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The Association Between Social Media Use and Urinary Tract Infections in Children

Safana Abdullah Algutaini^{1*}, Ayad Atween² and Marla B. Hall³

¹Department of Public Health and Epidemiology, East Carolina University, Greenville, USA

²Department of Pathology, NIMS University, Rajasthan, India

³Department Public Health, East Carolina University, Greenville, USA

Corresponding Author: Safana Abdullah Algutaini, Department of Public Health and Epidemiology, East Carolina University, Greenville, USA, E-mail: safana.algutaini@gmail.com

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Abstract

Background: The proliferation of social media platforms has fundamentally altered the daily behaviors of children and adolescents. In turn, concerns about its potential impact on physical health, including Urinary Tract Infections (UTIs), are evident. This study explored the relationship between social media use and UTI incidence in children aged 2-17 years, aiming to identify patterns of risk and potential preventive measures.

Methods: A cross-sectional study was conducted in which 500 parents or guardians of children who used social media were recruited. Participants were recruited through a combination of mini lectures at universities, in-depth interviews with parents at community centers and pediatric clinics, and online posts on social media platforms. A structured questionnaire was administered to gather data on social media usage patterns, bathroom habits, fluid intake, and UTI history. Descriptive statistics were used to summarize the data, while Pearson's correlation and chi-square tests were employed to examine the associations between social media use, platform-specific usage, gender, fluid intake, and UTI incidence.

Results: A total of 37% of the children had experienced a UTI in the past year. There was a modest positive correlation between prolonged social media use and UTI incidence ($r = 0.093$, $p < 0.05$). Children who used social media more than 4 hours per day exhibited significantly greater UTI rates, with incidence rates of 46.6% for 4-6 hours and 45.5% for more than 6 hours of daily use. Platform-specific analysis revealed that TikTok users had the highest UTI incidence (81.2%), followed by Snapchat users (56.8%). Gender analysis revealed slightly greater UTI rates in males (36.4%) than in females (34.0%), although the difference was not statistically significant ($p > 0.05$). Unexpectedly, children who consumed more than 8 glasses of water daily also exhibited a higher UTI incidence (55.6%), suggesting potential underlying health or behavioral factors that warrant further investigation.

Conclusion: This study highlights the potential link between excessive social media use and an increased risk of UTIs in children, particularly among users of highly immersive platforms such as TikTok and Snapchat. The findings suggest that prolonged digital engagement may contribute to health risks by influencing behaviors such as delayed bathroom visits and inadequate hydration. These results underscore the importance of balanced digital habits and active parental involvement in managing children's social media use. Therefore, public health initiatives should focus on educating parents and children about the potential health risks associated with excessive screen time and promoting healthier digital practices.

Implications: The findings of this study have significant implications for public health strategies aimed at promoting digital wellness among children and adolescents. However, further research is needed to explore the causal mechanisms underlying the observed associations and develop interventions that can effectively mitigate the health risks associated with prolonged social media use.

Keywords: Social Media, Urinary tract infections, Pediatrics, Digital health, Screen time, Health behavior

Introduction

The rapid advancement of technology and the proliferation of social media platforms have significantly transformed the daily lives of children and adolescents. Social media platforms such as Facebook, Instagram, TikTok, Snapchat, and Twitter have become



integral to the socialization and communication habits of young people [1]. While these platforms offer various benefits, including enhanced connectivity and access to information, concerns have emerged about their potential negative impacts on physical health [2]. This is particularly evident in relation to urinary tract health [3,4]. For a detailed breakdown of the survey questions used in the study, see Appendix A.

Urinary Tract Infections (UTIs) are among the most common bacterial infections in children, with a considerable impact on morbidity and healthcare utilization [5]. UTIs can lead to significant discomfort, frequent urination, abdominal pain, and, in severe cases, kidney damage if not promptly and adequately treated [6]. Several factors contribute to the development of UTIs in children, including poor hygiene, anatomical abnormalities, and behaviors that adversely affect bladder health, such as infrequent urination or delayed voiding [7]. Emerging evidence have shown that prolonged screen time is associated with various health risks, including obesity, poor sleep quality, and decreased physical activity [8]. Moreover, the sedentary behavior linked to extensive social media use may lead to delayed bathroom visits, potentially increasing the risk of UTIs due to prolonged urine retention [9].

Increased screen time has also been linked to mental health issues such as anxiety and depression in children and adolescents, which can indirectly affect physical health behaviors, including bladder habits [10]. Furthermore, the immersive nature of social media can lead to neglect of physiological needs, such as hydration and regular bathroom use, both of which are critical for preventing UTIs [11]. Specifically, inadequate fluid intake can lead to concentrated urine, which can irritate the bladder and increase the risk of infection [12]. Research suggests that social media is associated with reduced fluid intake among children who may neglect drinking water while engaged in digital activities [13].

Resultantly, parental supervision and guidance are essential in moderating children's social media use and promoting healthy habits [14]. Studies indicate that children whose social media use is monitored and limited by parents are less likely to exhibit behaviors that contribute to health issues, including delayed urination and inadequate hydration [15]. Therefore, given the rising prevalence of social media use among children and the significant health implications of UTIs, it is crucial to explore the potential association between these factors [16,17]. Understanding this relationship can inform public health interventions aimed at promoting healthier digital habits and preventing UTIs in this vulnerable population. For a detailed breakdown of the survey questions used in the study, see Appendix A.

