banda Aceh Juvenile Correctional Institution. A Pre - experimental one-group pre-test and post-test design was employed. A total of 33 participants were recruited using purposive sampling, based on power analysis (power 0.80, effect size 0.70,  $\alpha = 0.05$ ). The intervention consisted of five sessions of Interpersonal Therapy. Data were collected using demographic questionnaires, the Beck Depression Inventory-II (BDI-II) to measure depression, and the Beck Anxiety Inventory (BAI) to assess anxiety levels. The Wilcoxon Signed-Rank Test revealed a significant effect of Interpersonal Therapy on reducing depression ( $Z = -3.764$ ;  $p < 0.001$ ) and a non-significant trend in reducing anxiety ( $Z = -1.732$ ;  $p = 0.083$ ). Before the intervention, most respondents had moderate depression (60.6%) and mild anxiety (66.7%). After the intervention, 45.5% of participants experienced minimal depression, while mild anxiety increased to 87.9%. The mean depression score decreased from 20.94 to 13.79, and the anxiety score from 17.27 to 13.58. Interpersonal Therapy was effective in reducing depression and contributed to improvements in anxiety among juvenile inmates. This therapy can be used as a non-pharmacological approach in psychiatric nursing to support adolescents mental well-being in correctional settings.

## INTRODUCTION

Mental health problems have become a critical issue within correctional institutions, with depression and anxiety being the most frequently encountered disorders. According to the World Health Organization, among the approximately 9 million inmates worldwide, around 11% suffer from significant

mental health disorders, particularly depression and anxiety [1]. This condition indicates that correctional facilities are high-risk environments for mental disorders, especially for vulnerable groups such as adolescents undergoing rehabilitation.

According to 2023 data from the World Population Review, Ukraine ranks first among countries with the highest number of individuals experiencing depression, with 2,800,587 cases, accounting for 6.3% of its population. The United States follows in second place with 17,491,047 cases (5.9%), and Estonia ranks third with 75,667 cases (5.9%) [2]

As discussed from the United Kingdom, there has been a notable increase in mental health problems among adolescents in the United Kingdom and the United States over the past decade [3]. A 2021 study analyzing data from nearly 2.5 million adolescents in these countries reported rising levels of depression and anxiety [3]. According to the 2018 Indonesian Basic Health Research, the prevalence of depression among individuals aged over 15 years was 6.1%, based on data collected from 33 provinces across Indonesia [4]

The most prominent mental health issue among adolescents is depression. Depression is a mental disorder that can affect an individual's feelings, thoughts, and behaviors, as well as significantly impact daily activities such as sleeping, eating, and managing work [5]. Depression is also characterized as a mood disorder lasting more than two weeks and disrupting social functioning, occupational performance, and other areas of life [6]. The prevalence of mental disorders is even higher among adolescents in correctional facilities. The most common mental disorders include anxiety (3.7%) and major depression (1.0%). According to the Decree of the Minister of Justice of the Republic of Indonesia, a Correctional Institution is a technical implementation unit for corrections that houses, guides, and cares for inmates [7]. According to data from the Indonesia National Adolescent Mental Health Survey (I-NAMHS), one in three Indonesian-adolescents experiences mental health problems, and one in twenty suffers from a mental disorder within the past 12 months [8]. This fact highlights the importance of paying attention to the psychological condition of adolescents in correctional institutions, which tends to be more neglected compared to those in the general community.

Studies indicate that young inmates are more vulnerable to depressive disorders, especially those serving short sentences of 7–12 months [9]. Mental health issues among Juvenile Inmate not only affect their well-being during incarceration but also have significant implications for their social reintegration post-release. Therefore, appropriate and evidence-based psychological interventions are urgently needed [10]. One effective intervention that can be implemented by healthcare providers, including nurses, is Interpersonal Therapy (IPT), which focuses on interpersonal relationships as the root cause of psychological disorders.

