

+Development and Standardization of A Cinematic Violence Induced Risk-Taking Behaviour Test (CVIRBT) for Secondary School Students

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Abstract-- This study reports the development and standardization of a Cinematic Violence Induced Risk-Taking Behaviour Test (CVIRBT), designed to measure different dimensions of risk-taking behaviours among secondary school students exposed to cinematic violence. The test evaluates behavioural tendencies including physical aggression, defiance, imitative risky behaviour, impulsivity, and peer influence. A pilot study with 150 ninth-grade students was conducted. The test comprised 50 situational items depicting scenarios analogous to those found in violent films, each accompanied by four response options reflecting different behavioural responses. Item analysis was carried out to determine the Difficulty Index (Di) and Discriminating Power (D). Items with acceptable parameters ($0.3 < Di < 0.7$ and $D > 0.4$) were retained, resulting in a final 25-item test. The instrument's reliability was assessed using the split-half method with Spearman-Brown correction, while validity was established through expert review. The results demonstrate that CVIRBT is a psychometrically sound instrument that can be employed in further research and preventive interventions.

Keywords-- Cinematic violence, risk-taking behaviour, test development, secondary school students.

I. INTRODUCTION

Adolescence is a formative period marked by significant cognitive, emotional, and social development, during which individuals become increasingly susceptible to external influences. One such influence that has garnered extensive scholarly attention is exposure to cinematic violence. Violent media content is prevalent and often glamorized in films that adolescents frequently watch, potentially shaping their perceptions of normative behaviour and social interactions (Bushman & Anderson, 2001; Gentile et al., 2017). Research indicates that prolonged exposure to violent films can lead to an increase in aggressive thoughts, feelings, and behaviours, as well as desensitization to violence (Funk et al., 2004). The social learning theory posited by Bandura (1977) further supports the idea that individuals, especially adolescents, learn behaviours through observation and imitation of models seen in media. This theory underscores the importance of assessing imitative risky behaviour as a distinct component in understanding how cinematic violence may influence youth.

Beyond aggression, exposure to violent content has been linked to broader risk behaviours such as defiance of authority, impulsivity, and susceptibility to peer pressure (Eron, Huesmann, & Zelli, 1991; Kirsh, 2006). These behaviours often co-occur and can lead to negative academic, social, and psychological outcomes. However, a comprehensive and standardized tool specifically designed to assess the multifaceted nature of risk behaviour influenced by cinematic violence remains underdeveloped. The current study addresses this gap by developing and standardizing a Situational Test on Risk Behaviour (STRB) that captures five critical dimensions: physical aggression, defiance, imitative risky behaviour, impulsivity, and peer influence. The situational test format allows for contextually rich scenarios, enhancing the test's ecological validity and relevance for adolescents. Standardization through expert validation and reliability analysis ensures that the tool is psychometrically robust, making it a valuable instrument for researchers and educators aiming to understand and mitigate the effects of media violence on youth behaviour.

II. DEVELOPMENT OF CINEMATIC VIOLENCE INDUCED RISK-TAKING BEHAVIOUR TEST (CVIRBT)

The initial step in the construction and standardization of the tool was planning. Effective testing requires careful planning.

Adolescence is a critical developmental stage characterized by heightened sensitivity to external influences, including media exposure. Among the various media forms, cinematic violence has drawn considerable attention for its potential impact on adolescent behaviour, often linked to increased aggression and risk-taking (Anderson et al., 2003; Huesmann, Moise-Titus, Podolski, & Eron, 2003). Risk behaviour in adolescents may manifest as physical aggression, defiance of authority, impulsive decisions, and susceptibility to peer influence—all of which can have adverse social and educational consequences.

While numerous studies have focused on the effects of media violence on aggression, fewer have developed standardized tools to directly measure risk behaviours contextualized within the influence of cinematic violence. The current study aims to bridge this gap by developing and standardizing a Situational Test on Risk Behaviour tailored for secondary school students. The test provides situational scenarios inspired by violent media content, enabling the assessment of behavioural propensities in a realistic and relevant context.

The test assessed five distinct components of risk behaviour:

Physical Aggression

Includes behaviours such as hitting, fighting, or other forms of physical hostility.

Defiance

Encompasses attitudes and actions that challenge authority figures or social norms.

Imitative Risky Behaviour

Involves replication of hazardous acts seen in media, such as dangerous stunts or reckless conduct.

Impulsivity

Reflects a lack of deliberation, leading to spontaneous decisions with potentially negative outcomes.

Peer Influence

Captures susceptibility to conform to peers' encouragement or pressure to engage in risky activities.

There was a total of 50 test items in the draft test to assess the risk behaviour among students.

