

Social Media Usage, Parasocial Interactions and Existential Anxiety among Adolescents

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Abstract: This study aimed to explore how social media use relates to parasocial interactions and existential anxiety in adolescents. It was hypothesized that there would be a connection between social media usage, parasocial interactions, and existential anxiety in this age group. To investigate this, a cross-sectional research design was implemented. Researchers used multistage sampling to select a sample of 700 students from private schools and colleges in the Gujranwala district of Punjab, Pakistan. Social Media Engagement Questionnaire (SMEQ) by Przybylski et al. (2013), the Celebrity Persona Parasocial Interaction Scale (CPPI) by Bocarnea (2007) and the Existential Anxiety Questionnaire (EAQ) by Weems et al. (2004) were used for data collection. Correlation and regression analyses were performed, using SPSS Version 24 for statistical analysis. The Cronbach alpha showed that social media has a positive correlation with parasocial interaction ($r = .36, p < .01$), while social media usage do not show a significant relationship with existential anxiety ($r = .01, p > .01$). Further, parasocial interaction was negatively correlated with existential anxiety ($r = -.09, p < .05$). Regression analysis result shown that social media usage significantly predicts parasocial interaction $F(1, 698) = 102.58, p < .001$, and have 13% of the variance ($R^2 = .13$). In contrast, social media engagement did not significantly predict existential anxiety, $F(1, 698) = 0.12, p = .73, R^2 = .00$. However, parasocial interaction was a significant negative predictor of existential anxiety, $F(1, 698) = 5.50, p = .019$, accounting for less than 1% of the variance ($R^2 = .008$). It was concluded that social media usage was related to parasocial interaction and increase in parasocial interaction leads to decrease the existential anxiety. The results of this study add in comprehending these phenomena among Pakistani adolescents, highlighting the impact of social media usage on parasocial interactions and existential anxiety.

Keywords: Social Media Usage, Parasocial Interactions, Existential Anxiety, Adolescents

Introduction

Adolescence is an important stage of development that involves major physical, emotional, and psychological changes. Around the world, there are 1.3 billion adolescents, which accounts for 16% of the total population (UNICEF, 2022). In Pakistan, this group represents 22.7% of the population (UNICEF, 2020). Adolescents are usually divided into three stages: early (ages 10–13), middle (ages 14–17), and late (ages 18–21), with each stage presenting its own specific challenges related to identity, independence, and social interactions (Allen & Waterman, 2024).

Social media plays a pivotal role in adolescent development and psychological health. Defined as web-based platforms enabling rapid communication, user-generated content and social interaction (Buettner, 2016; Kaplan & Haenlein, 2010; Eley & Tilley, 2009), these tools are widely used by adolescents for communication, entertainment and information (Swar & Hameed, 2017; Twenge & Campbell, 2019).

Though providing advantages like self-expression and connectedness, overuse has been associated with adverse psychological effects like psychological tension, self-injury and suicidal thoughts (Abi-Jaoude et al., 2020; Keles et al., 2020). The determinants are demographics, socioeconomic status, screen behaviours and home environment (You et al., 2022; Sampasa-Kanyinga & Lewis, 2015). Media multitasking (Rideout, 2015) and parental inregulation (You et al., 2023) are also responsible for unhealthy usage habits. In the social environment, though sites facilitate relationship maintenance (Boyd & Ellison, 2008; Quan-Haase et al., 2010), excessive use can hinder concentration, lower offline contact and intensify feelings of loneliness (Ostovar et al., 2016; Sponcil & Gitimu, 2013). Adolescents tend to create idealized

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selves to receive peer acceptance, which may result in identity confusion or low self-esteem (Urista et al., 2009; Pempek et al., 2009).

