

Adolescents' Types of Short Video Use and Their Impact on Mental Health

Zhu Liyue¹ and Balan Rathakrishnan²

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ABSTRACT

With the widespread popularity of short video platforms, adolescents have become core users. Based on the uses and gratifications theory, this study explores the latent structure of adolescents' short video usage types and their differential impacts on mental health through a questionnaire survey. A total of 799 middle school students were surveyed using a self-compiled "Short Video Usage Type Questionnaire" covering seven categories of short video content. Their mental health status was assessed using a standard mental health scale, and principal component analysis (PCA) was conducted to extract latent factors. Structural equation modeling (SEM) was used to examine the underlying mechanisms. Results revealed two latent factors: "informational use" (including learning, interest-based, and news videos) and "entertainment use" (including comedy, leisure, gaming, and variety shows). Informational use significantly negatively predicted depression, anxiety, and stress, whereas entertainment use exhibited the opposite pattern. Additionally, gender moderated the relationship between entertainment use and anxiety. This study provides theoretical insights into the impact of short video use on adolescent development and has practical implications for media literacy education.

Keywords: Adolescents; Short Video Use Types; Mental Health; Principal Component Analysis; Structural Equation Modeling.

INTRODUCTION:

Research Background

In recent years, short videos have rapidly penetrated adolescents' daily lives due to their fragmented, audiovisual, and interactive features. According to the 5th National Report on Internet Usage Among Minors in China (2023), the number of adolescent short video users in China has reached 193 million, with 11.9% using them for over two hours daily. Short videos are not only key tools for adolescents' information acquisition and entertainment but also exert complex influences on their development due to their content diversity (e.g., entertainment, learning, news) (Vorderer et al., 2018).

Most existing studies focus on usage duration or frequency and reveal that excessive use is associated with increased anxiety, depression, and other negative emotions (Zeng, 2024; Keles et al., 2020). However, such studies typically treat short video use as a homogeneous variable and overlook the heterogeneity of content types—for instance, the differential effects of learning versus comedy videos. Thus, clarifying the structure of short video usage types and their associations with mental health is key to understanding adolescents' media behaviors.

LITERATURE REVIEW

1.2.1 Classification of Short Video Use Types

There is no universally agreed-upon framework for classifying short video usage types. Two main perspectives exist:

Motivational perspective: Based on uses and gratifications theory (Ruggiero, 2000), Swanson (1992) categorized media gratifications into "process gratifications" (e.g., entertainment) and "content gratifications" (e.g., information-seeking). Rubin and Perse (1987) further proposed a dichotomy between "ritualized use" (browsing without specific goals) and "instrumental use" (goal-oriented), which has laid a theoretical foundation for categorizing short video usage.

Content-based perspective: In China, studies often consider platform characteristics. For example, Gong et al. (2020) categorized short videos into "hedonic" and "social" types. Sun (2023) found adolescents preferred comedy and learning content, suggesting a dominance of entertainment and learning needs.

1.2.2 Short Video Use and Adolescent Mental Health

Existing research suggests a double-edged effect of short video usage on mental health. Learning and informational content can enhance adolescents' knowledge and self-efficacy (Jeong et al., 2016), whereas overuse of entertainment content may lead to attention problems, social withdrawal, and emotional distress (Twenge & Campbell, 2018). Yet, most studies examine single content types and lack a systematic view of their combined effects.

1.3 Research Objectives and Hypotheses

This study aims to extract latent factors of short video use among adolescents and examine their differential

impacts on mental health. The hypotheses are as follows:

- H1: Multiple latent factors (e.g., informational, entertainment) can be extracted from adolescents' short video usage.
- H2: Informational video use positively influences mental health (i.e., negatively predicts depression, anxiety, and stress).
- H3: Entertainment video use negatively influences mental health (i.e., positively predicts depression, anxiety, and stress).
- H4: Demographic variables (e.g., gender, grade level) moderate the above relationships.

METHODOLOGY

2.1 Participants

Participants were students from a public junior high school in Xuchang City, Henan Province, China. A combination of cluster sampling and voluntary participation was used to collect data. A total of 807 questionnaires were distributed, and 799 valid responses were returned (response rate: 99.01%). Among the respondents, 52.69% were male (n=421), and 47.31% were female (n=378); 50.94% were seventh-grade and 49.06% eighth-grade students. Ages ranged from 12 to 15 (M = 13.09, SD = 0.75). Participation was fully informed and voluntary, with teacher support in administration, and all ethical guidelines (anonymity and confidentiality) were strictly followed.

2.2 Instruments

2.2.1 Short Video Use Questionnaire

Developed based on the 2021 China Internet Use Report on Minors, this questionnaire includes 7 types of video content: 1) comedy, 2) Leisure, 3) Interest-based, 4) learning, 5) Gaming, 6) News, and 7) Variety. Participants rated usage frequency on a 6-point scale (0 = never, 5 = more than 3 hours/day). A pilot study (n=120) showed strong internal consistency (Cronbach's $\alpha = 0.89$; subscales: 0.76–0.85).

