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The Influence of Perceived Social Support on Loneliness Among Students Who Have Confided in Artificial Intelligence

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Abstract. Students today are increasingly exposed to both academic and social pressures that arise from rapid environmental and contextual changes within educational settings. These pressures often create psychological burdens that can manifest in negative emotional states, such as feelings of loneliness, especially when students perceive that they lack sufficient social support to help them adapt and cope with such challenges. Loneliness, in turn, can reduce well-being, hinder social functioning, and negatively affect academic performance. In recent years, with the advancement of digital technology, some students have turned to Artificial Intelligence (AI) systems as an alternative outlet for sharing personal feelings, confiding in AI chatbots when they feel isolated or unsupported. While this may provide temporary relief, the presence of social support from peers, family, and significant others is still considered a crucial protective factor against loneliness. This study was conducted to examine the effect of perceived social support on loneliness among students who reported having previously confided in AI. A quantitative approach was employed, using purposive sampling to target students fitting the criteria. Data were gathered through online questionnaires distributed to 384 respondents from various academic backgrounds. To test the research hypothesis, simple linear regression analysis was performed, enabling the exploration of the direct relationship between perceived social support and loneliness in the context of AI-mediated coping behaviors. The results of the analysis indicated that perceived social support has a negative and significant effect on loneliness among students who have confided in AI. Specifically, perceived social support accounted for 34.3% of the variance in loneliness levels. This finding suggests that when students perceive stronger and more reliable social support, their tendency to experience loneliness decreases, even if they also utilize AI as an outlet for self-disclosure.

Keywords: Artificial Intelligence; Confiding; Loneliness; Perceived Social Support; Students

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1. Introduction

Artificial Intelligence (AI) refers to intelligence added to a system that can be One emerging phenomenon among students is the use of AI as a platform to "confide" or share personal problems, such as through ChatGPT. A study conducted by Rizki et al. (2024) on sociology students at UNP revealed that 5.3% used ChatGPT as a medium for confiding. Similarly, a poll conducted by Kumparan from April 28 to May 5, 2025, found that 308 readers reported having confided in AI. These findings highlight that confiding in AI has become a widespread phenomenon today.

Various types of AI applications and chatbots can serve as outlets for confiding, some of which also provide counseling features. Research by Bachri et al. (2024) identified several AI-based applications that offer individuals the opportunity to access support anytime and anywhere, such as Headspace, Calm, MoodMission, Sanvello, Youper, m-Health, and Dopamind+. AI-based chatbots such as Sahabat Curhat (Sacu) and Replika were also noted. Bachri et al. (2024) concluded that AI-based technologies can help individuals maintain mental health and even reduce suicidal ideation. Given the growing academic demands and challenges of university life, some students have chosen to use AI not only to assist with academic tasks but also as a confidant.

Arnett (2000) explained that emerging adulthood is a transitional phase from adolescence to adulthood, typically occurring between ages 18–25. During this stage,

individuals undergo various social, emotional, and academic changes. Students in this phase often face academic pressures, shifts in their social environment, and struggles with identity formation, making them vulnerable to loneliness. Loneliness is defined as a psychological condition in which an individual perceives a gap between desired social relationships and actual social connections. According to Taylor (2018), the lack of social support when needed can trigger loneliness, even if one is not physically alone.

Social support can be divided into two subgroups: perceived social support and received social support. Perceived social support refers to an individual's perception of the availability and adequacy of support, whereas received social support refers to the actual support provided by others, not merely a perception (Haber et al., 2007).

One of the key factors influencing loneliness is social support. Sarafino (2011) emphasized that it is not only the presence of social support that matters, but also an individual's perception of its quality and availability, which plays a critical role in psychological well-being. A high level of perceived social support can provide a sense of security, enhance self-esteem, and help individuals cope with life's pressures. Conversely, low perceived social support may lead to feelings of being misunderstood, rejected, and emotionally isolated.

Previous research has confirmed the negative relationship between perceived social support and loneliness. Nandana, Jatnika, & Rubiyanti (2023), who studied 290 students, found that the higher the perceived social support, the lower the level of loneliness. Interestingly, their findings also revealed that this effect tends to be stronger among female students, as they process social support more deeply on emotional and interpersonal levels. Another study by Meianisa & Rositawati (2023) demonstrated that high levels of social support contributed to reduced loneliness among first-year migrant students.

