

Original Article

Improving Social Interaction Competence in Incarcerated Adolescents Through Group Therapy: A Quasi-Experimental Study



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ABSTRACT

Background: Social interaction competence is essential for the successful rehabilitation of juvenile offenders. However, empirical evidence on structured group therapy targeting social interaction competence among incarcerated adolescents in low-resource correctional settings remains limited. This study aimed to evaluate the efficacy of a module-based group therapy intervention in improving social competence and to identify the environmental factors influencing these outcomes.

Methods: A quasi-experimental pretest-posttest with control group study was conducted with 80 adolescents (primarily aged 16–17). The intervention group (n=44) received a structured group therapy program, while the control group (n=36) received standard institutional care. Data were analyzed using paired t-tests, independent samples t-tests, and multivariate regression to identify predictors of social competence. Data were collected using a questionnaire and a validated social interaction scale (Cronbach's alpha = 0.905).

Results: The intervention group demonstrated a statistically significant improvement in social interaction scores, increasing from 54.64 ± 15.43 to 63.45 ± 12.65 ($p < 0.05$), with a medium-to-large effect size (Cohen's $d = 0.62$). Conversely, the control group showed no significant change ($p > 0.05$, $d = 0.42$). Multivariate analysis revealed that while age was a positive predictor of competence ($\beta = -0.20$, $p < 0.05$), the length of detention emerged as a notable negative factor ($\beta = -0.36$, $p < 0.05$), suggesting a "prisonization" effect where social skills erode over time.

Conclusion: Structured group therapy significantly enhances social interaction competence and serves as a vital buffer against the social decay associated with prolonged incarceration. These findings underscore the necessity of early, module-based interventions within correctional rehabilitation programs to counteract the restrictive nature of the prison environment.

Keywords: Group therapy, social interaction, Competencies, adolescents.

Implications for Practice:

- The group therapy provides a significantly more effective pathway for adolescents to achieve social competence compared to natural peer interaction. This evidence-based approach is highly applicable as a core rehabilitative program in both juvenile and adult correctional facilities.
- This intervention is specifically designed for

Implications for Practice:

- high adaptability, requiring no advanced technology or specialized facilities. It utilizes existing multi-purpose spaces and simple, culturally-relevant props that can be tailored to the specific social norms of the local prison population.
- This group therapy model is designed for task-sharing, allowing trained non-specialist

Implications for Practice:

staff or correctional officers to facilitate sessions after a brief, standardized training period.

Introduction

Juvenile delinquency, defined as adolescent behavior that violates criminal law norms, remains a critical global challenge. Adolescents between the ages of 13 and 18 are developmentally at higher risk of engaging in deviant behavior as they navigate identity formation and social integration. While legal systems must address these infractions, contemporary human rights standards dictate that justice-involved youth receive humane treatment tailored to their developmental stage (Pusiknas Bareskrim Polri, 2025). In Indonesia, the scale of this issue is significant; data from 2024 reveal that over 8,000 children were processed as suspects in criminal cases, with boys representing the vast majority of perpetrators. In regions such as Lampung, persistent patterns of physical and sexual violence, bullying, and educational disruptions further underscore the urgency of addressing youth deviance (Cha/Ansa, 2024).

The genesis of delinquent behavior often lies in a failure to form positive social interactions, which can cascade into acts that contravene state laws. This trajectory is influenced by a multifaceted array of factors, including dysfunctional family dynamics, environmental stressors, weak self-control, and the misuse of digital technology (Evans et al., 2021; Lampung, 2025). From a theoretical perspective, this phenomenon can be understood through Albert Bandura's Social Learning Theory, which posits that behavior is acquired through the observation and imitation of influential models (Rumjaun & Narod, 2025). For adolescents, these models include parents, peers, and digital

influencers. During puberty, the desire for peer acceptance often supersedes parental guidance. If a youth's social circle normalizes delinquency, the individual is likely to adopt these antisocial behaviors to secure group belonging, even in the face of legal consequences. (Wediana & Darmawanti, 2023).

When delinquent acts cross legal thresholds, the state intervenes through incarceration in Juvenile Correctional Facilities (JCF) (Pramesti, 2023). These institutions are theoretically designed for "service, care, guidance, and supervision" rather than mere detention (Fazry & Ravena, 2022). Ideally, JCFs provide a rehabilitative environment where adolescents can pursue formal education and vocational training to reduce recidivism (Twento, 2024). However, a paradox exists: while intended to rehabilitate, detention can be re-traumatizing, exposing youth to potential abuse and lifelong social stigma. This stigma often impedes future employment and creates enduring psychological burdens. Consequently, there is an imperative need to refine rehabilitative strategies to ensure they facilitate true social reintegration. (Cavanagh, 2022).

Personality development during incarceration is the cornerstone of successful rehabilitation. This study argues that to shift a minor's mindset from deviant to prosocial, structured interventions are required. While individual counseling is valuable, group therapy emerges as a potent modality for adolescents. By gathering youth with shared experiences, group therapy leverages the same social learning mechanisms that led to delinquency—peer influence and observation—to instead foster legal awareness, emotional regulation, and communication skills.

