Emotion Suppression and Peer Rejection as Predictors of Loneliness in Female Adolescents

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Objective: The objective of this study was to investigate the predictive roles of emotion suppression and peer rejection on loneliness in female adolescents.

Methods and Materials: A correlational descriptive design was employed, involving 385 female adolescents recruited from various secondary schools in Tunisia. Participants completed a battery of standardized self-report measures assessing loneliness, emotion suppression, and peer rejection. Stratified random sampling ensured diverse socio-economic representation and adherence to ethical guidelines. Data were analyzed using SPSS-27. Descriptive statistics were generated to summarize participant characteristics and overall scores. Pearson correlation coefficients were calculated to examine the relationships between loneliness and each predictor. Subsequently, linear regression analysis was performed to determine how emotion suppression and peer rejection simultaneously contributed to loneliness.

Findings: Pearson correlation showed significant positive relationships between loneliness and emotion suppression ($r = .41$, $p < .01$), as well as between loneliness and peer rejection ($r = .52$, $p < .01$). The two predictors were also significantly related to each other ($r = .38$, $p < .01$). Regression analysis indicated that the model was significant ($F(2, 382) = 97.46$, $p < .001$), accounting for 34% of the variance in loneliness ($R^2 = .34$). Both emotion suppression ($\beta = .29$, $p < .001$) and peer rejection ($\beta = .41$, $p < .001$) uniquely and significantly contributed to loneliness in female adolescents.

Conclusion: Findings highlight that both emotion regulation patterns and social experiences play crucial roles in adolescent loneliness. Adolescents who suppress their emotions or encounter persistent peer rejection appear at a higher risk for feeling isolated. Identifying and addressing these two predictors may be integral to developing targeted interventions aimed at reducing loneliness and promoting emotional well-being among female adolescents in culturally diverse settings.

Keywords: Loneliness, Emotion Suppression, Peer Rejection, Female Adolescents.

1.   Introduction

Adolescence is a transformative developmental period marked by rapid changes in identity, emotional regulation, and social dynamics. During this stage, social connection and acceptance become central to psychological well-being, and disruptions in peer relationships or internal emotional processes can lead to significant mental health challenges, particularly loneliness. Loneliness, a subjective feeling of social isolation and perceived lack of companionship, is increasingly prevalent among adolescents and has been associated with a variety of negative outcomes, including depression, anxiety, and self-esteem issues (Sofrona & Giannakopoulos, 2024a; Weinberg et al., 2020). Female adolescents appear particularly vulnerable to the adverse effects of social disconnection, as they are often more attuned to emotional and relational cues in their social environments (Sánchez-Reyes et al., 2024; Wu et al., 2023).

Research highlights the intricate relationship between emotional processing strategies and the social context in which adolescents are embedded. Emotion suppression, defined as the deliberate inhibition of emotional expression, has been linked to difficulties in interpersonal communication and increased psychological distress (Macdonald et al., 2021; Sofrona & Giannakopoulos, 2024b). Adolescents who frequently suppress their emotions may struggle to form authentic relationships, as their peers may perceive them as detached or unapproachable. Over time, this can result in social withdrawal and perceived exclusion, exacerbating feelings of loneliness. In particular, girls who adopt suppression as a coping strategy in emotionally charged social situations may inadvertently hinder their access to peer support (Brown et al., 2024a; Han & Seo, 2024).

Peer rejection is another significant factor contributing to adolescent loneliness. It encompasses experiences of being excluded, ignored, or actively disliked by one's peers. Peer rejection has been shown to predict a host of negative emotional outcomes, including internalized distress and compromised social functioning (Long et al., 2020; Williams et al., 2017). When adolescents perceive themselves as unwanted by their peers, they are more likely to withdraw socially and internalize a sense of unworthiness, contributing directly to feelings of loneliness. The intensity of this experience is often magnified in girls due to their higher relational sensitivity and tendency to value peer relationships as sources of emotional security (Elliott et al., 2021; Jardas et al., 2023).

