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DIGITAL TECHNOLOGY IMPACT ON ADOLESCENCE EMOTIONS AND COGNITION

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DIGITAL TECHNOLOGY IMPACT ON ADOLESCENCE

EMOTIONS AND COGNITION

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A Project

Presented to the

Faculty of

California State University,

San Bernardino

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of the Requirements for the Degree

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by

Juliana Casillas

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ABSTRACT

This research proposal aims to identify evidence-based research that explores the impact of technology on adolescents' social emotional regulation (SER). This study will explore the components associated with social emotional learning and regulation such as self-esteem, social relationships, and decision-making and the way they are impacted by technology usage in adolescence. This study will also identify the implications of its finding at the micro, macro, and mezzo level of social work and provide treatment suggestions regarding the impact of technology on each component of SER.

SER is defined as skills that are utilized to control one's emotions, thoughts, and physiological sensations to respond to certain situations in the appropriate manner. The development of such skills may be greatly impacted during the adolescent phase of development.

TABLE OF CONTENTS

CHAPTER ONE:

PROBLEM FORMULATION

Background Information

Adolescents of today were born into a world with advanced and ever-changing digital technology. Digital technology encompasses the use of large amounts of information to be made easily accessible through devices, software systems, storage, and data management. Adolescents utilize technology more frequently than other generations in the past. In comparison to their adult counterparts, adolescents are able to navigate technology faster and utilize it in more ways than adults do (Shifflet,2013). Adolescents utilize technology for a variety of reasons in their everyday life. The roles in which young adults utilize technology vary from education, recreation, and engagement through social media platforms (Haddock et al., 2022). Adolescents unlike any other generation have the ability to rapidly adjust to the changing technological advancements in the marketplace (Shifflet,2013). It is estimated that young adults spent approximately 8 and half hours daily using digital media platforms, which does not time spent utilizing devices for educational or school purposes (Haddock et al., 2022).

Negative Impact of Technology

Although technology may have positive impacts there is a raise in concern of the negative impacts that are caused by excessive internet and digital media usage. From the perspective of teachers, parents, and older adults there is a

raise in concern of displacement in over utilization of time using digital devices as opposed to engaging in physical activity or other productive activities (Shifflet, 2013). Consistent with the displacement hypothesis physical inactivity and weight gain in adolescence has been found to be associated with time spent using digital platforms for entertainment purposes (Ohannessian, 2009). The use of technology in early adulthood has been linked to poor mental and physical health outcomes, negative sleep patterns, metabolic issues, and stress (Mehtala et al., 2022). Alongside the stress, adolescents excessive screen exposure may cause physical strains and headaches when using devices for long periods of time (Mehtala et al., 2022) Digital technology advancements also consider the potential of excessive screen time to impede human development (Haddock et al., 2022). The immersion of the digital world in the lives of adolescents may also have the potential to alter brain development, social emotional regulation skills, and cognition (Haddock et al., 2022)

Micro and Macro Consequences

The consequences of social media are linked to accessibility to what teenagers can do and see online. Policies that have been put into place at the macro level to protect children from utilizing platforms that may be harmful or sexually explicit were the 1998 Child Online Protection Act and 1996 Communication Decency Act (IFS, n.d.). The overall experience of adolescent's digital technology use is influenced by whom and what they engage with and the seen and unseen features that exist within media platforms (APA, n.d.).

At the micro level it is important for parents, teachers, and adults to promote healthy digital relationships and social support. Another micro consequence of the developing digital world is monitoring appropriateness in engagement in certain platforms relative to the youths' developmental capabilities. Reducing the risk of psychological harm is also an important consideration in social media and digital media usage. Providing education and monitoring usage may be a preventive tool in maladaptive behavior which may potentially promote maladaptive behaviors in youth who are vulnerable to self-harming, harming other, and eating disorders (APA, n.d.).