Cacioppo et al. (2015) classified loneliness into three dimensions: intimate loneliness, which arises from the absence of emotional support (empathy, care, concern); relational loneliness, stemming from the lack of friendships that provide instrumental support (time, effort, practical help); and collective loneliness, due to weak connections with social groups that foster a sense of belonging. Deficiencies in any of these aspects may increase the risk of loneliness. In the context of students, when support from their real-life environment feels lacking, AI may serve as an alternative to partially fulfill their emotional needs.

The phenomenon of using AI as a confidant reflects a shifting pattern in how individuals seek social support. For example, research by Mutiarrama et al. (2024) on users of Character.AI found that AI was chosen as a confidant to cope with loneliness resulting from the loss of emotional support in real life, such as the death of a parent or the absence of close friends. AI not only provides empathetic responses but also validates users' feelings, creating a sense of connection that, although virtual, is still perceived as meaningful.

This phenomenon is important to investigate due to its implications for mental health, social interaction, and technology use in everyday life. Therefore, this study seeks to analyze the influence of perceived social support on loneliness among students who have confided in AI, thereby offering both theoretical and practical contributions to the development of mental health literacy in the digital era.

2. Theoretical Review

Loneliness is a negative emotional state experienced when an individual feels socially isolated, even in the presence of others (Cacioppo et al., 2015). According to Weiss (as cited in Peplau & Perlman, 1982), loneliness does not simply arise from being alone, but from the lack of fulfilling relationships. Loneliness may occur when the number of social relationships is fewer than expected, or when the quality of intimacy within those relationships does not meet expectations (Gierveld et al., 2006). This condition is subjective in nature and is characterized by feelings of emptiness, hopelessness, helplessness, and loss of motivation (Nurayni & Supradewi, 2017).

Cacioppo et al. (2015) categorized loneliness into three dimensions. Intimate loneliness arises when there is no reliable individual to provide emotional support, such as empathy and care. Relational loneliness occurs due to the absence of meaningful friendships or group relationships that provide instrumental support such as effort, time, or material assistance. Collective loneliness relates to weak attachment to larger social groups, such as

communities or organizations. These three dimensions are interconnected and indicate that loneliness can emerge from the absence of emotional, instrumental, or collective support.

Several factors may influence the emergence of loneliness, including incompatibility in social relationships, changes in expectations of relationships, low self-esteem, and maladaptive interpersonal behavior (Brehm et al., 2002). Individuals with low self-esteem tend to avoid social interactions, perceive others negatively, and have difficulty building trust, making them more vulnerable to loneliness. Loneliness can also be triggered by life transitions, academic pressures, or insufficient social support (Diehl et al., 2018).

Social support is defined by Sarafino (2011) as assistance provided by friends or family in the form of attention, comfort, and appreciation, enabling individuals to feel accepted. Social support may take the form of verbal expressions, direct actions, or material help, which make individuals feel valued, loved, and cared for (Hidayati et al., 2023; Maimunah, 2020). Sarafino (2011) categorized social support into four aspects: emotional/esteem support (empathy, attention, recognition), tangible/instrumental support (material or practical assistance), informational support (advice, guidance, or problem-solving information), and companionship support (willingness to spend time together in social activities).

Social support can be divided into two subgroups: perceived social support and received social support. Perceived social support refers to an individual's perception of the availability and adequacy of support and their satisfaction with it, while received social support refers to the actual support received from others, not merely one's perception (Haber et al., 2007). Factors influencing the provision and reception of social support include the characteristics of the recipient, the availability and capacity of the provider, and the breadth of social networks (Sarafino, 2011). The absence of social support when needed may increase the risk of loneliness (Taylor, 2018). Conversely, adequate support—emotional, instrumental, or informational has been shown to reduce levels of loneliness (He et al., 2014).

Several previous studies have reinforced the negative relationship between social support and loneliness. Meianisa & Rositawati (2023) found that the higher the level of social support received by migrant students, the lower their loneliness. Similarly, Nandana, Jatnika, & Rubiyanti (2023), in their study on students during the pandemic, demonstrated a significant negative correlation between perceived social support and loneliness. Consistent results were also obtained from the studies of Widarti & Marsidi (2023), Gondokusumo & Soetjiningsih (2023), as well as international research by Lee & Goldstein (2015), Lin & Kingminghae (2014), and Xin & Xin (2015). These findings highlight the crucial role of social support in reducing loneliness across various cultural contexts and populations.

Based on theoretical foundations and previous research findings, it can be concluded that the perception of social support whether derived from real-life environments or alternative media such as Artificial Intelligence affects levels of loneliness. Students who feel a lack of support from their social environment tend to seek alternatives such as AI as a platform to share personal experiences, which subjectively fulfills part of their emotional and social support needs. Therefore, this study is grounded in the assumption that perceived social support influences the level of loneliness among students who have confided in AI.

