



Original Research Article

SMART PHONE USAGE AND ITS UTILIZATION IN SEEKING HEALTH RELATED INFORMATION AMONG RURAL ADOLESCENT STUDENTS

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ABSTRACT

Background: Rapid expansion of digital technology has significantly transformed the way adolescents access information, communicate, and engage with their social environment. Adolescents represent one of the most active user groups of smartphones, utilizing them for communication, entertainment, academic purposes and information seeking. With potential benefits, excessive smartphone use has been associated with negative physical and psychological outcomes, including sleep disturbances, anxiety, depression, and reduced academic performance. **Aim:** To estimate the prevalence of smart phone usage and utilization of smartphone in seeking health related information among rural adolescent students.

Materials and Methods: We adopted a cross-sectional study design with systematic random sampling technique to select 200 students aged in between 13 to 19 years. After obtaining written informed consent, we collected socio-demographic data, smartphone usage pattern and its purpose, source of health-related information was assessed using a self-directed questionnaire.

Results: Out of 200 students enrolled, 151 (75.60%) of them had access to smartphones out of which 47% of them had their own smartphones and 14% of them were using smartphones for more than 3 hours per day. It was seen that YouTube and social media network such as Facebook/Instagram were the major source for health-related information students were using.

Conclusion: Smartphone usage among rural students is widely increasing and source of health-related information varies widely. Matter of concern is that the source of health-related information accessed stands unscrutinised with questionable authenticity.

Keywords: Smart phone, adolescents, health information, students.

INTRODUCTION

The rapid expansion of digital technology has significantly transformed the way adolescents access information, communicate, and engage with their social environment. Among these technologies, smartphones have emerged as one of the most widely used devices globally. Increasing affordability, improved network connectivity and expanding digital infrastructure have contributed to

rising smartphone penetration even in rural areas. Adolescents represent one of the most active user groups of smartphones, utilizing them for communication, entertainment, academic purposes and information seeking.^[1]

In rural settings, adolescents often face barriers such as limited access to healthcare facilities, inadequate school-based health education, and sociocultural constraints that restrict open discussions about health topics. Smartphones may bridge this gap by

providing access to online health information, mobile health (mHealth) applications, and teleconsultation services.^[2] Health-related information seeking through smartphones can enhance health literacy, promote preventive behaviours and empower adolescents to make informed decisions regarding nutrition, mental health, sexual and reproductive health and lifestyle practices.^[3]

However, alongside potential benefits, excessive smartphone use has been associated with negative physical and psychological outcomes, including sleep disturbances, anxiety, depression, and reduced academic performance.^[4,5] Rural adolescents may be particularly vulnerable due to limited digital literacy, lack of supervision and inadequate guidance on credible online health resources.^[6] Therefore, understanding the pattern of smartphone usage and its specific utilization for seeking health-related information among rural adolescent students is essential for designing targeted interventions.

MATERIALS AND METHODS

Study design: Cross sectional study.

Study area: Adolescent students under the rural field practice area, under Rural Health Training

Centre under the department of Community Medicine, Varun Arjun Medical College and Rohilkhand Hospital, Banthra.

Study population: Adolescent students aged in between 13 to 19 years.

Study period: Three months

Sample size: Sample size was calculated using the formula $4PQ/d^2$, where the prevalence of usage of smartphone in India was taken as 22.4%, with 95% level of confidence, 6% absolute precision, total sample size calculated was 200.

Method of data collection: Adolescent students were selected using systematic sampling technique. Under the rural field practice area of RHTC Katra under the department of Community Medicine 8 villages with a population of around eighteen thousand. 200 adolescent students were equally selected from eight villages (25 students from each village) systematically. Written informed consent was obtained from the parents of the students. Information related to socio-demographic data, smartphone usage pattern and source of health-related information was collected using a self-designed questionnaire. Data collected was analysed using binary regression models using Epi info software.