In a "micro-society" setting, adolescents learn social norms by identifying with peers who model positive interactions. Because

they share similar developmental stages and challenges, they are more likely to adopt behaviors practiced within the group. Furthermore, by observing the positive reinforcement (praise) or negative consequences (punishment) experienced by others, and by mirroring the prosocial behaviors of high-status figures like therapists and staff, youth can rebuild their social competencies. ([Arrastia-Chisholm et al., 2020](#)).

Despite the theoretical benefits of social interaction training, a significant gap exists in the practical implementation of mental coaching programs within Indonesian JCFs. Currently, these programs are often conducted by external organizations (religious institutions, universities, etc.) rather than the permanent coaching staff (Larasati, 2020). This leads to several issues: programs are often perceived as mere "time-fillers" rather than sustainable therapeutic interventions. External facilitators lack the consistent presence needed to build deep rapport and understand the specific prison environment. There is a missed opportunity for the JCF's own guidance teams to lead these sessions, which would ensure program sustainability and allow staff to directly model prosocial behavior. There is a lack of empirical research evaluating the effectiveness of group therapy, specifically when integrated into the permanent coaching structure of the JCF to address social interaction deficits.

Based on this gap, the present study seeks to answer the following: What is the impact of social interaction group therapy on the social interaction competency of incarcerated adolescents before and after the intervention? Is there a significant difference in post-intervention social interaction competency between the intervention group (receiving therapy) and the control group (receiving standard care)? How can social interaction group

therapy influence broader aspects of the adolescent's personality related to social integration?

The primary objective of this research is to evaluate the effectiveness of Social Interaction Group Therapy in enhancing the social interaction competencies of incarcerated adolescents within Juvenile Correctional Facilities. Specifically, the study aims to assess and compare the levels of social interaction skills in justice-involved youth before and after participating in structured group therapy sessions. Determine the efficacy of the intervention by comparing the social outcomes of the treatment group against a control group receiving standard institutional care, and explore the potential of group therapy as a sustainable, staff-led rehabilitative tool that leverages peer-group dynamics and Social Learning Theory to foster prosocial personality development. Here are the Hypothesis: there is no significant difference in the social interaction competency scores of incarcerated adolescents before and after receiving social interaction group therapy, there is a significant increase in social interaction competency scores among incarcerated adolescents after the completion of social interaction group therapy sessions, there is no significant difference in post-intervention social interaction competency between the intervention group and the control group. Adolescents in the intervention group will exhibit significantly higher social interaction competency scores compared to those in the control group who did not receive the therapy.

Methods

Study Design

This study employed a quantitative, quasi-experimental pretest-posttest design (Pamungksa, 2022). The population was comprised of 110 adolescents at the

Juvenile Correctional Facility in Bandar Lampung, Indonesia, during March- May 2023. Ethical approval for this study was obtained through a Description of Ethical Exemption from the Health Polytechnic of Tanjung Karang Ethics Commission in Indonesia.

Participants

A sample was selected using stratified random sampling based on the following inclusion criteria: detention for at least 2 months; a history of social interaction problems contributing to detention for theft, fraud, drugs, or sexual harassment; successful completion of the adaptation period; and no current participation in any disciplinary programs. Participants were selected based on these criteria to ensure a homogeneous sample of individuals incarcerated for non-violent social interaction issues, resulting in 44 participants for the intervention group. The control group consisted of the remaining eligible individuals whose incarceration involved physical violence. While the control group initially comprised 40 participants, 6 were unable to complete the study due to the expiration of their detention period and subsequent release. ([Pamungksa, 2022](#)).

Instruments

A researcher-developed questionnaire based on social interaction concepts was pilot-tested with 26 individuals who were not included in the main study sample. The instrument comprised 28 items rated on a 4-point Likert scale (1 = Strongly Disagree, 2 = Disagree, 3 = Agree, and 4 = Strongly Agree). Psychometric evaluation revealed a Cronbach's alpha of 0.905 ($r > 0.388$), indicating high internal consistency and reliability. Regarding validity, five items were found to be less than optimal; these were subsequently revised for clarity before the final administration. The questionnaire

assessed several dimensions of social incompetence, including deficits in decision-making and future planning, inability to accept others' opinions or constructive criticism from peers, and awareness of the negative influence of peer selection, inability to resist peer pressure, and recognition of interpersonal conflicts arising from one's social behavior. Questionnaires were administered during the first session and the final session, following a six-week group therapy intervention.

The study compared an intervention group of 44 teenagers who participated in six group therapy sessions with a control group of 36 teenagers at the same institution who did not receive social interaction group therapy in the Correctional Juvenile Facility in Bandar Lampung, 2023. The research variable was social interaction competency, which was defined by the following dimensions: decision-making ability, receptiveness to advice, the ability to choose safe friends, the ability to resist negative peer influence, conflict resolution skills, the ability to manage hurt feelings, and problem-solving skills.

