Intelligent Techniques to Support Online Mental Health Communities: Resource Recommendations For 4 Levels of Stepped Care

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ABSTRACT

Mental health is one of the main health concerns for young people across the world. Most young people are reluctant to seek help from mental health services. The objective of the research project is to develop an online tool that facilitates help-seeking for young people. It is intended that the tool will provide a positive experience and make it easier for young people to find suitable support relative to their need. This tool will combine self-ratings and intelligent techniques to help identify difficulties and recommend appropriate next steps from four levels of stepped care: self-help (e.g. online resources); phone service (e.g. helplines); community/voluntary support; or a relevant medical service. In order to develop this tool, the design process will be informed by the Centre for eHealth Research Roadmap (CeHRes Roadmap). User-centered design methods will be incorporated into every phase of development to ensure that the tool meets the needs of young people.

CCS CONCEPTS

• Human-centered computing~HCI design and evaluation methods

KEYWORDS

Online help-seeking, mental health, youth, mhealth,

1.   Context and Motivation for Research

The research project aims to gain a better understanding of the online help-seeking behaviours of young people in order to develop an online tool which will facilitate a safer and more efficient online help-seeking process. My background as a counselling psychologist working in a university counselling service (CPUT) highlighted the role that technology can play in facilitating the help-seeking process for young people especially when traditional face-to-face services are unavailable or inaccessible. Many sources of online help already exist worldwide, including websites such as ReachOut in Australia and Ireland as well as online counselling services such as MobieG in South Africa. However, if young people are not made aware of resources, they may be difficult to locate in an already overpopulated online setting.

Working as a psychologist using participatory design methods, my research is an example of the multi-disciplinary nature of Human Computer Interaction that is emulated by CHI. The online tool, if successful, will allow young people to both access appropriate services relative to their need and interact with more support services in a timely manner.

1.1 University Program and Context of the Research

I trained and practiced as a Counselling Psychologist in South Africa, and moved to Dublin, Ireland, from Cape Town in April 2017 to pursue a Marie Sklodowska-Curie funded PhD in the area of human computer interaction and youth mental health at the School of Computer Science, University College Dublin (UCD). At UCD, full-time PhD Programmes are expected to last four years and include a training component involving the obtainment of 30 ECTS-recognised credits by completion of the programme. Within 18 months from the start of the PhD at UCD, PhD candidates prepare a written Transfer Assessment Report which will be assessed by an independent panel at the School of Computer Science. The aim of this assessment is to assess the progress of the student, and their competence and capacity to complete a doctorate.

My PhD is funded through a Marie Sklodowska-Curie Innovative Training Network (ITN) called TEAM (Technology Enable Mental Health for young people) which aims to support the assessment, prevention and treatment of mental health difficulties in young people.
The purpose of this Marie Sklodowska-Curie ITN is to holistically develop early stage researchers so that they may be able to use their skills and knowledge to address current and future global

concerns. The Marie Sklodowska-Curie grant is a three-year funded fellowship and considered to be a prestigious fellowship in Europe.

The TEAM ITN includes 15 early stage researchers (ESRs) across 4 universities and 5 countries, each working within one of the following work packages: assessment, prevention, treatment and policy. My own research project engages with the assessment work package and is titled "Intelligent Techniques to Support Online Mental Health Communities and Resource Recommendations for 4 Levels of Stepped Care."

I am currently in the first stage of the PhD programme, having completed one year thus far, and will be handing in a Transfer Assessment Report in September of this year. For my first year, I have focused on conducting a systematic literature review, examining the online help-seeking behaviours of young people, as well as on an online survey with young people aged 18 to 25 exploring their online help-seeking preferences.

I am confident that attending the AfriCHI doctoral consortium will allow me to develop a strong international network with peers and other senior researchers in my field. To date, I have developed an extensive collaborative network across Europe and I am eager to extend it into my home continent, with the aim of facilitating future research engagements. The consortium can facilitate the opportunity to investigate cross-cultural collaboration opportunities. A study to explore the cultural differences in online help-seeking behaviours of young people across different settings would be valuable in the design on an online tool that is universally accessible. Furthermore, this consortium would grant me the opportunity to present my work to senior researchers in the field, outside of my Doctoral Studies Panel who could offer perspectives and insights different to the current Eurocentric inputs.

1.2   Research Questions

1. How do young people who are experiencing mental health concerns seek help online?
2. What are the benefits and limitations for young people seeking help online from mental health resources?
3. How can web-based technology assist the online help-seeking process of young people?