Interpersonal Therapy has been proven effective in reducing symptoms of depression and anxiety across various populations, including incarcerated individuals [11], [12]. A study conducted at the Class II Special Child Development Institution (LPKA) in Banda Aceh showed that most juvenile inmates had a moderate level of psychological well-being (67.9%), while 17.9% were in the low category. These findings indicate that many of them do not experience a full sense of happiness and are at risk of developing psychological problems such as anxiety and depression [13]. This therapy assists individuals in understanding and resolving interpersonal issues linked to psychological disorders, such as role conflicts, role transitions, grief, and deficits in social relationships [14]–[16]. IPT is also considered flexible, as it can be administered by professionals from various disciplines, including nursing, making it suitable for integration into mental health services within juvenile correctional facilities.

The situation in Aceh Province underscores the urgency of implementing such mental health interventions. According to data from the Regional Office of the Ministry of Law and Human Rights in Aceh, as of November 2023, there were 7,812 inmates and detainees, with 40 of them being Juvenile Inmate at LPKA Banda Aceh [17]. This data emphasizes the need for a study to evaluate the effectiveness of Interpersonal Therapy in reducing levels of depression and anxiety among Juvenile Inmate in Banda Aceh, serving as a foundation for the development of more comprehensive and systematic psychological interventions.

## METHOD

This study employed a quantitative approach with a Pre - experimental design using a one-group pre-test and post-test model. The purpose of this design was to assess the effectiveness of interpersonal therapy in reducing levels of depression and anxiety among juvenile inmates at the Class II Special Development Institution for Children in Banda Aceh. The study population consisted of all juvenile inmates at the facility, totaling 40 individuals. A sample of 33 participants was selected based on a power analysis with a power of 0.80, an effect size of 0.70, and a significance level of 0.05. The independent variable in this study was interpersonal therapy, which focuses on improving interpersonal relationships as a therapeutic approach. The dependent variables were depression and anxiety levels, measured before and after the intervention.

Participants were selected using purposive sampling, with inclusion criteria comprising adolescents aged 14–18 years, classified with mild to moderate (BDI-II: 14–28; BAI: 8–35) were eligible to participate in this study. Exclusion criteria included severe mental disorders, illiteracy, or involvement in substance rehabilitation programs. Three instruments were utilized in this study to collect the necessary data. The first was a demographic questionnaire that captured data such as age, gender, education level, parents' occupation and income, and length of sentence. The second instrument was the Beck Depression Inventory-II (BDI-II), which consists of 21 items to assess depression levels. The third was the Beck Anxiety Inventory (BAI), also consisting of 21 items to measure anxiety levels. Both BDI-II and BAI have been validated and shown to be reliable, with a Cronbach's alpha of 0.92, indicating high internal consistency.

Participants were given a detailed explanation of the study's purpose and benefits and provided written informed consent prior to participation. A pre-test was administered to assess baseline levels of depression and anxiety. The intervention consisted of five sessions of interpersonal therapy, including phases of introduction, problem identification, communication development, interpersonal problem solving, and evaluation. This study implemented Interpersonal Therapy (IPT) as the main intervention, referring to the standard IPT guidelines adapted for adolescents [12], [14], [18]. The therapy consisted of five structured sessions, conducted over approximately five weeks, with each session lasting 60 to 90 minutes depending on the readiness and engagement level of the participants. The first session focused on establishing rapport and trust between the researcher and the participants, allowing them to share personal experiences and emotional concerns in a supportive environment. The second session was designed to identify core interpersonal issues, particularly grief, role conflicts, and emotional loss experienced after incarceration. In the third session, participants were guided to improve their communication skills through role-play and group interaction, enabling them to express themselves more effectively and respectfully. The fourth session emphasized problem-solving strategies, helping participants develop realistic and constructive approaches to manage interpersonal challenges, especially with peers and family members. The final session served as an evaluation and reflection phase, during which participants shared insights gained from the therapy, expressed improved emotional awareness, and demonstrated better coping mechanisms. This structured approach was instrumental in reducing depression levels and clinically lowering anxiety symptoms, particularly in preparing juvenile inmates for reintegration into society. After the final session, a post-test was administered to reassess levels of depression and anxiety and to evaluate participant engagement and emotional responses to the intervention. Data collection was conducted from January 16 to February 22, 2025, after obtaining all necessary ethical approvals.