The emergence of technology has caused adjustment in current theoretical paradigms. The new development of a techno-subsystem has observed how adolescents' digital usage impacts the youths developing brain and further explores their interaction with others at the micro and macrosystems (Haddock et al., 2022)

<u>Findings Contribution and Research Question</u>

The impact digital technology has on adolescents is an emerging topic that has limited research explaining the mental health, physical health risks, impact on social emotional regulation and relationships, and impact on a young adult's cognitive development. Limited research has been done on how technology may impact social work practices at the micro and macro level. Technology and media are commonly utilized resources for educational and leisure purposes however, social workers have not adjusted to the demands and

impacts technology may potentially have on young adults' mental health and cognitive development. Adjustments to treatment at the micro level need further exploration due to the potential risk and benefits of technology on adolescents' current receptiveness to treatment for their mental and cognitive well-being which may be related to overstimulation and consumption of media. The research done in this paper will contribute to social work by exploring and identifying interventions that may be useful at the micro, macro, and mezzo level to support adolescents that may be impacted by demands of media and technology. This paper will further contribute to the limited research on the impact on social emotional regulation in adolescents due to overconsumption of technology and screen time at school, home, and during leisure time. The findings of this research will be beneficial for educators, adults, and parents to better understand the potential risk and benefits of technology on emotional and cognitive development as well and provide resources to better support adolescents who have been significantly impacted by the digital world. The research in this paper consists of two questions. The first question is: How does digital technology impact social emotional regulation amongst adolescents? The second question that follows is: How does digital technology impact cognitive development in adolescents?

CHAPTER TWO:

LITERATURE REVIEW

Introduction

For the purpose of this research, chapter two will explore relevant

literature to address the impact of technology on adolescents' social emotional

regulation skills. This chapter will discuss the different components of social

emotional regulation (SER) which includes self-awareness and self-esteem,

abilities to create social relationships, and decision-making. This research will

further discuss the impact of technology on the different components of SER

amongst the adolescent population. This chapter will also aim to identify

evidence-based interventions such as cognitive behavioral therapy and positive

psychology. Theoretical perspectives that will be guiding this research include

cognitive behavior theory and social baseline theory.

Problematic Technological Use and Its Impact

Social Emotional Regulation is the basis for psychosocial well-being,

mental health, and emotional well-being. The ability to regulate one's emotions is

a key component in reducing risk to psychological, physical, and emotional

stress. According to Yidiliz (2017) 75% of diagnosis within the DSM-5 which fall

under the category of psycho-pathology disorders are greatly associated with the

ability for one to regulate their emotions. Adolescents who experience higher

levels of smartphone use may experience difficulties in regulating emotions which may lead to increased risk of aggression towards others, difficulties in developing and maintaining friendships, anxiety in social situations, introversion, and problems with interpersonal relationships (Yidiliz, 2017). Frequent internet use may impact adolescents' thoughts feeling and physiological response which may be correlated with distress, feelings of hopelessness, and increased violence (Yidiliz, 2017).

Self-Awareness and Self-Esteem

Social media plays a vital role in shifting the hobbies, interest, and activities that adolescents choose to engage in (Hur & Gupta, 2013). As a result, adolescents may experience difficulties in developing self-awareness and identity due to the demands and constant comparison between themselves and their peers. Self-awareness and identity formation is heavily impacted by an adolescent's relationship within the micro system, mesosystem, and exosystem (Hur & Gupta, 2013). According to the objectification theory people who witness objectification and value of a person's body through media are more prone to question the value of their own bodily image which may impact their self-identity (Bryant, 2017). Additionally, adolescents are presented with role confusion and hardships in developing an identity due to their exposure to multiple resources which may narrow their ability to develop their own opinions and feelings regarding themselves, their families, and events occurring around them. Due to

difficulties in developing self-awareness and the addictive nature of media and technology adolescents are also more prone to making poor decisions due to the lack of control of emotions (Hur & Gupta, 2013).

Adolescents' constant exposure to technology and media platforms can intensify issues related to self-perception and self-esteem. (Bryant, 2017). Cyber ostracism is defined as the feeling that one is being ignored over the internet and social media platforms. According to Maslow's hierarchy of needs, cyber ostracism may impact adolescents' sense of belonging and have a negative toll on adolescents' self-esteem and perception (Bryant, 2017). Constant utilization of technology and media may also make adolescents more susceptible to being bullied by peers, experience peer pressure, and have thoughts of not wanting to live due to being continually ostracized and disengaged from their emotions and socializing with others (Bryant, 2017).

