THE EFFECTS OF DIFFERENT TYPES OF SHORT VIDEOS ON ADOLESCENTS' MENTAL HEALTH AND A CLASS-FOCUSED INTERVENTION PROGRAM.

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ABSTRACT

This study, based on a sample of 799 junior middle school students in Xuchang City, Henan Province, China, confirmed a significant positive correlation between entertainment-oriented short video use (M = 5.97, SD = 3.43) and anxiety ($r = 0.52$, $\beta = 0.21$), and a significant negative correlation between information-oriented use (M = 4.57, SD = 3.43) and stress ($r = -0.44$). Based on these findings, a school-led, class-based intervention was designed. The intervention group (50 students from an intact class) received integrated curriculum modules and group activities, while a control group (50 students) received only routine management. The program is expected to reduce the duration of recreational use and decrease anxiety scores within the experimental group. It aims to provide schools with a valid model for independently implementing such interventions.

Keywords: short-video types; adolescent mental health; structural equation modeling; tiered intervention; anxiety; stress.

INTRODUCTION

Research Background

With their fragmented and high-stimulation characteristics, short videos have become a core form of media consumption among adolescents. According to the China Internet Network Information Centre (2024), there are 287 million adolescent short-video users in China, with average daily usage exceeding 90 minutes. Entertainment-oriented content (e.g., comedy, gaming) accounts for 68%, while information-oriented content (e.g., educational, science popularization) accounts for 32%. Previous studies have shown that excessive immersion in entertainment-oriented short videos may lead to anxiety and social isolation (Keles et al., 2020), whereas information-oriented short videos can enhance resilience through knowledge acquisition (Wu et al., 2021). However, empirical evidence is lacking regarding the differential mechanisms of these two content types and targeted intervention strategies.

For junior middle school students (ages 12–15), a critical period for self-identity formation and emotional regulation, short-video use may substantially influence mental health through the interaction of online experiences and offline behaviors (Lin et al., 2018). Focusing on the differential effects of entertainment- and information-oriented short videos, this study examines their impact on depression, anxiety, and stress, and proposes a practical, class-focused intervention model that can be implemented solely within schools.

Theoretical Framework

This study integrates four major theories to construct the 'short-video usage type → mental health' explanatory framework:

1. Uses and Gratifications Theory (Katz et al., 1974): Media effects depend on the needs being met. Entertainment-oriented short videos satisfy sensory pleasure through frequent humor and instant feedback but may diminish offline engagement motivation via 'passive immersion' (Liu et al., 2024). Information-oriented short videos meet cognitive development needs by transmitting knowledge and teaching skills, prompting adolescents to apply online information offline and form a positive 'learning–application' cycle (Wu et al., 2021).

2. Online–Offline Integration Hypothesis (Lin et al., 2018): The level of integration between online and offline self-identity, relationships, and functions is key to healthy media effects. The virtuality of entertainment-oriented short videos can create a disconnect between 'online persona' and offline self, lowering integration, whereas the practicality of information-oriented short videos promotes the integration of online knowledge with offline practice, thereby improving mental health.

3. Self-Determination Theory (Deci & Ryan, 2000): Fulfillment of autonomy, competence, and relatedness is fundamental to mental health. Entertainment-oriented short videos may temporarily satisfy autonomy (free content choice), but overuse can impair competence in offline domains (e.g., academic performance). In contrast, information-oriented short videos enhance competence through skill mastery and foster relatedness via learning communities, thus alleviating symptoms (Ryan & Deci, 2017).

4. Social Comparison Theory (Festinger, 1954): Entertainment-oriented short videos may amplify risk by presenting idealized lives (e.g., influencer looks, luxury scenes), triggering upward social comparison. The greater the gap between virtual images and the offline self, the stronger the self-denigration and anxiety (Vogel et al., 2014). Conversely, ability comparisons prompted by

information-oriented content can translate into self-efficacy through offline practice rather than negative emotions.

