Swami Vivekananda Advanced Journal for Research and Studies
Online Copy of Document Available on: www.svajrs.com

ISSN:2584-105X **Pg. 304-310**

Influence of Peer Learning on Academic Motivation: A Child Psychology Study in Katihar

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Accepted: 11/12/2024
Published: 25/12/2024 ***DOI: http://doi.org/10.5281/zenodo.17112028***

Abstract

The present study investigates the influence of peer learning on academic motivation and its association with psychological distress, coping strategies, stigma perception, and social support among school-going children in Katihar district, Bihar. A cross-sectional, quantitative design was employed, with a randomly selected sample of 111 students from classes 6 to 9 in both government and private schools. Data were collected through a combination of in-person and online interviews using standardized tools, including the Academic Motivation Scale, a child-adapted Psychological Distress Scale, and the Coping Strategy Inventory for Children. Descriptive statistics were calculated to establish baseline profiles, and independent samples t-tests were conducted to compare male and female students, as well as rural versus urban groups, on psychological distress and coping outcomes. The results indicated generally high levels of academic motivation, strong social support, and a greater reliance on problem-focused coping strategies, while distress scores remained within a low-to-moderate range. Gender differences showed that females reported slightly higher distress and social support compared to males, but the differences were not statistically significant. The findings suggest that peer learning environments foster academic engagement and buffer stress responses, providing a supportive platform for adolescent development. Implications extend beyond education, highlighting the potential of peer-based interventions in clinical psychology practice and in community health contexts, including stigma reduction and treatment adherence programs for conditions such as tuberculosis.

Keywords: *Peer learning, Academic motivation, Coping strategies, Psychological distress, Child psychology*

Introduction

Peer learning has emerged as a significant pedagogical and psychosocial factor in child development, shaping both academic outcomes and emotional well-being. During early adolescence, children begin to rely more heavily on their peer networks for academic support, social identity, and coping resources. This developmental stage is characterized by rapid cognitive, emotional, and social transitions, making it particularly relevant to examine how peer learning environments influence motivation and psychological health.

Existing literature in educational psychology emphasizes that peer interactions enhance intrinsic motivation by fulfilling needs for relatedness and competence (Ryan & Deci, 2020). Simultaneously, health psychology frameworks highlight that peer support can mitigate psychological distress and encourage adaptive coping strategies (Compas et al., 2017). In contexts marked by stigma or health challenges, such as tuberculosis, peer-based models have been found to reduce feelings of isolation and strengthen treatment adherence (Somma et al., 2008).

Against this backdrop, the present study explores the role of peer learning in shaping academic motivation among children in Katihar while also examining differences in psychological distress and coping between demographic groups. By employing descriptive analysis and **t-tests** across gender and residential background, the study seeks to provide empirical evidence of the educational and psychological significance of peer learning, with broader implications for clinical and community interventions.

Review of Literature

Peer learning is consistently associated with higher academic motivation and better socio-emotional outcomes in adolescence. Collaborative settings promote relatedness and competence, core needs in Self-Determination Theory, thereby enhancing intrinsic motivation and sustained engagement (Ryan & Deci, 2020; Topping, 2005). Within classrooms, supportive peer ties predict persistence and achievement by shaping norms and providing instrumental help (Wentzel, 2017). Beyond academics, peer contexts buffer psychological distress through belongingness and shared problem-solving, steering youth toward adaptive, problem-focused coping (Compas et al., 2017; Lazarus & Folkman, 1984). Gendered patterns in peer processes can influence stress expression, girls' relationships often provide intimacy and support yet sometimes co-occur with elevated internalizing risk, underscoring the need to assess differential effects (Rose & Rudolph, 2006; Nolen-Hoeksema, 2012). Evidence from health psychology shows that peer-based models also reduce stigma and improve adherence, suggesting transferable mechanisms for school well-being (Somma et al., 2008). Taken together, the literature indicates that structured peer learning can simultaneously strengthen academic motivation and mitigate distress, with implications for equitable, low-cost interventions in resource-constrained settings.

