IMPACT OF DIGITAL TECHNOLOGY ON HEALTH AND SOCIAL WELL-BEING OF DIGITAL NATIVES

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Abstract

Purpose of the study: The purpose of this research article is to explore how engagement with digital tools affects the health and social well-being of digital natives. The study aims to look into the facts that how youth are getting benefits from this digitalization and how it is also increasing their exposure to the associated health risks.

Methodology: The qualitative research is conducted in three selected universities of Islamabad. Through a closed-ended questionnaire, demographic data about the activities of the youth on digital technology was collected. In-depth interviews, focus group discussions and participant observation were the core techniques used in the research.

Main Findings: Digital natives have improved awareness about health issues and actively educating the digital immigrants to access knowledge about treatments on various health issues at the local and global levels. The research shows that digital youth do realize that these technologies are leaving some bad effects on their health and well-being yet have not been able to get rid of them because their daily life activities are dependent on these tools.

Applications of this study: The study will be of great significance for the policymakers, who are handling the rising health issues due to digitalization impact in the society. It will be an addition to the knowledge in the disciplines of Public health, Anthropology, and Psychology besides the medical sector. Data will be used to address the health issues in the coming days by the medical professionals and social scientists.

Novelty/Originality of this study: This study has generated the information about the impact of digitalization on youth's health by using the emic approach. Digital technology has taken up the role of socialization agent for the digital natives. So it is very important to listen to the youth's voices rather than assuming what is best for them. This study is novel in the sense that it is reflecting youth and how they perceive the digital technology as a beneficial tool and how it risks their life in many ways.

Keywords: Digital Technology, Digital Natives, Health, Youth, Social Well-being.

INTRODUCTION

The Digital era marks the period when digital technology is part of the social and cultural environment and has penetrated every aspect of life whether it is interaction, celebration, education, or workplaces. Digital technology has both positive and negative impacts on the social interactions and cultural processes. Digital technology has escaped the boundaries of professional and formal practice that initially fostered youth development. Societies are struggling to cope with the imbalance of digital and physical life. The Digital Era can be seen as the stage of an evolutionary system in which knowledge creation is not only very high but also rapid (Shepherd, 2004). The omnipresence of digital media is seen growing very rapidly. Author of Hamlet's Blackberry, William Powers (Powers, 2011), describes the digital era has converted the world into a giant room, in which everyone is within the reach of their neighbors. Sense of space has led people to feel that local, national, and global space becomes obsolete (Harvey, 1990). The digital population around the world has been reported to cross 4.333 million (Statista, 2019). It is estimated that by 2021 -1/3 population (Wagner, 2018) of the world will be seen on digital media, which warrants an investigation of how these digital tools affect us mentally, physically, and socially.

Digital Technology and Digital Native

Digital native is the segments of the population who are most engaged and exposed to the digital technology. Terms such as the "digital generation," the "cyber kids," "digital natives," (Prensky, 2001) and the "app generation" (Davis, 2013) attempt to characterize the cohort of contemporary children, adolescents, and other young people as one born into and shaped by ubiquitous computing technologies (Lasica & Darknet, 2005), mobile screens, and social media (Papert, 1996). At the end of 2011, 45 percent of the world's over 2.3 billion Internet users were young people (ITU, 2019). The older the children, the more they use the Internet. These Digital natives "are seen as a force of digital transformation" (Tapscott, 1998). This pace of engagement has a wide range of negative physical and psychological consequences. Their social wellbeing is at risk for no

gatekeepers are present in their technology-driven activities. Young people are seen to be at risk for their social well-being, such as pornography and sexting.

A review of the literature points to privacy issues, weaker family ties that derive from their engagement with technology. In recent years, however, the debate has come to be dominated by advocates of the new "digital generation" who regard technology as a force of liberation for young people from elder interference and to create new, autonomous forms of communication and community.

Developments with mobile media have offered youth more opportunities for creativity and information. Findings suggest that digital technology does have risks for their excessive use for digital natives. e.g., engaging like an addiction, spreading fake news, loss of online ID, cyber-bullying, and cybercrimes, have received some attention (Valenza, 2017). Youth can spend hours creating arts, sharing music and posts with online communities. Highlighting the benefits that it enhances the confidence of the digital natives and knowledge is lying at their fingertips (Livingstone & Haddon, 2009). Researchers have reflected that youth and kids are seen as authorities on digital technologies (Rettie, 2002).

