Journal of Development and Social Sciences
www.jdss.org.pk

RESEARCH PAPER

Digital Technologies' (ICTs) Impact on University Students in Pakistan during Covid -19: Exploring the Variables of Social Isolation, Anxiety, Interaction and Addiction

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PAPER INFO	ABSTRACT
	This study is design to understand the socio-psychological issues because of the consumption of ICTs of university students during the first phase of Covid-19 (March to August 2020).A structural questionnaire keeping in view of the variables of social Isolation, anxiety, Interaction and addiction is designed to acquire the data from students of two public sector universities i.e. University of Sargodha and Bahauddin Zakariya University Multan. The data is collected from 640 respondents through various whatsapp groups on online Google form. Findings of the study reveal that significant students spent their time on ICTs for prompt communication with family, peer and colleagues and real life friends. However, findings reflect significant adverse impacts of ICTs on youth in the form of depression, isolation and stress. The excessive use of ICTs is causing change in the social interaction pattern. However, findings also reflect that the impact is varied when there is change in demographics i.e. gender, education and location of the Institution. This study contributes in the literature of media dependency theory.

Introduction

Technology is valuable factor in emerging global life, the rapid advent of ICTs (Information and Communication Technologies) assured the use of technology in all form of communication including learning modes. The ICTs gives more secure and reliable communication and learning to its users comparing to the conventional means of communication. Information and learning tools that were scarcely available with the conventional platforms i.e. Instant communication via messaging (IM), short message service (SMS), multimedia message service (MMS), gaming consoles, high resolution cameras for audio visual filming, planners, shopping, food, multiple applications, mappings, market related tools, virtual conference and meeting tools and other give an

opportunity to the consumer of ICTs to ensure his/her connectivity via wifi or other means. The conventional schooling is replaced with these pedagogies (ICTs) that is surpassing all conventional modes. The smart phones, tabs and all other gadgets are available that are working on human cognitive level. However, the global reach of technology is expanding through these smart phones.

Townsend (2002)argued that the mobile phone users in year 1999 were around 500 million globally, it reached to six billion by the end of 2011. However, with the advent of smart phones and smart devices, statistics indicate that in year 2014 the 38 million hybrid and smart phone, 264 million tablets, 278 million computers and 1.8 billion were purchased around the world. However, it is predicted that in the year 2015, the global shipment of mobile phones will be over 2.5 billion (Gartner, 2014).Currently in Pakistan, there are 104 million broadband subscribers and 102 million 3G and 4 G subscribers (PTA, 2021). The usage of ICTs is varied from all age groups, children, not for education but for professional development, growth and automation. Yusuf et al. (2013) asserts that Pakistan is the country that has (60%) population consisting on youth and significant population is 30 years old.   The excessive usage of Information and Communication technologies (ICTs) trigger anxiety, effects on academics and professional life and create isolation among its consumers (Thomée et al, 2010).

The consumption patterns of youth are based; on learning where they use wide range of tools of information, learning, opinion, knowledge sharing and web oriented learning, communication where they share ideas, experiences and personal observation through social media means, Interaction with peers and friends, innovation by creation of content and entertainment by gaming, listening music, watching movies and online literature etc. However, ICTs are the youth culture and digital media literacy is imperative in all higher education institution so that it may mitigate the adverse effects of ICTs on youth.

This study impact of digital mobile devices at students of higher education institutions studies varies impacts on the students of two major higher education institutions of Pakistan i.e. University of Sargodha and Bahauddin Zakariya University of Pakistan. The findings of this study contribute in the literature of social psychology and the ICTs.

Face to Face Conversations to Online Chatting

Latest information technologies have opened new and innovative ways for individuals to explore various modes of social interaction. The fast adoption of information gadgets has affected the overall pattern of interaction among family members (Rudi et al., 2015). These new innovations like smart phones, laptops etc have given more opportunities to individuals to be entertained and explore the world with no boundaries but on the other hand these innovations have isolated individuals by enhancing their dependency on these latest technologies and they are psychologically captivated and engrossed in these gadgets which causes reduction in their social interaction with their family and friends.