Materials and Methods

Study design and participants

This cross-sectional study aimed to investigate the potential association between social media use and the incidence of UTIs in children aged 2-17 years. The study was conducted across multiple sites, including universities, community centers, and online platforms. The participants were the adult parents or guardians of the children who actively used social media. The eligibility criterion included having a child within the specified age range who used social media for at least 30 minutes per day for most days of the week. The exclusion criteria included children with known anatomical

abnormalities or chronic health conditions that predispose them to UTIs.

Data collection

The data were collected through a combination of in-person and online methods to ensure broad participation and data diversity. The data collection period spanned three months and included the following steps:

Mini lectures at universities: Researchers conducted mini lectures at several universities to explain the study's objectives and significance. These sessions were targeted at parents and guardians who were attending university events or were otherwise affiliated with the institutions. After the lecture, attendees were invited to participate in the study by completing the questionnaire either on-site using a paper copy or online.

Interviews with parents: In-depth interviews were conducted with parents, often as couples, at community centers and pediatric clinics. These interviews provided qualitative insights into the participants' experiences and concerns regarding their children's social media use and health. Following the interviews, parents were asked to complete the structured questionnaire, either in-person or online, depending on their preference.

Social media posts: To reach a broader audience, the study was also promoted through posts on social media platforms, including Facebook, Instagram, and Twitter. These posts provided a brief overview of the study and included a link to the online questionnaire. This approach helped to capture data from parents and guardians who might not have been reached through the in-person methods.

Questionnaire design

The structured questionnaire used for data collection was developed specifically for this study and was designed to capture detailed information in the following areas:

Demographic information: This section collected basic demographic data, including the child's age and gender (Table 1 and Table 2).

Age group	Percentage	Count
2-5 years old	37%	186
6-8 years old	22%	108
9-11 years old	16%	79
12-14 years old	12%	58
15-17 years old	14%	69

Table 1: Child's age distribution.

Gender	Percentage	Count
Male	61%	306
Female	39%	193

Table 2: Child's gender.

Social media usage: Participants reported the specific social media platforms their child used (e.g., YouTube, online games, TikTok, Instagram, Snapchat, Facebook, Twitter), the average

number of hours per day spent on social media, and the number of days when social media was most frequently used. Table 3 shows the distribution of social media platform usage among participants.

Platform	Percentage	Count
YouTube	69%	341
Games	59%	295
TikTok	18%	87
Instagram	14%	70
Snapchat	9%	43
Facebook	8%	38
Twitter	4%	21

Table 3: Social media platform usage.

Usage duration	Percentage	Count
Less than 1 hour	15%	75
1-2 hours	26%	129
2-4 hours	29%	143
4-6 hours	19%	97
More than 6 hours	11%	55

Table 4: Average daily social media usage.

Time of day	Percentage	Count
Morning	21%	106
Afternoon	44%	217
Evening	57%	280
Night	31%	154

Table 5: Preferred time of day for social media use.

Bathroom habits: This section assessed the frequency of the child's bathroom visits (urination) per day, any delays in going to the bathroom due to social media use, and the duration of such delays.

Fluid intake: Participants were asked to report the number of glasses of water their child drank daily, as well as the consumption of other beverages such as juice, soda, milk, tea, and coffee.

UTI history: Participants were queried about whether their child had experienced a UTI within the past year. If the answer was affirmative, they were asked about the frequency of UTIs during this timeframe (e.g., once, 2-3 times, more than 3 times).

Data analyses

Data analyses were conducted using SPSS statistical software and both descriptive and inferential statistics were employed. The inclusion criteria are as follows:

Descriptive analysis: Frequencies, percentages, means, and standard deviations were calculated for all relevant variables. This included the distribution of social media usage, bathroom habits, fluid intake, and UTI incidence.

Correlation analysis: Pearson's correlation coefficient was used to assess the relationship between the average daily social media usage (measured in hours) and UTI incidence. This analysis aimed to determine the strength and direction of the association between these variables.

Cross-tabulation and chi-square test: Cross-tabulations were performed to explore the relationship between social media usage categories, fluid intake levels, and UTI incidence. The chi-square test of independence was used to identify statistically significant associations between categorical variables.

Platform-specific analysis: Each social media platform was analyzed separately to determine its specific impact on UTI incidence. Binary indicators were created for each platform (1 if the child used the platform, 0 if not), and UTI incidence rates were calculated for each group.

Gender and fluid intake analysis: The data were stratified by gender and fluid intake category to explore potential differences in UTI incidence. Comparisons were made between males and females, as well as across different fluid intake levels (e.g., less than 3 glasses, 3-5 glasses, 6-8 glasses, more than 8 glasses).

Ethical considerations

The study was conducted following ethical guidelines for research involving human participants. Informed consent was obtained from all participants before data collection began. The data were anonymized to ensure participant confidentiality, and all personal information was securely stored. Participants were informed of their right to withdraw from the study at any time without consequence.

Results

Participant demographics

A total of 500 parents or guardians participated in the study; these individuals represented a diverse cohort of children aged 2-17 years. The gender distribution of the children represented was 61% male (n=306) and 39% female (n=193). The age distribution was as follows: 37% were 2-5 years old, 22% were 6-8 years old, 16% were 9-11 years old, 12% were 12-14 years old, and 14% were 15-17 years old. The age distribution of the children in the study is illustrated in Figure 1. This distribution reflects a broad representation across different childhood and adolescent stages, providing a comprehensive overview of social media usage patterns and their potential health impacts (Figure 2 to Figure 20).