In recent years, scholars have emphasized the bidirectional interplay between internal emotional regulation and external social experiences in predicting adolescent mental health. Emotion suppression not only impairs self-expression but also reduces the likelihood of receiving empathic responses from peers, thereby fostering environments where rejection and loneliness thrive (Brown et al., 2024b; Sofrona & Giannakopoulos, 2024b). Adolescents who feel socially rejected may further withdraw emotionally, creating a feedback loop that intensifies psychological distress (Norrington, 2020; Trekels et al., 2024). Moreover, these emotional and social difficulties often occur in tandem, making it essential to consider them together when examining predictors of loneliness.

Contextual factors such as parenting style, socio-economic conditions, and school climate also shape how adolescents experience and respond to emotion suppression and peer rejection. For instance, supportive parenting and emotionally responsive caregivers can buffer the negative effects of peer rejection by fostering a secure base for adolescents to return to (Rahayu et al., 2022; Wu et al., 2023). Conversely, parental neglect, overcontrol, or mental health difficulties can exacerbate adolescents' reliance on suppression strategies and increase their vulnerability to peer rejection (Haniyah et al., 2022; Sofrona & Giannakopoulos, 2024a). Such complex interrelations suggest that loneliness in adolescents is best understood as the outcome of multiple, interacting factors across personal, relational, and environmental domains.

The school environment further plays a pivotal role in mediating adolescents' emotional and social experiences. A positive school climate that encourages inclusivity and emotional expression has been associated with lower rates of peer victimization and loneliness (Long et al., 2020; Wang, 2023). On the other hand, competitive or unsupportive school environments can contribute to increased peer rejection and discourage open emotional communication. Technology use in school-based interventions also offers promise in mitigating loneliness by enhancing peer connection and emotion regulation skills (Maula et al., 2023; Zagni & Ryzin, 2024). Programs that foster cooperative learning and emotional literacy have been shown to reduce interpersonal conflicts and enhance social bonds among adolescents.

Importantly, cultural context plays a critical role in shaping how adolescents understand and respond to peer rejection and emotional expression. In collectivist cultures such as Tunisia's, where social harmony and familial

expectations are emphasized, emotional suppression may be socially reinforced, especially among girls (Nisa et al., 2023; S & N.T, 2024). These cultural values may compel female adolescents to inhibit emotional expression to avoid conflict or preserve group cohesion, even at the cost of their psychological well-being. Simultaneously, peer rejection in such settings may carry greater stigma, making its psychological impact more severe (Sánchez-Reyes et al., 2024; Weinberg et al., 2020). These dynamics highlight the importance of considering gender and culture when examining loneliness and its predictors.

Evidence also suggests that adolescents from marginalized or minority backgrounds may face compounded challenges related to peer rejection and emotion regulation. For instance, gender-diverse or LGBTQ+ adolescents often experience elevated levels of peer victimization, which heightens their risk for loneliness and mental health struggles (Elliott et al., 2021; Jardas et al., 2023). In such populations, suppression of emotional distress may be a protective mechanism in hostile environments, but one that simultaneously restricts access to meaningful social support (Beristain & Wiener, 2020; Brown et al., 2024a). Understanding how emotion suppression and peer rejection jointly operate in various adolescent groups is crucial for designing effective interventions.

Previous research has also underscored the mediating and moderating roles of psychological and environmental variables in the relationship between interpersonal dynamics and loneliness. For instance, belief in a just world, self-concept clarity, and mental health literacy have all been identified as factors that can buffer or amplify the effects of peer rejection and emotional dysregulation (Macdonald et al., 2021; Weinberg et al., 2020). Moreover, interventions that promote peer empathy, emotional expression, and conflict resolution skills have demonstrated efficacy in reducing both rejection and internal distress in adolescents (Aschbrenner et al., 2019; Nisa et al., 2023). These findings support the importance of targeting both social and emotional competencies in prevention and intervention efforts.

Given the increasing prevalence of loneliness and mental health issues among adolescents worldwide, particularly among females, it is critical to identify key psychological and social contributors that can be targeted through early intervention. Despite the substantial literature on adolescent loneliness, there remains a need for studies that simultaneously consider both emotion suppression and peer

rejection as predictors, especially in non-Western settings. The present study addresses this gap by exploring how these two variables interact to predict loneliness in female adolescents in Tunisia—a context where gender norms, social expectations, and emotional expression are deeply shaped by cultural values (Sofrona & Giannakopoulos, 2024b; Wu et al., 2023).