III. TRY OUT OF THE PILOT TEST

Students of St.Ephrem's High School, Chirakkadavu were selected for the pilot study. Permission from the school authorities as well as the consent from students were gathered. The test was administered among a group of 150 students after giving necessary instructions.

IV. ITEM ANALYSIS

Item analysis is a broad term encompassing various methods employed in education to assess and evaluate test items. These methods are typically utilized for the purpose of constructing and revising items. It is a technique used in determining the quality of each individual item that has to be used in the final study.

Steps involved in Item Analysis

(a) Determining Difficulty Index (Di) of each item

1. Arranging the data of each respondent in the descending order of the total score.
2. Choosing the upper 27 % (High Scorers) and the lower 27 % (Low Scorers) of the data and discarding the remaining.
3. Determining the number of correct responses in each group for each item separately.
4. Determining Difficulty Index (Di) of each item.

The difficulty level of a test item is shown by the percentage of pupils who got the correct answer for that particular item.

$$Di = (U+L) / 2N$$

where,

Di = Difficulty Index

U = Number of pupils in the Upper group who answered the item right.

L = Number of pupils in the Lower group who answered the item right.

N = Total number of pupils in any group who tried the item.

(b) Determining the Discriminating Power (D) of each item

$$D = (U - L) / N$$

where,

D = Discriminating Power

U = Number of pupils in the Upper group who answered the item right.

L = Number of pupils in the Lower group who answered the item right.

N = Total number of pupils in any group who tried the item.

V. PREPARATION OF THE FINAL TEST

After calculating Difficulty Index (Di) and Discriminating Power (D) of each item, these were arranged in a table. The items which had the satisfactory level of Di and D were chosen for the final test.

TABLE 1
Difficulty Index and Discriminating Power of items in the Pilot Study
CINEMATIC VIOLENCE INDUCED RISK-TAKING BEHAVIOUR
TEST (CVIRBT)

Qn. No.	Physical Aggression		Defiance		Imitative Risky Behaviour		Impulsivity		Peer Influence	
	Di	D	Di	D	Di	D	Di	D	Di	D
1	0.57	0.85	-	-	-	-	-	-	-	-
2	-	-	0.4	0.79	-	-	-	-	-	-
3	-	-	-	-	0.57	0.64	-	-	-	-
4	-	-	-	-	-	-	-	-	0.43	0.85
5	-	-	-	-	-	-	0	0	-	-
6	-	-	-	-	-	-	-	-	0.03	0.07
7	0.43	0.71	-	-	-	-	-	-	-	-
8	-	-	-	-	0.11	0.07	-	-	-	-
9	-	-	-	-	-	-	-	-	0.79	0.43
10	-	-	-	-	-	-	0.46	0.64	-	-
11	-	-	0.07	0.15	-	-	-	-	-	-
12	-	-	-	-	0.57	0.29	-	-	-	-
13	0.68	0.5	-	-	-	-	-	-	-	-
14	-	-	0.57	0.43	-	-	-	-	-	-
15	-	-	-	-	0.36	0.57	-	-	-	-
16	0.03	0.07	-	-	-	-	-	-	-	-

Qn. No.	Physical Aggression		Defiance		Imitative Risky Behaviour		Impulsivity		Peer Influence	
17	-	-	-	-	-	-	0.4	0.79	-	-
18	-	-	0	0	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	0.68	0.57
20	-	-	-	-	0.79	0.43	-	-	-	-
21	-	-	-	-	-	-	0.54	0.79	-	-
22	-	-	-	-	-	-	-	-	0.54	0.79
23	-	-	0	0	-	-	-	-	-	-
24	0.36	0.43	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	0.43	0.71	-	-
26	0.07	0.15	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	0.07	0.15	-	-
28	-	-	-	-	-	-	-	-	0.4	0.79
29	-	-	-	-	0.5	0.85	-	-	-	-
30	-	-	-	-	-	-	-	-	0.57	0.29
31	0.46	0.64	-	-	-	-	-	-	-	-
32	-	-	0.46	0.64	-	-	-	-	-	-
33	0.15	0.15	-	-	-	-	-	-	-	-
34	-	-	0.15	0.29	-	-	-	-	-	-
35	-	-	-	-	0.25	0.21	-	-	-	-
36	-	-	-	-	-	-	0.54	0.5	-	-
37	-	-	-	-	-	-	-	-	0.57	0.71
38	-	-	-	-	0.46	0.64	-	-	-	-
39	-	-	0.54	0.79	-	-	-	-	-	-
40	-	-	-	-	-	-	0	0	-	-
41	-	-	0.17	0.21	-	-	-	-	-	-
42	-	-	-	-	-	-	0.36	0.43	-	-
43	-	-	0.46	0.64	-	-	-	-	-	-
44	0.57	0.71	-	-	-	-	-	-	-	-
45	-	-	-	-	-	-	-	-	0.54	0.5
46	-	-	-	-	-	-	0.07	0.15	-	-
47	0.5	0.85	-	-	-	-	-	-	-	-
48	-	-	-	-	0.75	0.5	-	-	-	-
49	-	-	-	-	-	-	-	-	0.11	0.07
50	-	-	-	-	0.54	0.79	-	-	-	-