1.3   Background and Related Literature

The foundation for good mental health and well-being is laid during childhood, adolescence and young adulthood. Conversely, most mental illness initially emerges in late adolescence and early adulthood [8]. Appropriate and early stage help-seeking improves the long-term prognosis of mental health difficulties. It has been found that most young people are reluctant to engage in formal help-seeking due to a number of barriers such as stigma, access to

support, and a preference for self-reliance [3,4,6]. Most young people use the internet as the main source of information for all of their daily needs. Young people already go online to access information regarding their physical and mental health [2]. The internet serves as a viable alternative to traditional care pathways as it allows them a certain degree of control and confidentiality [1]. However, the online help-seeking process is not a simple one; with both formal, credible sources, and informal, unreliable sources being available [2,7]. It is useful to think of the online help-seeking process as influenced by a number of contextual and individual factors [9]. The online help-seeking experience and behaviours of young people needs to be examined and considered in the development of online resources that aim to facilitate the help-seeking process.

1.3   Objectives and Problem statement

Mental health is one of the main health concerns for young people around the world [10]. Yet most young people are reluctant to seek help from mental health services [9]. The objective of this research project is to develop an online tool that facilitates help-seeking for young people. It is intended that the tool will provide a positive experience and make it easier for young people to find suitable support relative to their need. This tool will combine self-ratings and intelligent techniques to help identify difficulties and recommend appropriate next steps from four levels of stepped care: self-help (e.g. online resources); phone service (e.g. helplines); community/voluntary support; or a relevant medical service. In order to develop this tool, the design process will be informed by the Centre for eHealth Research Roadmap (CeHRes roadmap) [5]. User centered design methods will be incorporated into every phase of development to ensure that the tool meets the needs of young people.

1.4   Research Approach and Methods

Van Gemert-Pijnen et al [5] have put forward the Centre for eHealth Research Roadmap (CeHRes Roadmap) as a holistic design framework for the creation of eHealth tools. This framework incorporates human-centred design principles and a participatory design approach [5]. The CeHRes roadmap is a useful framework to use for the planning, coordination and execution of an eHealth tool. It is intended to be used in a multidisciplinary team, clearly communicating findings from the contextual inquiry and value specification phases in a design document.

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Using the CeHRes road map framework, the following activities are planned for each stage of the PhD:

Contextual Enquiry	Value Specification	Design	Operationalisation
Systematic Literature Review	Requirements analysis	Develop a design document	Introduce the final version of the tool to the public
Online survey on Online help-seeking behaviours of young people		Develop and user test prototypes	
Focus groups on online help-seeking behaviours of young people		Develop and evaluate an MVP	
Co-design workshops			

Table 1. CehRes road map for current PhD project

1.5   Results to Date and Research to Date

Significant steps have been made with regard to the systematic literature review which is currently at the screening by full text stage.   The aim will be to complete the systematic review by the end of September 2018. The systematic review plays a key role in the development of this researcher's understanding of the area of online help-seeking behavior in young people. The findings from the review will be synthesized in chapter 2 of the final PhD thesis. Findings from the systematic review will also be used to inform the design of future studies that will contribute the design of the tool.

The survey on the online help-seeking behaviours of young people was completed by 1308 respondents from the Republic of Ireland between the ages 18 and 25. Recruitment was done through the use of Twitter, Facebook and collaboration with local mental health charities including ReachOut Ireland and SpunOut. The survey investigated online help-seeking preferences; device use; designation of credibility to online resources, as well as the overall wellbeing of the respondents. Early findings from the survey indicate that most respondents were unlikely to seek help from traditional sources of help such as GPs or mental health professionals for a personal or emotional concern they were experiencing. However, 82.6% would use an internet search from their mobile phone to seek help. Respondents indicated that online

resources endorsed by government, the HSE or their college/school were found to be more credible. These findings highlight that online resources that aim to facilitate the online help-seeking process of young people should be designed for mobile navigation in collaboration with governmental and health service partners. They also emphasize the need for credible alternatives to the traditional sources of help.

Recruitment strategies for the online survey had varying degrees of success. While most respondents were recruited through social media ads, recruiting schools to take part in this survey was challenging. Over 100 emails were sent out with only three schools expressing an interest in taking part. As a result, it was decided that this recruitment strategy would not be suitable for gaining the views of young people under the age of 18. Instead, focus groups were deemed more feasible with this age group. These focus groups will aim to determine the barriers and facilitators of online help-seeking for young people under the age of 18 as their needs are likely to be different to the over 18 cohort. Once data analysis on the survey and focus groups have been completed, the next step will be to conduct co-design workshops with young people to inform the design of the tool using the findings from the online survey and focus groups as prompts. From the activities completed during the contextual enquiry, a requirements analysis will be done in order to inform a design document. The design document will be used to inform the design of a prototype of the tool that will then be tested with users. A timeline is shown below:

June 2018 to March 2019	April to June 2019	July to December 2019	January 2020 to April 2020
Contextual Enquiry			
	Value Specification		
		Design	
			Operationalization

Table 2. Timeline for current PhD project

1.6   Expected Contributions

To develop online resources aiming to facilitate the help-seeking process for mental health support and information, the online help-seeking experience and behaviours of young people need to be examined. In understanding these experiences and behaviours, this research project will highlight the unique design requirements to be taken into consideration when designing tools to facilitate the online help-seeking of young people.

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