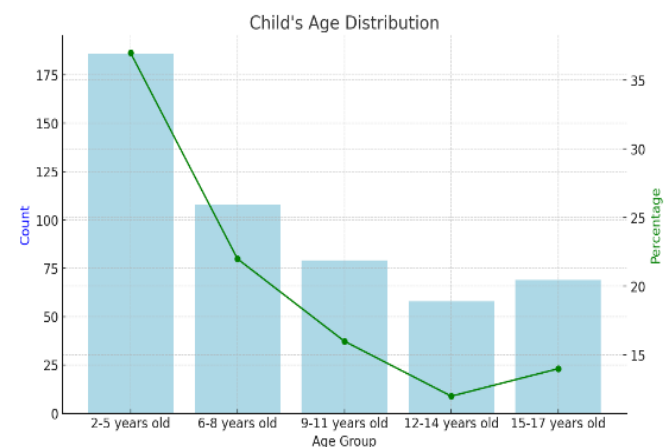


Figure 1: Child's age distribution.

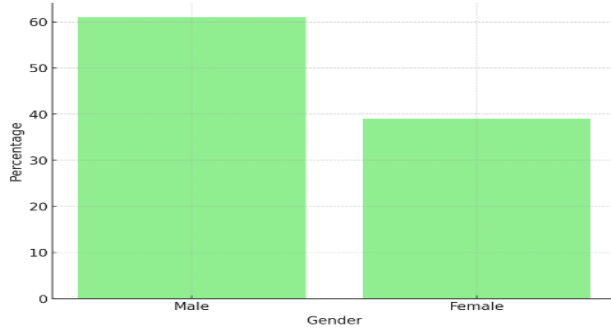


Figure 2: Child's gender.

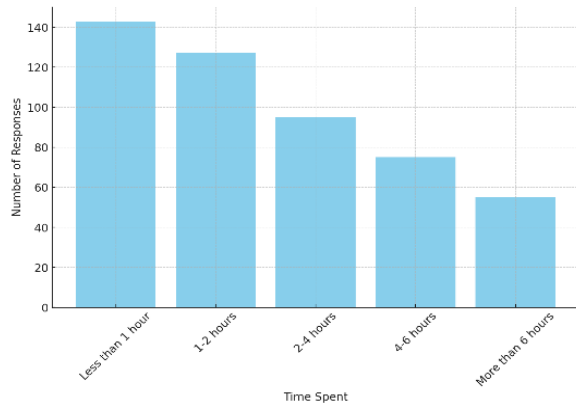


Figure 3: Time spent on social media by children.

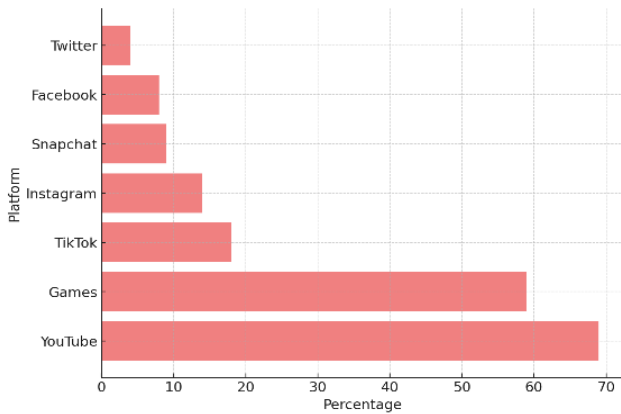


Figure 4: Social media platform usage.

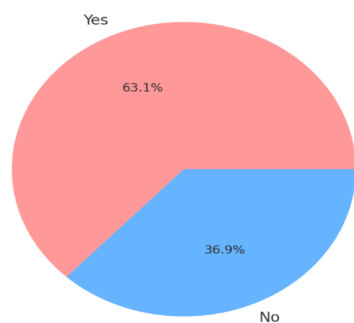


Figure 5: UTI occurrences in past year.

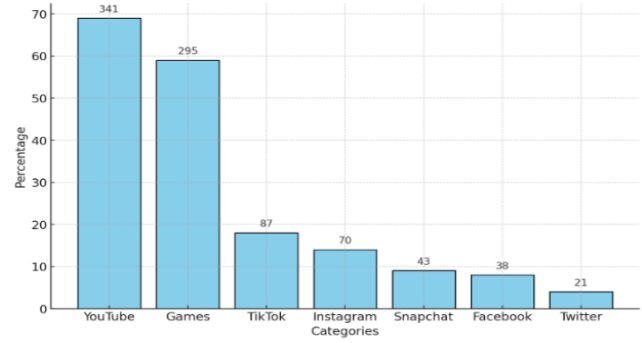


Figure 6: Social media platform usage.

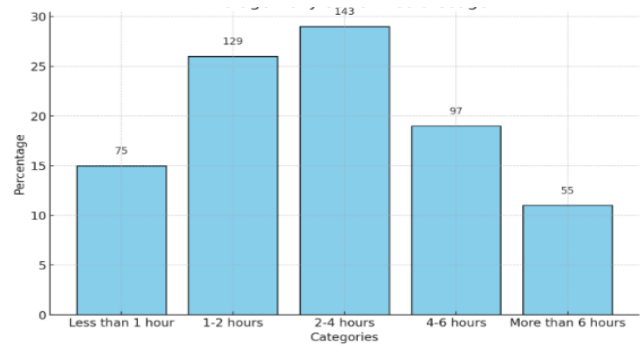


Figure 7: Average daily social media usage.

