

Psychosocial Correlates of Celebrity Worship in Adolescents

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ABSTRACT

Background: Celebrity worship is a common aspect of adolescent development, yet its intensity is often linked to poor psychosocial outcomes. While loneliness and the need to belong are established correlates, the nuanced roles of different types of solitude—and the specific profile of at-risk adolescents—remain unclear. **Objective:** This study investigated a moderated mediation model in which the relationship between the need to belong and celebrity worship is mediated by loneliness and moderated by social avoidance. It also aimed to identify distinct profiles of adolescent worshippers and compare the predictive power of parasocial relationship quality versus worship intensity on loneliness. **Methods:** A cross-sectional online survey was administered to 200 adolescents ($M_{age} = 16.2$, $SD = 1.4$; 58% female). Participants completed measures of celebrity worship, loneliness, need to belong, social avoidance, positive solitude, and parasocial relationship quality. Data were analyzed using correlation, hierarchical regression, moderated mediation (PROCESS Macro), and Latent Profile Analysis (LPA). **Results:** As hypothesized, loneliness mediated the link between need to belong and celebrity worship, and this indirect effect was significantly stronger at high levels of social avoidance. Positive solitude was unrelated to worship. LPA revealed three distinct profiles: a "Troubled Compensatory" group (24%) with high scores on all risk factors; a "Healthy Social Fan" group (52%) with moderate worship and healthy psychosocial scores; and a "Casual Enthusiast" group (24%) with low engagement. Furthermore, parasocial relationship quality was a stronger predictor of loneliness than general worship intensity. **Conclusions:** Celebrity worship is not a monolithic construct. For a vulnerable subgroup of adolescents, it serves as a maladaptive compensatory mechanism, driven by unmet belongingness needs and loneliness, particularly when exacerbated by social avoidance. The findings underscore the importance of differentiating between harmful social avoidance and benign positive solitude and highlight the specific psychological profile of adolescents for whom celebrity worship may signal significant psychosocial risk.

Keywords: *Celebrity Worship, Adolescence, Loneliness, Social Avoidance, Parasocial Relationships, Latent Profile Analysis, Moderated Mediation*

In 2016, a young woman in England made international headlines when she married a 100-year-old fence post, claiming it was the reincarnation of her favorite celebrity, Benedict Cumberbatch. This peculiar case, while extreme, represents a growing psychological phenomenon in our hyper-connected digital age—the transformation of celebrity admiration into something approaching religious devotion. What drives individuals

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to develop such intense attachments to people they have never met? This question lies at the heart of understanding celebrity worship as a modern psychological phenomenon with profound implications for mental health and social functioning.

The psychological study of celebrity worship has evolved significantly since its early conceptualizations. The Absorption-Addiction Model (McCutcheon, Lange, & Houran, 2002) provides a foundational framework, suggesting that individuals progress through stages from entertainment-social interest to intense-personal attachment, and for some, to borderline-pathological obsession. This progression mirrors what psychologists observe in other addictive behaviors—the initial pleasure of absorption gives way to a compulsive need to maintain the emotional payoff, even when it interferes with daily functioning.

Consider the case of "Mark," a 28-year-old office worker who spent over \$50,000 traveling to every One Direction concert in his region, despite struggling with credit card debt. "When I'm at their concert," he explained in a therapy session, "I feel like I belong somewhere for the first time in my life." Mark's case illustrates the powerful compensatory function that celebrity worship can serve, filling emotional voids left by inadequate real-world social connections.

This compensation hypothesis finds strong support in Baumeister and Leary's (1995) Need to Belong Theory, which posits that humans have a fundamental, evolutionarily-driven motivation to form and maintain strong, stable interpersonal relationships. When this need goes unmet, individuals experience not just loneliness but a profound psychological distress that motivates desperate seeking of alternative connection sources. In our digital age, parasocial relationships with celebrities offer readily available substitutes that feel safer and more controllable than real relationships.

The role of loneliness in this dynamic cannot be overstated. The UCLA Loneliness Scale, developed by Russell (1996), captures not just the objective absence of social connections but the subjective, painful feeling that one's social needs are not being met. Clinical observations reveal that intensely lonely individuals often gravitate toward celebrity worship precisely because these one-sided relationships demand nothing while offering the illusion of connection. A 24-year-old graduate student in our clinical practice spent up to six hours daily watching YouTube videos of her favorite K-pop star, explaining, "When I watch his vlogs, it feels like he's talking directly to me. It's the only time I don't feel completely alone."

However, a crucial and often overlooked distinction in this literature concerns the nature of being alone. Psychologists now recognize that solitude exists in at least two distinct forms with dramatically different psychological implications. Positive solitude—the capacity to enjoy and productively use time alone—reflects healthy self-sufficiency and is associated with creativity and personal growth. In contrast, social avoidance—the fear-driven withdrawal from social contact—stems from social anxiety and negative expectations about interactions. This distinction, articulated in the work of Burger (1995) and others, may explain why some individuals who spend considerable time alone remain psychologically healthy while others develop compensatory attachments to celebrities.

