



# Comparative analysis of the Impact of short-span videos on attention span and concentration levels in men and women.

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**Abstract:** *The rapid rise in the consumption of short-span videos, particularly on social media platforms, has sparked concerns regarding its potential impact on attention span and concentration levels. This study aims to conduct a comparative analysis of these effects in men and women. Utilising a mixed-methods approach, the research will involve both quantitative assessments and qualitative interviews. Participants will be exposed to a series of short-span videos, followed by standardised tests to measure changes in their attention span and concentration levels. The results will be analysed to identify any significant differences between genders. Preliminary hypotheses suggest that frequent exposure to brief, rapidly changing content may differently affect cognitive processes in men and women due to underlying neurological and psychological differences. This study aims to contribute to the understanding of how modern media consumption patterns can influence cognitive functions and whether these effects are moderated by gender.*

**Keywords:** *Short Span Videos, Attention Span, Concentration Levels, Gender Differences, Cognitive Processes, Media Consumption, Neurological Impact, Psychological Impact, Mixed-Methods Research*

## I. INTRODUCTION

In the digital age, the consumption of short-span videos has become ubiquitous, particularly with the advent of platforms such as Instagram Reels, and YouTube Shorts. These videos, often lasting between 15 seconds to a minute, are designed to capture and retain the viewer's attention through quick, engaging, and often sensational content. While these platforms have revolutionized entertainment and information dissemination, there is growing concern among researchers and clinicians about their impact on cognitive functions, particularly attention span and concentration levels.

Attention span, defined as the length of time an individual can focus on a task without becoming distracted, is a critical component of cognitive functioning. Similarly, concentration levels, or the ability to maintain focused attention over time, are essential for tasks requiring sustained mental effort. Previous research has indicated that media consumption can significantly influence these cognitive domains. For instance, a study by Swing et al. (2010) found that extensive exposure to fast-paced television programs could reduce sustained attention in children. Similarly, Uncapher and Wagner (2018) reported that habitual media multitasking is associated with reduced working memory capacity and diminished sustained attention in adults.

The proliferation of short-span videos presents a unique challenge, as their brief and rapid nature may exacerbate these effects. According to a study by Ophir et al. (2009), media multitasking, which often involves quick shifts between different types of content, is correlated with poorer performance on cognitive control tasks. Moreover, research by Baumgartner et al. (2014) suggests that the high levels of novelty and rapid content changes characteristic of short-span videos may overstimulate the brain's reward system, leading to decreased attention control.

Gender differences in cognitive processing further complicate this issue. Studies have shown that men and women may process and respond to media stimuli differently due to both neurological and sociocultural factors. For example, research by Stevens and Hamann (2012) indicated that men and women show different patterns of brain activation in response to emotional stimuli, which could influence their susceptibility to distraction. Additionally, a meta-analysis by Hyde (2014) found that while men and women generally perform similarly on attention and memory tasks, there are nuanced differences in how they allocate attentional resources under various conditions.

Given these considerations, the present study aims to conduct a comparative analysis of the impact of short-span videos on attention span and concentration levels in men and women. By employing a mixed-methods approach, this research will provide both quantitative and qualitative insights into how these cognitive functions are influenced by brief, engaging media content. Participants will be exposed to a series of short-span videos, after which their attention span and concentration levels will be measured using standardized tests such as the Attention Network Test (ANT) and the Continuous Performance Test (CPT). Additionally, qualitative interviews will explore participants' subjective experiences and perceptions regarding their media consumption habits and cognitive effects.

The significance of this study lies in its potential to inform both clinical practice and public policy. Understanding how short-span videos affect cognitive functions differently in men and women could lead to targeted interventions aimed at mitigating negative impacts. For instance, educational programs could be designed to raise awareness about healthy media consumption habits, particularly for populations most at risk of cognitive decline due to excessive exposure. Furthermore, this research could contribute to the development of guidelines for media producers, encouraging the creation of content that balances engagement with cognitive health.

In conclusion, as the consumption of short-span videos continues to rise, it is imperative to understand their broader implications on cognitive functions such as attention span and concentration levels. By examining these effects through the lens of gender differences, this study seeks to provide a nuanced understanding of the cognitive consequences of modern media consumption. The findings will not only advance the academic discourse on media psychology but also offer practical recommendations for fostering healthier media environments.