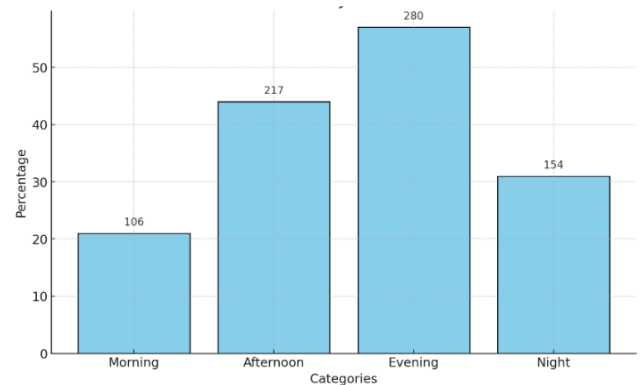


Figure 8: Preferred time of day for social media use.

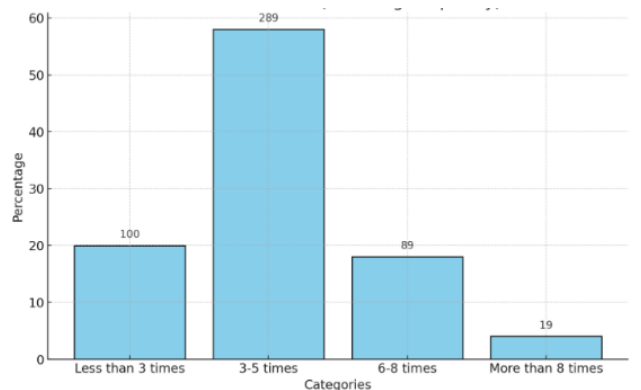


Figure 9: Bathroom habits (urinating frequency).

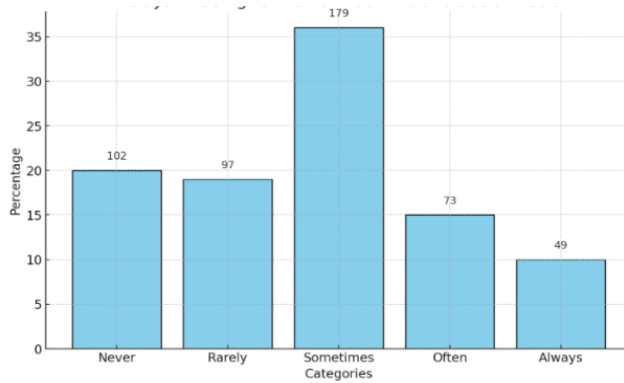


Figure 10: Delays in going to the bathroom due to social media.

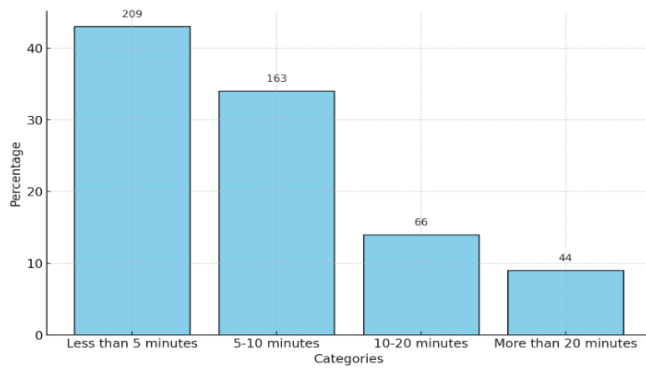


Figure 11: Delay duration if delayed bathroom use.

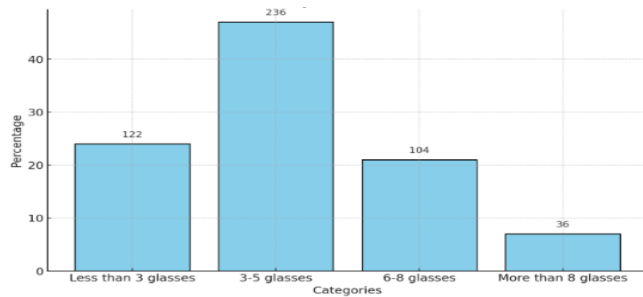


Figure 12: Daily water intake.

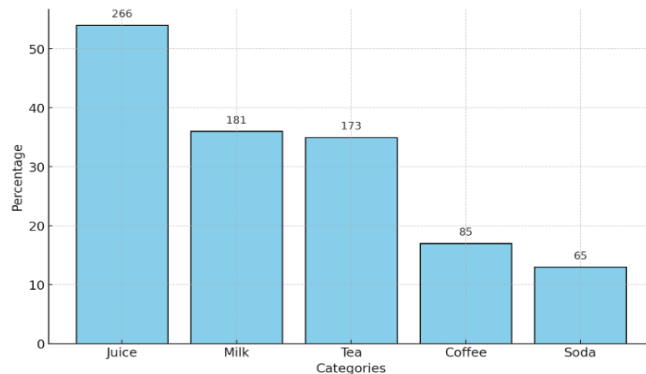


Figure 13: Regular beverage consumption.

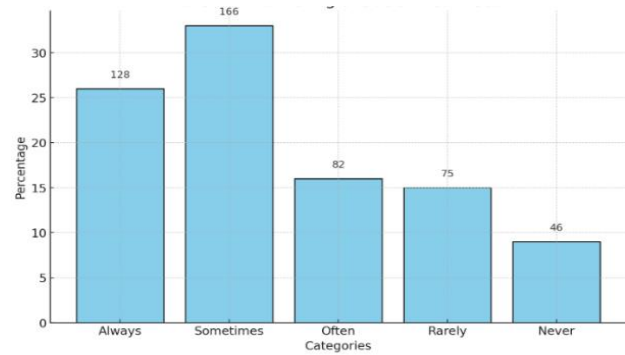


Figure 14: Parental monitoring of social media use.