3. Research Method

This study employed a quantitative approach to examine the effect of perceived social support on loneliness among university students who had previously confided in Artificial Intelligence (AI). The study population consisted of active students who had used AI as a medium for confiding. A total sample of 384 respondents was determined using Cochran's formula with purposive sampling techniques, based on specific criteria such as being an active student, having confided in one or more AI platforms, and having done so at least four times per month.

The data collection instruments included a perceived social support scale, developed based on four aspects proposed by Sarafino (2011), and a loneliness scale, based on three aspects identified by Cacioppo et al. (2015). Both instruments were tested, yielding item validity scores greater than 0.3 and reliability scores above 0.6. Data were collected online using Google Forms. Data analysis was conducted with the assistance of SPSS 24, comprising

descriptive analysis and simple linear regression to test the hypotheses. Prior to hypothesis testing, assumption tests were performed, including normality and linearity tests. The research model assumed that perceived social support (X) has a negative effect on loneliness (Y).

4. Results

The study was conducted by distributing questionnaires online. The questionnaires were created in the form of Google Forms and distributed or shared directly via social media platforms such as WhatsApp, Instagram, and TikTok. This strategy was intended to broaden the reach of questionnaire distribution and to ensure the respondents met the criteria, namely active university students in Indonesia who had confided in one or more types of AI. The research was carried out from June 15, 2025, to July 10, 2025.

Description of Research Respondents Based on Gender

Table 1. Description of Research Respondents Based on Gender

No.	Gender	Frequency	Percent
1.	Woman	322	83.9%
2.	Man	62	16.1%
	Amount	384	100%

Based on the gender classification of 384 respondents, it is known that 322 respondents were female (83.9%) and 62 respondents were male (16.1%).

Description of Research Respondents Based on Age

Table 2. Description of Research Respondents Based on Age

No.	Gender	Frequency	Percent
1.	17 years	4	1.0%
2.	18 years	28	7.3%
3.	19 years old	56	14.6%
4.	20 years	64	16.7%
5.	21 years	69	18.0%
6.	22 years	89	23.2%
7.	23 years	38	9.9%
8.	24 years old	16	4.2%
9.	25 years	9	2.3%
10	26 years old	3	0.8%
11.	27 years old	3	0.8%
12.	28 years old	1	0.3%
13.	30 years	2	0.5%
14	31 years old	1	0.3%
15.	32 years old	1	0.3%
	Amount	384	100%

Based on the age grouping of 384 respondents, it is known that the respondents' age range is between 17-32 years. The largest age group is 22 years old, with 89 people (32.2%), followed by 21 years old with 69 people (18%), and 20 years old with 64 people (16.7%).

Description of Research Respondents Based on the Type of AI Used

Table 3. Overview of Research Respondents Based on the Type of AI Used

NO.	Types of AI	Frequency	Percent
1.	Bing, DeepSeek, and ChatGPT	1	0.3%
2.	ChatGPT, Claude, Deepseek	1	0.3%
3.	ChatGPT, ClaudeAI, Gemini, Poe	1	0.3%
4.	ChatGPT, Deepseek	1	0.3%
5.	ChatGPT, DeepSeek, Grok	1	0.3%
6.	ChatGpt, Gemini, Character AI	1	0.3%
7.	ChatGPT, gemini, grok, deepseek	1	0.3%
8.	ChatGPT, Gemini, Claude, deepseek	1	0.3%
9.	QWEN, CO PILOT (GPT 4o based), ARIA (Gemini based)	1	0.3%
10.	Simsimi, ChatGPT, Gemini	1	0.3%
11.	ChatGPT, perplexity, poe	1	0.3%

12.	ChatGPT, Perplexity	1	0.3%
13.	Copilot and CICI	1	0.3%
14.	Cici	1	0.3%
15.	Bing	1	0.3%
16.	Headspace	1	0.3%
17.	Grok	1	0.3%
18.	Meta ai, Cici	1	0.3%
19.	ChatGPT, Replica	2	0.5%
20.	ChatGPT, Meta AI, m-health, Gemini	2	0.5%
21.	ChatGPT, Gemini, Deepseek	2	0.5%
22.	ChatGPT, Cici, Gemini	2	0.5%
23.	ChatGPT, Meta AI, CICI	2	0.5%
24.	Deepseek	2	0.5%
25.	ChatGPT, Cici	4	1%
26.	ChatGPT, Character Ai	5	1.3%
27.	ChatGPT, Meta AI, Gemini, Cici	6	1.6%
28.	Character AI	7	1.8%
29.	ChatGPT, Meta AI, Gemini	7	1.8%
30.	Gemini	8	2%
31.	ChatGPT, Gemini	19	4.9%
32.	Meta AI	22	5.7%
33.	ChatGPT, Meta AI	27	7%
34.	ChatGPT	249	64.8%
	Amount	384	100%