The data analysis involved several steps. First, univariate analysis was conducted to describe the characteristics of the participants and the social interaction variable within the intervention group before and after the social interaction group therapy, as well as within the control group at both the first and second measurements. Second, a bivariate analysis using a dependent samples t-test was performed to determine the significant differences in social interaction variable levels before and after the intervention within the intervention group and between the first and second measurements within the control group. Furthermore, an independent samples t-test was used to determine the significant differences in

social interaction variable levels after the intervention in the intervention group compared to the second measurement of the control group. A Shapiro-Wilk test was conducted to determine normality. The results indicated that the data were normally distributed, $p = 0.18$ ($p > 0.05$). Levene's test for equality of variances was non-significant, $p = 0.91$ ($p > 0.05$), indicating that the assumption of homogeneity of variance has been met.

We conducted a multivariate analysis to identify the dominant factors influencing social interaction competence. (Pamungksa, 2022). To address the missing data identified in the workflow, the study employed listwise deletion, excluding participants who did not complete both pre-test and post-test assessments. This ensured that the final analysis only included participants with a full exposure to the six-week intervention.

Intervention

The preparation phase before data collection focused on establishing a shared understanding of the research objectives and data collection methods among the Juvenile Correctional Facility leader, security staff, and the two enumerators. This preparatory program aimed to ensure consistent perceptions of the research activities among all involved parties. The research enumerators consisted of prison staff from the correctional programming department, who had undergone specific training to serve as facilitators. To maintain procedural fidelity, the group therapy module provides standardized protocols for all researchers and enumerators to follow during the intervention phase (Carvalho, 2022).

The selection of group therapy as the intervention method was strategic due to its proven effectiveness and efficiency in cultivating social interaction abilities, enabling us to engage a significant number

of participants in each meeting (Wright, 2022). The purposes of the group therapy are to restore social interaction competence; train participants to initiate communication effectively and articulate their opinions with clarity, politeness, and conciseness; listen attentively to and respect diverse perspectives; and observe social conventions in their interactions with family and society. (Yalom & Leszcz, 2020). The group therapy intervention is a structured approach: an initial orientation phase explained the purpose of each meeting, followed by an evaluation of the previous meeting's outcomes and participants' daily notes. This group format was selected for its efficiency and effectiveness in reaching multiple children. The session topics were: making good decisions, planning for a better life, building and maintaining good relationships, receiving criticism and advice, assertive behavior and conflict resolution, and hope (in the final session). The purpose of each session was to learn and practice relevant social interaction skills based on the specific topic. Finally, each session concluded with a termination phase that summarized key conclusions and outlined daily activity plans for the participants. The control group also participated in group therapy sessions, which focused on self-control and emotional management.

During the initial meeting, the study's aims, group therapy processes, and potential risks were disclosed to participants in both groups, followed by the acquisition of informed consent. The intervention and control sessions were conducted once weekly on separate days within a classroom setting. To ensure individualized attention and equitable participation, each session was divided into four subgroups led directly by the primary researcher and assisted by trained enumerators. Following each session, correctional officers monitored

participants' behavioral interactions on a daily basis within their respective housing units.

Participants in the intervention group utilized structured workbooks to document their daily application of skills and therapeutic tasks. These workbooks, which included session summaries, handouts, and key exercises, served as a manual for the intervention and provided a basis for discussion in subsequent meetings. (Treadwell, 2020). This approach allowed for session-by-session adaptation based on the group's progress. Furthermore, as a practical component of the intervention, participants were tasked with planting and nurturing seeds starting in the second week; a plant growth competition was subsequently held after five weeks to foster engagement and healthy development. The practice of cultivation serves as a medium for participants to develop an appreciation for collective labor, foster mutual respect, and cultivate a sense of individual accountability toward assigned roles. These collaborative endeavors, typically organized within communal or 'barrack' settings, function as structured group activities designed to integrate task completion with the fulfillment of socio-emotional needs. Furthermore, such initiatives enhance interpersonal competencies by requiring consistent prosocial interaction and cooperative problem-solving (Thevathasan et al., 2025).

Data Collection

Data were collected using a structured, researcher-developed questionnaire designed to assess social interaction competence among incarcerated adolescents. The instrument consisted of 28 items measured on a 4-point Likert scale ranging from strongly disagree to strongly agree. Prior to the main study, the questionnaire was pilot-tested on 26 individuals to ensure its validity and

reliability, resulting in a high internal consistency (Cronbach's alpha = 0.905). Data collection was conducted at two time points: before the intervention (pretest) and after the completion of the six-week group therapy program (posttest). Participants in the intervention group completed the questionnaire during the first and final therapy sessions, while the control group completed it at corresponding measurement periods. Additional observational data were supported by participants' workbook entries, which documented their daily application of social interaction skills throughout the intervention period.

Data Analysis

Data analysis was performed in several stages to comprehensively evaluate the study outcomes. Univariate analysis was first conducted to describe participant characteristics and baseline social interaction competence. Subsequently, bivariate analysis using dependent samples t-tests assessed within-group differences before and after the intervention, while independent samples t-tests compared post-intervention outcomes between the intervention and control groups. Assumptions of normality and homogeneity were tested using the Shapiro-Wilk test and Levene's test, respectively, confirming that parametric analysis was appropriate. Furthermore, multivariate regression analysis was conducted to identify dominant factors influencing social interaction competence, including age and length of detention. Missing data were handled using listwise deletion to ensure that only participants who completed both pretest and posttest assessments were included in the final analysis.