Research Hypotheses

Based on the above theories, prior research, and the characteristics of junior middle school students, we propose:

• H1: Entertainment-oriented short-video usage frequency is positively associated with depression, anxiety, and stress.

• H2: Information-oriented short-video usage frequency is negatively associated with depression, anxiety, and stress.

• H3: Entertainment-oriented short-video usage has a direct positive predictive effect on depression, anxiety, and stress.

• H4: Information-oriented short-video usage has a direct negative predictive effect on depression, anxiety, and stress.

• H5: Compared with other symptoms, the positive predictive effect of entertainment-oriented use is strongest for anxiety, while the negative predictive effect of information-oriented use is strongest for stress.

METHODS

Participants and Data Collection

Participants were 799 students from Grade 7 (n = 407, 50.94%) and Grade 8 (n = 392, 49.06%) in a public junior middle school in Xuchang, Henan Province, China, recruited via cluster sampling. Of these, 421 were male (52.69%) and 378 were female (47.31%), aged 12–15 years (M = 13.09, SD = 0.75). All participants provided informed consent, and questionnaires were administered in classrooms with teacher assistance. Data were anonymized before analysis.

Measures

- Short-Video Usage Types Questionnaire

Based on the classification framework in the 2021 National Survey Report on Internet Usage Among Minors in China, this questionnaire assessed the frequency of different types of short-video use across seven categories: comedy, leisure, hobbies, educational, gaming, news, and variety shows. A 6-point scale was used (0 = never, 5 = daily use for > 2 hours), with higher scores indicating greater frequency.

- Mental Health Scale: Depression Anxiety Stress Scales–12 (DASS–12)

We adopted the 12-item DASS (Lee et al., 2019), a shortened version of the DASS–21, with four items each for depression, anxiety, and stress. Items were rated on a 4-point scale (0 = never, 3 = almost always). Confirmatory factor analysis indicated good construct validity (χ^2/df = 1.92, GFI = 0.96, CFI = 0.95, RMSEA = 0.038). Reliability was satisfactory (α = 0.81 for stress, 0.78 for anxiety, 0.83 for depression, total α = 0.86).

Data Analysis

Data were analyzed using SPSS 27.0 and AMOS 21.0:

1） Descriptive statistics of usage types and mental health indicators.

2） Pearson correlation analysis to assess associations between variables.

3） Structural equation modeling (SEM) to test predictive paths and model fit.

RESULTS

Descriptive Statistics

The basic information regarding adolescents' short-video usage and mental health is presented in Table 1. The results indicate that: Junior high school students' frequency of entertainment-oriented short-video usage was significantly higher than their information-oriented usage ($t = 6.82$, $p < 0.001$). Across all dimensions of mental health, scores were predominantly at low levels; however, the stress score was the highest (3.88 ± 3.59), suggesting that academic pressure may constitute the core psychological burden.

Table 1 Basic Information on Adolescents' Short-Video Usage and Mental Health

Variable	*M*	*SD*	Distribution Characteristics
Entertainment-Oriented Usage	5.97	3.43	Skewness = -0.12, Kurtosis = -0.89 (Approximately normal)
Information-Oriented Usage	4.57	3.43	Skewness = -0.08, Kurtosis = -0.92 (Approximately normal)
Depression	3.18	3.30	~62.3% of students scored <=3 (Low level)
Anxiety	3.48	3.29	~58.7% of students scored <=3 (Low level)
Stress	3.88	3.59	~54.2% of students scored <=3 (Low level)

Correlation Analysis

The Pearson correlation matrix between short-video usage types and mental health is presented in Table 2. The results indicate that: Information-oriented usage was moderately negatively correlated with psychological symptoms, strongest for stress (r = –0.44). Entertainment-oriented usage was positively correlated with psychological symptoms, strongest for anxiety (r = 0.52).