This study aims to investigate the predictive roles of emotion suppression and peer rejection in the experience of loneliness among female adolescents.

2. Methods and Materials

2.1. Study design and Participant

This research employed a correlational descriptive design to examine the predictive relationship between emotion suppression, peer rejection, and loneliness in female adolescents. A total of 385 participants were selected using the Morgan and Krejcie (1970) sample size determination table, ensuring adequate statistical power for analysis. The participants were female adolescents enrolled in various secondary schools across Tunisia, selected through stratified random sampling to ensure representation from diverse socio-economic backgrounds and school districts. Inclusion criteria required participants to be aged between 13 and 18 years, fluent in Arabic or French, and willing to provide informed assent with parental consent. The study adhered to ethical research guidelines and received approval from the institutional review board.

2.2. Measures

2.2.1. Loneliness

Loneliness in this study was measured using the UCLA Loneliness Scale (Version 3), developed by Russell (1996). This widely used instrument consists of 20 items that assess individuals' subjective feelings of loneliness and social isolation. Respondents rate each item on a 4-point Likert scale ranging from 1 (Never) to 4 (Often), with higher total scores indicating greater perceived loneliness. The scale includes both positively and negatively worded items to reduce response bias, although it does not contain subscales. The UCLA Loneliness Scale has demonstrated high internal consistency (Cronbach's alpha typically above .90) and strong test-retest reliability. Numerous studies across diverse adolescent populations have confirmed the scale's construct validity, making it a robust and reliable tool for evaluating

loneliness in youth (Schoenmakers & ten Bruggencate, 2024; Yuan et al., 2023; Zhou & Shen, 2024).

2.2.2. Emotion Suppression

Emotion suppression was assessed using the Emotion Regulation Questionnaire (ERQ), developed by Gross and John (2003). The ERQ is a 10-item self-report instrument that measures two distinct emotion regulation strategies: Cognitive Reappraisal (6 items) and Expressive Suppression (4 items). For the purposes of this study, only the Expressive Suppression subscale was utilized. Items are rated on a 7-point Likert scale ranging from 1 (Strongly disagree) to 7 (Strongly agree), with higher scores reflecting greater use of emotion suppression. The ERQ has been widely validated and exhibits high reliability, with Cronbach's alpha for the suppression subscale commonly reported around .73. Prior studies confirm its construct and criterion validity, particularly in adolescent and young adult samples, making it an appropriate tool for examining suppression as a predictor variable (Herren et al., 2021; Soleymany & Sarifi, 2023; Zhu et al., 2023).

2.2.3. Peer Rejection

Peer rejection was measured using the Peer Experiences Questionnaire (PEQ) developed by Vernberg, Jacobs, and Hershberger (1999). The PEQ evaluates various forms of peer-related victimization and aggression and includes subscales for overt and relational victimization as well as peer rejection. The version used in this study includes 18 items, rated on a 5-point Likert scale from 1 (Never) to 5 (A few times a week), with higher scores on the rejection subscale indicating greater experiences of exclusion or rejection by peers. The PEQ has demonstrated good internal consistency (typically with Cronbach's alpha above .80) and has been validated across several adolescent populations. It is particularly effective for capturing peer rejection

experiences in school settings and has been widely used in psychological research with adolescents (Chiu et al., 2021; Tajabadi et al., 2020; Wright & Wachs, 2019).

2.3. Data Analysis

Data analysis was conducted using SPSS version 27. Descriptive statistics, including means, standard deviations, frequencies, and percentages, were calculated to describe the demographic characteristics of the participants. To assess the relationships between the dependent variable (loneliness) and the independent variables (emotion suppression and peer rejection), Pearson correlation coefficients were computed. Furthermore, linear regression analysis was used to evaluate the predictive power of the independent variables on loneliness. Before conducting these analyses, assumption checks for normality, linearity, multicollinearity, and homoscedasticity were performed and confirmed. All statistical tests were conducted at a significance level of $p < .05$.

