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Assessing the Impact of Excessive Electronic Gadget Usage on the Ergonomics and Health of Genz: A Multidisciplinary Study

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Abstract

The study explores GenZ's electronic gadget usage patterns, covering smartphones, tablets, laptops, and gaming consoles. It examines usage duration, positions, and sleep habits. Additionally, it delves into accessory preference, peak usage times, posture, and awareness. Participants answered questions on smartphone habits, posture changes, exercise, pain management, and discomfort. Findings reveal discomfort in eyes, neck, back, wrists, and hands, with symptoms like pain, irritation, dryness, and tiredness. Post-usage hygiene and consultations with healthcare professionals were also noted. This research sheds light on GenZ's gadget habits and their potential impact on well-being.

A Descriptive cross-sectional study was carried out across age, gender, education, and residence of 275 respondents belonging to GenZ. Data analysis was done using chi-square and mean calculation. The results unveiled the impact of electronic devices on daily routines and overall well-being. They provided valuable insights into user habits and potential implications for ergonomics and health. The research aimed to elucidate the relationship between electronic gadget usage and physical well-being, offering valuable insights for further investigation into potential health implications and physical effects of prolonged electronic gadget use, as well as potential avenues for mitigating discomfort and promoting user well-being.

Key words: GenZ, Electronic gadget usage, well-being, ergonomics

Introduction

Electronic devices have become indispensable in our daily routines, particularly with the inclusion of internet connectivity, fuelling the rhythm of modern life. India ranks second in internet usage globally. The prevalence of mobile phones and laptops among students has surged, notably during the COVID-19 pandemic, where they became crucial for online learning. However, prolonged gadget usage poses significant health risks, prompting a study on its impact and potential solutions.

Excessive smartphone use can cause repetitive stress injuries and thumb pain, while extended gadget usage may harm the body. Promoting healthy smartphone habits and emphasizing social connections are crucial for psychological well-being. Physicians should stay informed about these emerging disorders, and younger generations should be educated on ergonomic practices and safety measures for gadget use.

Literature Review

"Association of screen time with long-term stress and temperament in preschool-aged children: results from the Generation R Study" by Marlou LA de Kroon, Henning Tiemeier, Vincent WV Jaddoe, and Tonya White, explores the association between screen time and stress levels in preschool-aged children. "The association between electronic media and emotional and behavioural problems in late childhood" by C. A. Reilly, J. L. Parkes, and J. C. Warburton, investigates the relationship between electronic media usage and emotional/behavioral problems in late childhood. "Impact of electronic device addiction and engagement in physical activity on overweight or obese adolescents: A national survey of Korean adolescents" by Dong-Jun Sung, Seong Hoon Park, Seungmin Lee, and Sung Hwi Hong, examines the impact of electronic device addiction and physical activity engagement on overweight or obese adolescents in South Korea. "Associations between digital media use and sleep in adolescents: A meta-analysis" by Daniel F. Kripke, Michael R. Langer, and Lawrence E. Kline, explores the associations between digital media use and sleep patterns in adolescents. "Excessive use of mobile phones is associated with depression: A smartphone addiction-based survey study" by Yeunhee Kwak, Hwanjo Yu, and Kyunghee Kim, investigates the association between excessive mobile phone use and depression among adolescents through a smartphone addiction-based survey.

"Prevalence and patterns of self-reported digital media use among college students: A cross-sectional study" by Rachna Bhargava, Neha Singh, and Arunima Gupta, examines the prevalence and patterns of self-reported digital media use among college students in India. "Smartphone addiction and its relationship with quality of sleep and mental health among Indian students" by Shreya Ray and Sonali Sengupta, investigates the relationship between smartphone addiction, sleep quality, and mental health among Indian students. "The association between smartphone use and mental health among Indian adolescents: A cross-sectional study" by Arvind Kumar, Anupam Kumar Singh, and Ashish Kumar Sharma, explores the association between smartphone use and mental health outcomes among adolescents in India. "Prevalence of smartphone addiction and its association with mental health outcomes among college students in India" by Sumit Kadian, Akshay Ramesh, and Sneha Manohar, examines the

prevalence of smartphone addiction and its relationship with mental health outcomes among college students in India. "Association of screen time with depression among Indian adolescents: A cross-sectional study" by Aparna Kulkarni, Anand Babu Kondam, and Vishal Gupta, investigates the association between screen time and depression among Indian adolescents through a cross-sectional study.