To minimize selection bias, all participants who met the inclusion and exclusion criteria were given equal opportunity to participate, ensuring an objective recruitment process. Bias control was implemented through procedural training provided to the researcher and research assistants to reduce expectancy bias, and through the use of validated instruments (BDI-II and BAI) to objectively assess depression and anxiety. Confirmation bias was minimized by employing structured data recording and conducting data analysis only after the intervention was completed. Potential confounding factors were controlled by ensuring no other psychosocial interventions were administered during the study period, in coordination with the correctional facility. Intervention consistency was maintained by a trained research team, with adherence to standardized procedures throughout the study.

Data analysis was conducted using quantitative methods. Univariate analysis was used to describe participant characteristics and the distribution of each variable. Bivariate analysis was performed using the Wilcoxon Signed-Rank Test, due to non-normal data distribution as indicated by the Shapiro-Wilk test. This statistical test was used to examine significant differences in depression and anxiety scores before and after the intervention. The level of significance was set at  $p < 0.05$ . This study received ethical clearance from the Ethics Committee of the Faculty of Nursing, Universitas Syiah Kuala, under approval number 112015200924.

## RESULTS AND DISCUSSION

Based on Table 1, all 33 respondents in this study were male adolescents of mosleem. The majority were in late adolescence (66.7%), while the remaining were in middle adolescence (33.3%). In terms of educational background, most respondents (87.9%) had completed secondary education, whereas only 12.1% had completed primary education. Regarding parental occupation, the majority of respondents' parents worked as farmers or laborers (87.9%), with a small proportion employed as civil servants (9.1%) and in the private sector (3.0%). From an economic perspective, 45.5% of respondents reported that their parents' income was below IDR 1,500,000, while 36.4% fell within the range of IDR 1,500,000–3,000,000, and only 18.2% reported a parental income exceeding IDR 3,000,000. Low socioeconomic status is a significant factor that influences adolescents' psychological development, particularly for those undergoing rehabilitation in juvenile correctional institutions. Economic hardship often limits access to education, healthcare services, and emotional support from family members. These limitations contribute to a higher risk of psychological problems such as depression, anxiety, and stress. Previous studies have shown that family income is a strong social determinant of adolescent mental health outcomes.

In relation to their status as Children in Conflict with the Law, as many as 75.8% of respondents had received a sentence ranging from 25 to 60 months, indicating that the majority were serving relatively long periods in a closed institutional setting.

**Table 1. Respondent Demographics**

No	Demographic Data	f	%
1	Age		
	Mid adolescence (14–16)	12	33.3
	Late adolescence (17–19)	21	66.7
2	Gender: Male	33	100.0
3	Religion: Islam	33	100.0
4	Education		
	Primary	4	12.1
	Secondary	29	87.9
5	Parental Occupation	15	9.1
	Civil servant	1	3.0
	Private sector	29	87.9
	Laborer/farmer/trader		
6	Parental Income (IDR)	15	45.5
	<1,500,000	12	36.4
	1,500,000–3,000,000	6	18.2
	>3,000,000		
7	Sentence Duration		
	7–12 months	1	3.0
	13–24 months	4	12.1
	25–60 months	25	75.8
	>60 months	3	9.1

Based on Table 2, the respondents' level of depression showed a significant improvement following the intervention. The mean depression score at pre-test was 20.94, which decreased to 13.79 at post-test. This reduction in the mean score indicates a general decline in depression levels among respondents after receiving the intervention. Furthermore, the standard deviation at pre-test was 4.541 and increased to 7.057

at post-test, suggesting greater variability in depression levels among respondents following the intervention.

**Table 2. Effect of Interpersonal Therapy on Depression**

Measure	Test	M±SD	Median (IQR)	Wilcoxon Signed-Rank Test	
				Z	P
Depression	Pre-Test	20.94±4.54	22.00	-3.764	< 0.001
	Beck Depression Inventory – II	1	(9)		
	Post-test		15.00		
	Beck Depression Inventory - II	13.79±7.05 7	(12)		

The results of the Wilcoxon Signed-Rank Test showed a statistically significant change in respondents' depression levels before and after the intervention, with a Z value of -3.764 and  $p < 0.001$ . This finding is consistent with previous research, which indicates that interpersonal therapy can be adapted for various special populations, including juvenile inmates, and has been proven effective in reducing depressive symptoms. Interpersonal therapy is effective in reducing depressive symptoms and enhancing social functioning among adolescents, including specific populations such as Juvenile Correctional Institution Residents. The median depression score at pre-test was 22.00, suggesting that more than half of the participants experienced moderate depression before the intervention.

