Preliminary Criteria For Ict in Assisting Students With Psychological Problems

Scientific review paper

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Abstract

A rising quantity of research designates that adolescents' and students' psychological problems pose a risk to them and society. Research indicates that students frequently utilize Information and Communications Technology (ICT) services to get informed about mental health, and to resolve their psychological problems. A critical and reflective analysis of the scientific literature, and a critical examination and reflective synthesis, theories, and practice on the use of ICTs and digital media for the treatment of psychological problems have been employed in this study. The study identifies gaps in research theory and practice regarding the use of ICTs and digital services for the prevention and treatment of mental health issues among adolescents and the student population. The article proposes ten preliminary criteria for ICT use in the treatment of psychological problems as a direction for further research.

There is a lack of research that explores the appropriate ICT and digital media in assisting students with their psychological problems, namely, social anxiety (Kalebic, 2006; Klein, 2001), depression (e.g., Christensen et al., 2002; Juretic, 2008), psychosis (Sandsten, et al., 2018), sexual violence (e.g., Miller et al., 2018), as well as a lack of a proper pedagogical influence in childhood to prevent psychological disorders (Hibbard et al., 2012). ICT and digital media are used for treatments of traumatic memories, resulting from social pathological behavior, e.g., sexual abuse. ICT finds its application in the psychosocial treatment of psychological developmental difficulties such as psychosis (e.g., Pajevic et al., 2020).

Researchers specify (e.g., Kauer et al., 2014; Paterson et al., 2019) that students often make use of e-psychology, and other digital services to resolve their psychological problems, however, there are no systematic examinations of suitable ICT tools for a specific disorder. Effective use of ICTs is a crucial need among young people for diagnosis, assessment, therapy, or counseling services (e.g., Kenwright et al., 2004; Drigas et al., 2011). Evidence exists about the benefits of using social media (Bekalu et al., 2019), CBT (D'Anci et al., 2019), and e-psychology for treating depression and anxiety. Also, research highlights telepsychiatry for the treatment

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of psychotic symptoms (Mucic, 2007). However, the effective application of these therapeutical modes for different mental conditions and appropriate criteria have not been systematically examined.

Thus, a general lack of awareness of appropriate ICT tools may influence students' loss of trust, and reluctance to join digital media and to approach ICT online professional services. Moreover, a stigma widely prevalent in the world sends a message to a young person that society is helpless to rectify it adequately which endangers the recovery process. Students have not been trained to find ICT solutions, with the assistance of supervised professionals who assure anonymity, and allowance for freedom of expression with no feeling of shame and embarrassment.

Based on the above discussion, the main purpose of the article is to explore diverse ICT digital services and to draw preliminary criteria to assist students with their psychological problems. This has led to specific research objectives, namely:
(1) to critically analyse current theory and practice on the use of ICT in concurring students' psychological problems, namely, depression, sexual violence, psychotic symptoms, and anxiety
(2) to derive preliminary criteria that will motivate educators to take collaborative steps to respond to stigma and constant treat to psychological well-being at HE institutions. The emerging question set in this paper is:
RQ: What are the preliminary criteria for ICT and digital services use in supporting students' psychological well-being in higher educational contexts?

This article presents a review literature-based analysis of the multiple ICT and digital treatments discussed in the following sections.

Research Methods

This research article is founded on critical analysis and reflective synthesis of contemporary literature on the benefits of effective ICT digital services as well as their weaknesses for the rectification of students' psychological problems. Critical self-reflection and the creative inspiration of researchers and their judgments resulted in the derivation of a comprehensive analysis of different forms of digital services concerning

the benefits of ICT digital services as well as their weaknesses as novel research outputs. Critical reflection reproduces researchers' illuminations and evaluations of their perspectives concerning the opinions of other researchers (Hickson, 2016; Bordens & Abbott, 2008; Cresswell, 2009; Harwell, 2011). Thus, this traditional literature review has been supplemented by critical reflection (Snyder, 2019; Allan, et al., 2003; Denzin & Lincoln, 2000; Henry, 2009).

The Framework For Ict Use in Assisting Students With Psychological Problems

The Period of Adolescence Is a Critical Stage for Mental Health

The period of adolescence is a time in which a young man is "sought", listened to, searched for the right direction, and his whole journey can have both a positive and a negative outcome (Kohlberg, 1984). All changes that occur in adolescents, whether it is physical and sexual maturation, are related to schooling, or social contacts which is a great source of stress for them. Because of all of the above, it is very important to notice certain changes in their behavior and emotional state in time, and also try to help them early in the best possible way (Berger, 2019; Kessler, 2015).