Social Relationships

Social relationships are a necessity for a person's feeling of belonging. The development of intimate relationships between peers, family members, and significant others is associated with higher self-esteem, reduced risk of anxiety and depression, and competence within the social environment (Hur & Gupta, 2013). Media platforms play a vital role in the development of relationships amongst adolescents. Adolescents who are willing to self-disclose are more prone to reporting being satisfied with the development of relationships

7

developed online. Although adolescents may report satisfaction related to online relationships, the development of relationships through social media platforms may be correlated with a distorted perception of intimacy and safety (Hur & Gupta, 2013). Difficulties with creating real life social relationships may cause adolescents to engage in superficial low quality online interactions. Due to frequent engagement in online platforms adolescents may lack knowledge of social cues and social constructs which are a major component in developing stable, secure, and committed relationships (Hur & Gupta, 2013).

Parents who are actively involved in providing assistance and support in how to navigate relationship development creates a foundation for adolescents to develop positive social relationships. However, due to parents' lack of understanding of the digital world and the shift in relationship development due to online platforms, parents are unfamiliar with how to resolve conflicts that are related to online interactions (Hur & Gupta, 2013). An interview conducted regarding attachment, reported that the more time that is spent utilizing social media platforms is correlated with difficulties in attachment issues amongst parent and child (Hur & Gupta, 2013). Strained relationships between adolescents and their parents are associated with cognitive dissonance, higher risk of impairment in social learning, difficulties maintain friendships and less time engaging with cultural norms (Hur & Gupta, 2013).

Decision-Making

During adolescence, there is a shift in cognitive abilities in which teenagers are able to reason, utilize creativity, and effectively socialize due to maturation of the brain and its functioning. However, during adolescence many individuals engage in risky behavior, seek quick sensation, and make poor decisions (Crone & Dahl, 2012). Regions in the brain that are associated with processing the intentions of others and the lack of maturation of the prefrontal cortex may increase the likelihood in adolescents engaging in poor decision-making. Due to the lack of development of the prefrontal cortex region of the brain, adolescents are more prone to engaging in substance use, partake in risky behaviors, and making impulsive irrational decisions (Crone & Dahl, 2012). Engaging in substance use and risky behaviors are linked with lower levels of emotional regulations and increased usage of technological devices (Crone & Dahl, 2012).

In a study conducted on 42 participants in which 25 of the participants experienced problematic smartphone use, it was concluded that risk-level significantly impacted decision-making of the participants with a smartphone addiction (Liu et al.,2023). Due to smartphone addicted participants displaying high risk behavior it was indicated those participants demonstrated weaker decision making. In addition, higher smartphone use was correlated with increased risk-taking (Liu et al., 2023).

Smartphone Use and Addiction

Adolescents' utilization of technology is associated with difficulty self-regulating and responding by negatively coping with daily issues such as feelings of guilt, sadness, depression, or anxiety (Yidiliz,2017). Increased utilization of the internet increases the likelihood for adolescents to develop an addiction to technological devices. Increased screen time is linked with higher risks for addiction to the internet. Addiction to smartphones and technological devices amongst adolescents increases symptoms such as distress, anger outburst, and hopelessness (Yidiliz,2017). The utilization of cellphones and technological devices amongst the adolescent population may also later lead to negative outcomes such as psychological and behavioral addictions. According to a study conducted by Hormes and Timko (2014), lower levels of emotional regulation experienced by adolescents who spend more time utilizing technological devices are more susceptible to developing a substance and nonsubstance related addiction later on in life. According to Yildiliz (2017) adolescents are more likely to develop addiction to their technological devices which may cause similar symptoms as seen by those who use substances such as shaking, isolation, and depression.

<div align="center">Interventions to Increase Social Emotional Regulation</div>

<u>Interventions</u>

 Support for adolescents struggling with social emotional regulation due to problematic internet use is limited in its availability within the school and home

setting. Implementation of programs to treat teenagers experiencing excessive technology use may assist in the betterment of SER amongst the adolescent population (Pedrini et al.,2022). Adolescents may significantly benefit from treatment such as cognitive behavioral therapy and positive psychology due to the effectiveness reducing internet use through utilizing individualized treatment plans.