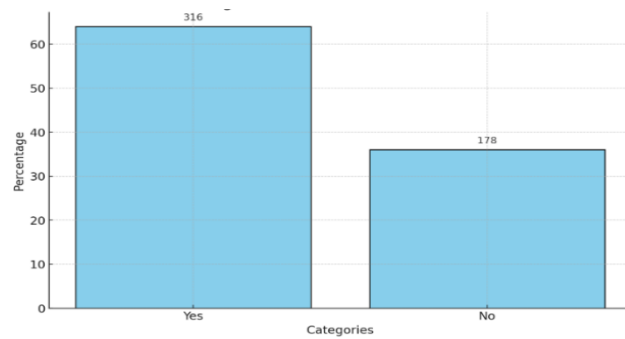


Figure 15: Setting time limits on social media use.

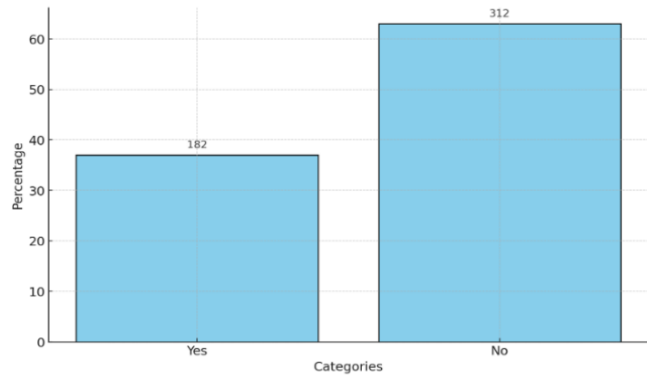


Figure 16: UTI incidence in the past year.

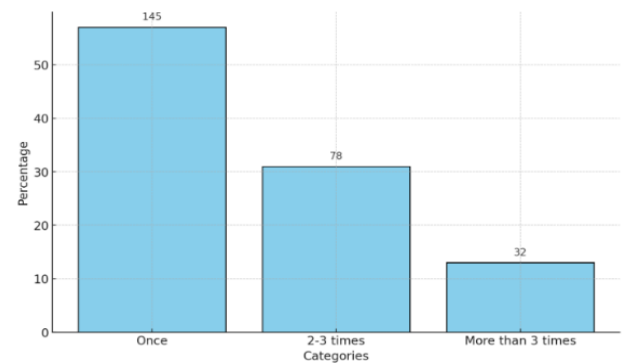


Figure 17: Frequency of UTIs if present.

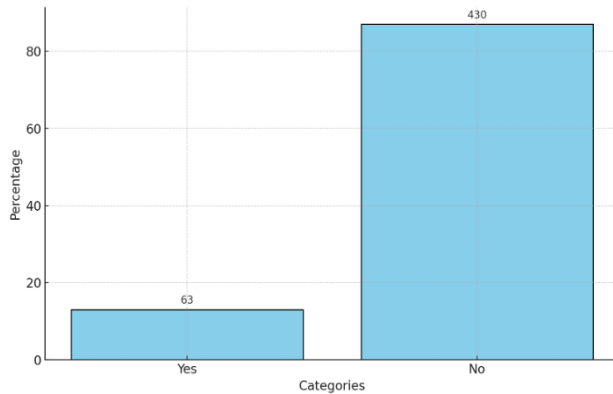


Figure 18: Known medical conditions affecting the urinary system.

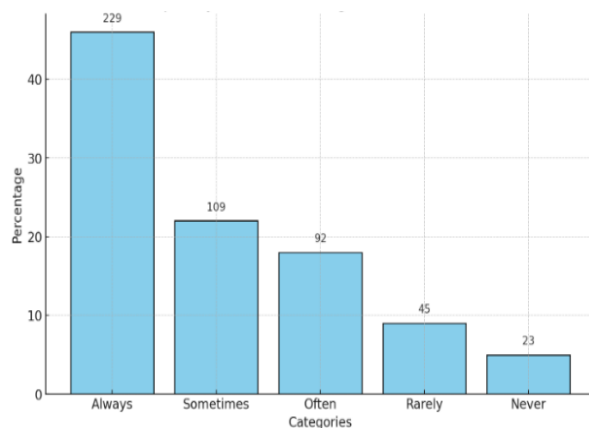


Figure 19: Frequency of handwashing after bathroom use.

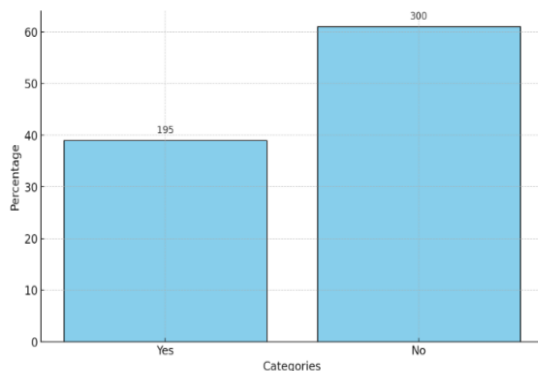


Figure 20: Use of hygiene products after bathroom use.

