RESEARCH ARTICLE

Youth Mental Health, Family Practice, and Knowledge Translation Video Games about Psychosis: Family Physicians' Perspectives

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Abstract

Objective: Family practitioners face many challenges providing mental healthcare to youth. Digital technology may offer solutions, but the products often need to be adapted for primary care. This study reports on family physicians' perspectives on the relevance and feasibility of a digital knowledge translation (KT) tool, a set of video games, designed to raise awareness about psychosis, marijuana use, and facilitate access to mental health services among youth. **Method:** As part of an integrated knowledge translation project, five family physicians from a family health team participated in a focus group. The focus group delved into their perspectives on treating youth with mental health concerns while exploring their views on implementing the digital KT tool in their practice. Qualitative data was analyzed using thematic analysis to identify patterns, concepts, and themes in the transcripts. **Results:** Three themes were identified: (a) challenges in assessing youth with mental health concerns related to training, time constraints, and navigating the system; (b) feedback on the KT tool; and, (c) ideas on how to integrate it into a primary care practice. **Conclusions:** Family practitioners felt that the proposed video game KT tool could be used to address youth's mental health and addictions issues in primary care settings.

Key Words: video game, psychosis, family physician, qualitative research, knowledge translation

Résumé

Objectif: Les médecins de famille éprouvent de nombreuses difficultés à prodiguer des soins de santé mentale aux adolescents. La technologie numérique peut offrir des solutions, mais les produits doivent souvent être adaptés aux soins de première ligne. Cette étude fait état des perspectives des médecins de famille sur la pertinence et la faisabilité d'un outil numérique de transmission des connaissances (TC), un ensemble de jeux vidéo conçus pour sensibiliser les jeunes à la psychose et à l'utilisation de la marijuana, et pour faciliter l'accès aux services de santé mentale pour les jeunes. **Méthode:** Dans le cadre d'un projet intégré de TC, cinq médecins de famille membres d'une équipe de médecine familiale ont participé à un groupe de discussion, qui visait à obtenir leurs perspectives sur le traitement des adolescents ayant des problèmes de santé mentale et à explorer leurs points de vue sur la mise en œuvre d'un outil numérique de TC dans leur pratique. Les données qualitatives ont été analysées à l'aide d'une analyse thématique afin d'identifier les modèles, les concepts, et les thèmes des transcriptions. **Résultats:** Trois thèmes sont ressortis: (a) les difficultés d'évaluer les jeunes ayant des problèmes de santé mentale sont liées à la formation, aux contraintes de temps, et à la navigation dans le système; (b) la rétroaction sur l'outil de TC; (c) les idées sur la manière de l'intégrer dans une pratique de soins de première ligne. **Conclusions:** Les médecins de famille croyaient que le jeu vidéo proposé comme outil de TC pouvait être utilisé pour aborder les problèmes de santé mentale et de dépendances des adolescents dans un contexte de soins de première ligne.

Mots clés: jeu vidéo, psychose, médecin de famille, recherche qualitative, transmission des connaissances

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Introduction

Youth between the ages of 14 and 24 are at the greatest risk of developing mental health and addiction disorders for the first time (Public Health Agency of Canada, 2002). It is estimated that between 10% and 20% of Canadian children and youth may develop mental health problems (Murphy & Fonagy, 2012; Waddell, Shepherd, Schwartz, & Barican, 2014). If left untreated, mental disorders that begin during adolescence can have a profound impact on the lives of youth and their families (Government of Canada, 2006).

Hospital-based emergency rooms and inpatient wards are often the first points of contact to access specialized mental health services for youth experiencing emerging psychosis (Archie, et al., 2010; Canadian Institute for Health Information, 2015; Statistics Canada, 2012). Rates of emergency room visits and inpatient hospitalizations for mental disorders among children and youth have increased by 45% and 37%, respectively, between 2006–2007 and 2013–2014 (Statistics Canada, 2012). The experience of accessing an emergency department or being hospitalized is often a traumatic event for youth and may pose an obstacle for engaging them in follow-up post discharge (Statistics Canada, 2001; Anderson, et al., 2015; Ferrari, et al. 2015; Ferrari, et al. 2016).

A window of opportunity exists through family health clinics to promote early access to specialized care and to prevent emergency department visits and inpatient hospitalizations (Statistics Canada, 2012). Eighty-three percent of Canadians visit their family physicians each year (Canadian Psychiatric Association and the College of Family Physicians of Canada, 2000). Family doctors are often the first point of contact when early signs of mental health problems emerge (Clatney, MacDonald, & Shah, 2008). They can help youth and their family navigate the mental health system and, sometimes, family doctors are the key providers of mental healthcare to youth (Clatney et al., 2008). Given the complexities of the gatekeepers' role, family physician may value new and innovative mental health solutions that are suitable for youth with emerging mental health concerns (Center for Addiction and Mental Health, 2016).