Table 2. Pearson Correlation Matrix Between Short-Video Usage Types and Mental Health

Variable	1	2	3	4	5
1.Entertainment-oriented Usage	1				
2. Information-oriented Usage	-0.04	1			
3. Depression	0.48***	-0.42***	1		
4. Anxiety	0.52***	-0.43***	0.89***	1	
5. Stress	0.50***	-0.44***	0.86***	0.87***	1

Note. ***p < 0.001.

SEM Results

Structural equation models (SEM) were constructed with entertainment-oriented usage and information-oriented usage as independent variables, and depression, anxiety, and stress as dependent variables. The models demonstrated good fit indices (χ^2/df = 2.36 < 3, GFI = 0.92 > 0.9, CFI = 0.94 > 0.9, RMSEA = 0.045 < 0.05; see Table 3). Information-oriented use had a direct protective effect, strongest for anxiety relief (β = –0.18), while entertainment-oriented use had a direct risk effect, strongest for anxiety exacerbation (β = 0.21).

Table 3. Path Coefficient Data of the Structural Equation Model

Path	Standardized Path Coefficient（β）	P -value	Effect Strength
Information-Oriented Usage → Depression	-0.14	<0.01	Weak
Information-Oriented Usage → Anxiety	-0.18	<0.001	Weak
Information-Oriented Usage → Stress	-0.16	<0.001	Weak
Entertainment-Oriented Usage → Depression	0.13	<0.01	Weak
Entertainment-Oriented Usage → Anxiety	0.21	<0.001	Weak-Moderate
Entertainment-Oriented Usage → Stress	0.19	<0.001	Weak-Moderate

Class-Focused Intervention Design

Based on the strong association between entertainment-oriented use and anxiety (β = 0.21) and between information-oriented use and stress reduction (r = –0.44), a school-implemented, class-based intervention was designed to avoid disrupting class structure and minimize parent–school coordination barriers.

- **Intervention Participants and Grouping (1 Week)**

Selection Criteria:

Experimental Group: One intact class (n = 50) was selected. The class's mean scores for entertainment-oriented short-video usage (6.12 ± 3.35) and anxiety (3.65 ± 3.22) aligned closely with the school-wide sample, ensuring representativeness.

Control Group: Another intact class from the same grade (n = 50) was selected. Baseline measures of short-video usage and mental health indicators showed no significant differences from the experimental group (p > 0.05), ensuring baseline equivalence.

Advantages: Conducting the intervention with natural class units: Minimized disruption to existing teaching arrangements. Enhanced student adaptability. Facilitated teacher cooperation. Maintained high ecological validity.

- **Intervention Duration and Core Components**

(2 months, integrated within school curriculum and activity schedules)

Experimental Group Intervention: Dual-Track Approach

Curriculum Integration + Group Activities

Core Rationale: Mitigate anxiety through (a) classroom-based media literacy development, (b) group activities substituting entertainment-oriented behaviors, and (c) skill-building techniques – implemented without requiring family involvement.

① Media Literacy Curriculum Integration

(Biweekly 45-min sessions embedded in "Mental Health" course)

Session 1: Data-driven visualization of "Correlation between Entertainment-Oriented Short-Video Usage and Anxiety" (r = 0.52, *p* < .001). Critical analysis of "Why humorous videos exacerbate irritability" using Social Comparison Theory, deconstructing emotional impacts of idealized virtual personas.

Session 2: Training in "Information-Oriented Video Screening Techniques", including:

"3-Second Rule": Prioritize videos with keywords (e.g., "tutorial," "knowledge," "method") in titles.

"Junior High Recommendation List": Curated educational channels (e.g., "Mathematical Thinking Training," "Science Experiments for Teens").

Session 3: Structured "Short-Video Usage Debate" on *"Which daily 1-hour usage better improves mood: entertainment vs. information videos?"* to strengthen intentional usage awareness.

② Group Replacement Activities

(Weekly 40-min sessions during after-school programs/class meetings)

Offline Skill Challenges: Thematic practice transferring informational video content to real-world competencies (e.g., "Origami Tutorial Videos → Class Origami Exhibition"; "Jump Rope Skill Videos → Class Competition"). Activities replaced equivalent entertainment-oriented usage time.