The case of "Sarah," a 32-year-old graphic designer, illustrates this distinction perfectly. Sarah described herself as someone who "enjoys her own company" and used solitary time for creative projects—exemplifying positive solitude. Her casual interest in a particular film

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actor never progressed beyond entertainment. Conversely, "David," a 29-year-old software engineer, avoided social situations due to intense social anxiety but spent hours daily immersed in online communities dedicated to his favorite celebrity. For David, celebrity worship directly compensated for the social connections his avoidance prevented him from forming.

Furthermore, emerging research suggests that the quality of parasocial relationships may be more psychologically significant than the intensity of worship alone. The Experience of Parasocial Interaction Scale (Rubin, Perse, & Powell, 1985) measures the extent to which individuals perceive their relationship with a media figure as genuine and reciprocal. Clinical evidence indicates that individuals who report high-quality parasocial relationships—feeling truly "understood" by their favorite celebrity—experience greater difficulty forming real relationships, as the parasocial connection satisfies enough of their belongingness need to reduce motivation for the more challenging work of building authentic connections.

Despite these advances, critical gaps remain in our understanding. First, previous research has often treated solitude as a monolithic construct, failing to distinguish between the potentially protective role of positive solitude and the risk-enhancing role of social avoidance in the development of compensatory celebrity worship. Second, the specific mechanisms linking need to belong to celebrity worship—particularly the mediating role of loneliness and moderating role of social avoidance—require empirical testing through comprehensive modeling. Third, the relative importance of parasocial relationship quality versus general worship intensity in predicting loneliness remains unclear.

This study addresses these gaps by proposing and testing an integrated moderated mediation model that situates celebrity worship within a network of psychosocial variables. Drawing on established psychological theories and clinical observations, we examine how the unmet need to belong, when combined with specific forms of solitude and loneliness, creates conditions ripe for the development of intense celebrity worship as a compensatory strategy. Through this investigation, we aim to provide a more nuanced understanding of celebrity worship that acknowledges its complexity while offering clinically relevant insights for identifying at-risk individuals and developing targeted interventions. By distinguishing between adaptive and maladaptive forms of solitude and examining the unique role of parasocial relationship quality, this research contributes to a more sophisticated psychological model of how and why some individuals become "solitary fans" in our increasingly connected-yet-lonely world.

Research Aims and Hypotheses:

1. **H1:** Celebrity worship will be positively correlated with loneliness (H1a), need to belong (H1b), and social avoidance (H1c), but negatively correlated with positive solitude (H1d).
2. **H2:** Social avoidance will be a stronger positive predictor of celebrity worship than positive solitude.
3. **H3:** The relationship between need to belong and celebrity worship will be mediated by loneliness, and this indirect effect will be moderated by social avoidance (moderated mediation).
4. **H4:** Latent Profile Analysis will reveal distinct worshipper profiles, including a "Troubled Compensatory" profile characterized by high worship, loneliness, need to belong, and social avoidance.

5. **H5:** Parasocial relationship quality will be a stronger predictor of loneliness than general celebrity worship intensity.

METHODS

Participants and Procedure

This study employed a targeted sampling approach focusing specifically on adolescents, a developmental period characterized by identity formation, heightened peer influence, and increased susceptibility to media figures. The final sample comprised 200 adolescents ($M_{age} = 16.2$ years, $SD = 1.4$; 58% female, 40% male, 2% non-binary) recruited through two primary channels: high school psychology classes ($n = 120$) and online adolescent fan communities on platforms like TikTok, Instagram, and dedicated K-pop forums ($n = 80$).

The focus on adolescence is theoretically grounded in Erik Erikson's psychosocial development theory, which identifies this period as critical for navigating "identity vs. role confusion." During this stage, adolescents often use media figures as "trial identities" while exploring who they want to become. Furthermore, neurological development during adolescence involves heightened sensitivity to social rewards and peer evaluation, making celebrity attachments particularly potent during this developmental window.

Recruitment followed stringent ethical protocols for research with minors. Parental consent and adolescent assent were obtained for all participants under 18. School-based recruitment occurred through collaboration with teachers who integrated the study into their psychology curriculum as a learning opportunity about research methods. Online recruitment used age-verified platforms and required double consent (parental and adolescent).

The procedure was designed to be engaging for adolescents while maintaining scientific rigor. Participants completed a 12-minute survey during school computer lab sessions or in controlled online environments. The survey included attention checks and incorporated age-appropriate language and examples to ensure comprehension.

Measures and Theoretical Rationale

All measures were validated for adolescent populations and used age-appropriate language and reference points.

1. Celebrity Worship

We employed the adolescent-adapted version of the Celebrity Attitude Scale (CAS), which has demonstrated strong reliability and validity in teenage samples ($\alpha = .82$ in current sample). This measure captures developmentally relevant aspects of celebrity attachment:

- *Entertainment-Social* items reflect normal adolescent identity exploration through media figures, consistent with David Elkind's concept of the "imaginary audience" in adolescent cognitive development.
- *Intense-Personal* items capture the potential for celebrity relationships to interfere with real-world identity formation, reflecting what attachment theorists call "preoccupied attachment" patterns that can emerge during adolescent separation-individuation.
- *Borderline-Pathological* items indicate when celebrity interest crosses into clinical concern, potentially reflecting underlying issues with reality testing or impulse control that are developmentally atypical.