Video games represent a multibillion-dollar industry in the North America (Riley, 2009). Although commercial video gaming has been associated with violence and concerns about aggression, therapeutic video games are emerging as possible psycho-educational tools for promoting clinical care (Sassi, 2012). A recent review showed how video games were effective in improving health outcomes, particularly in the areas of psychological therapy for children and youth (Baranowski, Buday, Thompson, & Baranowski, 2008; Ferguson, 2007; Primack, et al., 2012). Clinical research suggests that gaming technology can be used to treat adolescents' depression (along with cognitive behavioural therapy), to enhance therapeutic interventions and to increase appropriate help-seeking behaviours among players of the game (Merry, Stasiak, Shepherd, Frampton, Fleming, & Lucassen, 2012; Schoneveld, Malmberg, Lichtwarck-Aschoff, Verheijen, Engels, & Granic, 2016; Wijnhoven, Creemers, Engerls, Granic, 2015; Shandley, Austin, Klein, & Kyrios, 2010). For example, the video game SPARX was effective in reducing depressive symptoms among adolescents aged 12–19 years (Merry et al., 2012). Authors concluded that it was a potential alternative to usual care for adolescents with depressive symptoms in primary care settings. Also, Mind-Light (Playnice Institute) was developed for the treatment of anxiety disorders in children (Schoneveld et al., 2016; Wijnhoven et al., 2015). MindLight uses several treatment mechanisms to tackle anxiety in children: (1) exposure techniques, empirically-validated treatment components of CBT for anxiety—players are gradually exposed to the threatening cues in order to become habituated to these cues and eventually get more comfortable and less anxious when being exposed to them; (2) neurofeedback mechanisms, used to promote self-monitoring and control of relaxation and concentration; and, (3) attention bias modification, where children learn to disattend from threatening cues as well as shifting attention away from those cues and to focus on positive aspects of the environment in the service of relevant goals. In a clinical setting, MindLight was effective, in decreasing anxiety in children with autism spectrum disorder (ASD). Finally, the Reach Out Central game enables young people to learn skills and information about health-seeking behaviours by playing the video game, progressing to harder levels based on the skill and knowledge achieved (Wijnhoven et al., 2015). Despite promising evidence, the mentioned video games and others are most often used in specialized clinical settings and less is known about how to support the integration of digital video game tools into primary health care settings.

Inspired by research on first episode psychosis (Archie, Boydell, Stasiulis, Volpe, & Gladstone, 2012), cannabis use (Gage, Hickman, & Zammit, 2016), and pathways to care (Ferrari, et al., 2016), the Back to Reality Video Game series impart knowledge about research on the increased risk of psychosis among youth who use cannabis on a weekly basis. Sponsored by the Canadian Institute of Health Research, the series was created using integrated knowledge translation (iKT) methods (Graham et al., 2006). iKT requires that program/intervention users, or knowledge users, be members of the research team and participate in different stages of the research process. In this project, knowledge users included youth with lived experience of psychosis and cannabis use, early intervention of psychosis providers, and a family physician. The community of knowledge users were involved in the many stages of video game design, creation, and evaluation. The series include Harry's Journey, Harry's Journal, and Pathways to Care Map. The video games deliver experiential knowledge about psychosis and its treatment through interactive gaming technology and multi-media experiences. McMaster University owns

the intellectual property. This paper focused on family physicians' appraisal of this knowledge translation (KT) tool with respect to its relevance and feasibility in primary care and served as a nidus for discussions about youth mental health.

Methodology

Approval from the institutional review board was obtained, and each participant signed a consent form. The participants were all family doctors who worked in a family health team located in a small rural town in Ontario, Canada. The practice contains about 12,000 patients and employs 30 staff. Five out of the seven family physicians from the practice participated in the focus group. One of the participants were in their first year of practice, and another was in their last year before retirement.

The focus group was used as a means of generating rich and discursive data (Krueger & Casey, 2014). Focus groups, as a method of data collection, find their roots in product development and marketing research. According to Krueger and Casey (2014) a focus group's "carefully planned discussion designed to obtain perceptions on a defined area of interest in a permissive, non-threatening environment. It is conducted with approximately seven to ten people by a skilled interviewer. The discussion is relaxed, comfortable, and often enjoyable for participants as they share their ideas and perceptions. Group members influence each other by responding to ideas and comments in the discussion." The focus group method allowed participants to (a) "feed off each other" as they respond to each other's comments; (b) support or disagree with one another, creating more energy and thus more data; and, (c) get at perceptions and experiences. The sampling strategy was conventional and purposeful rather than random (Krueger & Casey, 2014) to receive specific feedback on the video game.