However, the most curricula at HE aims to transfer subject knowledge, to equip students with professional skills using pedagogical methods, information sharing, and exchange, with little exploration of students' psychological well-being and training for awareness of mental health (Adorno, 1998; Tyng et al., 2017).

What Is a Potential Cause of a Variety of Mental Problems Among Students and Adolescents in General?

Social anxiety is a potential cause of a multiplicity of mental problems among students Social anxiety is a state or feeling/experience of vague trepidation, worry, anxiety, and tension that can be of varying intensity and duration (Klein, 2001; Gilbody et al., 2015). Researcher, Kalebic (2006) states that school-related stress most often includes conflicts with friends, peers, teachers, and parents, school pressure, fear of poor grades, fear of failure, and the like

(Spirit et al., 1991 according to Kalebic, 2006; Klein, 2001).

Considering age, younger students state that the most common source of stress for them is insufficient and unfair grades, and conflict with colleagues, teachers, and parents, while for older students the most common source of stress is getting an insufficient grade (Deng et al., 2022; Kalebic, 2006) and psychological distress in the form of somatic symptoms (Liu et al., 2020). In addition, adolescents who exhibit test anxiety during the exam have greater activation and excitement of the autonomic nervous system (Spielberger & Vagg, 1995 according to Juretic 2008). Mental problems arise, e.g., psychosis (Merry et al., 2012), sexual violence (Miller et al., 2018), and psychotic symptoms (Maier, 1999).

The Role of Pedagogy in Detecting and Preventing Psychological Problems Among Adolescents

Psychological problems often have a reason behind them, and they are discovered too late because of the lack of pedagogues or psychologists. Currently, in HEIs, there is just one expert for all those psychological problems that students and adolescents generally encounter. It is important to draw attention to the lack of personnel, but also the available time for training of professional associates – pedagogues, since they are not competent to provide adequate assistance to students who today are increasingly coping with various psychological difficulties. So, this is also an indicator of how much HE must be involved and aware at all levels of cooperation for assisting students with psychological problems.

Justifications for Ict Use in Psychoeducation and Awareness Training in Higher Education

Researchers e.g., Radetic-Paic and Ruzic-Baf (2012) agree that ICT and digital media present effective means of treating psychological problems stating that, "young people are...the most vulnerable ...when it comes to the potential effect of computer use...while "their vulnerability stems from the fact that they go through a process of socialization and at their earliest age are subject to various influences that are relatively difficult to dose and control".

Progressive development of ICT began during and after the Second World War, as well as the development and research in the field of psychological tests and psychometry (Smiljcic et al., 2017; Berger, 2019).

The use of technology often does not stimulate imagination, reading, or deeper reflection and also affects the acquisition of information, decision-making, memory, and attention in young people (Anderson & Rainie, 2018). There is no doubt that technology (Riek, 2016) affects the thinking and attention of young people since attention is the basic prerequisite for the thinking process.

To take advantage of all the benefits of technology, we must first acquire certain knowledge to use the full potential of the information society through them (National Academies of Sciences, Engineering, and Medicine; Health and Medicine Division, etc. 2019). But is it enough to have access to technology? The Association of Colleges and Research Libraries (ACRL) (2000) points out that "information literacy is associated with information technology skills, but has broader implications for the individual, the education system and society.

A student or adolescent should be trained to use technology to obtain the necessary ICT skills and to discern what information he needs and how to use it (Spiranec, 2003). Using ICT is becoming a crucial component in the field of psychological treatment whose domain includes psychoeducational work, counseling practice to an in-depth psychotherapeutic approach (Smiljcic et al., 2017; Berger, 2019).

Cognitive Behavior Therapy (Cbt) and Behavioral Activation in Treating Depressive Symptoms

Depression can be labeled as feelings of sadness, guilt, worry, a pessimistic view of the future, discouragement, and helplessness (Chen et al., 2018). Cognitive-behavioral therapy is a psychotherapeutic treatment based on psychological theories of learning and modeling thoughts and emotions using a direct approach and techniques with a wide range of psychosocial difficulties. CBT influences the way how a person structures perception, and experience of the world and accordingly manifests certain behavior

(Mrgan & Jokic-Bregic, 2022).