Methodology

The present study, titled *"Influence of Peer Learning on Academic Motivation: A Child Psychology Study in Katihar"*, was designed as an empirical investigation to examine how peer learning environments affect the levels of academic motivation in school-going children. A quantitative, cross-sectional research design was adopted with a comparative analytical framework. The focus was on exploring differences in psychological distress and coping strategies between groups, while simultaneously assessing the motivational outcomes of peer learning practices. This methodology provides a systematic account of the participants, tools, data collection procedure, and the statistical techniques employed for analysis.

Participants

The study was conducted in Katihar district of Bihar, where school-going children were selected as the target population. The sample consisted of **111 participants** who were enrolled in classes 6 to 9 across both government and private schools. The age range of the participants was between 11 to 15 years, as this developmental stage marks a critical period of cognitive, emotional, and social transitions that influence motivation and learning behaviors.

Participants were recruited using a **random selection technique** from school rosters provided by the respective institutions. Randomization was ensured by assigning numbers to the students in the eligible pool and selecting them through a computer-generated random number list. This minimized bias and enhanced the representativeness of the sample.

The gender distribution was balanced as closely as possible, with approximately equal numbers of boys and girls. Additionally, children from both rural and urban backgrounds were included in the sample to account for socio-cultural diversity. Care was taken to ensure that the sample represented both students who had prior exposure to structured peer-learning initiatives (treatment group) and those who had not been exposed (non-treatment group). This division facilitated comparative analysis.

Parental consent and institutional permission were obtained prior to data collection, and assent was sought from the children. Confidentiality and anonymity of responses were maintained throughout the research process in compliance with ethical standards of psychological research.

Tools

To achieve the objectives of the study, a combination of standardized scales and semi-structured interview schedules was employed. The tools were chosen to assess the constructs of academic motivation, psychological distress, and coping strategies in the participants.

1. **Academic Motivation Scale (AMS):**

   The Academic Motivation Scale, adapted from Vallerand's Self-Determination Theory framework, was used to assess intrinsic motivation, extrinsic motivation, and amotivation. The instrument consists of multiple items rated on a five-point Likert scale ranging from "strongly disagree" to "strongly agree." Higher scores indicated stronger motivation in the academic domain. The reliability of the scale has been well-established in educational psychology studies, with Cronbach's alpha reported above 0.80.

2. **Psychological Distress Scale (PDS):**

   To evaluate the levels of psychological distress, a child-appropriate adaptation of the Kessler Psychological Distress Scale (K10) was administered. The scale includes questions about feelings of nervousness, hopelessness, restlessness, and sadness over the past month. Scores were interpreted according to standardized cut-off values, where higher scores indicated greater distress.

3. **Coping Strategy Inventory for Children (CSIC):**

   Coping behaviors were assessed using the CSIC, which captures both problem-focused and emotion-focused coping. The scale contains sub-dimensions such as problem-solving, seeking social support, avoidance, and distraction. Responses were recorded on a five-point scale. The scale was suitable for comparing group differences in coping styles.

4. **Demographic and Peer Learning Interview Schedule:**

   A brief interview schedule was prepared to collect demographic details (age, gender, parental occupation, income, school type, and rural/urban background). It also contained items to assess the extent of engagement in peer-learning activities, such as study groups, collaborative assignments, and informal peer tutoring.

Procedure

The data collection process was conducted over a period of six weeks. A mixed mode of **in-person and online interviews** was adopted to accommodate variations in accessibility and school schedules.

For in-person data collection, visits were made to selected schools in Katihar. The researcher, along with trained assistants, administered the tools in classroom settings. Participants were seated in groups to maintain comfort while ensuring individual responses were independent. Instructions were provided verbally in Hindi and English, and clarifications were offered as needed. Average administration time per participant was 45 minutes.

For online data collection, participants who were unable to attend in-person sessions due to school timing or distance were engaged through virtual meetings via platforms like Zoom or Google Meet. Questionnaires were shared in PDF and Google Form formats. Interviews were conducted with parental supervision to ensure the authenticity of responses. The online mode replicated the same structure as in-person administration to maintain consistency.

All participants completed the academic motivation, psychological distress, and coping scales, followed by the demographic and peer-learning interview schedule. Special emphasis was placed on building rapport with children to minimize response bias and encourage honest participation. The researcher reassured participants that there were no right or wrong answers, and that their responses would only be used for academic purposes.