A comparison between pre-test and post-test results further demonstrated an overall reduction in depression levels. These findings support the effectiveness of interpersonal therapy in alleviating symptoms of depression and post-traumatic stress disorder (PTSD), conditions that frequently co-occur, particularly among adolescents with a history of trauma [19].

Interpersonal therapy targets four primary areas: grief, role disputes, role transitions, and interpersonal deficits. These domains are central to the therapeutic framework and align with previous research emphasizing the need to identify and address social challenges, role transitions, and deficits in interpersonal relationships [14]. The intervention strategies include symptom assessment, emotional evaluation, development of new interpersonal skills, and the facilitation of effective communication.

The primary goal of interpersonal therapy in this context is to enhance the capacity of Juvenile Correctional Institution Residents to explore and resolve their interpersonal issues, whether with peers or family members. The therapy supports participants in strengthening their interpersonal relationships and in learning to seek and utilize both emotional and practical support as needed [18]. This is in line with the findings, which highlighted the role of interpersonal therapy in helping individuals recognize and overcome interpersonal conflicts that often underlie psychological distress [12].

Taken together, these results underscore the relevance and potential of interpersonal therapy as an effective psychological intervention for addressing depression and trauma-related symptoms in institutionalized adolescents. The structured approach and emphasis on improving communication, social skills, and emotional regulation offer valuable tools for promoting psychological resilience and social reintegration post-incarceration. Interpersonal therapy has a significant effect in improving social functioning and reducing depression and anxiety. Depressive and anxiety disorders are closely associated with dysfunction within the central nervous system, particularly involving the amygdala, hippocampus, and prefrontal cortex. Hyperactivity in the amygdala contributes to heightened stress responses, while reduced connectivity between the amygdala and the prefrontal cortex impairs emotional regulation [20]. Hippocampal dysfunction, which is essential for emotional memory, is especially prominent in adolescents who have experienced trauma or loss [21]. Interpersonal Psychotherapy (IPT) has shown efficacy in modulating these neural circuits by enhancing communication skills, promoting healthy social relationships, and facilitating adaptive emotional processing [22]. Studies have demonstrated that IPT reduces amygdala hyperactivity, improves regulatory control of the prefrontal cortex, and enhances hippocampal neuroplasticity, collectively contributing to the alleviation of depressive and anxiety

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symptoms [23], [24]. Overall, it is considered one of the effective non-pharmacological treatments for depression [25].

The Wilcoxon Signed-Rank Test results indicate that interpersonal therapy is effective in reducing depression among adolescents in correctional facilities. This aligns with Calista Roy's Adaptation Model, which views humans as adaptive systems responding to internal and external changes through four modes: physiological, self-concept, role function, and interdependence. Incarcerated adolescents often face focal stimuli such as emotional stress and limited social support, which may trigger maladaptive responses if coping mechanisms are weak. Interpersonal therapy helps improve self-concept, rebuild self-esteem, and foster positive social relationships. These outcomes reflect adaptive responses in line with Roy's theory, confirming the therapy's effectiveness in supporting psychological and social adjustment in correctional environments. [26]

Based on Table 3, the anxiety levels of respondents did not show a statistically significant increase after the intervention was administered. The mean anxiety score during the pre-test was 17.27 with a standard deviation of 7.735. The mean difference in anxiety scores after the interpersonal therapy intervention was 3.69 points. The median anxiety score in the pre-test was 18.00 with an interquartile range (IQR) of 13.

After the administration of interpersonal therapy, the post-test results indicated a notable improvement in the respondents' anxiety levels. The number of respondents categorized as having mild anxiety increased to 29 individuals (87.9%), while those in the moderate category decreased to 3 individuals (9.1%). Only 1 respondent (3.0%) was classified as having severe anxiety. The post-intervention mean score decreased to 13.58 with a standard deviation of 9.206, and the median was 13.00 with an IQR of 10.