These new technologies have activated a dire requirement of empirical research. The Digital era has opened a range of research topics that how it is causing the digital divide in society, the new opportunities, impact on the health. Youth are facing challenges this digital environment has brought to the. This cultural change demands research on a vast array of topics such as the dangers of bullying, addiction, digital inequality, racism, and sexual predation and also covers less inflammatory areas such as identity formation and privacy (Boyd, 2014). Digitalization is rapping societies at a very fast pace and influencing the lives of youth and pre-teen generation in many ways (Livingstone & Bober, 2005). It is concerning that digital media and technology is a relatively new phenomenon and little has been examined for the benefits and harms of it to the health, given that "it affects almost all the youth" (Valenza, 2017). There has been relatively little research in terms of the Pakistani context, about Youth and how a digital era has changed the life around them. Current research is on youth who grew in the digital era. Youth is the population segment that is the future of any society. They hold the key to the continuation and source of change of any culture. Yet their perspective and concerns as a distinct social group are largely overlooked in Pakistan

Objectives of Research

The objectives of the research are stated as

- To explore the positive and negative influence of digital tools on the health of digital natives.

- To put forth a compelling light on how engagement in contemporary digital technology affects the psycho-social development of the youth.

This study enlightens the impact of engagement with digital technology on life of youth who are engaged with these gadgets on regular basis. By exploring the different ways in which youth make use of these devices, the researcher has tried to explore the impact of this technology on their health and social wellbeing.

METHODOLOGY

The qualitative research was conducted in three universities of Islamabad i.e., Quaid-e-Azam University (QAU), Bahria University Islamabad (BUI), and National University of Science and Technology (NUST). The unit of analysis for this study was youth studying in the universities of Islamabad. Since the study focuses on the digital use of youth, so keeping in view the demographics of youth in Pakistan, the researcher has defined youth from the ages of 18-26 years where they are free from institutional restrictions for digital device usage rather than encouraged to use these in their education.

Anthropology is a holistic discipline has multiple instruments to carry out research. Two sources are used throughout the explorative study i.e., primary source and secondary source. In-depth interviews, three focus group discussions were conducted during the research in which different students expressed their views about the societal perceptions about the use of digital technology by youth, its impact on their health, ones' opportunities, and associated risks. Participant observation is also a significant technique used in the research which enhances the reliability of the information. A structured questionnaire was used to collect statistical data for the use of digital technology by the youth; the type of devices, the number of hours spent, kind of activities. Most of the questions were closed-ended but a few are open-ended as well. Present research involved a hundred and twenty-eight students from three universities of Islamabad selected through stratified random sampling.

RESULTS AND DISCUSSION

The use of digital technology has become a habit among youth. Digital screen use is seen as a staple of the present lifestyle, whether browsing on computers, laptops, tablets, watching TV, and smartphones. Scientists and physicians have long been expressing concerns about the impact of technology on people's wellbeing. The names of the universities and percent of

respondents were shown in Figure 1. Out of all 33% of respondents from QAU, 45 percent were male and 55 percent females. In NUST out of all 31% respondents, 32 percent were male and 67 percent were females while in BUI out of all 36% respondents, 46 percent males and 54 percent were females.
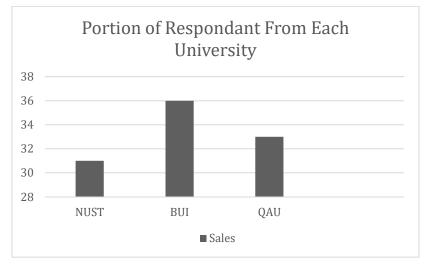

Figure 1: Portion of Respondents from each University

Source: Field data

These variations were because the number of questionnaires returned from each university was different.

Digital Technology in Daily Lives of Youth

Using digital technology and Web sites is among the most common activity of today's youth. Here we see the impact of this engagement particularly in terms of their physical health and social well-being. Portrays of the digital youth through their activities with digital gadgets often show the population of present-day youth as the anticipation for the future. Present-day youth "force for social Transformation" (Tapscott, 1998).

Time Spent and Preferred places for Digital Tools

Regarding the measurement of the time duration for the usage of digital technology; 20 percent of the respondents used their cell phones or any other electronic device just for less than 2 hours, 26.66 percent of the respondents used the devices for 2-5 hours and 29 percent of the respondents used the devices for more than 8 hours. The highest percent was of people who used the electronic devices for 5-8 hours i.e., 33.33percent.