During the focus group the two facilitators and participants reviewed/played the video games together with a guided group interview. The guide covered the following topics: youth mental health needs in primary care; appraisal of video game elements (e.g., story; characters; graphics; interactive elements; music); and feasibility of integrating the proposed mental health technology tool into their practice.

The focus group was digitally recorded and transcribed verbatim (Bailey, 2008). The transcription was analyzed according to the Braun and Clark method of thematic analysis (Braun & Clarke, 2006). An inductive approach was adopted, rather than a theoretically driven one so that the identified themes were strongly linked to the data (Braun & Clarke, 2006). The first author reviewed the focus group transcription for accuracy. The first author generated the codebook. A consensus meeting took place between the two authors to review and redefine the code and themes. In addition, the authors identified the strength of various themes by exploring the relationship between the first [code] and the second [theme] levels of analysis. Finally, the transcripts were reviewed and coded separately and independently by the two authors to promote accuracy, quality, and consistency of the data analysis process. As part of the last phase of the iKT cycle, the feedback and themes from the transcripts were then provided to the members of the community of knowledge users (including game designers, researchers, family doctor, and youth) to revise the Series for adaptation to primary care.

Results

Three themes were identified through thematic analysis of the qualitative group interviews with family physicians: a) challenges in assessing youth mental health; (b) feedback on the video games; and, (c) how to integrate the video game technology into primary care practice.

Challenges in assessing youth mental health

Participants reported considerable challenges in assessing youth with mental health concerns within primary care settings. Physicians described systemic barriers such as time constraints and problems accessing specialized care. Compared to treating adults, providing care to youth took longer and was more complicated.

> *Participant2: [I]t's an issue I find frustrating is time. Time to get into counseling, time to get into and out of the program and it's limited time to follow up in the meantime, but I find that frustrating for youths in particular.*

> *Participant1: [They] come in a crisis and there's an extra patient, or when you're expecting them, and they have a half hour appointment and they don't show up, or match your time with theirs.*

The family members play a vital role in supporting the assessment, referral and treatment phases. However, hidden dynamics within the family can increase the complexity of the case. Convincing youth to accept a referral to more specialized care can be a challenge. Family physicians described how youth found it difficult to disclose mental health problems, possibly due to stigma.

> *Participant3: [First we need to] find out from them what their concerns are. Lot of them come in because their parents brought them. They don't want to be there, and they kind of look at the floor, getting them to talk sometimes is the hard part.*

> *Participant1: Sometimes the parents need a lot of assurance, and some direction as to where you're going to find help for them, because the problem is what else goes on at home.*

The participants also acknowledged the problem of their inexperience in interviewing adolescents. Family physicians

reported limited training and exposure to adolescent psychiatry in medical school and residency training, compared to the treatment of anxiety and depression in adulthood. They felt youth mental health requires a different subset of interviewing skills. Participants wished they had received more training.

> *Participant 4: I'm a recent grad, and in medical school residency, there is very little exposure to youth mental health; mostly adults. Even in medical school, only certain people did child and adolescent psychiatry.*

> *Participant 1: I know for me I'm much comfortable dealing with the medical illnesses. I know exactly what I'm doing. I know exactly who to call, what to do. With the mental stuff, I am [at a] loss as much as the parents do. I scramble around, ask [colleagues] and ask nurses to see what they can give me.*

Feedback on the knowledge translation tool

In playing the video games, the participants reported to gain knowledge for themselves about addressing youth mental health concerns. The family doctors actually felt that they had learned something.

> *Participant 3: ...So it was interesting for me to hear from the game. I've heard of [addiction program name] before, but I don't really know it. I've never referred anyone there, so it's good to know what's out there and what the [early intervention in psychosis program name] program is.*

> *Participant 5: [What] I like [about] the video game is that those question [that the clinician posed] were quite open ended.... I don't think my questions were open ended. I think they're more directive... You see things that other people might not see. You hear voices that others might not hear, and I should just take a step back and say what is bothering you? What do you think is going on? You kind of open up the dialogue taking it in.*

Overall, family physicians were very pleased with the video games as they offered an interactive way to increase understanding of psychosis and effects of marijuana use among youth. They believed the game story and characters were easy to relate to and liked how the narrative helped players to connect with the main character in the story. It was seen as an interesting way to help players gain some appreciation of Harry's mental health and addictions issues.

> *Participant 2: I think there are a lot of elements in it that the youth could probably relate to. It's not the usual video games. It's kind of a way to see our way through it. I guess they're meant to play it in a classroom setting or an office setting.*

Family physicians also appreciated how each video game in the series delivers a different mental health content.