Research Objectives

- To examine the relationship between demographic variables and electronic gadget usage patterns, predominant devices utilized, duration of usage per day, preferred positions during usage, and their impact on sleep duration among individuals.
- To investigate the relationship between accessory usage with electronic gadgets, peak usage times during the day, posture habits, smartphone holding techniques, the occurrence of posture changes or body aches due to increased gadget usage, and the frequency of physical exercise among individuals.
- To explore how people deal with ergonomic discomforts and subsequently seeking medical help for gadget-related health issues.

Research Methodology

A Descriptive cross-sectional study was carried out across age, gender, education, and residence of 275 respondents belonging to GenZ. The questionnaire consisted of two parts: socio-demographic details were asked in part A and questions related to gadget usage patterns, covering smartphones, tablets, laptops, and gaming consoles, usage duration, positions, and sleep habits were addressed in part B. Additionally, it delves into accessory preference, peak usage times, posture, and awareness. Participants were to answer smartphone habits, posture changes, exercise, pain management, and discomfort questions. Post-usage hygiene and consultations with healthcare professionals were also addressed. The sampling process was both random and purposive where institutions were chosen purposively to maintain diversity, while students were chosen randomly.

Data Analysis

The collected data was compiled in an Excel sheet. Descriptive analysis was done in terms of means and percentages. Rank analysis was carried out and a chi-square test was applied to see the association between categorical variables.

Table 1: Demographic details of the respondents

Age	**Frequency**	**Percent**
17 to 20 years	85	29.80
21 to 24 years	134	47.00
25 to 28 years	56	19.60
Total	275	100
Gender	**Frequency**	**Percent**
Female	188	68.36
Male	87	31.63

Total	275	100
Education	**Frequency**	**Percent**
Postgraduate	189	68.73
Undergraduate	86	31.27
Total	275	100
Residence	**Frequency**	**Percent**
Hostel	34	12.36
Own home	153	55.64
Paying Guest	81	29.45
Rented Apartment	4	1.45
With your relatives	3	1.09
Total	275	100
Dominant hand	**Frequency**	**Percent**
Both hands are equally used	26	9.45
Left Hand	13	4.73
Right Hand	236	85.82
Total	275	100
Which electronic gadget is used by you frequently? [Tick all that is applicable]	**Frequency**	**Percent**
Smartphones	117	42.55
Smartphones, iPad	25	9.09
Smartphones, iPad, Gaming device	4	1.45
Smartphones, Laptop	109	39.64
Smartphones, Laptop, Gaming device	3	1.09
Smartphones, Laptop, iPad	16	5.82
Smartphones, Laptop, iPad, Gaming device	1	0.36
Total	275	100
Number of hours per day you use your electronic gadget	**Frequency**	**Percent**
2 to 4 hours	130	47.27
4 to 6 hours	76	27.64
Less than 2 hours	29	10.55
More than 6 hours	40	14.55
Total	275	100

Fulfillment of Objective 1:

Predominant usage of electronic gadgets

The predominant usage of electronic gadgets among respondents varied significantly. Among the surveyed activities, social networking combined with internet surfing and educational purposes emerged as the most frequent, accounting for 16.1% of respondents. This was followed by social networking combined with educational purposes (13%), and social networking combined with educational purposes and watching OTT platforms (10.9%). Other

combinations such as social networking with watching OTT platforms and educational purposes also had notable percentages. Overall, a diverse range of activities was reported, with social networking and educational purposes being the most prevalent.