Based on the data obtained regarding the type of AI used by respondents as a place to confide, it is known that GPT Chat is the type of AI most widely used as a place to confide, where respondents who only use GPT Chat without additional types of AI, namely 249 people.

Hypothesis Testing

Table 4. Determination Coefficient Test

Model Summary

Model	R	R Square	Adjusted R Square	Standard Error of the Estimate
1	.585a	**.343**	.341	11,289

a. Predictors: (Constant), Perceived Social Support

Table 5. Simple Linear Regression Test

Coefficientsa

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	97,148	2,751		35,318	.000
	Perception of Social Support	-.678	.048	-.585	-14,109	.000

a. Dependent Variable: Loneliness

Based on the results of the simple linear regression analysis, it was found that the variable Perceived Social Support has a negative and significant effect on Loneliness, with a regression coefficient of -0.678 and a significance value (p) of 0.000 ($p < 0.05$). This indicates that the higher the perceived social support experienced by an individual, the lower their level of loneliness. The R-Square value of 0.343 suggests that 34.3% of the variation in loneliness can be explained by perceived social support, while the remaining 65.7% is accounted for by other factors. Furthermore, to test the hypotheses of this study, the results can be observed in the following ANOVA table:

Table 6. ANOVA Test

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	25366.830	1	25366.830	199,055	**.000b**
	Residual	48680.730	382	127,436		
	Total	74047.560	383			

a. Dependent Variable: Loneliness
b. Predictors: (Constant), Perceived Social Support

Based on the Anova table above, the significance value (p) is 0.000 < 0.05, so Ho is rejected and Ha is accepted, meaning that the Perceived Social Support variable has an influence on Loneliness..

5. Discussion

The respondents in this study were 384 active university students who had previously shared their personal concerns with AI. Based on the simple regression analysis, the results indicate that perceived social support has a negative and significant effect on loneliness, with a regression coefficient value of -0.678 and a significance value (p) of 0.000 ($p < 0.05$). This finding suggests that the higher the perceived social support, the lower the level of loneliness. The study also found an R-Square value of 0.343, indicating that perceived social support explains 34.3% of the variance in loneliness among students who confided in Artificial Intelligence (AI), while the remaining 65.7% is influenced by other factors. These findings are consistent with a study by Meianisa and Rositawati (2023) conducted among 157 first-year migrant students in Bandung, which also demonstrated a negative relationship between social support and loneliness.

Sarafino (2011) emphasized that it is not merely the presence of social support that matters, but rather an individual's perception of the quality and availability of such support that most strongly influences psychological well-being. In this context, students who perceive themselves as being supported by friends, family, or a caring system (such as AI) are better equipped to cope with life pressures, including feelings of loneliness. This is consistent with the findings of Nandana, Jatnika, and Rubiyanti (2023), who studied 290 university students and reported a significant negative relationship between perceived social support and loneliness, meaning that higher levels of perceived support are associated with lower levels of loneliness.

Individuals with low perceptions of social support may feel they have no one to share their thoughts with, that they are misunderstood, unloved, and socially unaccepted, thereby increasing their risk of loneliness. Taylor (2018) argued that the absence or insufficiency of social support when it is most needed can give rise to loneliness. This is because social support is not simply about physical presence or the number of people around, but about how an individual perceives the availability of support when facing life's challenges.

When individuals feel that those around them are indifferent or unavailable when needed, they may experience emotional isolation despite not being physically alone. Loneliness in such cases may drive individuals to seek alternative, safe, and accessible outlets to share their thoughts, such as confiding in AI. A study by Mutiarrama et al. (2024) involving three students who actively used Character.AI as a conversational companion revealed that their primary motivation was to cope with loneliness arising from the absence of close friends to talk to, lack of words of affirmation from their social environment, and the loss of a mother as a primary source of emotional support.

This study found that students chose to confide in AI because it was perceived as safer, more neutral, and less judgmental than humans. AI was also viewed as capable of providing empathetic and logical responses and being consistently available, thereby serving as an alternative source of emotional support for those who feel lonely, fear rejection, or lack trustworthy outlets in real-world social interactions.