The use of CBT includes psychoeducational work, counseling practice to an in-depth psychotherapeutic approach. The majority of digital treatments are forms of cognitive behavioral therapy (e.g., Andersson, 2014; Gilbody et al., 2015). The interventions make more use of behavioral than cognitive procedures because there is a prominent educational component and some interventions are educational programs rather than treatments and deliver the intervention in "lessons", not "sessions" (Carlbring et al., 2007). CBT online lessons are indicated in the successful treatment of depression and anxiety disorders. When face-to-face lessons are prevented due to long waiting lists, work requirements, or distance that requires time in transport digital CBT can be a solution (Olthuis et al., 2015).

Behavioral activation is an approach to mental health that involves behaviors to influence emotional state (Ly et al., 2014). It is often a part of cognitive behavioral therapy (CBT), but it can also be a standalone treatment. Most research into behavioral activation has focused on its positive effect on depression (e.g., Gepp & Villines, 2021). This is because young people with depression often lose interest in activities they used to enjoy or no longer find pleasure in their hobbies.

A novel treatment applies an Internet-based psychoeducational program for depressive symptoms using human and automated support based on the cognitive-behavioral paradigm, which has proven effective in treating depressive symptoms with psychopharmacological therapy. The advantages of this treatment that stand out are the easy accessibility provided to many users, affordability, and a therapeutic opportunity without going to a therapist (Mira et al., 2017).

Internet Platforms, Psychoeducational Programs, and Multiple Treatments Modes for Depressive Symptoms

In terms of digital treatment of depressive symptoms, *a psychoeducational program* based on the Internet platform (Shah et al., 2022) that includes automatic ICT support with the possibility of the presence of therapeutic sustenance proved to be intermediate to very effective, depressive symptomatology (Mira et al., 2017). In terms of ICT support, activities such as self-monitoring were available, which reported to users about their relationship between mood and activity within the program and informed them about the treatment, and the steps they made including encouragement to continue treatment (Fonseca & Osma, 2021).

Researchers e.g., Chen et al. (2018), Firth et al. (2018) Kang et al. (2015) highlight other forms of innovative treatment for depressive symptoms. Examples include *robotics,* and *positive cognitive bias modification* as a potential therapy for depression such as direct-to-user digital treatments e.g., MindSpot, Australian online clinics the MoodGYM, which are *free online interventions* for depression (e.g., Christensen et al., 2002).

Social Media Channels for Treating Psychological Problems: Remote Psychoanalytic Therapies

There is an increasing need for psychological therapy through digital media such as social channels. Psychoanalysis and psychoanalytic psychotherapy as therapeutic modalities are used in the treatment of a wide range of psychological problems such as more serious psychological disorders and personality disorders (Divac-Jovanovic & Svrakic, (2017).

Matacic (2018) in his article 'Cybertherapy: on the possibility and impossibility of remote psychoanalytic therapies', sees the disadvantages of psychoanalytic and psychotherapeutic treatment in the fact that social channels such as Skype, Viber, and Zoom represent a guarantee of privacy, with a dominant concentration on analyzing facial expression at the expense of many bodily reactions (movements, smells of emotional resonance), and this presents the inability to understand the finer nuances of the process of projective identification (Klein, 2001).

The issue of professional and specialized treatment of mental difficulties through the social digital channel is becoming more and more the subject of research, e.g., the possibilities of such treatment where both advantages and disadvantages are observed (Matacic, 2018; Borovecki-Jakovljev, 2016).

The novelty in this psychoanalytic

process through social media channels is introduced by the author Scharff (2010, according to Braun, 2017) who believes that the psychoanalytic process is a matter of working with a mind that can be understood beyond the physical presence of the therapist. On the one hand, the social media space allows potential clients to gain insights about the biographical data of psychanalysts and may have access to their presence on social networks, which violates the principle of neutrality and abstinence of psychoanalysts (Eric, Dimitrijevic et al., 2018; Matacic 2018). The psychoanalytic community, as the forerunner of all forms of psychotherapy, has high standards of selection of both psychoanalysts and the clients themselves who undergo this type of treatment.

At the 49th Congress in Boston, the International Psychoanalytic Associations boldly raised questions about the changes that new technologies bring to the work of psychotherapists and psychoanalysts (Braun, 2017). The author points out that online social media treatment can be quite unsafe and exhausting when it comes to a deeper level of psychoanalysis.