The importance of these gadgets and tools cannot be denied in entertainment and information perspective but face to face communication and strong interaction is significant in developing affiliation with the loved ones. When direct interaction is replaced by technological tools it eventually causes multiple effects on social fabric of society. Technology cannot replace human emotions and expressions and emotions cannot be transmitted through technological gadgets. So the importance of face to face interaction can never be denied. The astonishing increase in the usage of latest information technological tools for various purposes is alarming, as it is isolating individuals and they are spending more of their time while using these gadgets. No doubt these technologically advanced tools are creating ease for people to gratify and fulfill many of their needs with this new media but this overuse of smart phones and laptops are becoming more and more serious causing social isolation among people (Hart &Frejd, 2013). And it is changing the pattern of people's life and the social fabric is changing dramatically due to the overuse of these latest technologies. Social activities are more confined, communication patterns are changed, mode of entertainment is transformed and the overall face to face interactions are minimized, thus leading society towards social isolation.

Selected Content to Unexpected Content

Scholars (Yuan, & Wu, 2020; Antonucci et al., 2017) have observed that a particular kind of behavior is dominating where people are more reluctant in socializing face to face and are more comfortable in interaction through latest technological gadgets.

Another undeniable reality is that the existence of undesirable messages and content is unavoidable. People are also exposed to such messages or consents which are not even desired or asked but such contents or pictures when appear on screen influence and affected by this undesirable material (Wolak, et.al, 2003).

Many empirical studies revealed that unexpected or selected contents regarding sexuality may cause serious harm physically and psychologically to people. Any kind of cyber based violence or other such content may inculcate particular kind of behavior among youth thus leading violent behavior among youth. Maximum number of people use internet and technology for acquiring information, research, entertainment and socialization yet there is a segment of society that use these gadgets for reprehensible purposes.(McGuire & Dowling, 2013)

It is becoming more apparent that various countries are raising voice for such usage of latest technological tools and trying to devise a mechanism through which such menace could be controlled (Crosson-Tower, 2014; Gross et al. 2002).

Affiliation to Addiction

There is agreement among scholars that information and communication technologies significantly influence youth by numerous ways. The use of latest technologies has gone through tremendous growth for the last few years. Where at one point this remarkable progress and advancement in ICTs has paved the way for further development in various fields, it has also developed a kind of behavioral addiction and have affected psychological health.(Panova, 2020)

There are certain studies denying the existence of addictive behavior regarding ICTs. (Castellana et al., 2007; Carbonell et al. 2012). At the same time several studies have supported the existence of device addiction (De-Sola Gutiérrez et al., 2016; Kwon et al., 2013; Roberts, et al., 2014; Roberts et al, 2015; Samaha and Hawi, 2016). It is apparent that almost all the segments of society belonging to all socio demographic sectors are addicted to this technology to some or to much extent (Alter, 2017).This technological addiction is because of the overuse of social media. Latest studies in Canada indicate that for youth the use of smart phones has become integral part of their life. Even young people usually and commonly misuse this technological devices by watching inappropriate contents.

Material and Methods

This study is intended to evaluate the socio-psychological impacts of Information and communication technologies (ICTs) on the university students of Pakistan. For this purpose, a quantitative study with structured questionnaire is designed to explore the variables of isolation, social Interaction, anxiety and addiction because of ICTs. The population of two public sector universities i.e. University of Sargodha and Bahauddin Zakriya University Multan is selected because these two universities are located far from capital of Pakistan and capital of Punjab Lahore. The data is collected from 640 respondents on the online Google form that sent on various universities' whatsapp groups during the first phase of lock down during the March to August 2020. The reliability of the instrument is alpha 0.767