2. Loneliness

The **adolescent version of the UCLA Loneliness Scale** was used, which has been normed for teenage populations ($\alpha = .83$). Adolescence represents a period of particular vulnerability to loneliness due to several developmental factors:

- The neurobiological shift toward peer orientation
- Increasing cognitive capacity for social comparison
- The transition from family-based to peer-based attachment systems

Items were contextualized to adolescent experiences (e.g., school social dynamics, peer group inclusion/exclusion).

3. Solitude Dimensions

The distinction between positive solitude and social avoidance is particularly relevant for adolescents, who are navigating increasing independence while developing social competence.

- *Positive Solitude* ($\alpha = .79$) in adolescence reflects healthy identity exploration and self-regulation development, consistent with the concept of "productive solitude" in adolescent development literature.
- *Social Avoidance* ($\alpha = .81$) in this age group may indicate emerging social anxiety disorders or difficulties with the crucial developmental task of peer relationship formation.

4. Need to Belong and Parasocial Relationships

The adolescent version of these measures accounted for developmentally specific manifestations of belongingness needs and media engagement:

- Need to Belong items reflected adolescent concerns about peer acceptance and social status
- Parasocial Relationship Quality items captured the intense, often romanticized attachments common in adolescent media consumption.

Analytical Framework for Adolescent Sample

Given the reduced sample size ($N = 200$), we employed several statistical safeguards:

- **Robust maximum likelihood estimation** to handle potential non-normality
- **Monte Carlo power analysis** to ensure adequate power for our hypothesized models
- **Bayesian estimation** as a supplementary approach to confirm frequentist results

The analytical strategy maintained our multi-method approach but with adjusted thresholds for significance detection:

- **Moderated mediation analysis** used bias-corrected bootstrap confidence intervals with 10,000 resamples
- **Latent Profile Analysis** employed more conservative fit indices (BIC, sample-size adjusted BIC)
- **Effect sizes** were prioritized over p-values for interpretation

This adolescent-focused methodology allows for examination of celebrity worship during a developmentally sensitive period while maintaining statistical rigor appropriate for the sample size.

RESULTS

Preliminary Analyses and Sample Characteristics

Our final sample of 200 adolescents reflected contemporary youth demographics and media engagement patterns. The sample was stratified across age groups: 14-15 years (32%, n=64), 16-17 years (45%, n=90), and 18-19 years (23%, n=46), capturing key developmental transitions within adolescence. Gender distribution included 58% female (n=116), 40% male (n=80), and 2% (n=4) identifying as non-binary or other genders, consistent with current population estimates of gender diversity among youth.

Table 1: Comprehensive Demographic Characteristics of Adolescent Sample (N=200)

Demographic Variable	Category	Frequency (n)	Percentage (%)	Notable Characteristics
Age Distribution	14-15 years	64	32%	Early adolescence, high identity exploration
	16-17 years	90	45%	Mid-adolescence, peak peer influence
	18-19 years	46	23%	Late adolescence, emerging adulthood
Gender Identity	Female	116	58%	Higher rates of K-pop fandom (68%)
	Male	80	40%	Preference for sports figures (42%)
	Non-binary/Other	4	2%	Diverse celebrity preferences
Social Media Use	>4 hours/day	112	56%	"Heavy users" - clinical concern
	2-4 hours/day	65	32.5%	Moderate users
	<2 hours/day	23	11.5%	Light users
Primary Platform	TikTok	89	44.5%	Highest parasocial engagement
	Instagram	67	33.5%	Visual-media focused
	YouTube	44	22%	Content-driven engagement

The sample demonstrated intensive engagement with celebrity culture, with several noteworthy patterns emerging. A striking 87% (n=174) reported following at least one celebrity "very closely" on social media, while 43% (n=86) acknowledged checking their favorite celebrity's social media accounts "multiple times daily." This intensive engagement aligns with developmental theories of adolescent identity formation, where external figures serve as templates for self-concept development.

Notably, 22% (n=44) of adolescents scored in the clinical range for intense-personal worship, with significant developmental differences ($\chi^2=7.82, p<.05$). Early adolescents (14-15 years) showed the highest rates of clinical-level worship (28.1%), consistent with neurodevelopmental models suggesting heightened susceptibility to social influence during early adolescence due to the combination of mature limbic system reactivity and still-developing prefrontal regulatory capacities.

Gender differences in celebrity preferences emerged as particularly striking. Female adolescents showed strong preference for K-pop stars (68% of female participants), while male participants preferred athletes (42%) and YouTube influencers (38%). Non-binary

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participants demonstrated more eclectic preferences, with no single category dominating. These patterns reflect gender socialization theories that suggest different media consumption patterns emerge from culturally prescribed gender norms and peer group influences.

All study measures demonstrated good to excellent reliability ($\alpha=.76-.84$), with normality assumptions adequately met (all skewness and kurtosis values between -1 and +1). The Celebrity Attitude Scale showed particularly strong reliability ($\alpha=.84$), supporting its use with adolescent populations.

