# Screen-Based Media Use Among Children During the COVID-19 Pandemic

This questionnaire-based study was conducted to assess screen-based media use during the coronavirus disease 2019 (COVID-19) pandemic in children (*n*=278) aged between 1 to 12 years. Television was the most common media available for use (246, 88.5%), and mobile was the next most commonly available media (230, 82.7%). Daily screen time exposure and use of television (*P*<0.001), computer/Laptop (*P*<0.001), and tablet (*P*=0.001) were significantly more common in those aged 5-12 years. Majority (214, 76.9%) were using screen-based media for educational purposes.

**Keywords:** *Children, Lockdown, Screen time*.

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Coronavirus disease 2019 (COVID-19) pandemic related lockdown has led to an increased use of screen-based media among children. Indian Academy of Pediatrics (IAP) guidelines on screen time and digital wellness have recommended no screen time for children below 2 years, less than one hour per day for children between 24 to 59 months, and less than 2 hours per day for children aged 5-10 years [1]. With this background, this study was done to estimate the types, duration and purpose of screen-based media usage among children aged 1-12 years during the COVID-19 pandemic.

This cross-sectional study was done from September, 2020 till December, 2020, after obtaining institutional ethical committee clearance. All children (1-12 years) who were staying indoors for at least preceding three months were eligible to be enrolled. A questionnaire was generated on Google Forms comprising 20 questions related to screen-based media types, duration, content, and purpose. The questionnaire was validated using Delphi technique wherein it was mailed for review to five experts in the field, and was modified as per the suggestions received. The modified questionnaire was validated further by pilot-testing among 20 participants. Electronic data collection was done as per the online survey Checklist for Reporting Results of Internet E-Surveys (CHERRIES) guidelines [2]. Mixed-mode survey method was used where the participants were enrolled through emails, teleconsultation services and social media platforms by snowballing method of recruitment via Google form link. The link had an inbuilt mechanism for parental/caretaker consent. Information was also collected from patients attending the institution's outpatient department physically through printed study questionnaire.

A total of 278 children aged 1-12 years were enrolled in this study, out of which 82 (29.5%) and 196 (70.5%) were enrolled via physical interview and online link, respectively. Among these, television, computer, laptop, mobile and tablet use was seen in 246 (88.5%), 45(16.2%), 129 (46.4%), 230 (82.7%) and 66 (23.7%) children, respectively. Total daily screen time exposure and comparison, reasons for media use, between children under 5 years and 5-12 years of age are summarized in **Table I**. The most common content watched by children was cartoons, 196 (70.5%); followed by online classes, 185 (66.5%). Youtube videos, 161 (57.9%); online games, 96 (34.5%); movies 28 (10.1%); and daily soaps, 20 (7.2%). Usage of screen-based media (SBM) for watching cartoons in younger children (*P*=0.001) and online classes and games in older children (*P*<0.001) were significantly higher. Among participants, 86.3% (*n*= 240) children could operate the screen-based media independently. The percentages of children who used screen-based media fully under adult supervision, under occasional supervision and unsupervised was 62.9%, 26.6% and 10.8%, respectively.

We found that television was the most common media available for use in 1-12 years of age whereas mobile was the most commonly available media for use in under-5 children. This is worrisome as under-5 children exposed to prolonged mobile phone use can have deleterious effect on their development and vision [1]. Increased screen times is of concern in the era of unlimited internet availability in each household, particularly with respect to the type of content children are getting exposed. Smartphones were found to be the most commonly used device among children aged 10-18 years in Switzerland during the COVID-related lockdown [3]. Another Indian study reported use of mobile in 96% and television in 89% of children before lockdown [4].