Findings and Discussion

This study how digital technologies (information and communication technologies) are impacting university students during Covid-19 is where social isolation, interaction with friends and family through the means of ICTs, anxiety and addiction of ICTs is explored. The respondents of this study are 640 respondents from two public sector university of Punjab, Pakistan. Where equal number of respondents taken from each institution. However, all the respondents varying from 18 to 30 years and their education are undergraduate (58%), post graduate (28.6%) and M. Phil and Ph. D are (13.4%). While exploring the variable of social isolation during the Covid-19 phase, respondents were asked about how they feel while they are staying at home, are they feel aggressive, get annoyed, feel bothered and or they use ICTs their family activity or functions. The significant respondents(39.7%) reveal that the excessive use of ICTs in the phase of Covid incite them to use ICTs in the family activity time while (34.8%) respond that if they were asked to stop using ICTs, it annoying them. However, there are significant respondents that (14%) that feel bothered if some one involves them in any activity while other (11.5%) feel aggressive (See Fig. 1).
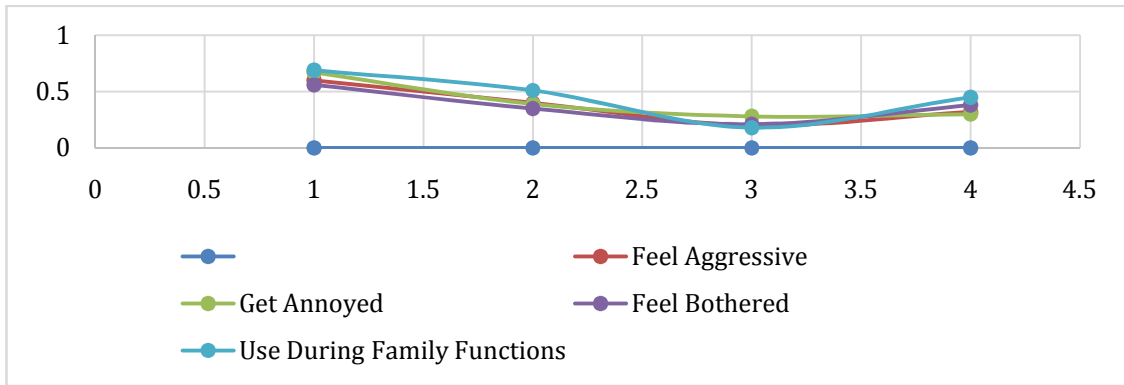
Fig.1. Interaction while using ICTs

This reveals that ICTs creates and impact on the youth that they engaged them extensively with ICTs that they do not care their family presence rather they feel bothered, annoyed and aggressive in if they asked to get involved in the physical presence of respondent. However, Thomée et al. (2010) findings that excessive use of ICTs creates isolation among its consumers where user creates their own virtual space where they want to live in. Hart & Frejd, (2013) asserts that these technological tools provide opportunity for people to gratify their needs of information, entertainment by smartphone, laptop, desktops and other technologies. However, over use of technology, changes the patterns of society and lead to toward social isolation. The excessive use of ICTs is causing addiction among youth. In the absence of ICTs the youth find themselves aggressive, bothered and uneasy. However, they find themselves easy and comfortable in the presence of ICTs. Figure 2 reveal that male students (40%) are significantly find themselves addictive than that of female students (20%). However the education also brings an impact on the addiction of ICTs. The higher education reflects the lower chances of addiction (see Fig. 2). The undergraduate students (32%) reflect the addiction of ICTs while post graduate (18%) and the students of M. Phil and Ph. D (10%). However the location also has significant impact on the addiction of ICTs.
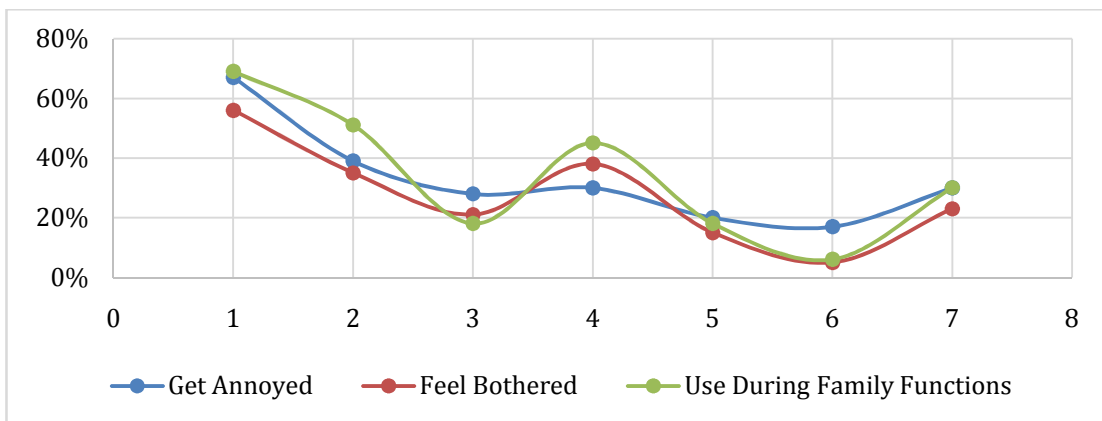