RESULTS

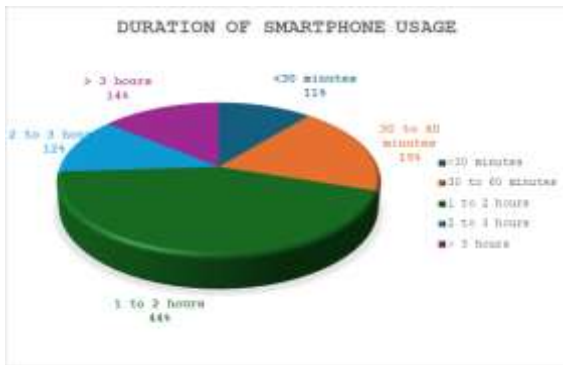
Table 1: Socio-demographic data

Sl. No	Socio-demographic parameters	Frequency	Percentage	
01	Age (In years)	13 to 15 years	82	41%
		16 to 19 years	118	59%
02	Gender	Male	126	63%
		Female	74	37%
03	Education	6 th to 8 th class	49	24.50%
		9 th & 10 th class	73	36.50%
		College	78	39%
04	Type of family	Nuclear	88	44%
		Joint	96	48%
		Three generation	16	8%
05	Socio-economic class (modified BG Prasad)	Class I	18	9%
		Class II	36	18%
		Class III	112	56%
		Class IV	22	11%
		Class V	12	6%

Demographic data: (Table 1) The mean age of our adolescent students was 16.18 ± 11.28 years with 82 (41%) aged in between 13 to 15 years and 118 (59%) were aged between 16 to 19 years. 126 (63%) of them were boys and 74 (37%) of them were girls. 49 (28.50%) were studying in between 6th to 8th standard in school, 73 (31.50%) in 9th and 10th standard in school and rest 78 (39%) were studying in college. 88 (44%) belonged to nuclear family, 96 (48%) to joint family and 16 (8%) to three generation family. The average family size was 6.38 ± 2.32 members and as per latest Socio-economic classification (modified BG Prasad), 18 (9%) belonged to class I, 36 (18%) to class II, 112 (56%) to class III, 22 (11%) to class IV and rest 12 (6%) to class V socio-economic status.

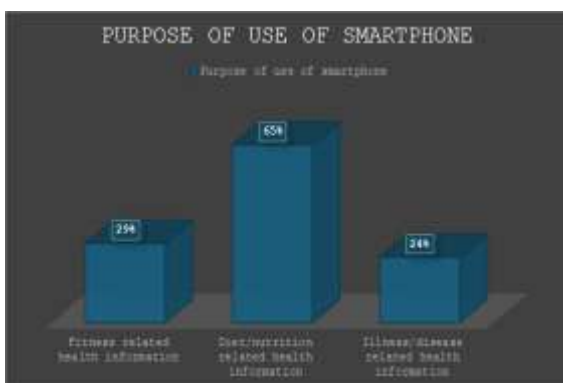
Pattern of smartphone usage: Out of 200 students, all of them had access to mobile phones, however only 151 (75.50%) of them had access to smartphones. Out of these 151 students, 71 (47%) had their own smartphone, 13 (9%) used their mothers smartphone, 58 (38%) used their fathers, 6 (4%) used their siblings and 3 (2%) used their friends smartphones (Table 2). Out of these 151 students, 17 (11%) were using smartphones for less than 30 minutes per day, 28 (19%) for 30 to 60 minutes, 67 (44%) for 1 to 2 hours per day, 18 (12%) for 2 to 3 hours per day and rest 21 (14%) for more than 3 hours per day. [Graph 1]

DISCUSSION

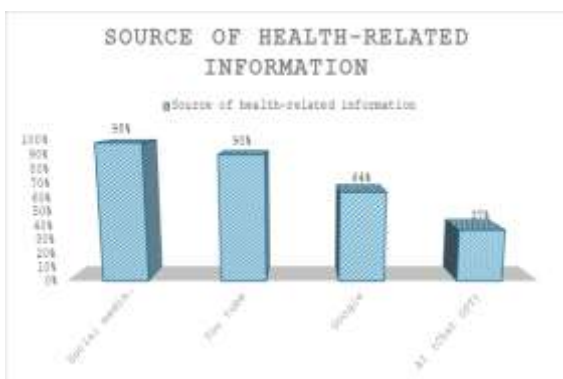


Graph 1: Duration of smartphone usage among rural adolescent students

Health-related information purpose and source: Out of 151 smartphone using adolescent students, 44 (29%) of them were using it for fitness related information, 98 (65%) for diet/nutrition related information and 36 (24%) for illness/disease related information (Graph 2). 32 (21%) of them were using health-related apps, while 119 (79%) were not using any health applications. It was observed that 118 (98%) were browsing social network (Facebook/Instagram) for health-related information, 136 (90%) were using you tube as source for health-related information, 97 (64%) were using google as their source and 56 (37%) were using AI tools (Chat GPT) as source for health-related information. [Graph 3]



Graph 2: Smartphone usage purpose among rural adolescent students.