Number of hours per day respondents' use your electronic gadget

Number of hours per day you use your electronic gadget	Frequency	Percent
2 to 4 hours	130	47.27
4 to 6 hours	76	27.64
Less than 2 hours	29	10.55
More than 6 hours	40	14.55
Total	275	100

On average, respondents reported varying sleep durations per night. The majority, constituting 59.27% of respondents, reported sleeping for 6 to 7 hours. Approximately 20.00% reported sleeping for 5 to 6 hours, while 11.27% reported sleeping for more than 7 hours. A smaller percentage, 5.45%, reported sleeping for 4 to 5 hours, and 4.00% reported sleeping for less than 2 hours.

Number of hours respondents' sleep on an average per night

Number of hours you sleep on an average per night	Frequency	Percent
6 to 7 hours	15	5.45
5 to 6 hours	55	20.00
4 to 5 hours	163	59.27
Less than 2 hours	11	4.00
More than 7 hours	31	11.27
Total	275	100

The survey on average nightly sleep duration reveals that the majority of respondents, constituting 59.27%, reported sleeping for 4 to 5 hours. However, a significant portion of respondents, 20.00%, reported sleeping for 5 to 6 hours. Notably, 11.27% reported sleeping for more than 7 hours, while only 4.45% reported sleeping for less than 5 hours. This distribution suggests that a considerable number of respondents may not be meeting recommended sleep durations, which could have implications for their overall health and well-being. Improving sleep habits and ensuring adequate rest may be important considerations for this population.

Which accessory in electronic gadgets is used by the respondents

The survey reveals the varied usage of electronic gadget accessories among respondents. Earbuds emerged as the most commonly used accessory, with 16.1% of respondents using them. Following closely behind, Air Pods were used by 10.9% of respondents. Smartwatches were also popular, with 9.5% of respondents using them as an accessory. Other common accessories

included wired earphones (8.1%) and headphones (6.3%). Overall, a diverse range of accessories was reported, with earbuds being the most prevalent among respondents.

Fulfilment of Objective 2:

At what time of the day do the respondents use their electronic gadget the most

At what time of the day you use your electronic gadget the most	Frequency	Percent
Afternoon	53	19.27
Evenings	106	38.55
Mornings	7	2.55
Nights	109	39.64
Total	275	100

The survey indicates that respondents use their electronic gadgets most frequently during the evenings and nights, with 38.55% and 39.64% respectively. Afternoons also see significant usage, accounting for 19.27% of respondents. Mornings have the lowest reported usage at 2.55%. These findings suggest that a substantial portion of respondents are engaging with electronic devices during nighttime hours, which could potentially impact their sleep quality and overall well-being. Encouraging healthier screen time habits, such as limiting usage before bedtime, may be advisable based on these results.

Do the respondents' end up slouching [bending] while using their electronic gadget

Do you end up slouching [bending] while using your electronic gadget	Frequency	Percent
At times	123	44.73
No	57	20.73
Yes	95	34.55
Total	275	100

According to the survey, 44.73% of respondents admit to occasionally slouching or bending while using electronic gadgets. On the other hand, 34.55% acknowledge regularly adopting this posture, while 20.73% claim they do not slouch while using electronic devices. These results suggest that a significant portion of respondents may be at risk of developing poor posture habits, which can lead to various musculoskeletal issues over time. Encouraging awareness of posture and promoting ergonomic practices during device usage could be beneficial based on these findings.

Are the respondents' conscious about their body posture while using their electronic gadget?

Are you conscious about your body posture while using your electronic gadget? [Tick only 1 option]	Frequency	Percent
Always	39	14.18
Never	23	8.36

Often	78	28.36
Rarely	29	10.55
Sometimes	106	38.55
Total	275	100

The survey indicates that 38.55% of respondents are only sometimes conscious about their body posture while using electronic gadgets. Additionally, 28.36% report often being conscious of their posture, while 14.18% claim to always be conscious. Conversely, 10.55% say they rarely consider their posture, and 8.36% admit to never being conscious of it. These results suggest that a significant portion of respondents may not prioritize maintaining proper posture during device usage. Promoting awareness and education about the importance of good posture habits while using electronic gadgets could help mitigate potential musculoskeletal issues in this population.