Fig. 2.ICTs causing addiction

The results here are in line with Panova (2020) that finds that ICTs has influence on youth by several ways, conversely, he finds that behavioral addiction of ICTs is observed that cause psychological effect. However, Castellana et al. (2007) and Carbonell et al.(2012) are denying the addiction because the Industrial countries are developed enough that they developed certain mechanism in school and educational institutions where they can dilute the addictive effects through ICTs literacy. Whereas, results also support the Alter's (2017) socio demographics factor in the ICTs addiction.
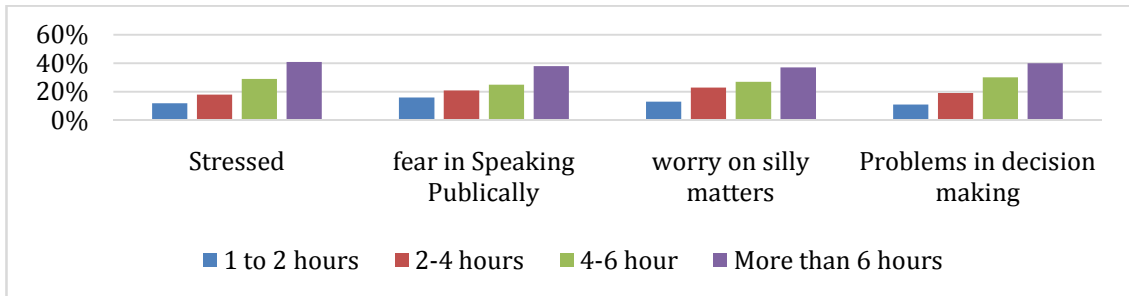

Fig.3Effect of ICTs on stress and anxiety

The results of study reveal that ICTs has great impact on the youth by causing anxiety. Figure 3 reveal that the anxiety and stress among youth are associated with the number of hours an individual spend on ICTs and it has significant impact on the respondents' all significant factor i.e. anxiety, fear and delay in decision process. The respondents which spend two hours a day on ICTs they a have relative less significant level of stress and anxiety (mean = 13%). However, the respondents which spend 2 to 4 hours a day on ICTs, on average they have (20.5%) on the factors that are stressed, fear in communicating publically, worry on small issues and they find problems in small issues. The respondents which spend time with ICTs more 4 to 6 hours a day are significantly prone to anxiety and stress (mean = 27.7%). The highly significant effect observe on the respondent which spend more than 6 hours a day on ICTs, they find themselves much prone to anxiety and stress (39%). The findings of the results are in line with Thomée et al. (2010) that argue that more respondents spend time on ICTs, it significantly influenced through stress and anxiety.
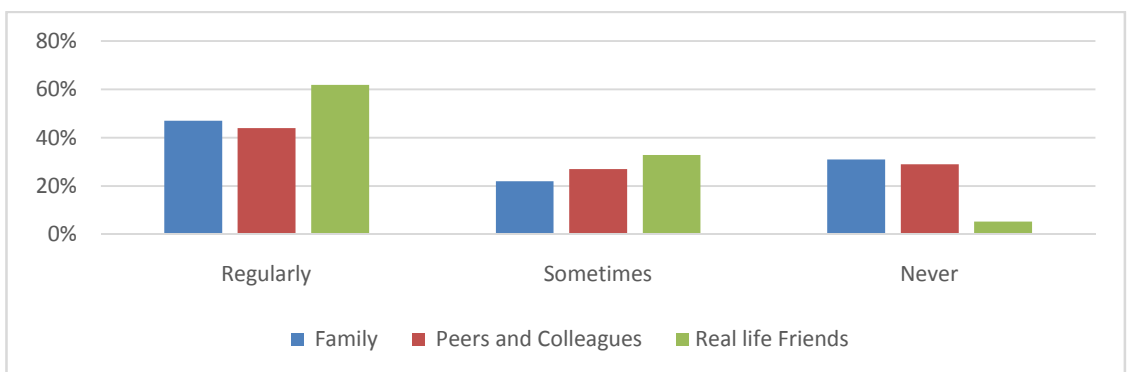