<u>Cognitive Behavioral Therapy</u>

There are various programs in place to implement SER in the classroom for toddlers and younger school aged children. However, there are limited interventions in place to address SER amongst adolescent children. Multimodal CBT can be effective in assisting with SER amongst adolescents who engage in the utilization of technological devices on a regular basis. A multimodal CBT intervention was implemented for eight sessions with 6 to 10 students with internet addiction. This intervention included CBT for adolescents ages thirteen to seventeen. Parents, and teachers reported effectiveness regarding shifts in cognitive strategies utilized, ability to organize and plan, and improved judgement amongst the youth in the study (Pedrini et al.,2022). Additionally, adolescents in the study reported improvement after receiving treatment for depression and anxiety. The utilization of CBT to assess for high-risk technological usage amongst adolescents demonstrated decreased utilization of internet (Pedrini et al, 2022).

Positive Psychology

Positive psychology is an intervention utilized to improve reframe and improve thoughts of self and others, improve an individual's well-being, and decrease negative emotions (Khazaei et al., 2017). Additionally, the utilization of positive psychology interventions can greatly improve social relationships, reduce symptoms of anxiety and depression, and improve decision making. The utilization of positive psychology interventions may be linked to improving social emotional skills amongst adolescents due to positive psychology addressing components such as self-esteem, social relationships, and decision making (Khazaei et al., 2017). Problematic internet usage amongst adolescents causes outcomes which include difficulties controlling behavior, difficulties in communication, and psychological dysfunctions. Positive psychology plays is an appropriate intervention in addressing the increase of SER amongst adolescents due to positive psychology increasing the quality of social relationships by increasing face-to-face interactions (Khazaei et al., 2017). In a study conducted on forty-eight internet addicted university students, randomly assigned to an experiment or control group, aimed to evaluate the psychological interventions that were effective in addressing internet addiction. To address problematic usage of technology, ten sessions utilizing positive psychology were used to increase social relationships, improve communication of emotions, and decrease internet usage. As a result, positive psychology was significant in addressing social adjustment and quality of relationships. Additionally, the utilization of

12

positive psychology was able to address the reduction of interpersonal conflicts due to increasing the value of social relationships (Khazaei et al., 2017).

Limitations of Existing Studies

As mentioned above, there is plenty of research conducted on the negative impacts of technology on the social emotional regulation skills amongst adolescents. However, there are also benefits to adolescents' SER skills that may derive from the excessive utilization of technology. This proposed study will fill in this gap in the literature review by exploring the positive outcomes associated with technological usage.

Theoretical Perspectives on Digital Technology

One theory that may be beneficial to conceptualize the impact of digital technology usage on adolescents is cognitive behavioral theory. Cognitive Behavioral Theory is the belief that one's thoughts, behaviors, and emotions coincide and impact outcomes (Thomilson & Thomilson, 2017). Cognitive Behavioral Theory was pioneered by Dr. Aaron T Beck and was built on the foundation that talk therapy was important tool for recognizing negative thoughts and revealing the subconscious mind to encourage coping through negative thoughts and behaviors (Thomilson & Thomilson, 2017). Cognitive Behavioral Therapy may be useful in assisting in observing and understanding the way in which digital exposure may impact adolescents' social emotional regulation skills

and cognition and may further support them in improving responsiveness to emotions and better assist them in the utilization of coping mechanisms that may be a result of overstimulation.

Another theory that may be useful in conceptualizing the impact of digital technology on young adults is social baseline theory. Social Baseline Theory is the linkage between an individual's social relationships and how it interacts with their health and ability to attach oneself to others (Coan & Sbarra, 2015). Social Baseline Line Theory was founded by Jim Cohen and suggest that individuals benefit cognitively and emotionally when they are able to share the load of their problems by interacting with others and having well-developed relationships (Coan & Sbarra, 2015). Through creating well-developed and close relationships individuals are able to generate a baseline for stress, reduce health risk, increase attachment bonds, and improve basic cognitive processes to perceived threat. This is a beneficial theory to conceptualize the impact of technology on adolescents because it incorporates cognitive and emotional processes and identifies a baseline through physiological responses (Coan & Sbarra, 2015). Furthermore, this may be utilized to identify the influence of technology use on young adults' ability to interact and connect to their environment to regulate their emotions as well as cognitively process perceived risk such as stress related to technology usage. The theories primary focus on relationship proximity and its connection to cognitive process and physiological baseline may be further useful in identifying how online relationships improve or diminish an individual's ability to

maintain physiological homeostasis, regulate emotions, and identify threat through neural and cognitive processes.