3. Findings and Results

The sample consisted of 385 female adolescents aged between 13 and 18 years. Regarding age distribution, 109 participants (28.3%) were 13–14 years old, 144 participants (37.4%) were 15–16 years old, and 132 participants (34.3%) were 17–18 years old. In terms of school grade, 121 participants (31.4%) were in their first year of secondary school, 138 (35.8%) were in the second year, and 126 (32.7%) were in the third year. The majority of participants, 254 (66.0%), reported living in urban areas, while 131 (34.0%) were from rural regions. Additionally, 198 participants (51.4%) reported that their parents had completed secondary education or higher, whereas 187 participants (48.6%) indicated lower parental educational attainment.

Table 1

Descriptive Statistics for Study Variables (N = 385)

Variable	M	SD
Loneliness	46.82	10.37
Emotion Suppression	18.74	4.61
Peer Rejection	29.57	6.12

The descriptive statistics in Table 1 show that participants reported a moderate level of loneliness (M = 46.82, SD = 10.37) based on the UCLA Loneliness Scale. Emotion

suppression scores, drawn from the Expressive Suppression subscale of the ERQ, averaged 18.74 (SD = 4.61), suggesting relatively frequent use of suppression strategies.

Peer rejection, as measured by the Peer Experiences Questionnaire, had a mean of 29.57 (SD = 6.12), indicating moderate experiences of exclusion or negative peer interactions.

Prior to conducting correlation and regression analyses, the underlying statistical assumptions were evaluated and confirmed. Normality of the data was assessed through the Shapiro-Wilk test, which indicated non-significant results for loneliness (p = .061), emotion suppression (p = .084), and peer rejection (p = .092), suggesting that the data were normally distributed. Linearity was examined through scatterplots, which showed a linear relationship between the independent variables and the dependent variable. Multicollinearity was assessed using the Variance Inflation Factor (VIF), with values of 1.23 for emotion suppression and 1.17 for peer rejection, indicating no multicollinearity issues. Homoscedasticity was confirmed by inspecting the residual scatterplot, which revealed a random distribution of residuals around zero. These results supported the appropriateness of using Pearson correlation and linear regression analyses in this study.

Table 2

Pearson Correlation Coefficients Between Loneliness and Predictor Variables

Variables	1	2	3
1. Loneliness	—		
2. Emotion Suppression	.41**	—	
3. Peer Rejection	.52**	.38**	—

As presented in Table 2, there were significant positive correlations between loneliness and both emotion suppression (r = .41, p < .01) and peer rejection (r = .52, p < .01). Additionally, emotion suppression and peer rejection were also significantly correlated (r = .38, p < .01), indicating that adolescents who more frequently suppress emotions are also more likely to experience peer rejection.

Table 3

Summary of Regression Model Predicting Loneliness

Source	Sum of Squares	df	Mean Square	R	R²	R²adj	F	p
Regression	4987.36	2	2493.68	.58	.34	.33	97.46	<.001
Residual	9641.72	382	25.23					
Total	14629.08	384						

Table 3 summarizes the regression model used to predict loneliness from emotion suppression and peer rejection. The overall model was statistically significant (F(2, 382) = 97.46, p < .001), explaining 34% of the variance in loneliness (R² = .34). The adjusted R² of .33 indicates a strong predictive model, suggesting that both predictors meaningfully contribute to adolescent loneliness.

Table 4

Coefficients of Multivariate Regression Model Predicting Loneliness

Predictor	B	SE	β	t	p
Constant	21.74	2.98	—	7.29	<.001
Emotion Suppression	0.84	0.15	.29	5.60	<.001
Peer Rejection	0.93	0.12	.41	7.91	<.001

Table 4 presents the multivariate regression coefficients. Both predictors were statistically significant. Emotion suppression positively predicted loneliness (B = 0.84, β = .29, t = 5.60, p < .001), as did peer rejection (B = 0.93, β = .41, t = 7.91, p < .001). The standardized beta coefficients indicate that peer rejection was the stronger predictor of the two.

4. Discussion and Conclusion

The present study aimed to examine the predictive roles of emotion suppression and peer rejection on loneliness in female adolescents. Based on correlational and regression analyses conducted on data collected from 385 adolescents in Tunisia, the results revealed significant positive relationships between both emotion suppression and peer rejection with loneliness. Furthermore, linear regression analysis demonstrated that both predictors uniquely and significantly contributed to the variance in loneliness, indicating that adolescents who suppress emotions and experience higher levels of peer rejection are more likely to report feelings of loneliness.