Social media usage patterns

The analysis revealed various patterns of social media usage among the participants. The most commonly used platforms were YouTube (69%, n=341), online games (59%, n=295), and TikTok (18%, n=87). The less frequently used platforms included Instagram (14%, n=70), Snapchat (9%, n=43), Facebook (8%, n=38), and Twitter (4%, n=21). Regarding the duration of social media use, 15% of the children spent less than 1 hour per day on social media, 26%

spent 1-2 hours, 29% spent 2-4 hours, 19% spent 4-6 hours, and 11% spent more than 6 hours daily.

UTI incidence and social media use

Overall, 37% of the children (n=182) represented by their parents or guardians reported that their child had experienced a UTI in the past year. The UTI incidence varied significantly with the amount of time spent on social media. Children who spent more than 4 hours per day on social media had the highest UTI incidence, with 46.6% of those using social media for 4-6 hours and 45.5% of those using it for more than 6 hours reporting UTIs. In contrast, UTI rates were lower among children who spent less time on social media, with 31.5% of those spending less than 3 hours per day reporting UTIs.

Platform-specific UTI rates

The analysis of UTI rates across different social media platforms revealed notable differences. The highest UTI incidence was observed among children who used TikTok, where 81.2% reported having experienced a UTI in the past year. This percentage includes both exclusive TikTok users and those who used TikTok in conjunction with other platforms. Snapchat users also exhibited a high UTI rate of 56.8%. In contrast, the UTI rates among users of other platforms were lower, with YouTube at 36.2%, online games at 45.6%, and Instagram at 37.7%.

Gender differences in UTI incidence

When stratified by gender, the data indicated a slightly greater UTI incidence among males (36.4%, n=106) than females (34.0%, n=71). However, this difference was not statistically significant ($p>0.05$), suggesting that gender may not be a major factor influencing UTI risk in this population.

Fluid intake and UTI incidence

Fluid intake was also analyzed to determine its impact on UTI incidence. The children who consumed more than 8 glasses of water per day exhibited the highest UTI incidence at 55.6%. This group, although the smallest in size (n=36), had a significantly greater percentage of UTIs than did those who consumed fewer fluids. The incidence of UTI was 37.2% in children who drank 6-8 glasses per day, while 33.9% of those who drank 3-5 glasses. The lowest UTI incidence was observed among children who drank less than 3 glasses of water per day, with 31.5% reporting UTIs. These counterintuitive findings may suggest that children with higher fluid intake might have underlying conditions or behaviors contributing to their increased UTI risk.

Bathroom habits and delays

The study also examined bathroom habits, particularly the frequency of urination and delays in bathroom visits due to social media use. The majority of children (58%) reported urinating 3-5 times per day, 18% urinating 6-8 times and 20% urinating less than 3 times daily. Among those who delayed their bathroom visits due to social media use, 43% reported delays of less than 5 minutes, 34% experienced delays of 5-10 minutes, 14% reported delays of 10-20 minutes, and 9% delayed for more than 20 minutes. The data suggested that longer delays were associated with a higher incidence of UTIs, particularly in patients who were delayed by more than 20 minutes. For detailed information on bathroom habits, refer to Table 6 in the Results section (Table 7 to Table 22).



Frequency of urination	Percentage	Count
Less than 3 times	20%	100
3-5 times	58%	289
6-8 times	18%	89
More than 8 times	4%	19

Table 6: Bathroom habits (urinating frequency).

Delay frequency	Percentage	Count
Never	20%	102
Rarely	19%	97
Sometimes	36%	179
Often	15%	73
Always	10%	49

Table 7: Delays in going to the bathroom due to social media.

Duration of delay	Percentage	Count
Less than 5 minutes	43%	209
5-10 minutes	34%	163
10-20 minutes	14%	66
More than 20 minutes	9%	44

Table 8: Delay duration if delayed bathroom use.

Water intake	Percentage	Count
Less than 3 glasses	24%	122
3-5 glasses	47%	236
6-8 glasses	21%	104
More than 8 glasses	7%	36

Table 9: Daily water intake.

Beverage type	Percentage	Count
Juice	54%	266
Milk	36%	181
Tea	35%	173
Coffee	17%	85
Soda	13%	65

Table 10: Regular beverage consumption.

Monitoring frequency	Percentage	Count
Always	26%	128
Sometimes	33%	166
Often	16%	82
Rarely	15%	75
Never	9%	46

Table 11: Parental monitoring of social media use.

Time limit setting	Percentage	Count
Yes	64%	316
No	36%	178

Table 12: Setting time limits on social media use.

UTI occurrence	Percentage	Count
Yes	37%	182
No	63%	312

Table 13: UTI incidence in the past year.

UTI Frequency	Percentage	Count
Once	57%	145
2-3 times	31%	78
More than 3 times	13%	32

Table 14: Frequency of UTIs if present.

Medical condition presence	Percentage	Count
Yes	13%	63
No	87%	430

Table 15: Known medical conditions affecting the urinary system.

Handwashing Frequency	Percentage	Count
Always	46%	229
Sometimes	22%	109
Often	18%	92
Rarely	9%	45
Never	5%	23

Table 16: Frequency of handwashing after bathroom use.

Use of hygiene products	Percentage	Count
Yes	39%	195
No	61%	300

Table 17: Use of hygiene products after bathroom use.

	Social media usage (hours)	UTI incidence
Social media usage (hours)	1	0.09256
UTI incidence	0.09256	1

Table 18: Correlation matrix for social media usage and UTI incidence.