Theories such as Uses and Gratifications (Katz et al., 1974), Social Capital (Bourdieu, 1986) and Cultivation (Gerbner, 1998) describe how adolescents utilize social media to satisfy their needs, establish social networks and the ways in which intense exposure warps reality and increases anxiety. Moreover, parasocial relationships with celebrities and influencers also influence self-concept and self-esteem (Chung & Cho, 2017; Ledbetter & Redd, 2016), as adolescents compare themselves to idealized online images (West et al., 2009).

One-sided emotional connections made with media personalities, like influencers or celebrities, frequently through repeated exposure are referred to as parasocial interactions (PSI). PSI, which was first used by Horton & Wohl in 1956, gives the impression of intimacy while making the audience feel connected even though they are aware that the relationship is not real. Because of their growing need for identity and belonging, these ties which can resemble true friendships are particularly prevalent among adolescents (Perse & Rubin, 1989; Giles, 2002).

Parasocial interactions (PSI) exist along a spectrum, ranging from entertainment-social to borderline-pathological. Entertainment-social PSI involves a casual and community-based interest in media figures, often fostering social connections among fans. Intense-personal PSI is marked by obsessive and emotionally driven attachment, where individuals may feel a deep personal connection to a media persona. The most extreme form, borderline-pathological PSI, can lead to delusional beliefs or dangerous behaviour, such as stalking, as outlined by Giles and Maltby (2006).

Several factors contribute to the strength of PSI, including physical attraction, perceived social similarity or homophily and admiration through wishful identification—where individuals aspire to be like the media figure (McCroskey & McCain, 1974; Hoffner & Buchanan, 2005). On social media, these interactions are intensified as influencers blur the lines between public and private life, creating the illusion of intimacy through direct engagement and carefully curated content (Chung & Cho, 2017). Hence, the formation of parasocial interactions through social media may contribute to existential anxiety in adolescents, as constant exposure to idealized lives and unattainable standards can provoke feelings of inadequacy, isolation and questioning of self-worth and purpose.

Existential anxiety, as described by Tillich (1952), involves deep psychological concerns related to human existence, specifically focusing on death, meaninglessness, freedom and isolation. He identifies three key dimensions of this anxiety. The first is fate and death, which reflects fear of mortality and the unpredictability of life's end. The second is meaninglessness and emptiness, wherein people struggle with the worry that life has no intrinsic purpose or direction. The third aspect is guilt and condemnation, which stems from worry over not living up to one's own or societal moral expectations.

In adolescence, these issues become more pronounced as cognitive and emotional development continues (Warren & Sroufe, 2004; Erikson, 1968). Exposure to the media also increases these anxieties by showing idealized lives and looks, frequently through parasocial connections. Adolescents may compare themselves to influencers and end up feeling inadequate and anxious about existence.

While PSI can offer comfort and role models, it may also distort adolescents' perceptions of relationships and self-worth, reinforcing unrealistic expectations. Tillich's idea of "the courage to be" highlights the importance of confronting existential questions authentically rather than escaping into media-driven illusions (Tillich, 1952). Thus, understanding the impact of parasocial interactions on existential anxiety in adolescents is vital as support systems promoting self-awareness, critical thinking and genuine connection can help young people navigate these challenges and develop a stronger sense of identity and purpose.

Hypotheses

Following hypotheses were proposed to guide the current study:

- There will be a correlation between social media usage, parasocial interactions and existential anxiety among adolescents.
- Social media usage will be a significant predictor of parasocial interactions and existential anxiety.

In today's digital age, social media deeply shapes adolescents' self-perception and mental well-being. While it enables peer connection, it also fosters parasocial interactions with idealized media figures, potentially heightening existential anxiety through constant comparison. This study aims to explore whether increased social media use predicts stronger parasocial interactions and higher levels of existential anxiety among adolescents. It also examines age-based differences between early and middle adolescence, providing guidance for developing effective mental health support and digital literacy initiatives.