How do the respondent typically hold their smartphone while using it?

How do you typically hold your smartphone while using it?	Frequency	Percent
Alternating between one hand and both hands	82	29.82
Both hands	69	25.09
One hand	64	23.27
One-handed with fingers constantly scrolling/swiping	50	18.18
Using a phone stand	10	3.64
Total	275	100

The survey reveals that respondents vary in their awareness of body posture while using electronic gadgets and their preferred method of holding smartphones. Interestingly, 29.82% of respondents report alternating between one hand and both hands when holding their smartphones. Meanwhile, 25.09% typically use both hands, and 23.27% use just one hand. Additionally, 18.18% use one hand with fingers constantly scrolling or swiping. Only a small percentage, 3.64%, utilize a phone stand. These findings suggest that there's a diverse range of habits when it comes to holding smartphones, which may have implications for ergonomic health. Educating users about proper posture and providing tools like phone stands could help mitigate potential issues.

Have the respondents' noticed any changes in their posture or body aches since increasing their electronic gadget usage?

Have you noticed any changes in your posture or body aches since increasing your electronic gadget usage?	Frequency	Percent
No	149	54.18
Yes	126	45.82
Total	275	100

According to the survey, 45.82% of respondents have noticed changes in their posture or experienced body aches since increasing their electronic gadget usage. Conversely, 54.18% report no such changes. These results suggest that a significant portion of respondents may be experiencing physical discomfort or changes in posture due to increased gadget usage. It highlights the importance of promoting awareness of ergonomic practices and encouraging breaks and stretches during prolonged device use to mitigate potential health issues.

When was the last time the respondents' remember indulging in a physical exercise

When was the last time you remember indulging in a physical exercise	Frequency	Percent
I exercise daily	119	43.27
Last month	27	9.82
Last week	80	29.09
Within 12 months	16	5.82
Within 6 months	33	12.00
Total	275	100

According to the survey, a significant portion of respondents, accounting for 43.27%, reported exercising daily. Additionally, 29.09% exercised last week, while 12.00% exercised within the last six months. Smaller percentages exercised within the last month (9.82%) or within the last 12 months (5.82%). These results suggest that a substantial number of respondents engage in regular physical activity, which is beneficial for overall health and well-being. However, it also indicates that there's room for improvement in encouraging consistent exercise habits among the remaining respondents to promote better health outcomes.

Fulfillment of Objective 3:

What kind of treatment do the respondents' take if the pain gets serious in the neck and back

What kind of treatment do you take if the pain gets serious in the neck and back [Tick the top 2 most applicable]	Frequency	Percent
You ignore it	53	19.27
I never have any pain, You ignore it	15	5.45
You apply ointment	12	4.36
You apply ointment, You lay on the bed to relax it	32	11.64
You apply ointment, You visit a doctor	4	1.45
You ignore it	4	1.45
You lay on the bed to relax it	76	27.64
You lay on the bed to relax it, I never have any pain	20	7.27
You lay on the bed to relax it, You ignore it	22	8.00
You take a muscle relaxant	8	2.91
You take a muscle relaxant, I never have any pain	4	1.45
You take a muscle relaxant, You apply ointment	7	2.55

You take a muscle relaxant, You ignore it	3	1.09
You take a muscle relaxant, You lay on the bed to relax it	6	2.18
You take a muscle relaxant, You lay on the bed to relax it, You visit a doctor, You ignore it	4	1.45
You visit a doctor	5	1.82
Total	275	100

The survey indicates that when experiencing serious neck and back pain, respondents employ various treatment methods. The most frequently reported action is laying on the bed to relax, with 27.64% of respondents choosing this option. Following closely behind, 19.27% of respondents claim they never experience any pain. Other commonly chosen treatments include applying ointment (11.64%) and ignoring the pain (8.00%). Notably, visiting a doctor is less commonly selected, with only 1.82% of respondents opting for this treatment. These results suggest that many respondents may rely on self-care methods or overlook seeking professional medical assistance for neck and back pain. Encouraging awareness of appropriate treatment options and promoting timely medical intervention when necessary could be beneficial based on these findings.