2.2.2 Mental Health Scale: DASS-12

The 12-item short form of the Depression Anxiety Stress Scales (DASS-12; Lee et al., 2019) was used to assess mental health. It contains 3 subscales with 4 items each: Depression, Anxiety, and Stress. Items are scored on a 4-point scale (0 = Never, 3 = Almost always). Higher scores indicate greater psychological distress. Reliability in this study: Depression ($\alpha = 0.83$), Anxiety ($\alpha = 0.78$), Stress ($\alpha = 0.81$), Total scale ($\alpha = 0.86$).

2.2.3 Demographics

Demographic variables collected include gender, age, grade level, and parental education.

2.3 Data Analysis

SPSS 27.0 and AMOS 21.0 were used for data analysis. Analytical steps included: 1) Descriptive statistics; 2) Common method bias testing (Harman's one-factor test); 3) Principal component analysis (PCA); 4) Confirmatory factor analysis (CFA); 5) Structural equation modeling (SEM); 6) Multi-group SEM for moderation analysis.

RESULTS

3.1 Common Method Bias

Harman's one-factor test indicated the first factor accounted for 28.6% of the variance, which is below the 40% threshold. This suggests that common method bias was not a serious concern in this study (Podsakoff et al., 2003).

3.2 Factor Structure of Video Use

PCA showed the data were suitable for factor analysis (KMO = 0.83; Bartlett's test: $\chi^2 = 1676.83$, $p < .001$). Two factors were extracted: 'Entertainment Use' (gaming, comedy, leisure, variety) and 'Informational Use' (learning, interest-based, news), accounting for a cumulative variance of 67.8%(see table1). CFA confirmed a good model fit ($\chi^2/df = 2.36$, GFI = 0.92, CFI = 0.94, RMSEA = 0.056) with satisfactory CR (>0.7) and AVE (>0.5).

Table 1 Exploratory Factor Analysis Results (N = 799)

Item	Factor	
	Entertainment-oriented	Information-oriented
Game-related	0.84	
Comedy-related	0.81	
leisure-related	0.79	
Variety show-related	0.71	
Learning-related		0.82
Interest-related		0.78
News-related		0.75
Eigenvalue	3.25	1.59
Variance Explained (%)	46.4%	21.4%

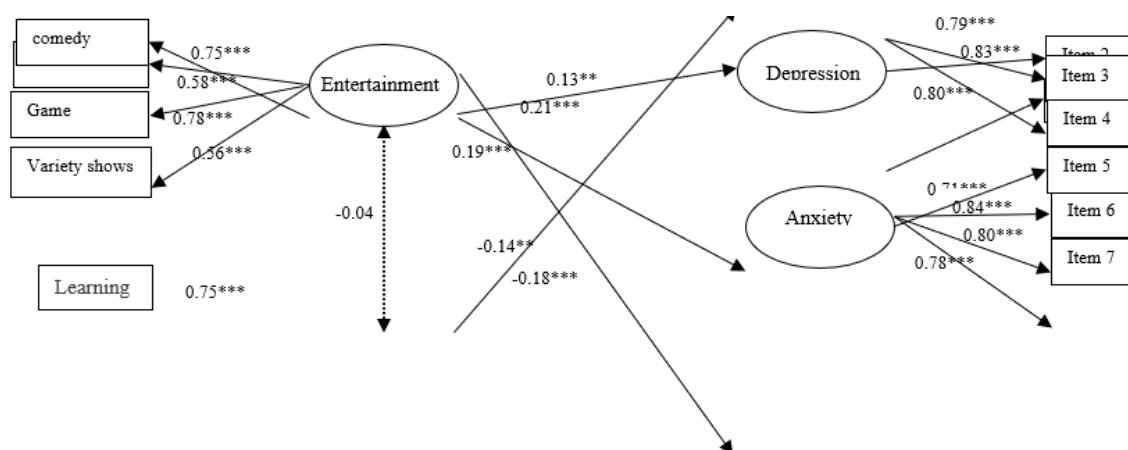
3.3 Descriptive Statistics and Correlations

Entertainment use ($M = 5.97$, $SD = 3.43$) was more frequent than informational use ($M = 4.57$, $SD = 3.43$). DASS-12 scores: depression ($M = 3.18$), anxiety ($M = 3.48$), stress ($M = 3.88$), indicating moderate levels. Correlation analysis showed: Informational use was negatively associated with depression ($r = -0.42, p < 0.001$), anxiety ($r = -0.43, p < 0.001$), and stress ($r = -0.44, p < 0.001$); Entertainment-oriented use showed significant positive correlations with depression ($r = 0.48, p < 0.001$), anxiety ($r = 0.52, p < 0.001$), and stress ($r = 0.50, p < 0.001$). This pattern suggests that higher frequency of entertainment-related short video consumption (e.g., comedy-related and leisure-related content) is associated with increased psychological distress among adolescents (see table 2).