Literature Review

Social media has become a dominant platform for adolescent communication, with research showing both positive and negative psychological effects. For instance, Allen et al. (2014) investigated the effects of social media on teens' psychosocial well-being, identity development and sense of belonging. Their findings showed that social media can foster connections but also increase feelings of loneliness. A longitudinal study by Blais et al. (2008) examined the effects of various online activities, including chat rooms, gaming and instant messaging, on the caliber of adolescent relationships. They discovered that while frequent use of chat rooms and online gaming was associated with a decrease in the quality of relationships, instant messaging tended to strengthen friendships and romantic ties. Wang et al. (2012) also looked at how medical students felt about social media and found that younger, better educated people had more positive opinions, which may indicate advantages for using social media in professional settings.

Furthermore, studies on the use of social media and parasocial interactions have revealed that adolescents frequently form one-sided connections with celebrities on the internet. According to Giles and Maltby (2004), adolescents' attachments to celebrities frequently mirror their developing emotional independence and the shifting of social ties from parents to peers. Lacap (2023) investigated how parasocial ties with Korean celebrity endorsers affect social media, emphasizing that interaction on these sites improves brand loyalty and fortifies parasocial ties. Baek and Jang (2013) distinguished between parasocial and reciprocal social ties on social networking sites, pointing out that while relying on parasocial relationships may lessen interpersonal mistrust, it is associated with increased loneliness and social media addiction.

Moreover, research on the use of social media and existential anxiety indicates that overuse of social media increases levels of existential uncertainty. Qureshi-Hurst (2022) explained the ways in which idealized self-presentation and seeking validation online increase existential affective states. Helm et al. (2022) discovered during the COVID-19 pandemic that although social media use mitigates existential isolation by acknowledging shared experiences, it also heightens emotional loneliness through the absence of physical interactions. On the other hand, Marker and Johnson (2019) showcased the positive aspect of social media by focusing on its function to increase individuality and self-expression, which can lessen loneliness through its ability to bring users in touch with like-minded groups regardless of physical location.

A growing area of research surrounds parasocial interactions and existential anxiety also highlights the complex emotions at play. For example, in their study of parasocial interaction, Wang et al. (2008) found that types of loneliness can alter parasocial interaction, with social isolation increasing parasocial interaction typically - and gender sometimes moderating social isolation's effect (i.e., the effect of gender on relation to parasocial interaction was substantial enough to make it either more negative or less positive reaction). In another example, Gleason et al. (2017) studied the admiration for celebrities in early adolescents and found gender differences in both parasocial preferences and emotional intensity. In yet another example, Bernhold and Metzger (2020) studied older adults and found that significant parasocial relationships with television characters are positively correlated with increased depressive symptoms, at least for males with attachment anxiety or problematic family relationships and using television as a substitute for connection - suggesting their effect on mental health is much more complex some experiencing it negatively and enriching the lives of others.

With conflicting findings and few studies completed in Pakistan, this study attempts to narrow the (somewhat) gap in methodologically and to make a worthwhile contribution to understanding the context of social media and parasocial and existential anxiety feelings among adolescents in Pakistan.

Methodology

Research Design

The current research utilized a cross-sectional design.

Sample and Sampling Technique

This research was conducted with the intention of obtaining participants aged 10–19 years, adolescents from private high schools and colleges in Gujranwala, Punjab, Pakistan; both male and female social media users. As previous research pointed to private school students having higher social media use than public school students (Masthi et al., 2017; Mingle et al., 2016), the private school sample was selected. A multistage probability sampling method followed, where private institutes were randomly selected from a compiled list; each institute class (grades 7–12) were then randomly selected and, lastly, students were randomly selected within the selected classes.

Inclusion Criteria

Selection criteria for the present study consists of:

- a) Children having age 10–19 years
- b) Both genders
- c) High school students and college students

Exclusion Criteria

Exclusion criteria for the present study consists of:

- a) Children below age 10
- b) Children having severe physical or medical health issues

Measures of the Study

Following are the key variables of the study, along with their operational definitions and the instruments used to measure social media usage, parasocial interactions and existential anxiety among adolescents:

Social Media Usage

Social media platforms offer a wealth of social information, allowing users to easily access real-time updates about various activities, events, and discussions across different networks. The assessment of social media usage was conducted using the Social Media Engagement Questionnaire, which has a Cronbach's alpha reliability coefficient typically between .82 and .89 (Przybylski et al., 2013), indicating a strong level of consistency in the measurement.