The significant association between emotion suppression and loneliness aligns with existing literature that emphasizes the detrimental effects of maladaptive emotion regulation strategies on adolescent well-being. Emotion suppression often limits individuals' ability to engage in open and supportive social exchanges, which are essential for cultivating meaningful peer relationships. Adolescents who suppress their emotions may appear disengaged or emotionally unavailable to peers, which can hinder reciprocal emotional connections and ultimately foster feelings of isolation (Sofrona & Giannakopoulos, 2024b; Wu et al., 2023). This aligns with prior findings suggesting that emotional inhibition disrupts the development of intimacy and trust in adolescent friendships, thereby increasing the likelihood of loneliness (Brown et al., 2024a; Han & Seo, 2024). In particular, among female adolescents—who tend to value emotionally expressive and empathetic peer interactions—emotion suppression may interfere more acutely with relational closeness and contribute more strongly to perceived social disconnection.

Additionally, the finding that peer rejection significantly predicts loneliness is consistent with previous research indicating that peer relationships are central to adolescent social development and psychological well-being. Adolescents who experience peer rejection often report fewer opportunities for companionship, support, and shared experiences, which are vital buffers against loneliness (Long et al., 2020; Williams et al., 2017). The effects of rejection can be particularly pronounced in female adolescents, who may place heightened importance on peer acceptance and feel the emotional consequences of social exclusion more deeply (Elliott et al., 2021; Sánchez-Reyes et al., 2024). This study's findings are in line with research emphasizing that peer victimization, including rejection and exclusion, is associated with a higher risk of loneliness, depressive symptoms, and social withdrawal (Jardas et al., 2023; Norrington, 2020).

When considered together, the results support a dual-pathway model in which internal emotion regulation difficulties and external social exclusion both contribute to loneliness. This underscores the importance of simultaneously addressing both individual-level emotional processes and social-contextual factors when designing interventions for adolescent loneliness. Emotion suppression may predispose adolescents to be perceived negatively by peers, increasing the risk of rejection, while peer rejection may reinforce the belief that emotional openness is unsafe, encouraging further suppression (Brown et al., 2024b; Sofrona & Giannakopoulos, 2024a). Such feedback loops are particularly damaging during adolescence, a period marked by heightened sensitivity to peer evaluation and a developing sense of identity (Han & Seo, 2024; Trekels et al., 2024).

Moreover, the Tunisian cultural context may magnify the relationship between these variables. In collectivist societies, such as Tunisia, adolescents—especially girls—are often socialized to prioritize group harmony and suppress negative emotions to avoid disrupting social cohesion (Nisa et al., 2023; S & N.T, 2024). This normative emphasis on emotional restraint may inadvertently discourage adolescents from seeking support or expressing distress, increasing their vulnerability to loneliness when social ties are weakened. In such contexts, peer rejection is likely to be particularly painful, as belonging and social acceptance are central to one's social identity and emotional stability (Sánchez-Reyes et al., 2024; Weinberg et al., 2020).

The role of parenting and family dynamics cannot be ignored in interpreting these findings. Adolescents who come from emotionally unsupportive or overcontrolling family environments may be more inclined to suppress their emotions and may lack the relational models necessary to navigate peer conflicts constructively (Rahayu et al., 2022; Wu et al., 2023). Similarly, the absence of secure attachment figures at home may exacerbate the impact of peer rejection, as adolescents lack alternative sources of emotional support (Macdonald et al., 2021). In previous studies, insecure parental attachments and high levels of parental rejection have been shown to increase both emotion suppression and the experience of loneliness in adolescents (Haniyah et al., 2022; Sofrona & Giannakopoulos, 2024b). These familial factors are likely to compound the emotional and social challenges identified in this study, making interventions that

address both family and peer relationships particularly important.

School environments also play a critical role in moderating the relationship between emotion suppression, peer rejection, and loneliness. A positive school climate characterized by open emotional expression, inclusive peer norms, and teacher support can mitigate the effects of peer rejection and promote healthier emotion regulation strategies (Long et al., 2020; Wang, 2023). Conversely, school climates that tolerate exclusionary behavior or discourage emotional openness may reinforce both suppression and social alienation. Recent studies have shown that school-based interventions promoting cooperative learning and emotional literacy can reduce peer rejection and enhance emotional well-being in adolescents (Maula et al., 2023; Zagni & Ryzin, 2024). These findings suggest that multi-level school interventions may be effective in disrupting the maladaptive cycle observed in this study.