### NEED OF THE STUDY.

The rationale for this study is grounded in the urgent need to understand the cognitive consequences of short-span video consumption in the digital age. By examining the differential impacts on men and women, this research aims to provide valuable insights that can inform both academic inquiry and practical applications. The findings will contribute to a nuanced understanding of media's role in shaping cognition.

#### 3.1 Population and Sample

The sample for this study comprised 113 participants aged 18 to 50, from various places across India, with a balanced representation of males (n = 55) and females (n = 56). The subjects were asked to answer the questions based on no restrictions on gender, education level, or occupation. Participants voluntarily filled out the questionnaire, ensuring informed consent was obtained.

#### 3.2 Data and Sources of Data

For this study, secondary data has been collected through a questionnaire method. Participants completed an online survey, The Attention control scale (ATTC) is a standardised tool used to measure attention span and concentration levels. It consists of a series of questions designed to assess how well individuals can maintain focus and resist distractions over a given period. The responses were collected and converted into numerical scores for statistical analysis.

#### 3.3 Theoretical framework

**Descriptive Statistics:** To summarise and describe the main features of the collected data, including measures of central tendency (mean) and variability (standard deviation) for attention span and concentration levels among men and women.

**Independent Samples t-Test:** To compare the mean scores of attention span and concentration levels between men and women after exposure to short-span videos. This test will help determine if there are statistically significant differences between the two groups.

**Spearman's rank Correlation:** To assess the strength and direction of the relationship between attention span and concentration levels across the sample. This analysis will provide insights into how closely related these two cognitive functions are.

### Research Methodology

The methodology section outlines the Aim and objectives that how the study is conducted. This includes hypothesis, tools, sample size, research design, and statistical use.

#### Hypothesis:

Hypothesis 1: Short-span videos will have a differential impact on attention span and concentration levels between men and women.

Hypothesis 2: Men will exhibit higher attention span and concentration levels compared to women exposed to short-span videos.

Hypothesis 3: Women will demonstrate higher attention span and concentration levels compared to men in short-span videos.

Hypothesis 4: There will be no significant difference in attention span and concentration levels between men and women.

#### Sampling technique:

Participants were recruited using a convenience sampling method. A Google Form containing the Attention Questionnaire (ATQ) scale was created to collect responses from individuals aged 18 to 50. The form link was distributed through personal networks, including friends and relatives, to gather a diverse sample.

**SAMPLE:** The sample for this study comprised 113 participants aged 18 to 50, from various places across India, with a balanced representation of males (n = 55) and females (n = 56). The subjects were asked to answer the questions based on no restrictions on gender, education level, or occupation. Participants voluntarily filled out the questionnaire, ensuring informed consent was obtained.

#### Statistical analysis:

- **Descriptive Statistics:** To summarize and describe the main features of the collected data, including measures of central tendency (mean) and variability (standard deviation) for attention span and concentration levels among men and women.

- **Independent Samples t-Test:** To compare the mean scores of attention span and concentration levels between men and women after exposure to short-span videos. This test will help determine if there are statistically significant differences between the two groups.

• Spearman's rank Correlation: To assess the strength and direction of the relationship between attention span and concentration levels across the sample. This analysis will provide insights into how closely these two cognitive functions.

#### **Description of tools:**

The Attention Questionnaire (ATQ) scale is a standardized tool used to measure attention span and concentration levels. It consists of a series of questions designed to assess how well individuals can maintain focus and resist distractions over a given period. The responses were collected and converted into numerical scores for statistical analysis.

#### **Statistical tools:**

The data organization and calculation of correlation coefficients were executed using SPSS, a widely recognized statistical software package. With SPSS, the collected data on the Impact of short-span videos on attention span and concentration levels in men and women were efficiently organized and analyzed. The software's capabilities facilitated the computation of Pearson correlation coefficients. This utilization of SPSS streamlined the statistical analysis process, ensuring accurate and systematic exploration of the relationships under investigation. Microsoft Excel was also used in the preliminary stages of data gathering and organization, and Microsoft Word was used for organizing all the information into this document.