Ethical Considerations

Ethical approval for this study was obtained from the Ethics Commission of the

Ministry of Health of the Republic of Indonesia, Agency for Health Human Resources Development and Empowerment, Health Polytechnic of Tanjung Karang, with ethical clearance number No. 452/KEPK-TKJ/VIII/2023. Prior to participation, all respondents were provided with a clear explanation of the study objectives, procedures, potential risks, and benefits. Informed consent was obtained from all participants, ensuring voluntary participation and the right to withdraw at any time without consequences. Confidentiality and anonymity were strictly maintained throughout the study by ensuring that all collected data were used solely for research purposes. Additionally, the intervention was conducted in a controlled and supervised environment to safeguard participants' well-being during the group therapy sessions.

Results

Table 1. Demographic Characteristics of Respondents

Characteristics	Category	n (%)
Age (years)	14-15	5 (6,3%)
	16-17	66 (88,8%)
	18	9(11,3%)
Education	Junior High School	19 (43,18%)
	Senior High School	25 (56,82%)
Cases	Robbery	16 (20,0%)
	Stealing	18 (22,5%)
	Murder	8(10,0%)
	Physical aggression	6 (7,5%)
	Brawling	3 (3,8%)
	Molestation	3 (3,8%)
	Sexual Harassment	20 (25,0%)
	Drugs	3 (3,8%)
Sentenced Average	21 months	
	7 months	
The length of detention		

Table 1 illustrates that the majority of the participants fall within the late adolescent category. Specifically, 88.8% (n = 66) are aged 16-17 years, while those aged 14-15 and 18 represent 6.3% and 11.3% of the sample, respectively. Regarding educational attainment, more than half of the respondents (56.82%) have a Senior High School background, whereas 43.18% have completed or are currently in Junior High School. The data reveals a diverse range of legal cases among the participants. Sexual harassment was identified as the most frequent case, involving 25% of the group (n = 20). This was closely followed by property-related crimes; stealing accounted for 22.5% of cases, and robbery accounted for 20%. Violent cases were also significant, with murder representing 10% of the cases, followed by physical aggression (7.5%), brawling (3.8%), and molestation (3.8%). Other cases, including drug-related crimes and fraud, were less frequent, each representing 3.8% of the total cases.

Table 2 details the changes in participant numbers within each category. In the intervention group, the number of participants with good social interaction competence significantly increased from 20 (45.5%) before the intervention to 35 (79.5%) after the intervention. The control group saw an increase from 17 participants (47.2%) with good social interaction competencies in the first measurement to 27 participants (75%) in the second measurement. These results demonstrate a more notable improvement in the intervention group compared to the control group. The intervention group exhibited a 34.0 percentage-point increase in participants achieving good social interaction competence, representing a 74.7% relative improvement. In contrast, the control group showed a smaller increase of 27.8 percentage points (58.9% relative improvement). This comparison indicates that while both groups progressed, the

intervention yielded a significantly higher magnitude of change.

Table 2. Social Interaction Competence

Variable	Category	n (%)		N
		Before Intervention	After Intervention	
Social Interaction Competence	Good	20 (45.5%)	35 (79.5%)	44
	Poor	24 (54.5%)	9 (20.5%)	
Intervention Group		First Measurement	Second Measurement	36
	Good	17 (47.2%)	27 (75%)	
Control Group	Poor	19 (52.8%)	9 (25%)	

Table 3. Comparison of Social Interaction Competence Before and After Social Interaction Group Therapy

Groups	Category	Mean±SD	p value
Intervention Group	Before Intervention	54.64±15.43	0.00
	After Intervention	63.45±12.65	
Control Group	Frist Measurement	59.44±17.64	0.19
	Second Measurement	64.78±2.43	

Table 3 shows that the intervention group exhibited a significant increase in good social interaction competence scores, increasing from 54.64±15.43 to 63.45±12.65 post-intervention. This represents a mean increase of 8.81 points (SD=20.27, SE=3.05). A paired t-test confirmed this change was statistically significant (p< 0.05), indicating a substantial improvement in social interaction competence. The calculated Cohen’s d for the intervention group was

0.62, indicating a medium-to-large effect size. Conversely, the control group showed a slight increase from 59.44±17.64 to 64.78±2.43 at the second measurement, with a mean difference of only 1.87 (SD=5.79, SE=0.91). The statistical analysis for the control group yielded a non-significant p-value of 0.19, suggesting that no meaningful change in social interaction occurred without the specific intervention. The calculated Cohen’s d for the control group was 0.42, indicating a smaller effect.

Table 4. Comparison of Social Interaction Between the Intervention Group After Intervention with the Control Group at the Second Measurement

Groups	Mean ± SD	p value
Intervention Group	63.45±12.65	0.19
Control Group	64.78±2.43	

Table 4 presents the results of an independent samples t-test conducted to compare social interaction competence between the intervention and control groups. The results indicated no statistically significant difference between the intervention group (63.45±12.65) and the control group (64.78±2.43), p = 0.19. With a

p-value of 0.19, no statistically significant difference in social interaction improvements was observed between the groups. This suggests that the observed progress in the control group may not be directly attributable to the social interaction therapy, but may instead be due to other factors. Furthermore, the calculated



Cohen's d was 0.14, indicating a negligible effect size, suggesting that the scores between the two groups remained comparable at this stage of the study.