Table 1: Time Spent on Digital Technology

For how much duration, do you use these electronic devices?	Frequency	Percent
Less than 2 hours	22	17%
2-5 hours	37	29%
5-8 hours	43	33.33%
More than 8 hours	26	20%

Source: Field Data

Youth have more opportunities to go online because their ecological setup offers them to connect at various places like bedrooms, home, market, on the way, etc. Data shows that places to approach digital technology are usually at home and at work i.e., university. Sixty-three percent want to approach alone not in company or at internet cafés. The ratios of online youth with an internet-connected computer in a house at a public location as dining or lounge area are twenty- three percent and do not vary greatly by gender among youth. Youth, through wireless internet access, are also more likely to have a computer located in a private space.

Kinds of Activities

Digital technology went increasingly important to youth; eighty-seven percent have their mobiles some are having two at a time while eleven percent borrow on a regular basis when coming to universities or out of the home. Mobile phone is the favorite pick of today's youth among the digital gadgets "*it's a world in the pocket*" in the words of a respondent. They use it

for text messaging, multimedia messaging (MMS), accessing the internet, downloading (games, ringtones, and music), emails, selfies, status updating on social media sites, shopping and navigation of places, sharing, as a learning aid (for spellings, meanings, conceptual clarity, university tasks). Research shows the internet, mobile phones, broadband connectivity, and e-shopping through applications like Darazz is on rising these days (Lenhart & Purcell, 2010).

Youth are not only online with their cell phone, but also through their laptops, tablets, I-pods, computers, and game consoles. Most laptops are used for learning tasks, doing assignments, study projects, use game consoles to go online and play globally. Youth are more regular users of instant messaging, as they are a tech-savvy generation (Lenhart et al., 2005). And they are now more likely to play games online, make purchases, get news, and seek health information. Figure 2 shows how these youths explore opportunities while being engaged with their digital devices. The results of the findings reveal that the topmost activity of digital natives is a social networking and eighty-three percent marked it their favorite activity. The next most tied-up activity of youth with their gadgets is instant messaging and enjoying videos and music. Looking for the news and weather is for which only forty-one percent of respondents are interested in and the-graph shows that this is the least preferred activity they do with their tools.
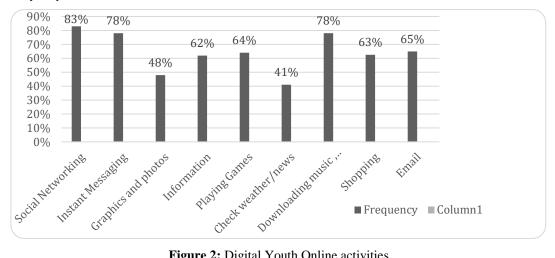

Figure 2: Digital Youth Online activities

Source: Field Data

It is important to establish respondents' preferences for web browsers and search engines because these applications enable the students to the online information. Google was the most preferred search engine, with a choice of ninety-one percent of respondents from the three universities; this result was clear and concise. Among the social networking websites, Facebook was the most popular among QAU and NUST students, Snapchat and Instagram are voted more popular among the Bahria University respondents use. Respondents use mostly Facebook for information sharing on general platforms like the public or family whereas friends prefer Instagram and snap chat forums. The Web sites containing videos, such as YouTube, are more popular in comparison to MSN containing news, gossips, and sending emails as the results of focus groups were gathered. This also depicts the global influence of the digital era on the everyday life of youth. Some of these websites provide opportunities to share scientific information within groups or blogs via Google and HEC digital libraries, or websites like YouTube which provide tutorials and guides in videos. The researcher found that participants had a positive attitude towards learning through internet use besides recreation and socializing drives, with all types of available resources.

Impact of Digital Devices on Youth

To analyze the impact of these interactive technologies on youth and their surrounding cultural environment, one needs to look at both sides of the digital tool usage by the youth which is part and parcel of this digital environment. The inclusion of youth's narrative is significant because they are an excessive user of digital technology than adults (Madden & Rainie, 2003).

Impact on Health

The results of the research create a fine picture regarding the importance of technology and its impacts on health both positively and negatively. Acknowledged by the respondents that it saved many but on the other hand, certain significant health issues are the outcome of this engagement with digital technology. Professor of Social Psychology Sonia Livingstone, while discussing the identification of an online risk stated that implied harm doesn't need to affect all users equally (Livingstone & Haddon, 2009).