Parasocial Interactions

Parasocial interaction refers to a type of mediated connection that develops through ongoing exposure to both real and fictional celebrities. This interaction was measured using the Celebrity Persona Parasocial Interaction Scale (CPPI), which shows high reliability with alpha values ranging from .80 to .90 and has established construct validity, supported by its unidimensional factor structure (Bocarnea, 2007).

Existential Anxiety

Existential anxiety relates to concerns about the deeper meaning of life and death (Weems et al., 2004). The levels of existential anxiety were measured using the Existential Anxiety Questionnaire. This tool, based on Tillich's (1952) framework, initially contained 21 items covering six main concepts. After removing eight items with weak correlations, a 13-item scale was developed, which demonstrated moderate reliability (Cronbach's alpha = .72).

Procedure

The present study was conducted in a well-organized and systematic manner. Permission to use and translate (into Urdu) the scales was obtained from their respective authors. A probability sampling technique was utilized for data collection. To collect data, adolescents were approached while visiting

various schools and colleges in a specific district of Punjab, Pakistan. Prior permission was obtained from the relevant authorities.

Participants received both verbal and written explanations about the study's purpose and were assured of the confidentiality of their personal information. Subsequently, oral and written consent was obtained and participants were provided with a questionnaire battery that included a socio-demographic form and three scales (SMEQ, CPPI and EAQ). Detailed guidelines for completing the questionnaire were also given. The researcher was available to attend to any inquiries or issues brought up by the participants. After data collection, all participants were sincerely thanked, and the questionnaires were reviewed to ensure that they have been completed accurately and thoroughly.

Data Analysis and Results

The findings of the current study are presented regarding the relationships between social media usage, parasocial interactions and existential anxiety among adolescents.

Demographic Characteristics

In this research, women were in the majority (53.3%). Moreover, the majority of the adolescents belong to 14-16 years age range. On the other hand, the percentage of the people who belongs to 17-19 is 32.7%. Furthermore, majority of the participants studied in 1st year (22.1%). Bulk of the participants belong to middle class (83.1%) socio-economic status. 90.4% of the participants live in urban area. Most of the respondents use YouTube followed by other social media platform, Instagram, Facebook and twitter. Most of the respondents' use of social media was 1-3 hours (67%) followed by 4-6 hours, 7-9 hours and more than 10 hours. Most of the respondents use social media for entertainment purposes, followed by usage for connecting with others, work or gaining information and shopping and for all of these mentioned purposes was at last. Among the participants, the majority use more than five social media platforms and its usage is daily.

Table 1

Correlation between Social Media Usage, Parasocial Interactions and Existential Anxiety among Adolescents (N= 700)

Variables	1	2	3
1. Social Media Usage	-	.358**	.013
2. Parasocial Interactions	-	-	-.088*
3. Existential Anxiety	-	-	-

This table 1 gives the value of correlation between the variables. There was positive significant correlation exist between social media usage and parasocial interactions (.358**). It indicated that increase in social media usage increases the parasocial interactions among adolescents whereas social media usage and existential anxiety do not show any relationship. Finally, parasocial interactions and existential anxiety showed negatively weak significant relationship (-.088*) which means that they are negatively related to each other. Increase in parasocial interactions leads to decrease in existential anxiety.