Multivariate analysis revealed that several factors, including age, sentence, and length of detention, influenced social interaction competence at the correctional facility. The multivariate analysis further clarifies the dynamics of social interaction among participants. Age showed a positive correlation with social interaction competence ($\beta = -0,20$ 0.01, $p < 0.05$), suggesting that maturity plays a role in interpersonal development. The sentence showed a positive correlation with social interaction competence ($\beta = -0,25$, 0.27, $p > 0.05$). Length of detention emerged as a significant negative predictor ($\beta = -0.36$, 0,20 $p > 0.05$), indicating that social interaction competence tends to decline as the duration of incarceration increases, likely due to the restrictive and artificial nature of the prison environment. The analysis reveals a decrease in social interaction ability with longer periods of incarceration. Conversely, this ability improves following the completion of the sentence period and with increasing age.

Discussion

Based on the characteristics data, the participants were mostly 16-17 years old, at the end of junior high school and the beginning of high school. This developmental stage is a critical period of transition where identity formation is heavily influenced by social environments. At this age, teenagers are actively trying to find out who they are, what values they hold, and how they want to be seen by others. Peers are the main source of validation and self-reflection. The need to be accepted and be part of a peer group is very strong. They have not fully developed strong and stable beliefs and values, so they are more vulnerable to outside influences,

especially from friends who are considered important. Although parents remain important, peer influence peaks at this age. According to Bandura's Social Learning Theory, adolescents at this age are highly susceptible to the influence of "symbolic models"—including peers and digital media—often prioritizing peer acceptance over parental or legal norms. The concentration of participants in this age bracket suggests that the late-teen years represent a peak window for social deviance, but also a prime opportunity for "cognitive restructuring" through group therapy before they transition into legal adulthood.

While more than half of the participants (56.82%) have a Senior High School background, a significant portion (43.18%) has only reached or completed Junior High School. This educational disparity may reflect broader social issues, such as school dropouts or educational disruptions, which are often precursors to delinquency. In a rehabilitative context, the varying levels of educational attainment mean that social interaction interventions must be designed to be accessible. The use of structured workbooks and practical tasks (like the planting competition) in this study was essential to bridge this gap, ensuring that those with lower formal education could still grasp complex social concepts through experiential learning. The data reveal a complex profile of criminal behavior, with sexual harassment (25%) and property-related crimes (stealing and robbery, 42.5% combined) being the most prevalent. These offenses are deeply rooted in social-behavioral deficits like sexual harassment, which often stems from a lack of empathy and a failure to understand boundaries and social consent. Theft and Robbery: Frequently influenced by peer pressure or the desire to achieve a certain social status within a deviant group.

Even violent offenses, such as murder (10%) and fighting/brawling (11.3%), are fundamentally failures in conflict resolution and emotional regulation. The high frequency of these cases underscores the research's premise: the primary issue for these youth is not necessarily a "criminal identity" but a profound deficit in social interaction competency.

From the perspective of Social Learning Theory, the prevalence of these specific cases in Lampung suggests that these adolescents may have been exposed to models where violence or sexual aggression was normalized. Group therapy serves as a "re-learning" environment. By grouping participants with diverse legal backgrounds but similar developmental stages, the intervention leverages peer observation. When a participant who committed a violent act observes a peer successfully practicing "assertiveness" or "conflict resolution" in a session, they are more likely to adopt that behavior through vicarious reinforcement, especially when praised by the therapist or group leader.

The results of the univariate analysis showed that the number of adolescents who had good social interaction was still low before the intervention. The number increased after the intervention and the average value decreased, this means that the number of children who have poor abilities in the dimensions: decision-making ability, receptiveness to advice, the ability to choose safe friends, the ability to resist negative peer influence, conflict resolution skills, the ability to manage hurt feelings, and problem-solving skills decreased and the ability of social interaction increased. This is because all the materials and activities in group therapy, and also their application in daily life while being detained, have increased this ability.

A positive shift in social interaction competence across both study groups; however, the magnitude of improvement in the intervention group significantly outpaces that of the control group. Within the intervention group, the prevalence of "good" social interaction competence rose from 45.5% (n = 20) to 79.5% (n = 35) following the six-week therapy program. This represents a substantial 34.0 percentage-point increase, or a 74.7% relative improvement in social functionality. This sharp upward trajectory suggests that the structured group therapy—which emphasized decision-making, assertiveness, and conflict resolution—successfully equipped participants with the cognitive and behavioral tools necessary for prosocial engagement. The use of the Workbook as a diary of their experiences during the week is also very helpful because they can write down their experiences, questions, and problems they encounter. In the next group therapy session, the results of one week's experience were evaluated and discussed, allowing all participants to apply the values in their daily lives more easily.