According to Cacioppo et al. (2015), intimate loneliness arises from the absence of others who can provide emotional support (empathy, care, affection), relational loneliness stems from the lack of quality friendships within a group offering instrumental support (e.g., lending money, time, or effort), while collective loneliness results from a lack of social

belonging when groups fail to provide adequate support. These concepts align with this study's findings. In terms of intimate loneliness, among the 384 respondents, 213 students (55.5%) were categorized as moderate, 123 (32.0%) as high, and only 48 (12.5%) as low. Regarding emotional/esteem support, 236 respondents (61.5%) were in the moderate category, 80 (20.8%) in the low category, and 68 (17.7%) in the high category. These results suggest that intimate loneliness tends to fall between moderate and high, while emotional support tends to fall between moderate and low. Thus, insufficient emotional support may increase the likelihood of intimate loneliness.

For relational loneliness, the majority of respondents (200 students, 52.1%) were categorized as moderate, 125 (32.6%) as high, and 59 (15.4%) as low. Regarding instrumental support, 213 respondents (55.5%) were in the moderate category, 90 (23.4%) in the low category, and 81 (21.1%) in the high category. This indicates that relational loneliness tends to fall between moderate and high, while instrumental support tends to fall between moderate and low, suggesting that a lack of instrumental support may heighten relational loneliness.

The categorization of loneliness based on age revealed that most respondents were between 18–25 years old, with loneliness levels ranging from moderate to high. This indicates that individuals in the emerging adulthood stage are more vulnerable to loneliness compared to other age groups. This finding is consistent with Shah et al. (2024), who reported that individuals aged 18–25 years are the most likely to experience loneliness. Meanwhile, perceived social support by age group ranged from moderate to low and moderate to high.

Perceptions of social support based on parental status showed that respondents with divorced parents were mostly in the moderate and low categories, whereas those with intact or single-parent households were more often in the moderate and high categories. This indicates that an individual's perception of social support depends on who provides it and how the recipient responds, as argued by Sarafino (2011). Even in less ideal family situations, perceptions of support can remain high if both parties play their roles effectively. Across parental status groups (divorced, intact, or single-parent households), loneliness was generally categorized as moderate to high. Thus, loneliness does not necessarily mean physical solitude, but rather an unmet emotional need for closeness, acceptance, and support from others. Hawkley and Cacioppo (2010) noted that loneliness is primarily a perceptual issue concerning the quality of social relationships, not merely the number or physical presence of others.

The categorization of loneliness based on AI usage duration and frequency also showed that most respondents were in the moderate-to-high range. Meanwhile, perceived social support varied, with some respondents falling into the moderate-to-low category and others into the moderate-to-high category. These findings suggest that the duration and frequency of AI use do not significantly influence loneliness or perceived social support. This may be due to the fact that most respondents had used AI for 1–6 months and interacted with it around four times per month, making this group dominant and limiting variation in the results.

6. Conclusion And Recommendations

This study concludes that perceived social support has a negative and significant effect on loneliness among university students who confided in Artificial Intelligence (AI), with 34.3% of the variance in loneliness explained by perceived social support. Both perceived social support and loneliness among respondents were found to fall within the moderate category.

One key finding is the reason respondents chose to confide in AI. They perceived AI as safer, more neutral, and less judgmental than humans. AI was also seen as empathetic yet logical, as well as consistently available, making it an alternative source of emotional support for individuals who feel lonely, fear rejection, or lack trustworthy outlets in real-world social interactions.

This study also found that insufficient emotional support increases the likelihood of intimate loneliness, while insufficient instrumental support heightens relational loneliness. Furthermore, among various AI platforms used, ChatGPT was the most preferred by respondents for sharing personal feelings and problems.

The limitations of this study include the predominance of female respondents, as well as homogeneity in duration and frequency of AI use, which may limit generalizability across genders and user groups. Additionally, the loneliness scale used contained unfavorable items that were not fully contextualized to AI, while data collection via online forms (Google Forms) may have biased the sample toward particular groups.

Based on these findings, it is recommended that students recognize that although AI can serve as a comfortable outlet for confiding, real social interactions remain essential. Thus, AI should be viewed as complementary rather than a substitute for human support. Universities are encouraged to promote student engagement through organizations and campus activities to foster healthy relationships and interactions. Future researchers are advised to include additional variables such as personality, mental health, quality of interpersonal relationships, self-esteem, and coping strategies, and to employ mixed methods to better understand motivations for AI use and the perceived meaning of social support.

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