Social media usage (hours)	UTI incidence count	Total count	UTI incidence percentage
1	28	89	31.46067
2	44	119	36.97479
3	34	138	24.63768
4	41	88	46.59091
5	30	66	45.45455

Table 19: UTI cases by social media hours.

Social media platform	UTI incidence percentage
YouTube	36.1516
Games	45.5516
TikTok	81.18812
Instagram	37.70492
Snapchat	56.75676
Facebook	37.77778
Twitter	50

Table 20: UTI rates by social media platform.

Gender	UTI incidence count	Total count	UTI incidence percentage
Female	71	209	33.97129
Male	106	291	36.42612

Table 21: UTI rates by gender.

Fluid intake	UTI incidence count	Total count	UTI incidence percentage
3-5 glasses	86	254	33.85827
6-8 glasses	32	86	37.2093
Less than 3 glasses	39	124	31.45161
More than 8 glasses	20	36	55.55556

Table 22: UTI rates by fluid intake.

Parental monitoring and UTI incidence

Parental monitoring of social media use was assessed to determine its potential protective effect against UTI incidence. The study revealed that children whose social media use was "always" monitored by parents had a lower UTI incidence (26%), than did those whose social media use was less frequently monitored (i.e., 33% for "sometimes," 16% for "often," 15% for "rarely," and 9% for "never"). This trend suggests that active parental involvement may reduce the risk of UTIs by encouraging healthier bathroom habits and limiting excessive social media use.

Statistical analyses

Correlation analysis revealed a modest positive correlation between increased social media usage and UTI incidence ($r = 0.093$, $p < 0.05$), indicating that higher social media use is associated with a slightly increased risk of UTIs. The chi-square tests confirmed statistically significant associations between social media usage duration, specific platform, and UTI incidence, particularly for platforms such as TikTok and Snapchat ($p < 0.01$). However, no significant association was found between gender and UTI incidence ($p > 0.05$).

Discussion

This study explored the potential association between social media use and urinary tract infections (UTIs) in children aged 2-17 years. The findings indicate a modest positive correlation between increased social media usage and UTI incidence, with particularly high rates observed among users of platforms such as TikTok and Snapchat. Additionally, children who spent more than 4 hours per day on social media exhibited significantly greater UTI rates. While gender differences were minimal, fluid intake emerged as a critical

factor, with higher UTI rates among children who consumed more than 8 glasses of water daily. These results contribute to a growing body of literature on the health implications of digital behaviors among young people.

The findings of this study align with previous research that links sedentary behaviors and prolonged screen time with adverse health outcomes in children. Studies have shown that high screen time is associated with poor physical health, including increased risks of obesity, poor sleep quality, and potentially, UTIs. This study is among the first to explicitly examine the relationship between social media use and UTI incidence, contributing novel insights to the field. The Platform-specific analysis also adds a new dimension to our understanding of how different types of digital engagement may impact health, with immersive platforms such as TikTok and Snapchat showing stronger associations with UTI risk.

Social media usage and UTI risk

The study showed that excessive social media use, particularly more than 4 hours per day, is associated with an increased risk of UTIs. This relationship can be attributed to several behavioral factors. Prolonged engagement with social media may lead to delayed bathroom visits, resulting in urine retention, which is a known risk factor for UTIs. Additionally, children engaged in digital activities may neglect hydration, further compounding the risk. The high UTI rates among TikTok and Snapchat users may reflect the immersive and interactive nature of these platforms, which can increase the likelihood of postponing attending to their physiological needs.

Fluid intake and UTI incidence

The finding that children who consumed more than 8 glasses of water per day had the highest UTI incidence is counterintuitive. While adequate hydration is typically protective against UTIs, this result suggests that there may be underlying health conditions or behaviors in this subgroup that increase their susceptibility to UTIs despite high fluid intake. It is possible that children who drink more water may already have a history of UTIs and are encouraged to hydrate as a preventive measure, indicating a reverse causality. These findings highlight the need for a more detailed exploration of the relationship between hydration practices and UTI risk.

Gender differences

Although the study revealed a slightly greater UTI incidence among males than females, the difference was not statistically significant. This finding contrasts with much of the literature, which often reports higher UTI rates in females due to anatomical differences. The lack of a significant gender difference in this study could be due to the specific behaviors associated with social media use that affect both genders similarly, or it could reflect sampling variability. However, further research is needed to clarify the role of gender in the relationship between social media use and UTI risk.

Parental monitoring

The protective effect of active parental monitoring against UTI incidence is a critical finding. Children whose social media use was closely monitored by their parents had lower UTI rates, suggesting that parental involvement may help mitigate the risks associated with excessive screen time. By setting limits on social media use and encouraging regular hydration and bathroom breaks, parents can play a vital role in safeguarding their children's health.



Implications of the Results

Public health and parental guidance

The findings of this study have several important implications for public health and parental guidance. Public health campaigns should emphasize the potential health risks associated with excessive social media use, including UTIs, and promote balanced digital habits. Educational initiatives targeting parents should highlight the importance of monitoring children's screen time and encouraging regular breaks for hydration and bathroom use.

For parents, the findings suggest the need for proactive management of their children's social media usage. Setting daily limits, encouraging physical activity, and ensuring that children maintain healthy bathroom habits can help reduce the risk of UTIs. Parents should also be vigilant about the platforms their children use, particularly those that are highly engaging and may lead to prolonged screen time.