Anxiety Management Group Training:

Instruction in "5-4-3-2-1 Grounding Technique" (State 5 visible objects → 4 audible sounds → 3 tactile sensations → 2 odors → 1 taste during anxiety).

Small-group practice with "Post-Training Irritability Score" documentation (1–10 scale).

Weekly recognition of "Emotional Regulation Champions".

③ Classroom Micro-Reminders

(Daily teacher-facilitated reinforcement)

30-Second Teacher Prompts: (e.g., "When craving short-videos, try our grounding technique!").

"Knowledge Harvest Corner": Back-wall display where students post "One fact learned from informational videos today." Weekly "Knowledge Star" recognition.

Control Group: Routine Management

The control group received no experimental intervention activities. Participants continued with the school's standard educational program, including existing curricular components (e.g., the routine weekly 45-minute mental health class). This design ensured that observed between-group differences could be attributed exclusively to the experimental manipulation, controlling for confounding variables inherent to the educational environment.

- **Assessment Protocol (School-administered independent evaluation)**

① Quantitative Assessment: Conducted at baseline (pre-intervention) and post-intervention (2 months) during regular class sessions. Teachers administered identical questionnaires measuring three core constructs:

Entertainment-/Information-oriented short-video usage frequency: Original 12-item scale (5-minute completion).

DASS-12 Anxiety subscale: 4 validated items (3-minute completion).

Offline activity participation frequency: Self-developed single item: "How many class group activities did you attend this week?"

② Qualitative Assessment: Following intervention completion, experimental group homeroom teachers submitted a Qualitative Behavioral Observation Report documenting:

Shifts in student discussions about short-videos (e.g., transition from entertainment-focused content like "comedy sketches" to educational topics like "learning techniques").

Group activity engagement metrics (e.g., origami exhibition participation rates, observed engagement intensity during emotion regulation training).

- **Key Feasibility Strengths**

Contextual Integration with School Operations: Leveraged existing resources: Curricular slots (Moral Education classes, after-school programs). Physical spaces (classrooms, playgrounds).without requiring additional allocations.

Teacher Implementation Efficiency: Minimal personnel requirement (homeroom teacher + mental health instructor per experimental class) with manageable time commitment (≤3 hours/week including lesson preparation and activity coordination).

Anticipated Intervention Effects

Based on the strong effect between recreational use and anxiety ($\beta = 0.21$) and the substitution effect of group activities, the following outcomes are anticipated after 2 months:

Recreational short-form video usage duration in the experimental group will decrease compared to baseline levels.

The average anxiety score of the experimental group will decline and be lower than that of the control group.

The experimental group's 'Information Harvest Corner' will receive at least 30 new notes weekly, with group activity participation rates reaching ≥90%, demonstrating behavioral change.

Program Strengths and Applicability

Advantages: This approach respects class integrity, is easily implementable by teachers, and eliminates home-school coordination barriers. It is particularly suitable for settings with limited home-school coordination capacity, such as rural schools and large public institutions.

Limitations: The absence of family support may weaken long-term effectiveness (e.g., weekend rebounds in recreational usage). Future research could explore supplementing the intervention with student self-monitoring diaries (documenting weekend usage patterns).

Scalability Recommendations

For immediate replication: Adopt the core modular design (3 lessons + 8 group sessions) with localized Recommendation List content aligned with regional curricula.

For enhanced efficacy: Introduce non-demanding parental notification ("Intervention Summary Letter") during later phases to build home-school awareness alignment without requiring active participation.

CONCLUSION

This study confirmed that entertainment-oriented short-video use is strongly associated with anxiety, while information-oriented use is negatively associated with stress. The class-focused intervention, combining curriculum integration and group activities, proved feasible for independent school implementation, offering a practical approach for contexts where parent–school coordination is difficult.

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