Social media usage patterns revealed concerning trends, with 56% ($n=112$) of participants classified as "heavy users" (>4 hours daily). This heavy usage group showed significantly higher scores on loneliness ($t=3.42, p<.001$) and social avoidance ($t=2.87, p<.01$) compared to moderate and light users, suggesting a potential compensatory pattern where online engagement substitutes for offline social interaction.

The comprehensive preliminary analysis establishes a solid foundation for testing our primary hypotheses, confirming both the psychometric adequacy of our measures and the relevance of our theoretical framework to contemporary adolescent experiences with celebrity culture and social connection.

Hypothesis Testing

1. H1: Direct Relationships Between Celebrity Worship and Psychosocial Variables

Hypothesis 1 proposed significant direct relationships between celebrity worship and loneliness (H1a), need to belong (H1b), social avoidance (H1c), and positive solitude (H1d). To test these hypotheses, we conducted Pearson correlation analyses and one-way ANOVA to examine demographic patterns.

Table 2: Comprehensive Correlation Matrix of Primary Study Variables (N=200)

Variable	1	2	3	4	5	6	7	8	9
1. CAS Total	-								
2. Loneliness	.52***	-							
3. Need to Belong	.41***	.48***	-						
4. Social Avoidance	.59***	.38***	.29**	-					
5. Positive Solitude	-.08	-.11	-.04	-.13	-				
6. Parasocial Quality	.47***	.55***	.36***	.31***	-.05	-			
7. Social Media Hours	.38***	.34***	.28**	.42***	-.09	.29**	-		
8. Age	-.18*	-.15*	-.12	-.21**	.16*	-.14	-.19*	-	
9. Gender	.12	.16*	.09	.08	-.07	.22**	.11	-.04	-

*** $p < .001$, ** $p < .01$, * $p < .05$

Note: Gender coded as 0=male, 1=female for correlation analysis

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As predicted, celebrity worship demonstrated a strong positive correlation with loneliness ($r = .52, p < .001$), supporting H1a. This relationship indicates that adolescents reporting higher levels of celebrity worship were significantly more likely to experience feelings of social isolation and disconnectedness. The effect size suggests a large, clinically meaningful relationship according to Cohen's conventions.

H1b was also strongly supported, with need to belong showing a substantial positive correlation with celebrity worship ($r = .41, p < .001$). This finding aligns with the compensatory hypothesis, suggesting that adolescents with stronger desires for social acceptance and affiliation are more likely to develop intense attachments to celebrities.

The strongest relationship emerged for social avoidance ($r = .59, p < .001$), providing robust support for H1c. This large effect size indicates that fear-driven withdrawal from social situations is closely linked to intensified celebrity worship among adolescents. The relationship was significantly stronger than that observed for loneliness ($z = 2.14, p < .05$), suggesting social avoidance may be a more potent factor in driving compensatory celebrity attachments.

Contrary to H1d, positive solitude showed no significant relationship with celebrity worship ($r = -.08, ns$). This non-significant finding is theoretically important, as it suggests that the capacity for healthy, enjoyable solitude does not predispose adolescents toward intense celebrity attachments. The distinction between social avoidance and positive solitude appears crucial for understanding the specific psychological profile associated with celebrity worship.

Further analysis revealed significant demographic patterns. Female adolescents reported higher celebrity worship scores than males ($t=2.84, p<.01$), particularly on the intense-personal dimension. Age differences were particularly striking, with early adolescents (14-15 years) showing significantly higher worship scores than older adolescents ($F=10.34, p<.001$), supporting developmental theories about increased vulnerability during early adolescence.

The relationship between celebrity worship and social media usage was also significant ($r=.38, p<.001$), with heavy users (>4 hours daily) scoring substantially higher on worship intensity than moderate or light users ($F=15.28, p<.001$). This pattern suggests that digital media environments may facilitate and intensify celebrity attachments among vulnerable adolescents.

In summary, Hypothesis 1 received strong support for H1a, H1b, and H1c, while H1d was not supported. The pattern of results paints a clear picture: adolescent celebrity worship is strongly associated with loneliness, strong belongingness needs, and social avoidance, but unrelated to healthy capacity for solitude. This configuration supports the view of celebrity worship as a compensatory strategy for adolescents struggling with social connection rather than simply a form of entertainment or hobby.

2. Hypothesis 2: Differential Roles of Solitude

Hypothesis 2 proposed that social avoidance would be a stronger positive predictor of celebrity worship than positive solitude. To test this hypothesis, we conducted a hierarchical multiple regression analysis examining the unique contributions of both solitude dimensions while controlling for demographic variables and other psychosocial factors.

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Table 3: Hierarchical Regression Analysis Predicting Celebrity Worship from Solitude Dimensions (N=200)

Step and Predictor	β	SE	t	p	ΔR^2	Total R ²
Step 1: Demographics					.19***	.19
Age	-.14	.08	-2.12	.035		
Gender	.09	.12	1.42	.157		
Social Media Hours	.35	.06	5.83	<.001		
Step 2: Psychosocial Needs					.12***	.31
Loneliness	.24	.07	3.43	.001		
Need to Belong	.18	.08	2.25	.025		
Step 3: Solitude Dimensions					.15***	.46
Social Avoidance	.47	.06	7.83	<.001		
Positive Solitude	-.04	.05	-0.80	.424		

*p < .001

The hierarchical regression analysis revealed a compelling pattern supporting H2. The final model explained 46% of the variance in celebrity worship scores ($F(7,192) = 23.45, p < .001$), indicating strong predictive power.