Generally, the Difficulty Index of a good item is considered to lie between 0.3 and 0.7 (Ebel & Frisbie (1991) and Discriminating Power greater than 0.4 is considered to be ideal (Garrett, H. E., & Woodworth, R. S. 1981). From the table, items whose $0.3 < Di < 0.7$ and $D > 0.4$ were selected for the final test.

In the Final Situational Test, items selected were Physical Aggression (5), Defiance (5), Imitative Risky Behaviour (5), Impulsivity (5) and Peer Influence (5). The final test was prepared with 25 items.

VI. VALIDITY

Content validity was ensured through a systematic expert validation process. The experts included:

- 1) Principals of B.Ed. colleges with expertise in educational psychology.
- 2) Ten experienced high school teachers from government schools familiar with adolescent behaviour.
- 3) Ten teachers from Teacher Education Institutions with substantial teaching experience.

Experts reviewed each item for appropriateness, relevance, clarity, and cultural sensitivity. Their suggestions led to modifications in wording and scenario construction, ensuring that the test items were understandable, contextually relevant, and reflective of realistic adolescent experiences.

VII. RELIABILITY

Reliability is a measure of the consistency of results obtained under consistent conditions. A test is considered reliable when an individual obtains similar scores or maintains a consistent rank across repeated administration of the test. While any individual score may slightly over estimate or under estimate a person's true level, tests with higher levels of reliability exhibit lower amounts of error compared to tests with lower reliability. Reliability is typically measured on a scale from 0 to 1, with higher values indicating greater test reliability.

Reliability testing involved the split-half method. The 50 items were divided into two equivalent halves, componentwise with responses from one half correlated with the other. That is, out of the 10 items included in the pilot study for each component, the odd items and even items were grouped to get equal halves. The correlation coefficient was then adjusted using the Spearman-Brown prophecy formula to estimate the test's internal consistency. Reliability ensured using Split-Half Method and items whose Spearman Brown Corrected Reliability Co-efficient (r_{SB}) greater 0.70 taken to the final draft of the tool (DeVellis, R. F. (2017). Scale Development: Theory and Applications (4th ed.). SAGE Publications).

TABLE 2
Spearman Brown Corrected Reliability Co-efficient (r_{SB}) for Items checked Component wise

Sl. No.	Components	r_{SB}
1	Physical Aggression	0.91
2	Defiance	0.75
3	Imitative Risky Behaviour	0.73
4	Impulsivity	0.79
5	Peer Influence	0.94



VIII. CONCLUSION

The Cinematic Violence Induced Risk-Taking Behaviour Test (CVIRBT) is a psychometrically sound instrument that reliably and validly assesses various dimensions of risk-taking behaviour among secondary school students. Its foundation in realistic, cinematic violence-inspired scenarios makes it particularly suited for studies exploring media effects on adolescent behaviour. Future research can expand its application to diverse populations and further explore its predictive validity. The findings from this study demonstrate that the Cinematic Violence Induced Risk-Taking Behaviour Test (CVIRBT) is a reliable and valid instrument for assessing multiple dimensions of risk-taking behaviour in adolescents within the context of cinematic violence exposure. Its situational approach provides a nuanced understanding of how adolescents might respond to scenarios resembling violent media content, thereby offering practical insights into behavioural tendencies that are otherwise difficult to quantify through traditional questionnaires.

The high reliability coefficient and positive expert feedback underscore the test's psychometric strength and applicability in diverse educational settings. By encompassing components such as physical aggression, defiance, imitative risky behaviour, impulsivity, and peer influence, the CVIRBT captures the complexity of adolescent risk behaviour, facilitating targeted interventions.

In an era where media consumption is pervasive and often uncontrolled, the ability to measure risk behaviours linked to cinematic violence is crucial. This tool can serve as a foundation for further research exploring causal relationships and for designing evidence-based prevention programs in schools. It is recommended that future studies extend the use of the CVIRBT to larger and more diverse populations to establish normative data and explore longitudinal effects. This tool can serve educators, psychologists, and researchers by identifying students at risk of engaging in harmful behaviours influenced by violent media, facilitating targeted interventions.

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