Table 2

Regression Analysis of Social Media Usage Predicting Parasocial Interaction (N = 700)

Variables	B	SE	β	t	p	95.0% CI
Constant	6.289	1.379	—	4.561	<.001	[3.583, 8.996]
Parasocial Interaction	0.224	0.022	0.358	10.128	<.001	[0.180, 0.268]

Note: SE = Standard Error, CI = Confidence Interval

The regression analysis (as shown in table 2) examined whether social media usage predict parasocial interaction. The social media usage was a significant positive predictor of parasocial interaction as the result indicated B = 0.224, SE = 0.022, β = 0.358, t (698) = 10.128, p < .001, 95% CI [0.180, 0.268]. This suggests that high social media usage was associated with more parasocial interaction.

Table 3*Model Summary of Social Media Usage Predicting Parasocial Interaction (N = 700)*

R	R ²	Adjusted R ²	F	p	SE
.358	.128	.127	102.576	<.001	10.869

Note: R² = R Square, Adjusted R² = Adjusted R Square, F = F-statistic, SE = Std. Error of the Estimate

The overall regression model was statistically significant, $F(1, 698) = 102.576$, $p < .001$ and $R^2 = .128$, indicating that change in parasocial interaction account for 12.8% explained variance due to social media usage.

Table 4*Regression Analysis of Social Media Usage with Existential Anxiety among Adolescents (N = 700)*

Variables	B	SE	β	t	p	95.0% CI
Constant	17.866	0.168	—	106.371	<.001	[17.536, 18.196]
Existential Anxiety	0.003	0.007	0.013	0.345	0.730	[-0.010, 0.015]

Note: SE = Standard Error, CI = Confidence Interval

The regression analysis (as shown in table 4) examined whether social media usage predicted existential anxiety scores. Social media usage was not a significant predictor of existential anxiety as results depicted $B = 0.003$, $SE = 0.007$, $\beta = 0.013$, $t(698) = 0.345$, $p = 0.730$, 95% CI [-0.010, 0.015]. This suggests that social media usage scores do not meaningfully contribute to explaining variance in existential anxiety.

Table 5*Model Summary of Social Media Usage predicting Existential Anxiety (N = 700)*

R	R ²	Adjusted R ²	F	p	SE
.013	.000	-.001	0.119	.730	2.265

R^2 = R Square, $Adjusted R^2$ = Adjusted R Square, F = F-statistic, SE = Std. Error of the Estimate

The overall regression model was not significant, $F(1, 698) = 0.119$, $p = .730$ and the $R^2 = .000$, indicating that social media usage explains virtually none of the variance in existential anxiety among the participants.

Table 6*Regression Analysis of Parasocial Interaction with Existential Anxiety among Adolescents (N = 700)*

Variables	B	SE	β	t	p	95.0% CI
Constant	18.557	0.286	—	64.829	<.001	[17.995, 19.119]
Existential Anxiety	-0.011	0.005	-0.088	-2.345	0.019	[-0.021, -0.002]

Note: SE = Standard Error, CI = Confidence Interval

The regression analysis (as shown in table 6) examined the predictive relationship between parasocial interaction and existential anxiety among participants. Importantly, parasocial interaction was a statistically significant negative predictor of existential anxiety: $B = -0.011$, $SE = 0.005$, $\beta = -0.088$, $t(698) = -2.345$, $p = .019$, with a 95% CI [-0.021, -0.002].

This suggests that high parasocial interaction were associated with lowering existential anxiety. Although the effect size is small (as reflected by the low R^2 and standardized beta), the finding is statistically significant and may warrant further investigation in broader psychological or media influence contexts.

Table 7
Model Summary of Parasocial Interaction predicting Existential Anxiety (N = 700)

R	R ²	Adjusted R ²	F	p	SE
.088	.008	.006	5.501	.019	2.25648

R² = R Square, Adjusted R² = Adjusted R Square, F = F-statistic, SE = Std. Error of the Estimate

The overall regression model was statistically significant, $F(1, 698) = 5.501, p = .019$, indicating that the predictor explained a small but significant portion of the variance in existential anxiety. The R^2 value was 0.008, meaning approximately 0.8% of the variance in existential anxiety was accounted for by the parasocial interaction.