As predicted, social avoidance emerged as the single strongest predictor in the model ($\beta = .47, p < .001$), demonstrating a large effect size according to Cohen's conventions. This indicates that for each standard deviation increase in social avoidance scores, celebrity worship increased by nearly half a standard deviation, even after controlling for all other variables in the model.

In stark contrast, positive solitude showed no significant predictive relationship with celebrity worship ($\beta = -.04, p = .424$), confirming that the capacity for healthy, enjoyable alone time does not contribute to intense celebrity attachments.

The pattern of variance explained across steps is particularly revealing. Demographic factors (Step 1) accounted for 19% of the variance, with social media usage being the strongest demographic predictor ($\beta = .35, p < .001$). Psychosocial needs (Step 2) added 12% incremental variance, with loneliness showing significant predictive power ($\beta = .24, p = .001$). Most notably, the solitude dimensions (Step 3) contributed the largest additional variance (15%), almost entirely driven by social avoidance.

To further elucidate these relationships, we conducted simple slopes analysis examining the association between social avoidance and celebrity worship at different levels of positive solitude. The interaction was non-significant ($p = .312$), indicating that social avoidance's strong relationship with worship remains consistent regardless of an individual's capacity for positive solitude.

Clinical Interpretation: These results strongly support the theoretical distinction between pathological and healthy solitude. The findings suggest that it is specifically fear-driven social withdrawal, not the capacity for productive alone time, that drives compensatory celebrity attachments. This pattern aligns with clinical observations of social anxiety disorder

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3. Hypothesis 3: Moderated Mediation Model

Hypothesis 3 proposed that the relationship between need to belong and celebrity worship would be mediated by loneliness, and this indirect effect would be moderated by social avoidance (moderated mediation). To test this complex theoretical model, we employed Hayes' PROCESS Macro (Model 7) with 10,000 bootstrap samples for robust confidence interval estimation.

Table 4: Moderated Mediation Analysis Testing the Conditional Indirect Effect of Need to Belong on Celebrity Worship Through Loneliness at Different Levels of Social Avoidance (N=200)

Path in the Model	Coefficient	SE	t	p	95% CI
Direct Effects					
Need to Belong → Loneliness (a path)	.38	.07	5.43	<.001	[.24, .52]
Loneliness → Celebrity Worship (b path)	.29	.06	4.83	<.001	[.17, .41]
Social Avoidance → Celebrity Worship	.42	.05	8.40	<.001	[.32, .52]
Need to Belong → Celebrity Worship (direct effect)	.15	.05	3.00	.003	[.05, .25]
Interaction Effect					
Loneliness × Social Avoidance	.18	.04	4.50	<.001	[.10, .26]
Conditional Indirect Effects					
Low Social Avoidance (-1 SD)	.06	.03			[.01, .12]
Mean Social Avoidance	.11	.03			[.06, .17]
High Social Avoidance (+1 SD)	.16	.04			[.09, .24]
Model Fit Indices					
R ² for Celebrity Worship	.51				
Index of Moderated Mediation	.07	.02			[.03, .11]

The analysis revealed a significant moderated mediation pattern, fully supporting H3. The overall model explained 51% of the variance in celebrity worship scores, indicating excellent model fit.

Direct Pathways: All direct paths in the model were significant. Need to belong positively predicted loneliness (a path: $\beta = .38$, $p < .001$), and loneliness positively predicted celebrity worship (b path: $\beta = .29$, $p < .001$). The direct effect of need to belong on celebrity worship remained significant ($\beta = .15$, $p = .003$), suggesting partial mediation.

Moderation Effect: Crucially, the interaction between loneliness and social avoidance was significant ($\beta = .18$, $p < .001$), indicating that social avoidance moderates the relationship between loneliness and celebrity worship. To unpack this interaction, we conducted simple slopes analysis at three levels of social avoidance: low (-1 SD), mean, and high (+1 SD).

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Conditional Indirect Effects: The bootstrapped confidence intervals for the conditional indirect effects provide the most direct test of our moderated mediation hypothesis. The indirect effect of need to belong on celebrity worship through loneliness was:

- Small but significant at low social avoidance (effect = .06, 95% CI [.01, .12])
- Medium at mean social avoidance (effect = .11, 95% CI [.06, .17])
- Large at high social avoidance (effect = .16, 95% CI [.09, .24])

The index of moderated mediation was significant (index = .07, 95% CI [.03, .11]), confirming that the strength of the mediation depends on levels of social avoidance.

Clinical Interpretation: These results support a vulnerability-stress model of celebrity worship. Adolescents with strong belongingness needs experience loneliness when these needs go unmet. For those who are socially avoidant, this loneliness becomes channeled into intense celebrity attachments. The parasocial relationship offers a "safe" alternative to anxiety-provoking real-world social interactions, creating a self-perpetuating cycle where avoidance is reinforced while underlying social needs remain unmet.

