

## **Field Testing A Campus Preparation Mental Health Resource** **Essais sur le terrain d'une ressource de santé mentale qui** **facilite l'introduction au campus**

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Résumé de l'article

Cette recherche visait à déterminer si une ressource de littératie en santé mentale pouvait augmenter la littératie en santé mentale des élèves de 12e année. Des étudiants au baccalauréat en éducation (N = 8) d'une université rurale du Canada atlantique ont créé un jeu de société et un séminaire sur la santé mentale basée sur cette ressource. Ils ont appliqué la ressource à travers le jeu de société et le séminaire aux élèves de 12e année de deux écoles secondaires locales. Il y avait des résultats positifs, quoique modérés, pour un certain nombre de mesures liées à la littératie en santé mentale et à la préparation aux études postsecondaires. Les participants considéraient la ressource comme utile et étaient susceptibles de la recommander à leurs pairs. Cette ressource est prometteuse pour le soutien d'élèves dans leur transition du secondaire au postsecondaire.



# FIELD TESTING A CAMPUS PREPARATION MENTAL HEALTH RESOURCE

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**ABSTRACT.** This research investigated whether a mental health literacy resource could increase Grade 12 students' mental health literacy. Bachelor of Education students ( $N = 8$ ) from a university in rural Atlantic Canada created a board game and mental health seminar based on the resource. They applied the resource through the board game and seminar to Grade 12 students at two local high schools. There were positive albeit modest outcomes across a number of measures related to mental health literacy and post-secondary schooling preparation. Participants regarded the resource as helpful, and they were likely to recommend it to their peers. This resource holds promise for supporting students as they transition from high school to post-secondary settings.

## ESSAIS SUR LE TERRAIN D'UNE RESSOURCE DE SANTÉ MENTALE QUI FACILITE L'INTRODUCTION AU CAMPUS

**RÉSUMÉ.** Cette recherche visait à déterminer si une ressource de littératie en santé mentale pouvait augmenter la littératie en santé mentale des élèves de 12<sup>e</sup> année. Des étudiants au baccalauréat en éducation ( $N = 8$ ) d'une université rurale du Canada atlantique ont créé un jeu de société et un séminaire sur la santé mentale basée sur cette ressource. Ils ont appliqué la ressource à travers le jeu de société et le séminaire aux élèves de 12<sup>e</sup> année de deux écoles secondaires locales. Il y avait des résultats positifs, quoique modérés, pour un certain nombre de mesures liées à la littératie en santé mentale et à la préparation aux études postsecondaires. Les participants considéraient la ressource comme utile et étaient susceptibles de la recommander à leurs pairs. Cette ressource est prometteuse pour le soutien d'élèves dans leur transition du secondaire au postsecondaire.

Post-secondary educational (PSE) life is both a challenge and an opportunity. The transition from high school to PSE life is a time of greater independence. Many students can find this new life experience daunting. For example, the National College Health Assessment (American College Health Association [ACHA], 2017) reported that half of students “felt things were hopeless,” a large majority “felt overwhelmed” and “exhausted,” and more than sixty percent “felt very lonely,” signalling that the process of adaptation to these new life circumstances may be characterized by emotional, cognitive, and behavioural difficulties. In addition, this part of the lifespan is associated with the onset of mental disorders such as depression, psychosis, and anxiety (Kessler et al., 2007), while tied with this onset, youth suicide is known to be the second-leading cause of death in Canadian adolescents (Mann, 2002; Navaneelan, 2012). Helping young people recognize the signs and symptoms of mental disorders may result in more timely and appropriate help-seeking for themselves and those around them. Addressing student mental health needs is now recognized as an important issue on PSE campuses (ACHA, 2017; Canadian Association of College & University Student Services [CACUSS] and Canadian Mental Health Association [CMHA], 2013; Holmes et al., 2011; Prince, 2015; Storrie et al., 2010). Our article is based on the evaluation of a mental health literacy resource created for Grade 12 students who were about to embark on post-secondary education.

Young people may not be able to recognize whether the emotional and cognitive conditions that they are experiencing could be due to a mental disorder and thus may not seek appropriate assistance. As a result, early intervention and effective treatment may not occur (Giamos et al., 2017; Kelly et al., 2007; Kessler et al., 2005). For those needing care, inadequately resourced requisite services may not be able to effectively meet this need (Giamos et al., 2017). In Canada, attempts are being made to create useful policy frameworks such as the CACUSS’s *Post-Secondary Student Mental Health: A Guide to a Systemic Approach* (2013) and the forthcoming *Post-Secondary Students Standard* (<https://www.mentalhealthcommission.ca/English/student-standard>). Some evidence-based resources designed to be deployed upon entry to post-secondary schooling to help facilitate the transition to campus are now freely and widely available (Gilham et al., 2018; Kutcher, Wei, & Morgan, 2015).