Social media platforms and policy

Social media companies could consider incorporating features that promote healthier usage patterns among younger users. For example, reminders to take breaks or hydrate could be integrated into platforms to help prevent the negative health impacts associated with prolonged use. Additionally, policymakers might consider guidelines or regulations that require social media platforms to include wellness features, especially for content targeted at children and adolescents, to mitigate the risks highlighted by this study.

Future Research Directions

Given the limitations of this study, future research should aim to explore the relationship between social media use and UTIs through longitudinal designs that can better establish causal links. Additionally, studies that incorporate objective measures, such as digital tracking of screen time and medical records for UTI diagnosis, could provide more robust data. Further investigation into the mechanisms by which specific platforms influence health behaviors and outcomes is also warranted. Finally, research should examine how interventions designed to reduce screen time and promote healthy habits can effectively prevent UTIs and other health issues associated with excessive digital engagement.

Strengths and Limitations

This study's strengths include its comprehensive data collection methods, which combined in-person and online approaches to reach a diverse participant pool. The use of mini lectures at universities, interviews with parents, and online surveys distributed through social media ensured a broad and representative sample, enhancing the generalizability of the findings. Additionally, the study addresses an emerging issue by examining the relationship between social media use and UTIs in children, providing timely insights into the potential health implications of excessive screen time. The detailed analysis of platform-specific usage, fluid intake, bathroom habits, and gender differences allowed for a nuanced understanding of the potential contributors to UTI incidence.

This study is not without limitations. As a cross-sectional study, it captures data at a single point in time, limiting the ability to establish causal relationships between social media use and UTI

incidence. The reliance on self-reported data from parents introduces potential biases, such as recall bias or social desirability bias, which may lead to inaccuracies in the data. While the study controlled for several factors, such as fluid intake and bathroom habits, other potential confounding variables (e.g., underlying health conditions, diet, physical activity levels) may not have been fully accounted for. This complicates the interpretation of the results.

Furthermore, although the sample was diverse, the recruitment methods (e.g., university-based lectures, online social media posts) may have attracted participants from specific socioeconomic or educational backgrounds, potentially limiting the generalizability of the findings to other groups. The Platform-specific analysis, while valuable, may not capture the full complexity of children's online behaviors, as the nature and intensity of engagement can differ significantly between platforms. Last, the study did not include objective measurements of social media use or health outcomes, such as digital tools to track screen time or medical records to verify UTI diagnoses, which could have provided more robust and reliable data than self-reports.

Conclusion

This study provides important insights into the potential health implications of excessive social media use in children, particularly its association with the incidence of UTIs. The findings indicate that prolonged daily engagement with social media, especially for more than four hours, is associated with a greater incidence of UTIs. This relationship is most pronounced among users of highly immersive platforms such as TikTok and Snapchat, where the nature of interaction may contribute to behaviors such as delayed bathroom visits and inadequate hydration, which are known risk factors for UTIs.

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Appendix: Survey Questions

Section 1: Demographic information

1. **How old is your child?**
 - 2-5 years old
 - 6-8 years old
 - 9-11 years old
 - 12-14 years old
 - 15-17 years old
2. **What is your child's gender?**
 - Male
 - Female

Section 2: Social media usage

3. **Which social media platforms does your child use? (Check all that apply)**
 - Facebook
 - Instagram
 - TikTok
 - Snapchat
 - Twitter
 - YouTube
 - Games
4. **On average, how many hours per day does your child spend on social media?**
 - Less than 1 hour
 - 1-2 hours
 - 2-4 hours
 - 4-6 hours
 - More than 6 hours
5. **At what times of the day does your child mostly use social media? (Check all that apply)**
 - Morning
 - Afternoon
 - Evening
 - Night

Section 3: Bathroom habits

6. **How many times does your child go to the bathroom to urinate each day?**
 - Less than 3 times
 - 3-5 times
 - 6-8 times
 - More than 8 times
7. **Has your child ever delayed going to the bathroom because of being on social media?**
 - Never
 - Rarely
 - Sometimes
 - Often
 - Always
8. **If your child has delayed going to the bathroom, how long is the delay usually?**
 - Less than 5 minutes
 - 5-10 minutes
 - 10-20 minutes
 - More than 20 minutes

Section 4: Fluid intake

9. **How many glasses of water does your child drink each day?**
 - Less than 3 glasses
 - 3-5 glasses
 - 6-8 glasses
 - More than 8 glasses
10. **What other beverages does your child consume regularly? (Check all that apply)**
 - Juice
 - Soda
 - Milk
 - Tea
 - Coffee

Section 5: Parental monitoring and social media limits

11. **How often do you monitor your child's social media use?**
 - Never
 - Rarely
 - Sometimes
 - Often
 - Always
12. **Do you set limits on how much time your child can spend on social media each day?**
 - Yes
 - No
13. **If yes, what is the maximum amount of time your child is allowed to spend on social media each day?**
 - Less than 1 hour
 - 1-2 hours
 - 2-4 hours
 - 4-6 hours
 - More than 6 hours



Section 6: UTI history

14. Has your child had a urinary tract infection (UTI) in the past year?
 - Yes
 - No
15. If yes, how many times has your child had a UTI in the past year?
 - Once
 - 2-3 times
 - More than 3 times
16. Does your child have any known medical conditions that affect their urinary system?
 - Yes
 - No
17. If yes, please specify: _____

Section 7: Hygiene practices

18. How often does your child wash their hands after using the bathroom?
 - Never
 - Rarely
 - Sometimes
 - Often
 - Always
19. Does your child use any hygiene products (e.g., wipes, sanitizers) after using the bathroom?
 - Yes
 - No
20. If yes, please specify: _____