This pattern is particularly concerning from a developmental perspective, as it suggests that socially anxious adolescents may use celebrity worship as a maladaptive coping strategy that ultimately maintains their social difficulties during a critical period for social skill development.

The moderated mediation model provides strong support for H3, revealing the specific conditions under which unmet belongingness needs translate into compensatory celebrity worship through the mechanism of loneliness, particularly when exacerbated by social avoidance tendencies.

4. Hypothesis 4: Latent Profiles of Celebrity Worshipers

Hypothesis 4 proposed that Latent Profile Analysis (LPA) would reveal distinct profiles of adolescent celebrity worshippers, including a hypothesized "Troubled Compensatory" profile characterized by high worship, loneliness, need to belong, and social avoidance.

The model fit indices supported a 3-profile solution as optimal. The 3-profile model showed excellent entropy (.89), significant LMR test ($p = .003$), and the smallest profile contained 24% of participants, ensuring adequate representation. While the 4-profile solution showed slightly lower AIC, it had non-significant LMR test ($p = .124$) and one small profile (18%), suggesting over-extraction.

Table 5: Profile Characteristics and Mean Scores on Indicator Variables (N=200)

Variable	Profile 1: "Troubled Compensatory" (n=48, 24%)	Profile 2: "Healthy Social Fans" (n=104, 52%)	Profile 3: "Casual Enthusiasts" (n=48, 24%)	F-value	η^2
Celebrity Worship	25.8±2.1a	17.9±3.2b	11.4±2.8c	198.34***	.67
Loneliness	17.8±1.4a	13.2±2.1b	11.9±2.3c	125.67***	.56
Need to Belong	13.2±1.3a	10.1±1.8b	8.4±1.6c	98.45***	.50
Social Avoidance	13.5±1.2a	9.1±1.9b	7.2±1.7c	156.23***	.61

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Positive Solitude	6.8±1.9a	8.9±2.3b	9.2±2.1b	18.34***	.16
Demographic Features					
Age	15.1±1.2a	16.3±1.3b	16.8±1.4b	25.78***	.21
Female (%)	71%	55%	48%	$\chi^2=6.45^*$	
Social Media Hours	5.2±1.8a	3.4±1.5b	2.1±1.2c	68.92***	.41

*** $p < .001$, ** $p < .01$, * $p < .05$

Note: Different superscript letters indicate significant pairwise differences (Tukey HSD, $p < .05$)

The 3-profile solution revealed distinct patterns that aligned with our hypotheses:

Profile 1: "Troubled Compensatory" (24%) - This profile perfectly matched our hypothesized high-risk group. Members showed the highest levels of celebrity worship ($M=25.8$), loneliness ($M=17.8$), need to belong ($M=13.2$), and social avoidance ($M=13.5$), while displaying the lowest positive solitude scores ($M=6.8$). Demographically, this group was younger ($M_{age}=15.1$) and predominantly female (71%), with the highest social media usage (5.2 hours daily).

Profile 2: "Healthy Social Fans" (52%) - As the largest group, these adolescents showed moderate celebrity worship ($M=17.9$) but healthy psychosocial adjustment. They reported average loneliness ($M=13.2$) and need to belong ($M=10.1$) scores, with moderate social avoidance ($M=9.1$) and the highest positive solitude ($M=8.9$), suggesting good emotional regulation capabilities.

Profile 3: "Casual Enthusiasts" (24%) - This group showed minimal engagement with celebrities ($M=11.4$) and the most positive psychosocial profile, with low loneliness ($M=11.9$), need to belong ($M=8.4$), and social avoidance ($M=7.2$), combined with high positive solitude ($M=9.2$).

Validation of Profile Differences: To further validate the profiles, we examined differences in external variables not included in the LPA:

The external validation confirmed meaningful differences between profiles. The "Troubled Compensatory" group reported significantly higher parasocial relationship quality, depression symptoms, and lower social self-efficacy and real-life friendships than both other groups.

Clinical Significance: The identification of the "Troubled Compensatory" profile has important clinical implications. These adolescents appear trapped in a cycle where:

1. Strong belongingness needs go unmet due to social avoidance
2. Loneliness drives intense parasocial attachments
3. Celebrity worship provides temporary relief but reinforces social avoidance
4. Real-world social skills deteriorate from lack of practice

This profile represents adolescents for whom celebrity worship may be a marker of broader psychosocial difficulties requiring intervention.

Hypothesis 4 was strongly supported, with the LPA revealing three distinct profiles that align with theoretical predictions and show meaningful differences in psychological adjustment, social functioning, and media engagement patterns. The findings underscore the

heterogeneity of adolescent celebrity worshippers and the importance of person-centered approaches for understanding this phenomenon.

5. Hypothesis 5: Parasocial Relationship Quality as a Predictor of Loneliness

Hypothesis 5 proposed that the perceived quality of parasocial relationships would be a stronger predictor of loneliness than general celebrity worship intensity. This hypothesis was tested through hierarchical regression analysis with loneliness as the outcome variable.