#### **Procedure: participant recruitment:**

- Participants were recruited using a combination of convenience and purposive sampling techniques to ensure a diverse and representative sample of young adults aged 18 to 50 years. Recruitment was conducted through university announcements, social media platforms, and community bulletin boards to reach a wide audience.
- Before participating, all potential participants were informed about the study's purpose, procedures, and ethical considerations, including confidentiality and the voluntary nature of their participation. Informed consent was obtained electronically from all participants

#### **Data Collection:**

- Participants completed an online survey that included the Attention Questionnaire (ATQ) scale. The survey was administered via a secure online platform to ensure data privacy and ease of access.

#### **Survey Administration:**

- The survey was designed to take approximately 15-20 minutes to complete. Participants were instructed to answer all questions honestly and to reflect on their experiences. Clear instructions and definitions were provided to ensure a consistent understanding of the terms used in the survey.

#### **Data Analysis:**

- Upon completion of data collection, the responses were compiled and prepared for statistical analysis. Descriptive statistics were calculated to summarize the demographic characteristics and the scores from the Attention Questionnaire (ATQ) scale.

#### **Reporting Results and Discussion:**

- The results were compiled and interpreted in the context of existing literature. The findings were reported in detail, including the statistical significance, effect sizes, and confidence intervals for each analysis.
- A discussion section followed, where the implications of the findings were analyzed. This included comparing the results with previous research, exploring the potential reasons behind observed patterns, and discussing the theoretical and practical implications for understanding the Impact of short-span videos on attention span and concentration levels in men and women.

#### **Conclusion and Implications:**

- The study concluded with a discussion of the implications of the findings for understanding the Impact of short-span videos on attention span and concentration levels in men and women.

#### **Ethical issues:**

1. This research work has been done in accordance with all ethical norms and care has been taken to follow principles.
2. The data has been collected with due consent from every individual who has participated in the study.
3. All participants have been informed prior to the purpose of this research.
4. All data has been kept confidential and it will be made sure that it is not misused.
5. It will also be made sure that the personal details are not revealed to anyone or missed for any purpose.
6. Standard tools have been used for data collection.

#### **Limitations of the study:**

- 1.) Sampling Bias: The convenience sampling method may not provide a representative sample of the general population.
- 2.) Self-Reported Data: Reliance on self-reported data can introduce response biases.

**Results :****• Group Statistics**

	Gender	N	Mean	Std. Deviation	Std. Error Mean
AttentionFocusing	Male	55	21.91	4.870	.657
	Female	56	22.25	3.599	.481
Attentionshifting	Male	55	27.33	5.019	.677
	Female	56	26.88	3.449	.461

Table no. 1 shows the group statistic of men and women in which Mean, standard deviation and standard error mean of both men and women.

Table 2, it shows that the attention focusing more i.e 2.755 than attention ble no. 1 shows the group statistic of men and women in which Mean, standard deviation and standard error mean of both men and women.

**Independent Samples Test**

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
AttentionFocusing	Equal variances assumed	2.755	.100	-.420	109	.675	-.341	.812	-1.950	1.268
	Equal variances not assumed			-.419	99.397	.676	-.341	.814	-1.956	1.274
Attentionshifting	Equal variances assumed	2.570	.112	.554	109	.581	.452	.816	-1.165	2.070
	Equal variances not assumed			.552	95.528	.582	.452	.819	-1.173	2.078



## Correlations

			Gender	AttentionFocusing	Attentionshifting
Spearman's rho	Gender	Correlation Coefficient	1.000	.070	.025
		Sig. (1-tailed)	.	.232	.399
		N	111	111	111
	AttentionFocusing	Correlation Coefficient	.070	1.000	.411**
		Sig. (1-tailed)	.232	.	.000
		N	111	111	111
	Attentionshifting	Correlation Coefficient	.025	.411**	1.000
		Sig. (1-tailed)	.399	.000	.
		N	111	111	111

\*\* . Correlation is significant at the 0.01 level (1-tailed).

Table 3, According to Spearman's rank correlation is significant at the 0.01 level.

### Discussion

The present study aimed to investigate the impact of short-span videos on attention span and concentration levels, comparing these effects between men and women. The results indicate that there are no significant differences in attention-focusing and attention-shifting abilities between genders after exposure to short-span videos. This outcome contradicts the initial hypotheses that predicted differential impacts based on gender.