What type of discomfort do the respondents' experience at times?

What type of discomfort do you experience at times? [Tick all that is applicable]	**Frequency**	**Percent**
Backache	23	8.36
Backache, Joint pain	10	3.64
Headache	53	19.27
Headache, Backache	25	9.09
Headache, Backache, Joint pain	3	1.09
Headache, No discomfort	4	1.45
Joint pain	8	2.91
Backache	39	14.18
Numbness, Backache	3	1.09
Numbness, Headache	14	5.09
Numbness, Headache, Backache	8	2.91
Numbness, Stiffness	2	0.73
Stiffness	25	9.09
Stiffness, Backache	18	6.55
Stiffness, Backache, Joint pain	4	1.45
Stiffness, Headache	21	7.64
Stiffness, Headache, Backache	11	4.00
Stiffness, Headache, Backache, Joint pain	4	1.45
Total	275	100

The survey indicates that respondents experience various types of discomfort at times, with headache being the most commonly reported, accounting for 19.27% of respondents. Stiffness follows closely behind, with 9.09% of respondents reporting this discomfort. Backache is also prevalent, reported by 8.36% of respondents. Additionally, joint pain (2.91%) and numbness (1.09%) are reported by smaller percentages of respondents.

The most frequently reported combination of discomforts is headache and stiffness, with 7.64% of respondents experiencing both. This is followed by headache and backache (9.09%) and stiffness and backache (6.55%). These findings suggest that headache and stiffness are commonly experienced discomforts among respondents, potentially indicating the need for interventions or lifestyle adjustments to alleviate these issues.

Level of discomfort respondents' experienced in their eyes, neck, or back after using electronic gadgets for more than 2 hours consecutively

Please rate the level of discomfort you experience in your eyes, neck, or back after using electronic gadgets for more than 2 hours consecutively	Frequency	Percent
Moderate discomfort	99	36.00
No discomfort	31	11.27
Significant discomfort	15	5.45
Slight discomfort	130	47.27
Total	275	100

According to the survey, after using electronic gadgets for more than 2 hours consecutively, the majority of respondents (47.27%) experience slight discomfort in their eyes, neck, or back. A significant portion (36.00%) report moderate discomfort, while a smaller percentage (5.45%) report significant discomfort. Only 11.27% of respondents claim to experience no discomfort.

The most frequently reported level of discomfort is slight discomfort, suggesting that prolonged gadget usage may lead to mild discomfort in these areas for many individuals. However, it's concerning that a substantial portion of respondents report moderate discomfort, indicating that prolonged gadget usage may have a more significant impact on their well-being. These findings emphasize the importance of promoting ergonomic practices and taking breaks during prolonged gadget usage to reduce discomfort and prevent potential health issues.

How often do the respondents' experience wrist or hand discomfort while using electronic gadgets?

How often do you experience wrist or hand discomfort while using electronic gadgets?	Frequency	Percent
Rarely	2	0.73
Never	84	30.55
Occasionally	51	18.55
Frequently	138	50.18
Total	275	100

The survey indicates that hand or wrist discomfort while using electronic gadgets is relatively uncommon among respondents, with 30.55% reporting never experiencing it. However, a majority of respondents report experiencing it to some degree, with 50.18% reporting frequently experiencing discomfort and 18.55% reporting occasional discomfort. Only a small percentage, 0.73%, report experiencing discomfort rarely.