**Table 3. Effect of Interpersonal Therapy on Anxiety**

Measure	Test	M±SD	Median (IQR)	Wilcoxon Signed-Rank Test	
				Z	P
Anxiety	Pre-Test Beck Anxiety Inventory – II	17.27±7.735	18.00 (13)		
	Post-test Beck Anxiety Inventory – II	13.58±9.206	13.00 (10)	- 1,732	0,083

The Wilcoxon Signed-Rank Test yielded a Z value of -1.732 and  $p = 0.083$ , indicating no statistical significance ( $p > 0.05$ ). However, a clinically meaningful reduction in anxiety was observed following the implementation of Interpersonal Therapy (IPT). This study found that Interpersonal Therapy (IPT) was effective in reducing depression, but had no clear impact on anxiety. This differs from prior studies showing IPT's effectiveness for both conditions. One possible reason is that most participants had mild anxiety at baseline, limiting measurable change. Environmental stressors and limited social interaction in the correctional setting may also have reduced the therapy's impact. Since the sessions focused mainly on interpersonal issues, they may have been more suited to addressing depression. Anxiety, which may stem from trauma, stigma, or uncertainty about the future, may require broader therapeutic approaches. Thus, while IPT benefits depression, additional strategies may be needed to address anxiety in juvenile inmates [27], [28]. The proportion of adolescents with mild anxiety increased from 66.7% to 87.9%, suggesting clinical improvement despite the lack of statistical significance. Clinical efficacy remains relevant in small sample studies. IPT helps improve interpersonal functioning and has shown benefits in correctional settings by fostering positive relational attachments [29], [30]. Interpersonal Therapy may also ease pre-release anxiety related to social reintegration, stigma, and future uncertainty. While [31] reported no significant link between sentence duration and stress, longer incarceration still poses mental health risks, including anxiety and PTSD. Therefore, IPT holds clinical value as a supportive intervention for adolescents in correctional environments, especially during transition period [32].

The reduction of anxiety levels in juvenile inmates can be explained through Roy's theoretical framework, wherein interpersonal therapy functions as a positive contextual stimulus that supports cognitive coping mechanisms. During therapy sessions, juveniles are guided to comprehend and manage their anxiety, restructure negative thought patterns, and enhance communication skills as well as constructive social interactions [26].

This intervention strengthens the self-concept adaptation model by enabling juveniles to recognize their intrinsic value and potential, thereby reducing feelings of fear, anxiety, and low self-esteem. Furthermore, the therapy facilitates the realignment of role functions within the correctional environment and promotes interdependence through supportive relationships with peers, officers, and family members. Consequently, the adaptive responses elicited through interpersonal therapy demonstrate the effectiveness of this intervention in assisting juveniles to cope positively with environmental stressors in alignment with Roy's theory [33].

## CONCLUSION

Based on the results of the data analysis, it can be concluded that the administration of Interpersonal Therapy had a significant effect on reducing depression levels among juvenile inmates at the Special Child Penitentiary ( $p < 0.001$ ). This indicates that the intervention was effective in alleviating depressive symptoms in this population. Therefore, Interpersonal Therapy may be recommended as a therapeutic approach for managing depression among incarcerated adolescents.

In contrast, the intervention did not have a statistically significant effect on reducing anxiety levels ( $p=0.083$ ). Although a descriptive decrease in anxiety was observed, it did not reach statistical significance. These findings suggest that addressing anxiety in juvenile inmates may require additional or alternative therapeutic interventions that are more specifically tailored to the nature of anxiety experienced by this group.

One of the main challenges in this study was adjusting the intervention schedule to align with the routine activities at the correctional facility, which resulted in considerable time gaps between sessions and required schedule modifications to ensure the intervention was delivered in full. Additionally, the one-group pretest-posttest design without a control group limited the ability to attribute outcomes directly to the intervention. The small sample size and single-site setting also reduced the generalizability of the findings. Future research is recommended to use a controlled trial design with a larger sample and more diverse population.

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