Access to E-Health Care

Through E-health care units and online lectures, doctors and nurses can be reached via emails, conferences, and online videos. Few respondents mentioned that benefit of digital technology in the medical sector had saved many lives with the use of new diagnostic equipment such as medical imaging machines, MRI machines, CT and PET scanners, X-ray has improved the treatment of diseases, and of course the overall health of people. Almost everyone checks their blood pressure and sugar level at home using the easily available tools. The digital era has given the opportunity, patients can easily access doctors and the process of diagnosis and treatment has become a lot quicker and efficient. Well said by a respondent "*But first you have to be digitalized to gain the benefits.*"

It was noted that almost all of the respondents had sought medical help through digital technology either for themselves, friends or family. Digital technology has not only increased the contact of doctors and patients, some sites have the option to chat with doctors and nurses live to discuss their medical issues. Even they update you latest on health issues via mail if you sign in to their sights. One of the respondents, Fatima from NUST, told that she has signed to Harvard Medical School for health-related issues. They send her useful health information almost every day and also, she chats with doctors on this site. She has helped many of her near and dear ones on health issues for the awareness she gets from the site. There is a variety of topics of interest for these young people about health that they may want to find out such as stress reduction, sexually transmitted infections, and different signs of depression.

New Digital Devices for Heath Advice

They have various apps on their digital gadgets Huawei health, Google health, calorie counter, health calculator. These help to get them fit and healthy. One of the respondents said, "*I am conscious about my calorie burn. It tells me how much I walked and how much I should, etc. Because our lifestyle is not very active so we are in need to keep a check on our calories*".

Another said "*I wear Fitbit* (It is a digital device that is used as a fitness recording meter. It is available as a wristband usually. It records your steps, the distance you walked, sleep patterns, calories intake and burned, etc.)*, (showed the band on the wrist) it tells me my sleep patterns my daily activities, helps me to keep fit*". It was found out that there has been a major shift in routines and habits due to the incorporation of digital devices and appliances. Lifestyle changes appear to be shifting towards a diet living dominated by technology in various forms.

Poor Eyesight

Observation during the interaction with the sample revealed that the majority of the population had eyesight issues. They were either wearing glasses or blinking eyes while on their gadgets, but they did not realize that it was caused due to the overuse of their phones. The glowing light coming out of the screens caused their vision to be affected. Even if they did realize, they did not seem to care. They believe that they cannot avoid this exposure as "*education and social interaction ensure this exposure*". One of the well-informed respondents, Ahamd said as told by one of his cousins who was an eye specialist "*web link 10 times less than when we are not in front of a screen. This is dangerous because it can harm your eyes by causing dryness of tears and maybe red eyes, blurring of vision". "Causing pain in the shoulder or neck*". When the researcher asked that what they do to protect from such harm. A respondent said that he uses a screen shield on his computer and sits for thirty minutes on it then moves away to give rest to his eyes. But not always sometimes for study and assignments have to sit for long hours, which caused irritation in his eyes. Such complaints were recorded frequently by the respondents during focus group discussions.

Weight Gain

One of the dangerous risks of this era is obesity. Although Obesity is not the direct outcome of digital technology yet it is one of the prominent associated factors causing Obesity in youth. Obesity is the beginning of furthermore diseases such as from blood pressure to diabetes and even hormonal imbalances. This is happening because of no exercise and more usage of the technologies which are making the youth more and more comfortable (Wilksch et al., 2019).

One of the reasons pointed in the focus group discussion was 'eating disorder", leading to weight-related issues. Few respondents are of the view that they eat their food faster or not properly. Others forget to eat because they are so involved in what they are doing. Osama Khan often finds himself eating his meals later than usual. "Whenever I am on the Digital technology, I forget to eat at the right time. Often I don't notice my stomach grumbling. I eat four to five hours later than what is normal. Because I am so hungry when I remember to eat, I often overeat, and now I have gained weight because of bad eating habits."

Another respondent has also gained weight, but she is not eating more than she used to. She noticed that six months ago, she has started spending too much time with her digital tools either playing games or chatting. Because she is always sitting

down, and not moving around much, she has become overweight. So, another more significant reason is increased time on digital gadgets and less physical activity. A stagnant lifestyle of youth is resulting in obese youth and more fragile ones.