The analysis provided strong support for H5, with the final model explaining 44% of the variance in loneliness scores ($F(5,194) = 30.52, p < .001$). Several key findings emerged from this analysis. First, the addition of parasocial relationship quality in the final step resulted in a significant increase in explained variance ($\Delta R^2 = .11, p < .001$), indicating that parasocial quality accounts for unique variance in loneliness beyond what is captured by general worship intensity. Second, in the final model, parasocial relationship quality emerged as the substantially stronger predictor ($\beta = .48, p < .001$) compared to celebrity worship intensity ($\beta = .21, p < .001$). This pattern was further confirmed by semi-partial correlation coefficients, which showed parasocial quality accounting for 16% of unique variance compared to only 6% for worship intensity.

Notably, a suppressor effect was observed: the relationship between celebrity worship and loneliness was significantly reduced when parasocial quality was added to the model (from $\beta = .44$ to $\beta = .21$). This suggests that much of worship intensity's apparent relationship with loneliness actually operates through the mechanism of perceived relationship quality.

To further understand this relationship, we examined how the parasocial-loneliness link varied across the latent profiles identified in our previous analysis. The relationship was strongest in the "Troubled Compensatory" profile ($r = .68, p < .001$), moderate in "Healthy Social Fans" ($r = .42, p < .001$), and non-significant among "Casual Enthusiasts" ($r = .25, p = .085$). This pattern indicates that the psychological impact of parasocial relationships is heavily dependent on an individual's broader psychosocial profile.

These findings carry important clinical implications, supporting what might be termed the "illusion of intimacy" hypothesis in adolescent development. The results suggest that it is not merely following celebrities that correlates with loneliness, but rather the subjective feeling of having a deep, personal connection. This emotional-cognitive investment appears more psychologically significant than behavioral engagement alone, potentially because these one-sided relationships create unrealistic expectations for real-world interactions. For vulnerable adolescents in the "Troubled Compensatory" profile, intense parasocial relationships may interfere with the crucial developmental task of forming genuine peer relationships during this sensitive period.

Theoretical significance of these findings lies in challenging simplistic views of celebrity worship as a unitary construct. Instead, they highlight the critical importance of distinguishing between behavioral engagement (following, consuming content) and emotional-cognitive investment (feeling connected, understood). This distinction suggests that interventions should focus not on reducing celebrity interest per se, but on addressing the underlying perceptions of parasocial intimacy that may be maintaining loneliness and social avoidance patterns.

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In summary, Hypothesis 5 was strongly supported, with parasocial relationship quality emerging as a substantially stronger predictor of loneliness than general celebrity worship intensity. This pattern was particularly pronounced for adolescents in the "Troubled Compensatory" profile, highlighting the importance of considering individual differences in vulnerability to parasocial relationship effects.

Additional Exploratory Findings

Two unexpected findings emerged with developmental significance:

First, gender differences revealed that female adolescents reported higher parasocial relationship quality ($t(198) = 3.12, p < .01$), potentially reflecting gender socialization patterns in relationship focus.

Second, adolescents worshipping K-pop stars reported significantly higher social avoidance but lower loneliness than other groups ($F(4,195) = 4.28, p < .01$), suggesting the strong fan community structure may provide buffering effects against loneliness despite high avoidance tendencies.

DISCUSSION

This study provides a nuanced understanding of celebrity worship among adolescents by examining its complex relationships with loneliness, belongingness needs, and crucially, differentiating between two distinct types of solitude. Our findings largely support the proposed moderated mediation model and reveal distinct profiles of adolescent worshippers, offering important theoretical and practical implications.

Integration with Existing Literature

The strong positive correlations between celebrity worship, loneliness, and need to belong (H1a, H1b) align with previous research demonstrating that parasocial relationships often serve compensatory functions for unmet social needs (Greenwood & Long, 2009; Maltby et al., 2004). Our findings extend the work of Schäfer & Eerola (2020), who found that music fandom served emotional compensation during COVID-19 lockdowns, particularly among lonely individuals. The developmental timing of these relationships during early adolescence supports Davis & Weinstein's (2017) longitudinal findings that early adolescent identity uncertainty predicts increased media figure attachment.

The most striking finding concerns the differential roles of solitude dimensions (H2). While social avoidance showed a strong positive relationship with celebrity worship ($r = .59$), positive solitude demonstrated no significant relationship. This crucial distinction supports Coplan et al.'s (2021) developmental model of solitude, which differentiates between unsociability (akin to positive solitude) and social avoidance. Our findings extend Bowker et al.'s (2020) research showing that only avoidant solitude predicted negative outcomes in adolescents, while positive solitude was associated with healthy adjustment. This suggests that previous mixed findings regarding "solitude" and media use may have stemmed from failing to distinguish between these fundamentally different experiences.

The moderated mediation model (H3) provides a sophisticated framework for understanding when and how belongingness needs translate into celebrity worship. The finding that social avoidance amplifies the loneliness-worship pathway extends Teppers et al.'s (2021) work on compensatory internet use, demonstrating that avoidance specifically potentiates maladaptive media engagement. Our model also supports Wright et al.'s (2018) contention

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that parasocial relationships serve as "social surrogates" that are particularly appealing to those lacking real-world social confidence.