Table 2 Descriptive Statistics and Correlation Analysis of Variables

Variable	M	SD	1	2	3	4	5
1. Entertainment-oriented use	5.97	3.43	1				
2. Information-oriented use	4.57	3.43	-0.04	1			
3. Depression	3.18	3.30	0.48***	-0.42***	1		
4. Anxiety	3.48	3.29	0.52***	-0.43***	0.89***	1	
5. Stress	3.88	3.59	0.50***	-0.44***	0.86***	0.87***	1

Note: *** $p < 0.001$.



3.4 Structural Equation Modeling Results

A structural equation model was constructed with information-oriented and entertainment-oriented use as predictors and the depression, anxiety, and stress dimensions of the DASS-21 as outcome variables. The model demonstrated good fit indices: $\chi^2/df = 2.08$, GFI = 0.94, CFI = 0.96, RMSEA = 0.045. Path coefficients were as follows (Figure 1): 0.18, $p < 0.001$, and stress ($\beta = -0.16, p < 0.001$). Entertainment-oriented use significantly positively predicted depression ($\beta = 0.13, p < 0.01$), anxiety ($\beta = 0.21, p < 0.001$), and stress ($\beta = 0.19, p < 0.001$).

3.5 Moderation by Demographics

Multi-group SEM showed a significant gender moderation in the entertainment use $\rightarrow$ anxiety path ($\Delta\chi^2 = 4.52, p < 0.05$), with a higher effect for females ($\beta = 0.31$) than males ($\beta = 0.23$). No significant moderation effects were found for depression, stress, or grade level ($p > 0.05$).

DISCUSSION

Factor Structure of Short-Video Usage Types

Principal component analysis extracted seven short-video categories into two dimensions—information-oriented use and entertainment-oriented use—confirming hypothesis H1. This structure not only aligns with the instrumental vs. ritualized dichotomy in Uses and Gratifications Theory (Rubin & Perse, 1987) but also provides content-specific refinement: Information-oriented use (learning-, interest-, and news-related content) reflects adolescents' proactive needs for knowledge acquisition and perspective broadening. Entertainment-oriented use (comedy- and leisure-related content)

corresponds to their emotional regulation and recreation needs. This classification advances a novel framework for understanding the intrinsic architecture of adolescents' short-video engagement.

Differential Effects of Short-Video Use on Mental Health

Employing DASS-12's depression, anxiety, and stress dimensions, this study delineates distinct mechanisms through which short-video usage patterns affect adolescent mental health, supporting hypotheses H2 and H3.

Information-Oriented Use demonstrated significant negative predictions for depression, anxiety, and stress, corroborating the "instrumental media use enhances mental well-being" paradigm (Jeong et al., 2016). Dimension-specific mechanisms emerged:

Learning-related content may alleviate academic stress through enhanced academic self-efficacy (Bandura, 1997). Interest-related content (e.g., sports/arts) potentially reduces depressive symptoms by strengthening self-identity. News-related content facilitates adaptive stress coping through expanded social cognition. Collectively, these pathways mitigate psychological burden.

Entertainment-Oriented Use positively predicted all three distress dimensions, extending prior findings on excessive entertainment use and psychological distress (Keles et al., 2020). Symptomatology analysis revealed: Comedy/variety show-related content may exacerbate stress through attention fragmentation and time displacement effects. Game/leisure-related content potentially intensifies depression via perceived reality gaps that erode self-worth. Instant feedback mechanisms (e.g., likes/comments) may heighten anxiety through upward social comparison (Twenge & Campbell, 2018).

4.3 Implications of Gender Moderation Effects

Females' heightened sensitivity in the entertainment-oriented use → anxiety pathway aligns with DASS-12's measurement of social tension and physiological tension. Research indicates females exhibit greater susceptibility to social evaluation (García-Fernández et al., 2025). Idealized life portrayals prevalent in entertainment-oriented content (e.g., influencer aesthetics, idealized body images) may exacerbate appearance-related anxiety and upward social comparison tendencies, thereby amplifying anxiety symptoms. This underscores the need for gender-specific interventions, such as reducing upward comparisons in entertainment consumption while fostering self-acceptance.

4.4 Limitations and Future Directions

The cross-sectional design precludes causal inference. Future studies should expand beyond the adolescent sample to include college populations. Additionally, examining mediating mechanisms (e.g., social capital, self-control) would elucidate underlying pathways.

CONCLUSION

Adolescent short-video engagement bifurcates into information-oriented (psychologically beneficial) and entertainment-oriented (psychologically detrimental) use, with gender moderating the entertainment-anxiety relationship. Families, educational institutions, and platforms should collaborate to promote moderate usage, encourage knowledge-focused consumption, and foster developmental health.

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