Graph 3: Source of health-related information among smartphone using rural adolescent students

Prevalence and patterns of Smartphone usage

Recent studies indicate that smartphone ownership among adolescents has increased dramatically across both urban and rural populations.^[1] Research conducted among rural school students has shown high daily usage rates, with many adolescents spending several hours per day on smartphones.^[7] The primary purposes reported include social networking, video streaming, gaming, and communication.^[8]

Although smartphones provide access to educational content, studies suggest that educational or health-related use is often secondary to entertainment purposes.^[7,9] In rural contexts, smartphone sharing among family members is common, which may limit private or confidential health-related searches, particularly for sensitive topics such as reproductive health.^[10]

Gender differences also influence smartphone usage. In certain rural communities, male adolescents report greater autonomy and screen time compared to female adolescents due to sociocultural norms.^[11] These disparities may affect equitable access to digital health information.

Utilization of Smartphones for health-related information

Smartphones have become a convenient source of health information due to easy internet access and the availability of health apps, websites, and social media platforms. Adolescents commonly search for information regarding diet, fitness, acne management, mental health concerns, and sexual health.^[3,12]

Mobile health (mHealth) interventions have demonstrated potential in improving health knowledge and self-management behaviours among adolescents.^[2] Access to accurate online health information can improve health literacy, encourage preventive care, and reduce misconceptions. For rural adolescents with limited healthcare access, smartphones can serve as an initial point of information before consulting health professionals.^[13]

However, challenges remain. Digital health literacy—the ability to identify credible sources and interpret online health information—varies significantly among adolescents.^[6] Many rely on social media platforms or unverified websites, increasing exposure to misinformation.^[14] Without adequate guidance, adolescents may misinterpret symptoms, engage in self-diagnosis, or adopt unsafe health practices.

Health Impacts of excessive smartphone use

While smartphones provide health information benefits, excessive usage has been associated with several adverse outcomes. Studies have reported associations between problematic smartphone use and anxiety, depression, and poor sleep quality among adolescents.^[4,5] Prolonged screen time has

also been linked to visual strain, headaches, musculoskeletal discomfort, and reduced physical activity.^[8]

Rural adolescents may face additional risks due to limited recreational infrastructure, making smartphones a primary source of entertainment. Parental supervision and parent-child communication significantly influence adolescents' digital habits. Supportive parental involvement is associated with healthier smartphone usage patterns and better psychological outcomes.^[15]

Several barriers hinder optimal use of smartphones for health-related purposes in rural settings:^[6,11]

1. Limited digital literacy
2. Poor internet connectivity
3. Language barriers
4. Cultural constraints regarding sensitive health topics
5. Economic limitations and shared device usage

Addressing these barriers requires school-based digital literacy programs, integration of validated health apps into educational curricula, and collaboration between healthcare providers and educational institutions.

CONCLUSION

Smartphone usage among rural adolescent students is widespread and continues to increase. While smartphones are predominantly used for communication and entertainment, they also hold significant potential as tools for accessing health-related information. When utilized appropriately, smartphones can enhance health literacy, promote preventive behaviours, and reduce healthcare access disparities in rural settings. Findings from our study suggested that majority of the adolescents had access to smartphones. Diet and Nutrition, Fitness were two major health-related information they searched for and that YouTube and Social networking such as Facebook and Instagram were the major source of their health-related information. Major concern stands with the scrutiny of the information available and authenticity of the information available in social networking sites. Also, future research should focus on longitudinal assessments of smartphone-based health

interventions and the development of structured school-based digital health education programs to maximize benefits while minimizing associated risks.

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