Psychoanalysis and psychoanalytic psychotherapy are not the only fields of application of counseling or psychotherapeutic treatment, and other directions, schools, and disciplines in the field of learning psychology, education, and counseling, psychotherapeutic and clinical work indicate the possibilities of digital forms of application (Burns, 2006).

The Application of E-Mental Health (E-Mh) in the Treatment of Psychological Problems

Research shows (e.g., Paterson et al., 2019; Kauer et al., 2014) that students and young people often use e-psychology and other digital services such as online counseling to solve their psychological problems. The effective use of e-psychology in synergy with ICT is key for students and young people for diagnostics, assessment, therapy, or advisory services (e.g., Berger, 2019; Drigas et al., 2011). E-psychology is particularly suitable for depressive syndrome (Andersson & Cuijpers, 2008; Baumeister et al., 2014; Christensen, 2002). The entire content of the support program is enabled through *a synchronous* vision that includes real-time support (Smyth & Shocklock,

1998) and *asynchronous* that has prepared and accessible material on the Internet without direct contact with the helper.

The new signifier in e-mental health (e-MH) implies the use of ICT in recognizing and detecting symptoms of mental disorders, improving mental health prevention and early interventions, preventing recurrence, etc. An example is the e-MH which includes mainly a treatment program and monitoring as an adjunct to clinical work. The e-MH can be used in the form of educational applications (Escobar, L., & Escobar, M., 2019;).

Psychosocial Support on Digital Platforms and Computer Games in Treating Sexual Violence

Significant contributions of psychosocial supportive interventions based on the digital plateau can be applied in working with children and adolescents who have survived some forms of sexual violence, which represent a special category of the vulnerable population. Sexual violence can be labeled as sexual behavior manifested without the consent and permission of another person, or without the possibility of voluntary consent in minors, which can be in different forms and intensity (Smiljcic et al., 2017; Shawn & Waquar, 2022; Ungar, 2013).

Special advantages of psychosocial support via the web are the possibility of quick access to the necessary assistance that can be multidisciplinary: namely, psychologists, social workers, lawyers, necessary legal assistance professionals, doctors, and caregivers. Furthermore, advantages include anonymity, a lesser sense of shame and embarrassment, independence and autonomy, freedom of expression, and the absence of a geographical or time barrier (Bah et al., 2021).

Telepsychiatry in the Treatment of Psychological Problems

Psychotic disorders are denoted by the ICD-10 International Classification of Mental and Behavioral Disorders (Pajevic et al., 2020) which implies a disrupted reality test, the presence of delusional ideas that can be of different topics concerning diagnosis, the occurrence of hallucinatory delusions, and inadequate and mismatched behavior along with several other symptoms (Maric et al., 2012).

When it comes to psychoeducation and psychological support for adolescents with psychosis, psychosocial interventions involving work to improve the quality of life, have proven to be necessary with medication therapy (Kucukalic et al., 2006). Virtual reality has been explored in the treatment of persecutory delusions (Collett et al., 2016). By introducing ICT technology to youths with psychosis/schizophrenia, it would be possible to receive the necessary psychological support and psychoeducational interventions without exposure to existing stigmas and prejudices in society.

The use of ICT to provide psychoeducational interventions does not have clear effects compared to standard medical care in a study conducted by Välimäki et al. (2013). The authors, however, do not give up on the possibility of further research in this field.

The author Mucic (2007) particularly distinguished himself in the field of spreading awareness and education about the benefits and assistances of telepsychiatry, which he began practicing in the 1990s in Denmark when he encountered dilemmas and challenges of working with refugees from the former Yugoslavia who were affected by the war. Mucic (2007) emphasizes the advantage of telepsychiatry, which sharply separates from online treatments, primarily because telepsychiatry in its setting offers security and privacy practices, and points to further improvement in the field of data protection where collaboration with the IT sector is necessary.

Mucic (2018) like researchers Matacic (2018) and Braun (2017) emphasizes the importance of the possibility of treatment in the mother tongue, the decentralization of this practice outside large cities, but also the work of a concrete expert that can include students with different geographical places.

Supervised digital treatment may dramatically reduce the amount of clinician time needed without sacrificing effectiveness (Christopher et al., 2017; Wild et al., 2016) and telepsychiatry is a form of. There is a consistent finding that supervised digital interventions are more effective than unsupported ones although, depending on the context and the specific intervention, the difference is not necessarily great (Baumeister et al., 2014). It is generally thought that the explanation lies in better treatment adherence in the presence of support (Mohr et al., 2011). Telepsychiatry is considered an indirect supervised digital treatment that reduces the prevalence of stigma particularly present in psychosis.