Family physicians also made recommendations on how to improve the games. For example, they found that the family doctor character talked too fast in some sections and used medical jargon, such as *CBT* which youth might not understand.

How to integrate the video games into primary care practices

Family physicians recognized the potential of the video games in initiating the discussion about mental health problems, engaging youth in treatment, and helping them gain more knowledge on signs/symptoms, and the services made available to them. To facilitate access to the games, family physicians suggested having the game available online or on tablets. The time before or after the appointment can be used to play the video games. Finally, family physicians reported that parents could also benefit from the games.

> *Participant 3: With online access if they came into your clinic- and you're like I'm going to make the referral for you, I want you to play this while you're doing that, and you're kind of with them too, to spend the time to do it because they're otherwise just sitting there.*

> *Participant 2: They're already in your office. So you could do this, instead of sitting here doing nothing. That program would be relevant, take a look at it. I kind of like that idea. That would be useful if we had a tablet reaction, you know, grab the tablet, it's got ear phones on it.*

> *Participant 2: Parents would really benefit actually. The parents would get a lot out of it.*

Discussion

Our results suggest that family physicians are in an excellent position to help identify and support mental health treatment at an early stage, but they also face many difficulties. Some of the main challenges include the following: starting a dialogue about mental health concerns, communicating information about symptoms associated with mental illness, and engaging youth in referrals to specialized services. Our findings are consistent with other studies that document problems getting youth to talk about mental health concerns and approaching mental health treatment services (Chomienne, Grenier, Gaboury, Hogg, Ritchie, &

Farmanova-Haynes, 2011; Lester, Tritter, & Sorohan, 2005; Dansky, & Miles, 1997).

The proposed KT tool appealed to family physicians because it immerses players in virtual scenarios mimicking situations faced by real youth. They valued its potential to reach young people and to help them gain knowledge so they could discuss their condition with their family physician.

Emerging research shows that video games are increasingly being used in healthcare to promote mental health (Baranowski et al., 2008; Ferguson, 2007; Primack, et al., 2012). Some video games are even effective for treating mental disorders, for example, SPARX which incorporates cognitive behavioural therapy to treat depression among youth (Merry et al., 2012). However, very few video games about mental health disorders exist, and still fewer have undergone rigorous testing (Boydell, Hodgins, Pignatiello, Teshima, Edwards, & Willis, 2014). Efficacy studies hold the key to assessing the impact of this technology on mental health (Primack et al., 2012). However qualitative studies play a major role in understanding how to close the research-clinical practice gap (Graham et al., 2006).

The physicians made recommendations about how to integrate the tool into their practice, such as asking the youth to play the games while waiting to see their providers. Existing evidence concludes that the waiting room experience is an important driver of patient satisfaction (Oermann, 2003; Sherwin, McKeown, Evans, & Bhattacharyya, 2013) and an opportunity to promote better care (Sherwin et al., 2013). Surveys of primary care offices show that engaging patients in activities during the wait time, significantly increases satisfaction, even if the length of waiting is unaltered. Using the waiting room to screen, monitor, and educate patients enhances satisfaction and promotes a more effective provider-clients interaction (Sherwin et al., 2013).

Study limitations should be acknowledged. The analysis was based on a single focus group with five participants. This sample size limits the generalization of the findings; however, qualitative studies are usually context dependent and driven. Our aim was to explore the integration of the video games into this particular setting. The study findings set the foundation for advancing knowledge about the use of video game technology. According to Graham: "the KTA [knowledge-to-action] field, while not exactly uncharted territory, is territory that has differing views on its boundaries and on the nature of the terrain.…Ensuring that knowledge to action occurs is complex and challenging.…KTA is about an exchange of knowledge between relevant stakeholders that results in action. To achieve this, appropriate relationships must be cultivated. The first step in this process is to identify the relevant stakeholders and to establish a common understanding of KTA" (p. 22). Overall, knowledge translation is a complex, iterative, and organic process. This study involved primary care physicians

in assessing the potential, opportunities and challenges of how to effectively integrate the video game tools about psychosis into their practice. Based on the recommendations made by physicians we hope to assess both qualitative and quantitative the impact of the games in youth asking them to play the games while waiting to see their providers.

Conclusion
Family practice offers a number of advantages for providing mental healthcare to youth, the long-lasting therapeutic relationships and the enduring trust of family members, but there are also a number of challenges engaging youth in care. Family physicians appreciated the value of the video games in clinical practice as a psycho-educational tool to promote knowledge about mental health and addictions care.

Acknowledgements / Conflicts of Interest

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