Fig.4Communicating with family, Colleagues, peers and real life friends

The results of Figure 4 reflect that communication of respondents with family members, peer and colleagues, real lifefriends is greatly influenced. The significant respondents regulary communicating their family (47%), peers (44%) and real life friend (61.80%). The respondents sometimes communicate to their family (22%), Colleagues and peers (27%) and with real friends (32.9%). However, there is also significant respondent that never communicate their family (31%), colleagues (29%) and real life friend (5.30%) when they are using ICTs. These results are in lined with West et al. (2009) which argue that in the computer mediated communication there is fuzziness between family members (particularly parents) and friends. Usually, university students reluctant to create computer mediated communication with family because the tool operated through ICTs creates an opportunity to explore their new relations through virtual space.
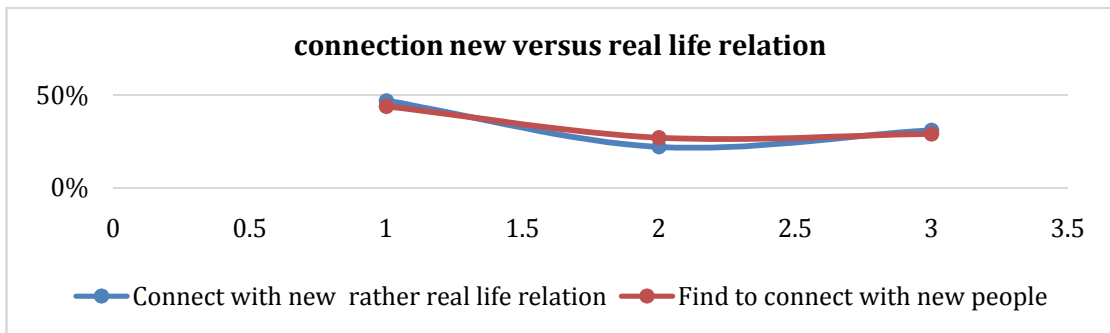

Fig 5.ICTs, new versus real life relations

Figure 5 reflects that how respondents seek for new online relations and comparing real life relations. The significant respondent (average mean = 34.5%) prefer to connect with new relation rather existing relation among university students. Whereas, (31%) respondent prefer not to establish relation with online contact. Significant respondents (average mean = 35.5%) among university students prefer to connect new relation whereas (29%) respondents do not make new connection through the means of social media and ICTs. However, gender wise analysis may reveal that significant number of female respondents prefer to use ICTs to connect with their relations as compare to the male respondents. Contrary, significant male university students (average mean = 40%)with their existing connections (See Fig. 6).
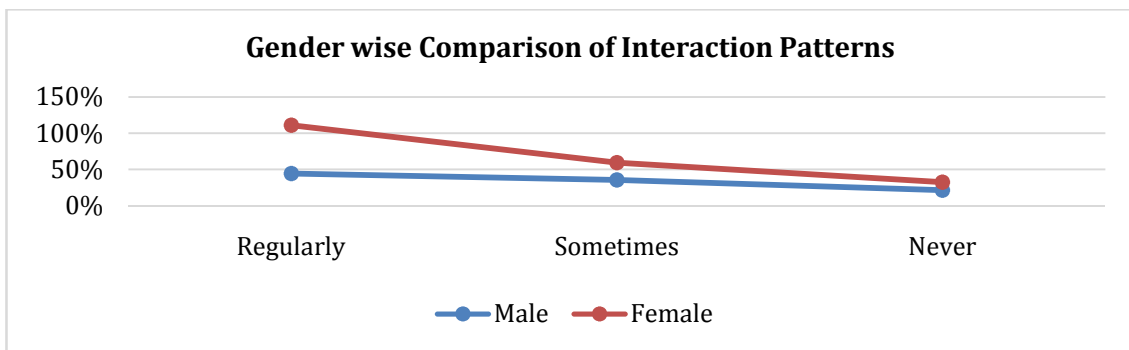