Preliminary Criteria for Ict and Digital Services in Conquering Students' Mental Problems

The study aimed to derive criteria based on the examination of advantages and disadvantages of ICT treatments of students' mental problems that could assist in detecting, preventing, and rectifying students' mental health issues in HE. There are hardly any fundamental insights and actions regarding students' mental health issues in HE, and this may be caused by a lack of awareness, resources such as pedagogues and psychologists, and proper training of students in terms of mental health.

Researchers have recognized the current fragmented approach for understanding basic issues of mental health that usually appear during adolescent age and the use of appropriate ICT tools to assist with the underlying psychological problems. Researchers also discovered a widely spread stigma that prevents adolescents and students from taking early action as societies see mental health as a taboo theme that postpones early treatment. Furthermore, there is a missing awareness practice concerning interpretations of mental health issues, as well as a deficiency in the availability of an appropriate theoretical framework, and training programs, which may influence inadequate applications of ICT remedial measures.

Moreover, there are no detailed investigations into how ICT tools may detect early signs of hidden psychological turmoil how to determine the students' vulnerability to mental health problems, and also how to clarify the role of the diversities of human factors in the educational context. In this context derived criteria serve to guide students, educators, and policy/curriculum makers.

Consequently, the study derived criteria that were founded on theoretical perspectives (e.g., Radetic-Paic & Ruzic-Baf, 2012) and research on mental health in adolescents age (e.g., Pajevic et al., 2020). Research findings (Gilbody et al., 2015;

Kessler, 2015; Wild et al., 2016) provide a solid conceptual background for creating the criteria.

The results of this study were ten criteria

for the effective use of ICT and other digital services in treating psychological problems in HE (see Table 1).

There is an urgent need to guide the use

Table 1

Preliminary criteria for ICT use in HE in conquering students' psychological problems

Preliminary criteria	Preliminary criteria description
C1: Psychoeducation, awareness, and training	Psychoeducation, training for awareness, prevention, and early detection of mental health issues should be initiated in HE.
C2: Self-initiative and motivation for searching online help	The choice of appropriate digital services, and motivation to search for online help to minimize stigma, and reduce costs and time, should be supported in HEIs.
C3: The role of social media and computer games in social violence	Understanding the role of social media and computer games in mental health and the prevention of traumatic events such as sexual violence should be re-examined in higher education.
C4: The use of e-psychology for depression and anxiety	The effective use of e-psychology in synergy with ICT for assessment, therapy, or advisory services, should be an essential part of academic practice to invest in students' preparedness in recognizing and detecting symptoms of mental disorders such as depression and anxiety.
C5: Pedagogy of mental health	The pedagogy of mental health issues should be promoted among students in HE, to empower their critical insight into the use of ICT tools for psychological well-being.
C6: Telepsychiatry in treating psychosis disorders	Telepsychiatry as an indirect supervised digital treatment should be sponsored in, HE to save students' time, costs, and privacy provided implementation of data protection, ethical issues, and very professional standards.
C7: Psychological service of anonimity in sexual violance	Psychosocial assistance via web services that provide anonymity, a minor sense of shame and embarrassment, the feeling of independence and autonomy, allowance for freedom of expression, and the absence of a geographical or time barrier should be supported in HE.
C8: e-MH and real-time support for treating general psychological problems	Asynchronous support models in the form of e-mental health (e-MH) denote the use of ICT educational applications with telemedicine services and a synchronous approach that includes real-time support for a variety of psychological problems should be encouraged in HE.
C9: Online psychoanalysis and CBT methods	Psychoanalysis and CBT theories and their online applications should be addressed in depth in HE to improve students' knowledge and coping with depressive symptoms.
C10: ICT and social stress disorder	Promoting an understanding of social anxiety disorders that are critical in adolescence should be a priority in HEIs.

of ICTs regarding students' mental health which may serve to promote awareness and prevention measures in HE environments, and also for a curriculum change in HE regarding awareness of mental health issues in adolescents age so that students and educators are better informed, acquire knowledge about the first signs of psychological distress, ICT tools, and how to bypass social blocks namely, stigma as an unresolved societal problem. For this

purpose, derived criteria serve to guide students, educators, and policy/curriculum makers (see Table 1).