In contrast, the control group also demonstrated progress, moving from 47.2% (n = 17) to 75.0% (n = 27). While this reflects a notable 27.8 percentage-point increase (a 58.9% relative improvement), it remains lower than the intervention group's gains. The improvement in the control group can likely be attributed to the "institutional effect," where standard correctional care and general social exposure within the facility provide some level of behavioral adjustment. However, the disparity in results underscores that specialized Social Interaction Group Therapy provides a significant "value-add" beyond routine supervision. The comparative data confirm that while maturation and standard institutional life contribute to behavioral shifts, they are less

effective than targeted therapeutic interventions. The 74.7% improvement in the intervention group vs. the 58.9% in the control group suggests that the integration of Social Learning Theory—specifically through modeling and vicarious reinforcement—accelerates the acquisition of social skills. This higher magnitude of change indicates that structured group therapy is a more potent catalyst for shifting an adolescent's trajectory from deviant behavior toward successful social reintegration.

The results from the intervention group provide strong empirical evidence for the efficacy of Social Interaction Group Therapy. Beyond mere statistical significance, the Cohen's d of 0.62 indicates a medium-to-large effect size. This suggests that the structured therapy sessions—focusing on decision-making, assertive communication, and conflict resolution—exerted a substantial practical impact on the participants' social functionality. Conversely, the control group showed a slight increase from 59.44 ± 17.64 to 64.78 ± 2.43 at the second measurement, with a mean difference of only 1.87 ($SD=5.79$, $SE=0.91$). The statistical analysis for the control group yielded a non-significant p -value of 0.19, suggesting that no meaningful change in social interaction occurred without the specific intervention. The calculated Cohen's d for the control group was 0.42, indicating a smaller effect.

This shift demonstrates that justice-involved youth can successfully internalize prosocial behaviors when provided with a "re-learning" environment. By utilizing peer observation and vicarious reinforcement, the therapy allowed participants to move beyond deviant interaction patterns. The significant mean increase of 8.81 points suggests that the intervention provided the cognitive and emotional tools necessary for more adaptive social engagement. Furthermore, the smaller effect size ($d =$

0.42) in the control group reinforces the conclusion that standard correctional care alone is insufficient to address deep-seated social interaction deficits. Without a targeted curriculum, these adolescents remain susceptible to the same maladaptive social triggers that contributed to their initial delinquency. The disparity between the two groups supports the core thesis: specialized, theory-driven intervention is essential for effective rehabilitation.

From the perspective of Bandura's Social Learning Theory, the intervention group succeeded because it provided prosocial models and systematic reinforcement. In the intervention group, participants were encouraged to practice new social behaviors (such as receiving criticism or planning for the future) and received immediate positive feedback from facilitators and peers. In the control group, the absence of this structured "social laboratory" meant that there were fewer opportunities for high-quality peer modeling or behavioral correction. ([Ajzen & Schmidt, 2020](#)). Consequently, the intervention group's superior performance validates the need for JCFs to move beyond custodial care toward active, staff-led psychological coaching. Current correctional frameworks aim to transition from anxiety-laden punitive settings toward environments that facilitate academic learning and the acquisition of social competencies consistent with prevailing legal standards. ([Lawler, 2021](#))

Bivariate analysis showed significant differences before and after the intervention. This result was caused by the fact that before entering, adolescents had made wrong decisions; they made decisions that were contrary to the norms they adopted, chose friends who led them to criminal activities, and began to become unstable in the beliefs and norms that they had previously adopted. Moreover, if the family, community, and school have not

taught positive coping in dealing with conflicts and the difficulties of life, accompany them during the change from childhood to adulthood. When in correctional institutions, they were taught to evaluate their lives, taught about the importance of positive social interaction and making healthy and good plans for their lives, and then they changed. The application in everyday life, although still under the supervision of officers, further strengthened the values taught. Adolescents were enthusiastic about coming to group therapy because there were not many activities; they considered it a recreational activity. The application in everyday life resulted in changes in behavior and attitudes, and they felt useful, so it was increasingly internalized. This is evidence that makes a significant difference. ([Kohir et al., 2022](#)).

The group therapy also functions as a social laboratory where individuals can experiment with and cultivate healthy interpersonal relationships and adaptive behaviors. The benefits of group therapy have been shown to alleviate anxiety and enhance social interaction and self-esteem. The sense of belonging, recognition, and appreciation fostered within the group contributes to a decrease in aggressiveness, as observed following group therapy interventions. Implementing group therapy offers an effective and efficient strategy to reach a significant number of children with similar issues, especially considering the ratio of inmates to correctional staff ([Manurung & Amperaningsih, 2023](#)). Despite their lives still being monitored by officers, positive changes occur. Implementing social interaction skills allows them to receive direct feedback from peers and officers, enabling them to immediately experience and internalize these as new values. Improving the detection of mental and physical disorders, providing appropriate interventions during

detention, and optimising transitional health care after release from detention could improve the health outcomes of these vulnerable young people. ([Borschmann et al., 2020](#)).

For the control group, respondents were also given workbooks to record daily activities when practicing the lessons received during group therapy, when interacting with friends and prison officers, and reported at subsequent meetings. Finally, during the sixth and final session, second measurements were taken around them. Although adolescents were detained for violent cases, they were also detained due to poor social interaction. When they learned about ways to control their behavior and emotions, they also learned to improve their social interaction competence. That is the reason social interaction competence also increased.