#### Key Findings:

##### 1. No Significant Gender Differences:

o The independent samples t-test showed no significant differences between men and women in both attention focusing and attention shifting. This suggests that short-span videos do not differentially affect these cognitive functions based on gender.

##### 2. Correlation Between Attention Focusing and Attention Shifting:

o A significant positive correlation between attention focusing and attention shifting was found, indicating that individuals who are better at focusing attention are also better at shifting attention. This relationship underscores the interconnectedness of these cognitive processes.

##### 3. Non-significant Correlation with Gender:

o The lack of significant correlations between gender and both attention focusing and attention shifting further supports the conclusion that gender does not play a significant role in the impact of short-span videos on these cognitive functions.

### Conclusion

This study aimed to explore the impact of short-span videos on attention span and concentration levels, focusing on gender differences. The findings provide significant insights into how brief video content affects cognitive functions across genders.

The primary result indicates no significant differences in attention-focusing and attention-shifting abilities between men and women after exposure to short-span videos. This outcome challenges initial hypotheses predicting gender-specific impacts. Independent samples t-tests showed statistically similar mean scores for both attention focusing and attention shifting in men and women, suggesting that short-span videos do not differentially affect these cognitive abilities.

A significant positive correlation between attention focusing and attention shifting was found, indicating that individuals adept at maintaining attention also excel at shifting it when necessary. This underscores the interrelatedness of these cognitive processes, highlighting that enhancing one can benefit the other.

The findings have several theoretical and practical implications. Theoretically, the results suggest that the cognitive effects of short-span video consumption may be universally experienced across genders, challenging gender-specific assumptions in the literature. Practically, these findings imply that interventions to mitigate the potential negative impacts of short-span video consumption do not need to be gender-specific. Educational and mental health professionals, along with content creators, can develop generalized

strategies to enhance media literacy and promote mindful digital consumption. For instance, educational programs could focus on effective screen time management, mindfulness during media consumption, and activities that foster cognitive flexibility. Despite the valuable insights, several limitations must be acknowledged. The use of convenience sampling may limit the generalizability of the findings. Future research should employ more diverse and representative sampling methods. The reliance on self-reported data via the Attention Questionnaire (ATQ) scale introduces potential biases. Incorporating objective measures, such as neuropsychological assessments or eye-tracking technology, could provide more accurate data. Additionally, this study did not control for content type, viewing context, or individual media consumption habits, which could influence the impact of short-span videos on cognitive functions. In conclusion, this study contributes to understanding the cognitive effects of digital media, showing that short-span videos do not differentially impact attention span and concentration based on gender. The findings highlight the importance of considering individual differences and content characteristics in understanding media consumption's complex interactions with cognitive processes. Ongoing research in this area will be crucial for developing effective strategies to maintain and enhance cognitive health in a media-saturated environment.

## Appendix

1. It's very hard for me to concentrate on a difficult task when there are noises around.
2. When I need to concentrate and solve a problem, I have trouble focusing my attention.
3. When I am working hard on something, I still get distracted by events around me. 4. My concentration is good even if there is music in the room around me.
5. When concentrating, I can focus my attention so that I become unaware of what's going on in the room around me.
6. When I am reading or studying, I am easily distracted if people are talking in the same room.
7. When trying to focus my attention on something, I have difficulty blocking out distracting thoughts.
8. I have a hard time concentrating when I'm excited about something. 9. When concentrating I ignore feelings of hunger or thirst.
10. I can quickly switch from one task to another.
11. It takes me a while to get involved in a new task.
12. It is difficult for me to coordinate my attention between the listening and writing required when taking notes during lectures.
13. I can become interested in a new topic very quickly when I need to.
14. It is easy for me to read or write while I'm also talking on the phone.
15. I have trouble carrying on two conversations at once.
16. I have a hard time coming up with new ideas quickly
17. After being interrupted or distracted, I can easily shift my attention back to what I was doing before.
18. When a distracting thought comes to mind, it is easy for me to shift my attention away from it.
19. It is easy for me to alternate between two different tasks.
20. It is hard for me to break from one way of thinking about something and look at it from another point of view.