Discussion

This article argues that a lack of appropriate criteria for the use of ICT and digital media in treating students' psychological problems may prolong this social burden particularly when more

complex mental problems are involved. In this article, multiple ICT and digital media (e.g., e-psychology, digital (social) media, telepsychiatry, CBT, and psychoanalysis) (Gilbody et al., 2015; Matacic, 2018; Klein, 2001) were introduced as a theoretical basis and tools in assisting students with depression, anxiety, sexual violence, and psychotic symptoms. Although the ICT tools analysed in this study, are depicted as a separate technology, they interact in synergy, internet platforms allow the simultaneous use of multiple digital media that may influence and guide students' psychological well-being.

The research question seeks to determine the following: *What are the preliminary criteria for digital services use in supporting students' psychological well-being in higher educational contexts?*

The documentary analysis indicates the importance of pedagogical knowledge (C5), ICT literacy, awareness and training (C1), and awareness of social anxiety (C10) (e.g., Fernandez-Batanero et al., 2021). Thus, awareness, adequate ICT training, digital programs, knowledge of telepsychiatry, understanding of the appropriate use of computer games and real-time support, knowing the advantages of psychoanalytic psychotherapy using online tools, and critical knowledge acquisition concerning adolescents' social anxiety risk of falling victim to mental health reflect criteria C1 to C10.

Criterion C1 emphasizes training for awareness and psychoeducation and supporting students' effort and motivation to search for self-help (C3). Criterion C5 highlights the pedagogy of mental health that may serve as a critical aid to students, academics, and decision-makers in HEIs. Criteria C3 highlights social media and computer games for sexual violence, and C4 includes applications of e-psychology applicable to depression and social anxiety.

Telepsychiatry (C6) offers new visions for psychosis, while criterion (C10) promotes an understanding of social anxiety disorders. Criterion (C8) emphasizes the use of e-MH with synchronous and asynchronous treatments for a variety of psychological problems (Escobar, L., & Escobar, M., 2019; Paterson et al., 2019). All digital services should respect privacy, anonymity, freedom of expression, and independence (C7). The basis for most treatments is digital CBT and psychoanalysis (C9).

Derived criteria are not encompassed in the HE curriculum which weakens students' attentiveness to self-monitoring and proactive actions despite the widely existing stigma in HE and society. Furthermore, HEIs should be equipped with adequate ICT resources and opportunities for students to understand crucial issues of mental health (Valmaggia et al., 2016) and play a vital role in training, supporting, and coordinating actions for the early detection and prevention of mental health issues in coordination with psychological services and community.

Conclusion

The article explored theoretical and practical research viewpoints on the use of ICT tools in treating common mental problems namely depression, anxiety, sexual violence, and psychosis, that served as a basis for the derived ten crucial criteria of ICT use in, HE. An in-depth analysis and critical reflection of the literature, and current practices at HE reveals the following tentative conclusions:

- Multiple ICT tools and social media assist students with their psychological problems.
- HEIs should undertake preventive measures in collaboration with health services and develop programs to inform students about early signs of mental health issues in adolescents age and train students on how to choose appropriate ICT tools and digital media.

Action is necessary at higher education institutions (HEIs) in terms of curriculum change to initiate various ICT training programs for mental health prevention and rehabilitation purposes. Based on the discussion, it can be concluded that the youth are the most defenseless concerning mental health due to a lack of knowledge, inadequate awareness, and training at HEIs. In summary, the following suggestions are offered:

This study produced preliminary criteria for ICT use and a comprehensive description of the use of ICT tools, and their justifications for HE that offered a deeper insight into mental health issues among adolescents. Derived criteria of current ICT tools should be applied in different real-world contexts as a building block for further examination of mental health issues in HE

environments.

Limitations, and Future Research Directions

The design of preliminary criteria for the use of ICT tools and digital media in assisting youths with mental health issues is based on a solid theoretical and conceptual framework, to clarify the complex social problem of mental health, which may be regarded as the originality and the value of this research. Additionally, this paper aims to inspire researchers to undertake further research on this topic, specifically the in-depth analysis of early signs of mental health problems.

The limitations can result from a lack of practical analysis of multiple ICT tools and techniques, their advantages, and weaknesses in treating a wide spectrum of mental health issues that usually occur in adolescents' age.

The conclusions of this study should be cautiously applied in HEIs because preliminary criteria need practical investigations and vibrant assessment procedures, to identify early signs of mental health issues that motivate students to take adequate steps with the assistance of ICT and the supervision of professionals.

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