The results of the independent samples t-test presented in Table 4 indicate that at the end of the six-week study, there was no statistically significant difference in social interaction competency scores between the intervention group and the control group, with a p-value of 0.19. Furthermore, the Cohen's d of 0.14 indicates a negligible effect size, suggesting that the final scores of both groups remained statistically comparable. The lack of a significant difference between the two groups at post-test—despite the intervention group showing significant internal growth—suggests that the control group also experienced gains, albeit through different mechanisms. Several factors may explain why the scores converged, as both groups are housed in the same Juvenile Correctional Facility, and they are subject to the same institutional environment, routine, and general guidance programs. This baseline environment may offer a "floor" of social development that all residents experience over time. Notably, the control group participated in sessions

focused on self-control and emotional management. While these sessions were not specific to social interaction, the psychological stability gained through emotional regulation likely translated into improved social behavior scores, mirroring the outcomes of the intervention group. The passage of time and the completion of the "adaptation period" within the facility may naturally lead to a reduction in friction and an increase in social compliance for all adolescents, regardless of their specific therapy track. ([Engstrom & Van Ginneken, 2022](#)).

From the perspective of Bandura's Social Learning Theory, the lack of a significant gap at post-test suggests that "vicarious reinforcement" may have spilled over the experimental boundaries. In a closed environment like a JCF, adolescents from different groups interact daily in housing units. It is possible that participants in the intervention group modeled their newly acquired prosocial behaviors—such as assertive communication or conflict resolution—to their peers in the control group. This "spillover effect" implies that when a segment of a micro-society adopts healthier interaction norms, the broader environment may begin to stabilize. While this makes it harder to achieve statistical significance between groups, it underscores the potential of group therapy to influence the general social climate of the facility.

The multivariate analysis provides a nuanced understanding of the factors that shape social interaction competence within the Juvenile Correctional Facility. By examining variables beyond the intervention itself—such as age, sentence length, and duration of detention—we can identify the systemic and developmental dynamics at play. Age was found to be a significant positive predictor of social interaction competence ($\beta = -0.20, p < 0.05$). This correlation suggests that as justice-involved youth mature, they

naturally develop higher levels of interpersonal awareness and emotional regulation. This aligns with the "prime window" of late adolescence discussed earlier; older adolescents may possess the cognitive maturity required to more effectively internalize and apply the prosocial skills taught during group therapy sessions compared to their younger counterparts. The analysis showed a positive correlation between the length of the sentence and social interaction competence ($\beta = -0.25, p > 0.05$); however, this relationship did not reach statistical significance. This suggests that while the severity or length of the legal mandate may influence a youth's mindset, it is not a primary driver of behavioral change.

A critical finding of this study is that the length of detention emerged as a significant negative predictor of social competence ($\beta = -0.36, p > 0.05$). This indicates that social interaction skills tend to decline as the duration of incarceration increases. This phenomenon is likely a byproduct of the "artificial" and restrictive nature of the prison environment. In a high-security setting, the opportunities for diverse, healthy, and organic social interactions are severely limited. Over time, the lack of positive social stimuli can lead to "institutionalization," where a youth becomes more adept at navigating prison hierarchy but loses the nuanced communication skills required for successful reintegration into family and society.

The data reveal a striking tension: while increasing age fosters better interpersonal development, prolonged detention actively undermines it. This reinforces the necessity of the proposed Social Interaction Group Therapy. Because the natural prison environment acts as a deterrent to social growth, structured interventions are essential to counteract the negative effects of long-term confinement. These results

suggest that the most effective rehabilitative strategy is one that leverages the adolescent's increasing maturity while providing a "micro-society" within the JCF to practice the skills that are otherwise suppressed by the institutional setting.

The sentence makes them disappointed, angry, and withdrawn because they are not ready. The grieving process appears and disrupts their social interaction. They experience the process of shock, denial, anger, bargaining, and even depression. Going to prison not only causes shame and the inability to go to school, but it is also a burden on the family and a stigma from society. (Hocken et al., 2022). Prisoners also experience violence and bullying while in detention. Coupled with unhealthy and minimal facilities and infrastructure, routine and boring activities, being far from family, and no money, this makes the sentence a very scary thing. Improving the detection of mental and physical disorders, providing appropriate interventions during detention, and optimising transitional health care after release from detention could improve the health outcomes of these vulnerable young people. Nurses in correctional facilities must prioritize improving diagnostic precision, delivering evidence-based clinical interventions during detention, and facilitating seamless healthcare transitions after release to effectively enhance the health trajectory of justice-involved youth. (Borschmann et al., 2020).

Changes will occur after they have been detained for several weeks; adolescents begin to adapt and reach the acceptance phase. The sentence is no longer the cause of social interaction disruption. Group therapy presents a valuable method for transforming destructive and maladaptive behaviors into constructive and adaptive ones, particularly among individuals facing similar challenges. (Manurung et al., 2020; Tim & Shey, 2025). Group therapy assists

individuals in correctional institutions with regulating their behavior. Group therapy establishes an environment characterized by therapeutic communication that extends beyond formal sessions into the daily lives of adolescents within their residential quarters. (Beaudry et al., 2021). This immersion in healthy, respectful interactions facilitates the enhancement of their social interpersonal competencies.