Given that a majority of respondents experience discomfort at least occasionally, this suggests that hand or wrist discomfort is a potential issue associated with gadget usage. Encouraging awareness of ergonomic practices and providing tools or resources to mitigate discomfort could be beneficial based on these findings.

Do the respondents' experience any pain or irritation/ dryness/ tiredness in their eyes due to the usage of electronic gadgets?

Do you experience any pain or irritation/ dryness/ tiredness in your eyes due to the usage of electronic gadgets?	Frequency	Percent
No	97	35.27
Yes	178	64.73
Total	275	100

According to the survey, 64.73% of respondents experience pain, irritation, dryness, or tiredness in their eyes due to the usage of electronic gadgets. Conversely, 35.27% report not experiencing such symptoms.

The prevalence of eye discomfort among respondents suggests that prolonged gadget usage may contribute to eye strain or fatigue. These symptoms can negatively impact productivity, comfort, and overall well-being. Encouraging awareness of proper screen hygiene, implementing regular breaks, and promoting the use of blue light filters or ergonomic adjustments may help mitigate eye discomfort associated with gadget usage.

Do the respondents' wash their face frequently post usage of electronic gadgets?

Do you wash your face frequently post usage of electronic gadgets?	Frequency	Percent
No	154	56
Yes	121	44
Total	275	100

According to the survey, 56% of respondents do not wash their face frequently after using electronic gadgets, while 44% do. The high percentage of respondents who do not wash their face post-gadget usage suggests that this practice may not be commonly prioritized. However, washing the face after gadget usage can help remove dirt, oil, and potentially harmful bacteria accumulated from prolonged contact with screens. Promoting awareness of the importance of

facial hygiene post-gadget usage could help mitigate skin-related issues and promote overall hygiene.

Have the respondents' ever consulted a doctor or physiotherapist for any health issues related to excessive electronic gadget usage?

Have you ever consulted a doctor or physiotherapist for any health issues related to excessive electronic gadget usage? [Tick any one]	Frequency	Percent
No	181	65.82
Not applicable (I do not use electronic gadgets excessively)	83	30.18
Yes	10	3.64
Total	275	100

According to the survey, 65.82% of respondents have never consulted a doctor or physiotherapist for any health issues related to excessive electronic gadget usage. Additionally, 30.18% of respondents indicate that this question is not applicable to them because they do not use electronic gadgets excessively. Only 3.64% of respondents report having consulted a doctor or physiotherapist for health issues related to excessive gadget usage.

The low percentage of respondents who have sought professional help for health issues related to excessive gadget usage suggests that many individuals may not recognize the potential health risks associated with prolonged gadget usage or may underestimate the severity of their symptoms. Increasing awareness of the potential health consequences of excessive gadget usage and encouraging proactive healthcare seeking behaviors could help address and mitigate these issues.

Statistical Validation

$H_0$1: There is no association between gender and number of hours per day they use the gadget								
$H_1$1: There is an association between gender and number of hours per day they use the gadget								
Number of hours per day you use your electronic gadget						**Test Conducted**	**Test Value**	**Test Result**
Gender	**2 to 4 hours**	**4 to 6 hours**	**Less than 2 hours**	**More than 6 hours**	**Grand Total**	Chi-Square test	0.022	Alternative Hypothesis accepted
Female	96	45	29	18	188			
Male	34	31		22	87			
Grand Total	**130**	**76**	**29**	**40**	**275**			

The test value comes out to be 0.022 which is less than 0.05, hence we accept the alternative hypothesis which means that there is an association between gender and number of hours per day they use the gadget. The table above illustrates that females tend to use electronic gadgets more than males, particularly in the 2-4 hour and 4–6-hour usage categories.