The use of digital interventions and peer-led support programs has also gained traction as an effective strategy for addressing adolescent loneliness. As digital communication becomes increasingly central to adolescent social life, interventions that promote safe and inclusive online peer interactions may help reduce the psychological impact of offline peer rejection (Aschbrenner et al., 2019; Nisa et al., 2023). Additionally, virtual platforms that encourage emotional sharing and support can counteract the effects of emotion suppression by providing adolescents with alternative avenues for expression and validation. Evidence suggests that adolescents prefer interventions that incorporate technology and peer involvement, especially when dealing with sensitive topics like mental health and social exclusion (Beristain & Wiener, 2020; Brown et al., 2024a).

Another important aspect highlighted by this study is the intersectionality of individual, relational, and cultural dimensions in understanding adolescent loneliness. While much of the existing research has been conducted in Western contexts, the present findings emphasize the relevance of emotion suppression and peer rejection in non-Western settings as well. The unique cultural scripts surrounding emotional expression and social conformity in Tunisia may shape adolescents' experiences differently than in individualistic societies, highlighting the need for culturally adapted mental health strategies (S & N.T, 2024; Sofrona & Giannakopoulos, 2024a). Additionally, recognition of these cultural differences is essential in developing interventions

that resonate with adolescents' lived experiences and are more likely to be effective in specific sociocultural contexts.

Furthermore, this study adds to the growing body of evidence pointing to the importance of early identification and prevention of loneliness in adolescence. Prolonged loneliness has been linked to a range of long-term psychological and physiological health issues, including depression, substance use, low academic achievement, and impaired immune functioning (Brown et al., 2024b; Elliott et al., 2021). By identifying emotion suppression and peer rejection as key predictors of loneliness, this study provides valuable insights into early risk indicators that can inform the design of school-based screening tools and individualized intervention plans. In doing so, it supports a preventative approach to adolescent mental health care, rather than a reactive one.

5. Limitations and Suggestions

Despite its contributions, this study is not without limitations. First, the reliance on self-report measures may introduce bias due to social desirability or inaccurate self-perceptions. Adolescents may underreport peer rejection or emotional difficulties due to stigma or lack of self-awareness. Second, the study's cross-sectional design limits causal inferences; although associations between variables were identified, longitudinal research is needed to examine the directionality of these relationships over time. Third, the study focused exclusively on female adolescents from Tunisia, which may limit the generalizability of the findings to other gender groups or cultural contexts. Additionally, unmeasured variables such as parental mental health, trauma history, or social media use may have influenced the observed relationships.

Future research should explore these relationships using longitudinal and mixed-methods designs to better capture the evolving nature of adolescent emotional and social experiences. Including qualitative data through interviews or focus groups could provide deeper insights into how adolescents understand and navigate emotion suppression and peer rejection in their daily lives. Studies involving male adolescents, gender-diverse youth, and adolescents from different cultural backgrounds are also needed to broaden the applicability of findings. Furthermore, future investigations should examine potential mediating and moderating variables—such as family support, school climate, or digital peer networks—that could influence the strength of the relationship between these predictors and loneliness.

Experimental studies evaluating the impact of interventions that target emotion regulation and peer inclusion would also offer practical value.

Based on the findings of this study, school counselors and educators should prioritize emotional literacy programs that teach adolescents how to express and manage emotions effectively. Peer mentoring and inclusion campaigns can help reduce rejection experiences by fostering a more compassionate and supportive school environment. Mental health professionals working with adolescents should assess for emotion suppression and peer rejection as early indicators of loneliness and provide targeted support to address these vulnerabilities. Family-based interventions can also be effective, particularly when they promote open communication and emotional responsiveness at home. Lastly, integrating culturally sensitive mental health education into school curricula can empower adolescents to seek help and support their peers in emotionally healthy ways.

Authors' Contributions

Authors contributed equally to this article.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

The authors report no conflict of interest.

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Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

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