Lack of Sleep

Respondents, in general, mentioned that they tend to connect to the Digital technology at night after 10-11 o'clock, when most of their friends are also online, and chat until 05:00 A.M. Also, net speed and cheap net packages are available for that time mostly. Youth are facilitated with digital tools by their family and with these pocket computers (smartphones) and handy tablets they lay on their beds for long waked nights (Woods & Scott, 2016). Farzana a student of BS.I. T (bachelors studies information technology) told *"It's normal for us, youth to go asleep at 0400 in the morning. Students often don't come to morning classes for this reason*." However, lack of sleep is not the only reason for cutting classes. Eighty-five percent of the respondents sleep with their phones right next to them so that they don't miss anything. "*I always see people coming to university with red eye*s", reported a faculty member. Now lack of sleep along with affecting the physical health of a person also affects their mental health. It makes people jittery, reduces their capacity to concentrate, thinks deeper, and also contributes to them feeling lazy (Kırcaburun, 2019).

Few other health issues as mentioned by the respondents during their visits to health physicians include bone density is weaker among youth and bone fractures are higher, it's because they get less exposure to sunlight which is a source of vitamin "D". Yet another respondent said, "*Keeping that laptop on our lap can cause severe damage to your reproductive health too by its radiations, from causing irregular menstrual cycles to leading of loss fertility".*

Mental Health and Social well being

The Internet gives a platform to youth so they can share and express their feelings freely. Youth uses these forums to raise their voices regarding political and social issues. The Digital era connected the people and made them worldly generations. Early researches also emphasized the point that communities support those kids and adults to participate in the virtual environments, who are isolated in the real world due to their disabilities. Thus, helping these isolated individuals in gaining social well-being through the virtual world.

Improved Cognitive Skills

Many respondents were attracted to video games on different gadgets and spend most of their time on that. The research was told by these game lovers that these video games can be beneficial for a player in many cognitive functions (Zhao, 2008). A person can be good at problem-solving and following directions. These games also increase the coordination between the hand and the eyes, *"My uncle always encouraged us to play games because you will be learning skills and increasing focus on targets"* a respondent replied, that how it improve their hand and eye coordination, seen as significant motor skill and involve the cognitive capabilities of the individual. Adding to the benefits a respondent said "*it enhances our creativity, like in Farm Villas*", "*In shooting games, you learn to take aims, directions, and much more*". So the brain processes all the information with the coordination of the hands because all the activities are making use of keyboards and controllers.

Self Esteem Boosted

Research pointed out that youth have become so dependent on digital technology that their self-worth relies on it (Toma, 2013), they like being praised by their peers, it makes them feel good about themselves (Zheng, 2019). Zainab one of the respondents told: *"It's surprising to see how many people support you and encourage you via different apps, it lifts your mood, knowing there are people who understand you, know you, and still believe in you".* Usman said, "*Just a simple act of putting up a picture on social media can do wonders*". Most of the respondents responded that they either felt acknowledged or happy when their pictures get many likes (Anzak, 2018). They felt important when somebody shares their post, they feel that appreciative comments on their picture have a positive effect on their self-esteem. They are transforming their daily life into photographic life (Yau, 2019) Youth have started comparing "*think they are obligated to keep up to the labels that have been put on them, otherwise, it will affect their popularity among the 'cool kids*." Few of the respondents accepted that when their friends or someone from their friend list gets more likes, or their friends talk to other people on social media because they complimented them, such an event gave rise to a feeling of jealousy among many of our respondents.

Mental Health and Social wellbeing

Mental health refers to how we feel about ourselves and others, and how we fulfill the demands of life. Stressful situations can cause harm to mental. Continuously occupied with the networking around the world, decrease in their attention span is not acting (Musetti, 2020) as an obstacle just at that time but it also affects their daily life chores and responsibilities, because continuous distraction further gives rise to many more problems such as communication barrier, frustration because according to the respondents there are times that they don't remember a certain event that took place when they were engaged with their digital tools in playing games. A respondent in his interview admitted that "*Continuous use of technology*

serves as a distraction at times and decreases our attention spans. We get angry at others for not explaining things properly, but it could be that we youth, were not listening to the other person themselves as they were distracted at that time".

Source of Stress and Anxiety

"*Chronic smartphone stress is this type of stress is because of the excessive use of smartphones where you are so hooked to your mobile notifications that all the time, even more, when there are no notifications. You start to become stressed which in the future leads to depression*" Halima, one of the respondents mentioned. Constantly talking about the 'ideal profiles' of people caused a feeling of anxiety among a few of our respondents. The feeling of insecurity arises in them which makes them feel anxious during any social contact be it their friends, acquaintances, family, etc. They feel as if they should stay out of the limelight, they start to feel as if everybody around you thinks slowly of them. Social media may become addictive for some of the adult (Buglass, 2017).