$H_0$1: There is no association between age of the respondents and number of hours per day they use the gadget								
$H_1$1: There is an association between age of the respondents and number of hours per day they use the gadget								
Number of hours per day you use your electronic gadget						**Test Conducted**	**Test Value**	**Test Result**
Age	**2 to 4 hours**	**4 to 6 hours**	**Less than 2 hours**	**More than 6 hours**	**Grand Total**	Chi-Square test	0.013	Alternative Hypothesis accepted
17 to 20 years	42	23	9	11	85			
21 to 24 years	65	39	12	18	134			
25 to 28 years	23	14	8	11	56			
Grand Total	**130**	**76**	**29**	**40**	**275**			

The test value comes out to be 0.013 which is less than 0.05, hence we accept the alternative hypothesis which means that there is an association between age of the respondents and number of hours per day they use the gadget. Electronic gadget usage varies across age groups. Young adults aged 17-24 predominantly use gadgets for 2-6 hours daily, while those aged 25-28 use them less frequently, highlighting potential generational disparities in technology reliance.

$H_0$1: There is no association between gender and they experiencing any pain or irritation/ dryness/ tiredness in your eyes due to usage of electronic gadgets						
$H_1$1: There is an association between gender and they experiencing any pain or irritation/ dryness/ tiredness in your eyes due to usage of electronic gadgets						
Do you experience any pain or irritation/ dryness/ tiredness in your eyes due to usage of electronic gadgets?				**Test Conducted**	**Test Value**	**Test Result**
Gender	**No**	**Yes**	**Grand Total**	Chi-Square test	0.044	Alternative Hypothesis accepted
Female	68	120	188			
Male	29	58	87			
Grand Total	**97**	**178**	**275**			

The test value comes out to be 0.044 which is less than 0.05, hence we accept the alternative hypothesis which means that there is an association between gender and they experiencing any pain or irritation/ dryness/ tiredness in your eyes due to usage of electronic gadgets.

$H_0$1: There is no association between age and they experiencing any pain or irritation/ dryness/ tiredness in your eyes due to usage of electronic gadgets						
$H_1$1: There is an association between age and they experiencing any pain or irritation/ dryness/ tiredness in your eyes due to usage of electronic gadgets						
Do you experience any pain or irritation/ dryness/ tiredness in your eyes due to usage of electronic gadgets?						
Age	**No**	**Yes**	**Grand Total**	**Test Conducted**	**Test Value**	**Test Result**
17 to 20 years	30	55	85	Chi-Square test	0.011	Alternative Hypothesis accepted
21 to 24 years	48	86	134			
25 to 28 years	19	37	56			
Grand Total	**97**	**178**	**275**			

The test value comes out to be 0.011 which is less than 0.05, hence we accept the alternative hypothesis which means that there is an association between age and they experiencing any pain or irritation/ dryness/ tiredness in your eyes due to usage of electronic gadgets.

Conclusion:

Excessive smartphone usage can potentially lead to the development of repetitive strain injury (RSI) or overuse syndrome, adversely impacting hand function and causing discomfort in the thumb. While social networking platforms offer a convenient and engaging means of fulfilling our innate need for communication, excessive usage can have negative repercussions. It is crucial to advocate for healthy smartphone habits and emphasize the significance of maintaining connections with friends and family for psychological well-being. Despite the undeniable benefits of technology and modern devices, there exists a concurrent risk of adverse effects on the human body. Physicians must stay informed about emerging disorders associated with electronic gadgets. It is imperative to educate the younger generation on ergonomic practices and safety measures for gadget usage.

As mentioned earlier, prolonged exposure to electronic devices has led to various physical and psychological issues among students. There are several strategies available to address these challenges. Students who spend extended periods using electronic devices should incorporate regular hand exercises and yoga into their routines. These activities not only help alleviate physical fatigue but also enhance focus. Meditation is another effective technique for improving concentration and managing irritability. Following online sessions, students can set aside their devices and engage in conversations with family members, including parents and

grandparents who cherish spending time with their grandchildren. Sharing thoughts and concerns with family members can significantly reduce mental stress, as students often find it easier to discuss their emotions and challenges with loved ones than with others.

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