Fig 6. Gender wise comparison of social Interaction of youth

Results show that male respondents' connection with family is significantly influenced (average mean = 45.5%) whereas this observed (average mean = 39.5%) among female students of university. However, (21%) female respondents are agreed that ICTs did not influence their relationship with family as compare of male students of universities (11%).
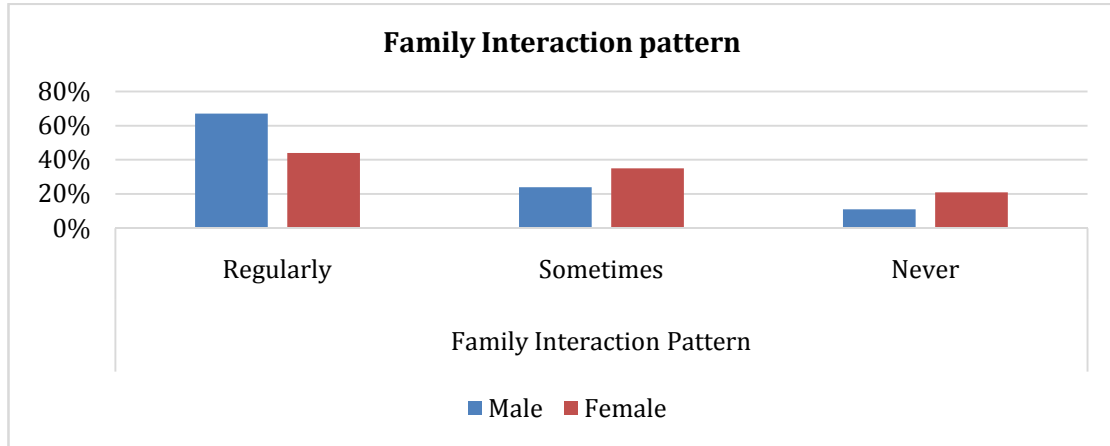

Fig7. Gender of respondents and impact on family bond

On variables of social isolations, anxiety, interaction with family, peer and colleagues, real life friends and addiction of ICTs is correlated with the age, education , gender and institution. The results reflect that there is significant correlation among said variables with education and institution. The more an individual has education there is less probability (12%) of his social isolation, anxiety and influence of family and real life relations and addiction because of addiction. However, this slightly more significant (19%) when it applies to the academic institution (see Table1).

Table 1
Correlation of variables with age, education, gender and Institution

	Variables		Age	Education	Gender	Institution
Social Isolation, Anxiety, Interaction and Addiction	Age	Correlation		.129*	.017	.197*
		Significance (2-tailed)		.021	.740	.000
	Education	Correlation			.174	.035
		Significance (2-tailed)		.	.001	.526
	Gender	Correlation				-.046
		Significance (2-tailed)			.	.407
	Institution	Correlation				
		Significance (2-tailed)				.

*p > .05

The above results are in line with Köttl et al. (2021) that asserts that the consumption of ICTs and mobile technologies in the first and 2nd phase of Covid-19 are extensive and their effects on German audience are varying. However, the influence of

ICTs and related technologies are comprehensive in the areas of education but it greatly influence the social behavior of individuals. Moreover, Hwa and Peck (2020) confirm that mobile communication technologies are impacting in the form of deficit of social skills and imparting anxiety among Malaysian youth. They further argued that results confirm the relationship of ICTs and media dependency theory.

Conclusion

The dependency on ICTs for communication, education, business and others is greatly increased that depict from rising number of broadband subscribers (104 million) and increasing number of 3G and 4G users (102 million) in Pakistan. However, in the various waves of Covid-19 in which country went through complete and later partial lockdown situation where mobilization was absent from social arena. Information and communication technologies (ICTs) were the only education and social life line in the pandemic situation. The study reflects that undergraduate are more relying on ICTs than the other university students. It reflects their higher involvement with ICTs and they significantly detached themselves from physical world around them. The findings also reflect that university students find themselves addictive and this significance is relatively low in female students. While exploring the stress and anxiety among university students, it is observed that time spending ICTs also contribute in the stress and anxiety. The more one consume time with ICTs, the more he/she is prone to stress and anxiety. Information and communication technologies have been the significant source of communication with family, friends and colleagues. However, it is significant with real life friends, family and then peer and colleagues. Moreover, the university students prefer more to develop a online connection rather communicating with the real life relations. However, male students' interaction significantly influenced than that of of female students. In the comparison of relationship of social isolation, anxiety, interaction and addiction of ICTs with age, gender, education and location of the institution there is significant relationship of education and location of the Institution with the said variables. This study contributes in the literature of media dependency theory that states that when audience relying on media for varying purposes, it significantly influence them, one of them is socio-psychological impacts of media.

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