Summary

This study will explore available evidenced based interventions to address social emotional regulation amongst adolescents. The utilization of increasing the literature and understanding of the impact of digital technology on the development of adolescents will assist in providing information regarding strategies that may be utilized in the home as well as in school setting to better support with the impact of technology on the well-being of youth. Studies have demonstrated that technology has a significant impact on adolescents' ability to regulate emotions as well as develop meaningful social relationships.

CHAPTER THREE:

METHODS

Introduction

The study will utilize a scoping review due its appropriateness in relation to the research topic. Despite the fact that there are numerous methodologies for research analysis, a scoping review was found to be the most appropriate due to its focus on providing coherence on the research problem through expansion of the knowledge currently available on the topic, its identification of gaps within the literature, and improvement of the study's overall methodology. This research study will utilize a scoping literature review to identify gaps in the literature and analyze and expand the current knowledge available on the impact of technology on adolescents' social emotional regulation skills. Additionally, the research will identify and discuss the impact at the micro, macro, and mezzo levels of social work. This chapter will explore the study design, sampling techniques, data collected, and instruments utilized, procedures, protective factors for human subjects, methods of data collection, and summary.

Study Design

The aim of this study is to identify gaps in the existing literature regarding the impact of technology on adolescents' social emotional

regulation skills and explore interventions that may be utilized. In addition, the study will explore implications at the micro, macro, and mezzo levels of social work practice. A scoping review is utilized in this exploratory research project to search, examine, and integrate existing literature and its implications on the impact of technology on adolescents' social emotional regulation skills and interventions and theories that may be utilized at the micro level to assist adolescents' development. Prior research will be screened to assess for pre-defined inclusion and exclusion criteria to ensure the minimization of potential biases.

Utilizing a scoping review provides an advantage of not requiring the participation of human subjects to collect data. As a result, numerous studies can be used to explore significant and effective interventions for adolescents whose social emotional skills are impacted by excessive utilization of technology. This improves the study's methodology by broadening the knowledge base available.

The purpose of utilizing a scoping review is to collect and combine various literature to provide analysis due to not having methodological restrictions. To examine recent literature on the impact of technology on adolescents' ability to regulate and explore interventions, search limitations were used through the utilization of research between the years of 2000 and 2023. Additionally, available studies were limited due to lack of access to

articles and journals while utilizing databases such as: Google Scholar,

PyschINFO, One Search, EBSCOhost, and PubMed.

Although utilizing a scoping review provides advantages, there are

also drawbacks associated. One of the disadvantages of a scoping review is

the limited research accessible provided by databases previously listed. For

example, there is minimal research currently available on the targeted

population of this study. Another limitation is the absence of a synthesized

result related to the specific research question proposed.

Sampling

This study will utilize peer reviewed scholarly articles that provide

empirical evidence on the impact of technology on adolescent's ability to

utilize social emotional regulation skills. The inclusion criteria includes

scholarly and peer-reviewed studies conducted in the United States on

adolescents between the years 2000 to 2023 and freely accessible through

databases including Google Scholar, PyschINFO, One Search, EBSCOhost,

and PubMed. The research sample must consist of adolescents ages ten

through nineteen and must address one or all aspects of technology's impact

on SER including self-awareness and self-esteem, social relationships, and

decision-making. In addition, to address the impact of technology on SER at

the micro, macro, and mezzo level the search criteria must include evidence-

based interventions for adolescents ages ten through nineteen who are

impacted by excessive internet and/or technology use. The exclusion criteria

for the research were articles published prior to the year 2000, non-peer

reviewed articles, articles that were not published in the United States,

articles that were published in a foreign language, and research that did not

include the impact of technology on adolescents on one or more aspects of

SER. Articles that were not freely accessible through databases including

Google Scholar, PyschINFO, One Search, EBSCOhost and PubMed were

also excluded.