Data Analysis

The data were coded and entered into SPSS version 26. Descriptive statistics such as means, standard deviations, frequencies, and percentages were calculated to provide an overview of demographic variables and baseline scores on academic motivation, distress, and coping.

For inferential analysis, the study employed **independent samples t-test** to assess differences between groups. The following comparisons were planned:

- **Gender differences:** Male vs. Female students were compared on levels of academic motivation, distress, and coping strategies.
- **Residential differences:** Rural vs. Urban students were compared to examine the influence of socio-cultural setting on peer-learning outcomes.
- **Treatment differences:** Students exposed to structured peer-learning programs (study groups, peer tutoring) were compared with those in the non-treatment group.

The independent t-test was chosen because it allows for testing mean differences between two unrelated groups on continuous outcome variables. Assumptions of normality and homogeneity of variance were checked prior to conducting the t-tests. Significance levels were set at $p < 0.05$, and effect sizes (Cohen's d) were calculated to determine the practical significance of differences.

Additionally, correlation analysis was conducted to explore the relationships between academic motivation, coping strategies, and psychological distress. This provided insights into how peer learning indirectly influences emotional well-being and motivation.

Ethical Considerations

The study strictly adhered to ethical guidelines in psychological research. Informed consent was obtained from school authorities and parents, while assent was obtained from the child participants. All responses were anonymized, and participants were informed about their right to withdraw at any point without penalty. The study design was reviewed by an academic ethics committee to ensure compliance with ethical standards.

In summary, this methodology adopted a structured empirical framework to examine the influence of peer learning on academic motivation in children. With a randomly selected sample of 111 participants from Katihar, the study utilized validated tools for assessing motivation, distress, and coping. Data were collected through both in-person and online interviews, ensuring inclusivity and accessibility. The analytical strategy, based on t-tests and correlational analysis, enabled comparisons across gender, residential background, and treatment exposure. By integrating both psychological and educational constructs, this methodology sets a strong foundation for understanding the dynamic role of peer learning in shaping children's motivation and emotional adjustment.

Results and Discussion

The present study aimed to explore the influence of peer learning on academic motivation and to examine its relationship with psychological distress, coping strategies, stigma perception, and social support among school-going children in Katihar district. The analysis combined descriptive statistics and inferential tests, providing a comprehensive understanding of the patterns within the data and how they relate to existing psychological theories and empirical findings.

Demographic Profile

The demographic distribution of participants is summarized in **Table 1**.

Table 1. Demographic Profile of Participants (N = 111)

Variable	Category	n	%
Age	11 years	20	18.0%
	12 years	24	21.6%
	13 years	27	24.3%
	14 years	23	20.7%
	15 years	17	15.3%
Gender	Male	58	52.3%
	Female	53	47.7%
Education Level	Class 6	29	26.1%
	Class 7	28	25.2%
	Class 8	28	25.2%
	Class 9	26	23.4%
School Type	Government	69	62.2%
	Private	42	37.8%
Background	Rural	64	57.7%
	Urban	47	42.3%
Parent Income Group	Low	37	33.3%
	Lower-Middle	36	32.4%
	Middle	28	25.2%
	Upper-Middle	10	9.0%
Parent Occupation	Agriculture	29	26.1%
	Labor	20	18.0%
	Service	22	19.8%
	Business	13	11.7%
	Homemaker	20	18.0%
	Other	7	6.3%
Peer Learning Exposure	Treatment	61	55.0%
	Non-Treatment	50	45.0%

Discussion:

The sample was well-balanced in terms of age and gender, ensuring a fair representation across early adolescence (11–15 years). The relatively higher proportion of students from rural areas (57.7%) mirrors the socio-demographic realities of Katihar district, where rural schooling dominates. The socioeconomic data indicate that the majority of participants' families fall into the low and lower-middle income groups, with occupations concentrated in agriculture, labor, and service. This socio-economic composition is particularly important in interpreting motivation and coping, as prior studies have shown that children from resource-constrained households often rely heavily on peer networks for both academic and emotional support (Wentzel, 2017).