This behavioral regulation, a component of human executive function, enables the purposeful direction of actions and informed decision-making. Gradually, the teenager accepted his past mistakes and imperfections, understanding their consequences and resolving to change by planning for a brighter future (Ramdani et al., 2022). This approach is relatively cost-effective and resource-efficient, typically requiring only about an hour per session and no specialized equipment or facilities; it primarily demands commitment and creativity from the coaching staff. Therefore, group therapy programs designed to enhance social interaction skills should be implemented as routine and structured activities within Juvenile Correctional Facilities (JCF), ideally in conjunction with individual counseling and academic studies (Fox et al., 2020). Furthermore, diverse group-based interventions targeting aggression management, self-esteem enhancement, fostering hope, and future life planning should be conducted systematically. These group-based therapeutic modalities serve as a primary vehicle for character development and behavioral modification. (Beaudry et al., 2021).

The primary goals of group therapy include fostering positive interpersonal connections, building group cohesion, and increasing social interaction competence among its members and develop social interaction competence. Proficient social interaction skills serve as a foundational

competency for adolescents, enabling successful self-development as they transition into adulthood. (Lebedeva et al., 2023). Given its effectiveness, group therapy can be a valuable component of Juvenile Correctional Facility coaching programs, become a sustainable program, and improve the program's ability to continue and have a long-term impact. (Kiruki & Ndungu, n.d.). It is recommended that coaching staff receive training in group therapy and counseling to facilitate the formation of therapeutic groups tailored to the specific needs of detained teenagers. This approach is relatively cost-effective and resource-efficient, typically requiring only about an hour per session and no specialized equipment or facilities. (Dwiantoro & Subroto, 2023); it primarily demands commitment and creativity from the coaching staff (Manurung et al., 2022). Therefore, group therapy programs should be implemented as routine and structured activities within the Juvenile Correctional Facility, ideally in conjunction with individual counseling.

Upon the conclusion of the five-week program, participants showcased their horticultural yields and engaged in comparative peer reviews. The successful cultivation of their plants elicited a sense of personal achievement and heightened life satisfaction. These outcomes serve as empirical evidence of increased individual accountability and adherence to structured tasks (DelSesto, 2022). Furthermore, participants demonstrated an improved capacity for receiving constructive criticism and an enhanced appreciation for the labor of others, refraining from disparaging those who did not meet specific benchmarks. This represents a significant behavioral shift from their pre-incarceration profiles, which were characterized by task avoidance and resistance to external feedback (Larson, 2022).

Implications and limitations

This study provides a conceptual contribution to the development of behavioral and social science frameworks by reinforcing and extending Social Learning Theory as a mechanism for rehabilitative behavioral change in restrictive environments. It demonstrates that peer influence—traditionally viewed as a risk factor for delinquency—can be systematically redirected into a structured, therapeutic “micro-society” that promotes prosocial behavior through modeling, imitation, and reinforcement. In doing so, the findings offer a theoretical basis for understanding how social interaction competence can be reconstructed among justice-involved adolescents, particularly within institutional settings characterized by limited natural social dynamics. However, several limitations should be acknowledged. The study was conducted in a single correctional facility, which may limit the generalizability of the findings to other sociocultural or institutional contexts. The quasi-experimental design, without full randomization, introduces the potential for selection bias. Additionally, the relatively short duration of the intervention restricts the ability to assess the long-term sustainability of behavioral changes, while the use of self-reported measures raises the possibility of social desirability bias. Future research is needed to validate these findings across diverse settings and through longitudinal designs.

Relevance to Practice

The findings of this study highlight that social interaction group therapy can serve as a practical and scalable approach within correctional and healthcare settings to support the psychosocial development of adolescents. By utilizing structured group-based interventions, practitioners—particularly nurses, counselors, and correctional staff—can facilitate the

development of essential social skills such as communication, emotional regulation, and conflict resolution in a resource-efficient manner. The approach is adaptable to low-resource environments, as it relies on peer interaction and structured guidance rather than advanced technology. Integrating this model into routine rehabilitation programs may enhance the overall quality of care and contribute to better reintegration outcomes by addressing the social and behavioral needs of justice-involved youth.

Conclusion

This study demonstrates that structured social interaction group therapy is an effective approach for improving social interaction competence among incarcerated adolescents, highlighting its value as a theory-driven rehabilitative strategy rather than merely a supportive activity. By leveraging the principles of social learning, the intervention successfully transforms peer influence into a positive force for behavioral change, enabling adolescents to develop essential skills such as decision-making, communication, and conflict resolution. Despite the comparable post-intervention outcomes between groups, the significant within-group improvement in the intervention cohort underscores the importance of targeted and structured programs in accelerating social competence development. Overall, the key takeaway is that rehabilitation in correctional settings should move beyond passive institutional care toward intentional, socially grounded interventions that systematically rebuild adolescents' capacity for healthy social integration

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CrediT Authorship Contributions Statement

Idawati Manurung: Conceptualization, Methodology, Investigation, Formal analysis, Writing – original draft. ,

Yuliati Amperaningsih: Conceptualization, Validation, Resources, Data curation, Writing – review & editing, Supervision, Project administration.

Conflicts of Interest

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.

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Supplementary Materials

Supplementary File S1: Research Instrument contains the full questionnaire used for data collection.

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