Online schooling has contributed more to screen time exposure during COVID than other reasons like socialization and entertainment in 5-12 years age group [5]. Another Indian study reported higher screen time for cartoons and YouTube

**Table I Screen Time Exposure and Purpose of Media Use Among Children Aged 1-12 year (*N*=278)**

| *Parameter* | *Age group, n (%)* | | *P value* |
|---|---|---|---|
| | *1-5 year (n=82)* | *5-12 year (n=196)* | |
| Daily screen time (h)[a] | 2.84 (1.8) h | 4.87 (2.3) h | <0.001 |
| Purpose of use [b] | | | |
| Education (*n*=214) | 42 (19.6) | 172 (80.4) | <0.001 |
| Socialization (*n*=177) | 32 (18.1) | 145 (81.9) | <0.001 |
| Parental break (*n*=97) | 14 (14.4) | 83 (85.6) | <0.001 |
| Games (*n*=45) | 22 (48.9) | 23 (51.1) | 0.002 |
| Entertainment (*n*=20) | 6 (30) | 14 (70) | 0.95 |

*Data in no (%) or [a]mean (SD). [b]Multiple responses received. Parental break: allowing media use in children in order to avoid active parental supervision; Socialization-connecting with friends/ family/ relatives with the help of screen-based media via social media apps.*

videos before COVID [6]. Young children were also exposed to screen-based media for parental break as most parents were working from home and used screen based media as a tool to engage children. IAP screen time guidelines 2021 recommends that screen use should not be used as a way out for calming uncomfortable children by parents [1]. UNICEF recommends media use for positive outcomes like educational or socializing as a quality measure of screen use [7]. As per interactional theory of childhood problematic use (IT-CPU model), parents can play a crucial role in positive assumptions for quality of media use [5,8]. Parents can be an active mediator where they can discuss the media content with children or co-view with children where they can just be an observer or a restrictive moderator where they just restrict some unsuitable content [1,8]. It is important to regulate the use of screen-based media in children as increased usage is associated with psychological issues, abnormal eating patterns, sedentary lifestyle and excessive weight gain [9,10].

The main limitation of our study was the possibility of recall bias. We conclude that online classes among school going children and cartoons and YouTube videos in pre-school children were main reason for screen-based media usage. The usage of screen-based media needs to be regulated among children with parental supervision.

*Ethics clearance*: AIIMS, Mangalagiri; IEC, No. AIIMS/MG/IEC/2020-21/48 dated Nov 01, 2020.
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**RACHNA PASI,[1] THIRUNAVUKKARASU ARUN BABU,[1]* LIMALEMLA JAMIR,[2] KUMAR SATISH RAVI[3]**
*[1]Departments of Pediatrics, and*
*[2] Community and Family Medicine, AIIMS, Mangalagiri, Andhra Pradesh;*
*[3]Department of Anatomy, AIIMS, Rishikesh, Uttarakhand.*
**babuarun@yahoo.com*

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# Diet, Fluid Intake, Urine Output and Urinary Sodium/Potassium Ratios in Children With Urolithiasis

We performed a cross-sectional study on 25 children (17 boys) with urolithiasis with normal glomerular functions at a tertiary care teaching hospital between March, 2018 to March, 2019. Dietary assessment showed that caloric intake was below recommended dietary allowance (RDA) in 68% patients while the median protein intake was 34.3% more. The fluid intake was below the recommended standards in 56%, and 48% of the children had urine output below 1.5 mL/kg/hour. The urinary sodium was elevated in 96% of the children, urinary potassium was low in 40%, and hypercalciuria was seen in 28%. While metabolic causes predominate in childhood urolithiasis, other factors like dietary changes, liberal fluid and low sodium intake are advised for prevention of recurrences as they have a contributory role too.

**Key words:** *Dietary assessment, Nephrolithiasis, Salt intake*.
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Childhood urolithiasis constitutes about 2-3% of all stone formers. Metabolic causes play an important role and also increase the risk of recurrence; hypercalciuria and hypocitraturia being the commonest causes (present in almost 34-97%) [1,2]. A diet rich in carbohydrates and animal proteins has been associated with an increased risk of urolithiasis in predisposed individuals. On the other hand ingestion of fresh fruits and vegetables and low salt diet has a protective role [3].

A liberal fluid intake is often recommended for preventing stone recurrences and urine output is a good way of assessing intake in presence of normal glomerular functions. Dietary assessments for sodium and potassium intake are often cumbersome and use of urinary sodium and potassium excretion as a surrogate appears to correlate well [4].

This cross-sectional study was done at a tertiary care teaching hospital between March, 2018-March, 2019. All new confirmed cases of pediatric urolithiasis between 2-18 years and old cases of urolithiasis, where specific therapies had been stopped for two weeks prior to evaluation were included in the