Surprisingly there were three people who said that it didn't matter to them, they can go for like 2-3 days without their mobile phones and they feel rather relaxed and described the feeling as *'mental rest'.* One of the respondents said that he didn't have any phone, *"it leaves no privacy, so I don't use these gadgets and have no media accounts as well*". Another significant reason given was that he didn't want to be notified by the family of his whereabouts and he wanted to enjoy the freedom.

Cyberbullying Causing Depression

Cyberspace has become a new place for bullying of youth who are weak or afraid to commit bullying in traditional ways. Most bullies are anonymous to the victims (Vandebosch & Van Cleemput, 2009). Respondents said that actions are repeated to intentionally cause harm to the victim. Mostly the bully has an edge or expert on digital skills than the victim. Involvement in the cyberbullying is seen as a constant stressor (Hellfeldt, 2020). Respondents pointed different forms of bullying behavior, involves online mean behavior, manipulation of online content, deleting other people from social groups, posting pointed statuses. During the focus group discussion while asking about the personal experiences of bullying the respondent told that "*Leaks of SMSs, also, puts victims in a very difficult mental state which makes them paranoid, induces stress, and prone them to depression*." Another added, *"it is very easy for people to say anything in this virtual world without disclosing their real identities*". As a coping strategies if the victims share their experience with a trustworthy like a family, (Machmutow, 2012) they managed to come out of their stress and anxiety.

CONCLUSION

The principle idea of this article is to highlight the situation of youth growing in the digital era; how they are approaching the opportunities and facing the associated challenges named as risks. It was important to know their practices and their point of view about the culture's speculations for "digital natives". The findings of the research have enriched the knowledge on the process of digitalization of societies and the behavioral changes due to engagements with digital gadgets. It will be a good source of information for policymakers in various sectors like social well-being, health and also help to portray the clear picture of digital natives to society. As adoption of any technology may have various consequences depending on its use at an individual as well as at the group level. So, these online environments have a strong impact on their offline social life and interactions. The anxieties and myths prevailing in the societies about youth and their digital lives must include the way they explore opportunities and risks involved with its usage. Some of them responded explicitly saying that these technologies can have severe negative effects, but they must use them anyways regardless of the consequences because they have become dependent on them and they have no other choice but to use them. Research also shows it hampers the social wellbeing of youth dragging them into that negative outcome such as low self-esteem, increased usage of tobacco and alcohol, psychological issues, and meager physical health.

The digital youth do realize that these technologies are leaving some bad effects on them bad postures, weight gain, poor sight. They may be having stress issues due to phone addiction, but they blame it on some other reason. A balance between the two is very necessary. In a suggestively manner, it may seem cool to these youth now but it will restrict their movement later on which is a big issue. The need of the time beseech advancement with technology but humans although complex beings cannot evolve at the speed technology is advancing thus to retain ideal health whether physical or social, a level of moderation must be achieved.

LIMITATIONS OF THE STUDY

The study has a serious limitation of time and resources to generate the data for a large sample. So, the findings are limited in the scope of generalization to a larger universe. During the data collection, respondents were hesitant to share the online contents causing them emotional stress for privacy protection. Ethical concerns of the research ensured the protection and privacy of the respondents. So, in those areas data shows limitations but findings were supplicated with the observations and participation in group discussions.

SUGGESTIONS FOR THE FUTURE STUDIES

Adaptation to the digital society is the need of time. Future studies could be aimed to look into the factors that help to build resilience for this adaptation. Another significant area of future research will be the matter of digital harassment that is strongly influencing the well-being of youth. Future studies should also take into account the ideas of digital immigrants how they see youth growing in the digital era have been exposed to health risks. Such studies will help in generating information to adapt to the changing society in a better manner.

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AUTHORS' CONTRIBUTIONS

The main idea and objectives were proposed by author[1] and author[2]. Field work and data collection were done by author[1]. The theoretical frame was collaborated by author[1] and author[2]. Author [3] assisted in moderating and analyzing focus group discussions. Author[3] proofread the document and prepared it as per the requirements of the journal. Results were discussed by all the authors and the final manuscript was contributed.

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