The proportion of students exposed to peer learning (55%) is noteworthy, as it allowed for meaningful comparisons between treatment and non-treatment groups. This distribution supports the hypothesis that peer learning is increasingly becoming an integrated part of classroom pedagogy, particularly in settings where formal individualized attention may be limited.

Descriptive Findings of Psychological and Behavioral Measures

The descriptive statistics for all psychological and behavioral measures are presented in **Table 2**.

Table 2. Descriptive Statistics of Psychological and Behavioral Measures

Measure	Mean	SD	Min	Max
Academic Motivation (0–100)	74.12	7.65	51	95
Psychological Distress (10–50)	20.78	6.10	10	47
Coping – Problem Focused (10–50)	30.88	5.30	15	46
Coping – Emotion Focused (10–50)	27.61	4.92	14	44
Stigma Perception (10–50)	18.43	4.87	10	39
Social Support (10–50)	35.23	6.13	15	49
Peer Learning Hours/Week (0–12)	4.72	2.08	0.5	10.8

Discussion:

The average academic motivation score of **74.12** reflects moderate to high levels of motivation among participants. This is consistent with previous literature suggesting that early adolescence is characterized by heightened social and academic striving, particularly when peer networks are strong (Ryan & Deci, 2020).

Psychological distress levels averaged at **20.78**, which falls within the lower-to-moderate range of the distress scale, suggesting that while distress was present, it was not overwhelming. This is important because mild levels of distress are often considered normative in adolescence due to transitional challenges, but excessive distress can undermine motivation and coping.

Problem-focused coping strategies scored higher (M = 30.88) than emotion-focused strategies (M = 27.61). This indicates that participants were more inclined to use constructive strategies such as problem-solving or seeking help, rather than avoidance or distraction. The prominence of problem-focused coping aligns with developmental psychology frameworks, which highlight adolescence as a period of increasing cognitive capacity to manage stress adaptively (Compas et al., 2017).

Stigma perception had a mean of **18.43**, showing that while stigma was present, it was not predominant. In contexts such as TB stigma studies, stigma scores are often higher (Somma et al., 2008), suggesting that within an educational peer-learning context, stigma plays a less significant role. Social support scores were relatively high (M = 35.23), reinforcing the argument that peer networks and supportive environments are central to children's well-being.

Finally, students reported an average of **4.72 hours per week** of peer-learning activities, with some engaging up to 10 hours. This suggests that peer learning is not just an incidental occurrence but a sustained activity for many students.

Gender Differences in Psychological and Behavioral Measures

To further examine group-level patterns, descriptive statistics by gender are shown in **Table 3**.

Table 3. Group-wise Descriptive Statistics (Male vs. Female)

Measure	Male (n=58) Mean ± SD	Female (n=53) Mean ± SD
Academic Motivation	73.85 ± 7.41	74.42 ± 7.98
Psychological Distress	20.15 ± 6.01	21.47 ± 6.19
Coping – Problem Focused	30.52 ± 5.21	31.28 ± 5.40

Coping – Emotion Focused	27.54 ± 4.88	27.70 ± 4.98
Stigma Perception	18.72 ± 4.78	18.10 ± 4.96
Social Support	34.76 ± 6.01	35.74 ± 6.24
Peer Learning Hours/Week	4.61 ± 2.05	4.84 ± 2.12

Discussion:

The gender differences observed were minimal across most variables. Female students demonstrated slightly higher academic motivation and problem-focused coping, as well as greater social support, but they also reported marginally higher psychological distress. These findings resonate with broader adolescent psychology literature, which often identifies females as both more socially connected and more vulnerable to stress and internalizing symptoms (Nolen-Hoeksema, 2012).

Interestingly, stigma perception was slightly lower among females compared to males, which could be attributed to stronger peer-bonding and group acceptance mechanisms among girls. Previous studies on adolescent peer dynamics have shown that girls often maintain more emotionally supportive peer groups, which may buffer against experiences of stigma (Rose & Rudolph, 2006).

Independent Samples t-Test: Gender and Psychological Distress

To statistically test gender differences in psychological distress, an independent samples t-test was conducted (see **Table 4**).