Discussion

The current study investigated the relationship between social media usage, parasocial interactions and existential anxiety among adolescents. Firstly, it was hypothesized that there would be significant correlations among these three variables. Supporting this, a moderate positive correlation was found between social media usage and parasocial interactions ($r = .358, p < .01$), indicating that higher engagement with social media is associated with increased parasocial bonding. This finding is consistent with earlier research suggesting that digital platforms, particularly those emphasizing visual and personal content, create opportunities for adolescents to form one-sided emotional attachments with celebrities, influencers and media figures (Giles & Maltby, 2004; Madison & Porter, 2016).

In addition, there was a statistically significant but small negative correlation between parasocial interactions and existential anxiety ($r = -.088, p < .05$), which suggests that these relationships may provide at least some emotional solace to adolescents, diminishing their feeling of existential uncertainty/distress. In contrast, the current study found no significant correlation with social media usage and existential anxiety ($r = .013$), suggesting that time spent on social media may not be directly related to adolescents' existential anxiety. This is consistent with the recent literature indicating that social media psychological relevance relies more on the quality and intent of the social media context than on the amount of time spent on social media (Twenge & Campbell, 2019).

This finding was further supported by regression analysis, which showed that social media usage significantly predicted parasocial interactions, $F(1, 698) = 102.58, p < .001$, explaining 13% of the variance ($R^2 = .13$). These results align with existing literature demonstrating how social media platforms foster parasocial bonds by enabling users to follow, interact with and feel connected to celebrities and influencers (Chung & Cho, 2017; Farooq et al., 2010; Madison & Porter, 2016). Platforms such as YouTube and Instagram provide opportunities for self-disclosure and continuous updates, which enhance the sense of emotional intimacy between users and media figures (Kim & Song, 2016; Phelps, 2011; Lacap, 2023).

However, social media usage did not significantly predict existential anxiety, $F(1, 698) = 0.119, p = .730, R^2 = .000$, indicating that general engagement with social media does not meaningfully contribute to existential distress among adolescents. This contradicts some previous studies that have linked excessive social media use to increased anxiety or emotional instability but also reflects the complexity of social media's psychological effects, which may be mediated by content type, user motivation and individual emotional resilience (Qureshi-Hurst, 2022; Marker & Johnson, 2019).

In contrast, parasocial interaction emerged as a significant negative predictor of existential anxiety, $F(1, 698) = 5.501, p = .019$, although the explained variance was small ($R^2 = .008$). The negative beta coefficient ($\beta = -.088$) suggests that adolescents engaging more in parasocial relationships may experience slightly lower levels of existential anxiety. This may be due to the perceived connection, emotional support or sense of belonging these one-sided relationships can offer, particularly during periods of identity exploration or emotional vulnerability. These findings echo previous work by Wang et al. (2008) and Berman et al. (2006), who suggested that parasocial connections can act as coping mechanisms that offer some relief from emotional distress, even if they are not mutual or reciprocal relationships.

These findings underscore the complex nature of the relationship between social media and adolescent mental health. Simply using social media does not lead to existential anxiety. More specifically, while frequency and use of social media don't seem to matter much, the type of social media interaction such as parasocial interactions are more salient. Future research should consider what individual differences, such as emotional independence, attachment styles, and social support systems, interact with parasocial and social media usage and contribute to existential anxiety. While it might also be worthwhile to examine types of content and the level of emotional investment within parasocial relationships to further explore the mechanisms for these associations. Therefore, these dynamics should be understood in their significance, especially within adolescent populations who are rapidly developing their identity and emotions (Allen et al., 2014; Berman et al., 2006).

Conclusion

The results stated that there was a positive relationship between social media use and parasocial interactions and a negative relationship between parasocial interactions and existential anxiety. Additionally, the results confirmed that parasocial interactions significantly predicted existential anxiety, while social media use did not.

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