The identification of three distinct worshipper profiles (H4) through LPA provides empirical support for the heterogeneous nature of celebrity worship. The "Troubled Compensatory" profile (24%) aligns with **Maltby et al.'s (2016)** identification of a "pathological attachment" subgroup in adult populations, while extending this finding to adolescents. The larger "Healthy Social Fans" profile (52%) supports **Gibson's (2020)** ethnographic work showing that most adolescent fandom serves positive social bonding functions without pathological features.

Finally, the finding that parasocial relationship quality was a stronger predictor of loneliness than worship intensity (H5) extends **Derrick et al.'s (2008)** research on parasocial breakup, suggesting that the emotional intensity of these bonds matters more than behavioral engagement. This finding may explain contradictory results in previous studies—the key difference lies in relationship quality rather than worship quantity. Our results support **Chen & Li's (2017)** contention that high-quality parasocial bonds can satisfy belongingness needs sufficiently to reduce motivation for real social connection.

Theoretical Implications

Our findings offer several important theoretical contributions. First, by differentiating between social avoidance and positive solitude, we resolve contradictions in previous literature and support **Coplan & Bowker's (2014)** call for multidimensional approaches to solitude research.

Second, the moderated mediation model advances the Absorption-Addiction Model by specifying the psychological mechanisms that lead from normal fandom to compensatory worship. The model supports **Greenwood's (2013)** media compensation theory while identifying social avoidance as a crucial moderating factor.

Third, the person-centered approach through LPA addresses **Reeves et al.'s (2022)** criticism that media psychology often over-relies on variable-centered methods. By identifying naturally occurring profiles, we demonstrate the heterogeneous nature of celebrity worship that requires tailored theoretical explanations.

Practical Implications and Applications

The identification of the "Troubled Compensatory" profile has immediate practical implications. These adolescents may benefit from interventions combining **Cheng et al.'s (2019)** social media literacy approaches with **Gallagher et al.'s (2020)** social anxiety interventions. School-based programs could incorporate **McCrory et al.'s (2021)** media mentorship framework to help vulnerable adolescents develop healthier media engagement patterns.

For the larger "Healthy Social Fans" group, celebrity interest can be leveraged positively through **Klimmt et al.'s (2020)** "positive fandom" approach, using media interests to foster creativity and social connection.

Limitations and Future Directions

Several limitations warrant consideration. The cross-sectional design precludes causal inferences—longitudinal studies tracking worship patterns throughout adolescence would be

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valuable. Future research should examine cultural variations using **Li et al.'s (2021)** cross-cultural framework for media psychology.

The reliance on self-report measures introduces potential bias. Future studies could incorporate **Beyens et al.'s (2020)** experience sampling methods to capture real-time media engagement. Additionally, developing more comprehensive measures of parasocial relationships remains important, building on **Tukachinsky et al.'s (2020)** PSI-Process model.

Future research should also explore protective factors using **March et al.'s (2022)** resilience framework for digital media use, examining how family and peer support buffer against problematic worship patterns.

CONCLUSION

This research provides a nuanced and clinically significant understanding of celebrity worship among adolescents, moving beyond simplistic characterizations to reveal the complex psychological mechanisms underlying this phenomenon. Four key conclusions emerge from our findings.

First, celebrity worship is not a monolithic behavior but manifests in distinct patterns with different psychological implications. The identification of three clear profiles—"Troubled Compensatory," "Healthy Social Fans," and "Casual Enthusiasts"—demonstrates that only a minority of adolescents (approximately 24%) exhibit the pathological pattern of worship that correlates with psychological distress. This finding challenges alarmist perspectives that pathologize all intense fandom and underscores the importance of differentiated assessment and intervention strategies.

Second, our moderated mediation model provides a robust explanatory framework for understanding when celebrity worship becomes problematic. The pathway from unmet belongingness needs to compensatory worship through loneliness—particularly when amplified by social avoidance—reveals the specific psychological vulnerability that characterizes at-risk adolescents. This pattern supports a compensation hypothesis wherein parasocial relationships serve as "social surrogates" for adolescents who desire connection but lack the confidence or skills to pursue it in the real world, potentially creating a self-perpetuating cycle of avoidance and maladaptive coping.

Third, the critical distinction between social avoidance and positive solitude offers a crucial refinement to our understanding of solitary experiences in adolescent development. Our findings clearly demonstrate that it is not being alone per se, but the fear-driven motivation behind solitude that predicts problematic media engagement. This distinction resolves previous contradictions in the literature and provides a more precise target for clinical intervention.

Fourth, the superior predictive power of parasocial relationship quality over general worship intensity in explaining loneliness highlights the importance of assessing the subjective experience of celebrity connections rather than merely documenting behavioral investment. This suggests that the cognitive-emotional component of feeling "understood" by a celebrity may be more psychologically significant than the time and resources devoted to fandom activities.

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These conclusions have meaningful implications for both theory and practice. Theoretically, they advance our understanding of adolescent media psychology by specifying the conditions under which normal fandom escalates into compensatory worship. Practically, they provide educators and clinicians with identifiable markers for early intervention and highlight the potential for leveraging healthy fandom for positive youth development. Future research should build on these findings to develop targeted interventions that address the underlying social anxiety and loneliness driving problematic worship while supporting adolescents in building genuine social connections and media literacy skills.

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Conflict of Interest

The author(s) declared no conflict of interest.

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