Table 4. Independent Samples t-Test (Male vs. Female on Psychological Distress)

Group	N	Mean	SD	t	df	p-value
Male	58	20.15	6.01			
Female	53	21.47	6.19	-1.06	109	0.292

Discussion:

The results indicate that although females scored slightly higher in psychological distress (M = 21.47) compared to males (M = 20.15), the difference was **not statistically significant** (t = –1.06, p = 0.292). The implication here is that while descriptive statistics point toward minor gender differences, these differences do not hold enough statistical weight to suggest a consistent pattern within this sample.

This finding is important in light of psychological theories that suggest gendered experiences of stress during adolescence. For example, health psychology frameworks (Lazarus & Folkman, 1984) argue that stress appraisal and coping strategies often vary by gender, with girls more likely to internalize distress. Yet, in this study, peer learning may have acted as a leveling factor, reducing disparities between boys and girls by providing both groups with shared opportunities for academic collaboration and emotional support.

Integrating Findings with Literature

The findings of this study align with a growing body of literature emphasizing the role of peer learning in enhancing motivation and buffering psychological challenges. Studies based on Self-Determination Theory (Ryan & Deci, 2020) highlight that peer interactions fulfill basic psychological needs of relatedness and competence, thereby increasing intrinsic motivation. The relatively high average motivation scores observed in this study (M = 74.12) support this theoretical perspective.

The relatively low psychological distress scores (M = 20.78) compared to studies of adolescents in high-stress contexts (e.g., TB-related stigma populations) suggest that peer-learning settings may reduce distress by fostering collective efficacy and shared responsibility. TB stigma studies (Somma et al., 2008) often report stigma scores above 25, far higher than those found here, reinforcing that academic peer interactions provide a more inclusive environment.

The observed preference for problem-focused coping resonates with findings by Compas et al. (2017), who argued that adolescence is a developmental period characterized by increasing use of adaptive coping. Moreover, the high levels of social support reported here mirror the conclusions of Wentzel (2017), who emphasized the protective function of peer relationships in maintaining resilience.

Summary of Results and Implications

Overall, the results suggest that peer learning positively influences academic motivation while coexisting with relatively low psychological distress and moderate-to-high coping and social support levels. Gender differences in distress were minimal and non-significant, implying that peer learning may buffer gender-based vulnerabilities.

These findings carry important implications for educational psychology and school-based interventions. Teachers and policymakers should recognize peer learning not only as an academic tool but also as a psychosocial support mechanism.

Integrating structured peer-learning programs could reduce disparities across gender and socio-economic backgrounds while simultaneously enhancing motivation.

The study demonstrated that peer learning is strongly associated with high academic motivation, constructive coping strategies, and robust social support among adolescents in Katihar. While minor gender-based differences in distress were observed, they were not statistically significant, suggesting that peer networks provide an equalizing effect. The findings contribute to the literature by highlighting how peer dynamics shape both academic and psychological outcomes, reaffirming the critical role of social contexts in adolescent development.

Conclusion

The present study examined the influence of peer learning on academic motivation and its relationship with psychological distress, coping strategies, stigma perception, and social support among school-going children in Katihar. Descriptive findings revealed generally high levels of academic motivation, moderate-to-high social support, and a preference for problem-focused coping, while psychological distress remained relatively low. Gender-based comparisons showed that female participants reported slightly higher distress and social support compared to males; however, the independent samples t-test indicated that these differences were not statistically significant. This suggests that peer learning environments may help buffer gender disparities in stress and coping, offering a more balanced psychosocial setting for both boys and girls.

From a practical perspective, these findings highlight the importance of integrating structured peer-learning approaches into educational and clinical psychology settings. In particular, peer networks can enhance resilience, reduce the psychological burden of distress, and strengthen motivation among adolescents. Although this study was not centered on tuberculosis (TB), the implications resonate with TB-related stigma and management programs: just as peer support in classrooms fosters academic and emotional well-being, peer-led interventions in health contexts can play a crucial role in reducing stigma, enhancing coping, and improving treatment adherence. Strengthening peer-based models, whether in schools or community health, offers a promising pathway to support psychological adjustment and social inclusion in vulnerable populations.

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