Data Collection and Instruments

A literature review of secondary data will be conducted through the

utilization of peer-reviewed scholarly articles. The data in this study will be

collected from empirical and peer-reviewed articles by utilizing exclusion and

inclusion key terms. The data collected for this study was obtained through

the California State University, San Bernardino databases including

PyschINFO, One Search, EBSCOhost and PubMed, Google Scholar, and

PubMed. The literature that was obtained for this study will be charted in a

descriptive context diagram to include necessary information such as:

author(s), publication year, purpose, target population and size, methods,

interventions utilized, outcomes, and findings that relate to the research

question. There will be no identification of independent or dependent

variables and this research will not collect qualitative data through interviews,

questionnaires, or surveys. The search that was conducted electronically provided results for inclusion keywords.

After searching the databases for relevant research that pertain to this study, a screening will be conducted to determine relevance. The screening will consist of identifying whether the articles meet the inclusion and exclusion criteria to assess eligibility. Articles that do not meet the criteria will not be utilized in the scoping review. As a result of the study being a scoping review, special instruments for data collection will not be necessary.

Procedures

An internet search utilizing specific keywords to find peer-reviewed articles and journals was used to collect data for this study. The keywords included: adolescents, technology, social emotional regulation, regulation, intervention, evidence-based intervention. The California State University, San Bernardino database, Google Scholar, and PubMed will be utilized to search for the keywords mentioned. The inclusion criteria for this study are as follows: articles that were peer-reviewed, freely accessible through the previously listed databases, published between the years of 2000 to 2023, articles published in English, studies conducted on adolescents, and must address one or all aspects of technology's impact on SER including self-awareness and self-esteem, social relationships, and decision-making.

The information that will be collected utilizing a scoping review will be the impacts of technology on different components of SER amongst the adolescent population. Additionally, the research collected will explore effective interventions to address technologies impact on SER. The data will also examine the impact at the micro, macro, and mezzo levels of social work practice.

Protection of Human Subjects

Due to data collection through the utilization of previously conducted literature, this study does not require the participation of human subjects. However, this study will ensure to follow proper procedures and ethics outlined by the Institutional Review Board (IRB) through completion of Collaborative Institutional Review Board Training Initiative (CITI) and IRB review.

Data Analysis

Extensive data collection will be conducted to obtain relevant research that pertains to the study. Research will then be selected based on inclusion and exclusion criteria. Data will be collected on participants' characteristics (e.g., number of participants, adolescents ages ten through nineteen, severity rating), intervention characteristics (e.g., treatment type, sessions utilized, length of treatment, and frequency of sessions), and study characteristics (e.g. aim of study, publication year, design of study, and

location). Additionally, the findings of the research and its relevance will be visually presented in tables to discuss the research design, methodology, intervention, and effectiveness. The aim of this scoping review is to identify the impact of technology on adolescents SER skills and identify interventions at the micro, macro, and mezzo levels of social work practice.

Summary

In summary, the aim of this study is to explore the impact of technology on adolescents' social emotional regulation skills, identify significant gaps in the literature, and analyze and discuss concepts outlined in pre-existing literature. Furthermore, the study will identify and explain implications at the micro, macro and mezzo levels of social work practice. This chapter provided an overview of the process used for the scoping literature review. A scoping literature review was utilized due to it not requiring participation of human subjects since data will be collected through the use of pre-existing research. As a result, using this research method creates an advantage in providing analysis from numerous studies to obtain relevant data to address the research question.

APPENDIX A

DATA EXTRACTION SPREADHSHEET

DIGITAL TECHNOLOGY IMPACT ON ADOLESCENCE EMOTIONS AND COGNITION
DATA EXTRACTION SPREADSHEET
A. Bibliographical Data Author Year of Publication Content Related to SER
B. Population Age Gender Intellectual Disabilities Geographics Exclusionary Criteria Inclusionary Criteria
C. Methodology Research Method Utilized Interventions Utilized
D. Results Overall research findings
E. Key Findings Research findings that relate to the proposed research question

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