Amongst the various mental health initiatives and endeavours applied to address the above concerns, a mental health literacy (MHL) approach has been considered as the foundation for mental health promotion, prevention, and care (Kutcher, Wei, Costa, et al., 2016; Kutcher, Wei, & Coniglio, 2016). Recent studies show that effective application of best-available evidence-based classroom curriculum resources in secondary school settings improves student MHL-related outcomes, including mental health knowledge, stigma against mental disorders, and help-seeking efficacy (Kutcher, Wei & Morgan, 2015; McLuckie et al., 2014; Milin et al., 2015; Ravindrian et al., 2018). Additionally, MHL interventions

can improve early identification and access to mental health care for those who require it, thus improving social, academic, and vocational outcomes (Larsen et al., 2011; McGorry et al., 2011; Mojtabai et al., 2015; Perkins et al., 2005; Scott & Happell, 2011).

Interventions designed to enhance MHL should be developmentally appropriate and contextually applied, as children and youth experience different mental health challenges at different stages of their life (Jorm & Kitchener, 2011; Kutcher, Wei & Coniglio, 2016; Milin et al., 2016; Ross et al., 2012). For example, to help address the transition to post-secondary schooling, an MHL intervention applied in the later years of secondary school must consider the emerging independence of students, the interdependence of mental health, health and life-skills competencies, and the role of peer interaction as a source of informal health support (Gulliver et al., 2010; Reavley et al., 2012; Rickwood et al., 2005). It should also come at little to no cost, be accessible, and be able to be applied easily in secondary school classrooms by teachers.

Given all the above, an early intervention for high school students is needed to help better prepare them for post-secondary schooling and be better equipped to successfully modulate the emotional, cognitive, and behavioural exigencies they experience on campus. Such an intervention may increase senior high school students' MHL in addition to providing them with useful information about the challenges and opportunities of campus life, and how to address them. Creating MHL resources with embedded life skills may also enhance student ability to successfully adapt during the transition process or to be able to assist their peers during this time.

*Know Before You Go (KBYG)* is a unique life skills resource specifically created for Grade 12 students to help them prepare for their post-secondary life, including through use of a board game. A brief PowerPoint seminar was created to introduce KBYG to the Grade 12 students. PowerPoint slides contained information on mental health literacy, understanding stress as an important everyday feature of life necessary to build resiliency, and the importance of knowing the impact of having too little or too much stress. This latter aspect of stress is important for the KBYG board game, which requires students to work together to modulate their stress levels as they navigate the life challenges of transitioning from high school to post-secondary settings. The present article describes the field test of KBYG for its potential impact on MHL prior to its wider dissemination in the community. The research questions addressed in this intervention were to what extent would the seminar, board game play, and engagement with KBYG:

- increase the Grade 12 students' MHL, in particular, their knowledge about topics related to post-secondary life and mental illness,
- increase the Grade 12 students' perceived sense of preparedness for post-secondary education,

- be perceived as being of benefit by the Grade 12 students, and
- lead to students recommending KBYG to their peers.

## METHOD

### *Intervention*

KBYG is a campus preparation MHL resource in which mental health components are embedded in a publication (available online or as hard copy) that contains a host of important considerations related to preparation for campus life. It was created with input from various stakeholders, including students, teachers, parents, mental health experts, and educators through collaboration between a youth mental health knowledge translation and implementation team at a Canadian university and a Canadian provincial department of education. The KBYG resource was approved for student use in the province where it was created. It contains life-skill strategies and information on many topics, including finance, academic work, living with peers, identity, sexuality, substance use, and career planning. Embedded throughout KBYG is information about how to maintain good mental health, build resilience, and seek mental health care as needed.

In this field test, KBYG was additionally enriched for classroom application through the creation of a board game and classroom seminar approach that was provided to Grade 12 students in two rural high schools in a province in Atlantic Canada.

In a Bachelor of Education (BEd) mental health course, a small team of eight BEd students from a university in rural Atlantic Canada (with assistance from the instructor for the mental health course) created a board game and an MHL seminar (including PowerPoint slides and handouts) based on the KBYG resource. With support from the instructor, the BEd students practised their seminar presentation. They then applied the KBYG resource through the board game and seminar to two-hundred-and-twelve Grade 12 students at two local high schools. The board game and seminar were created to enhance student self-directed learning of the KBYG resource.

### *Procedure*

Following university and school board research ethics approval, to deliver and evaluate the intervention the research team collaborated with representatives from the local Centre for Education and with high school guidance teachers and administrators from two local high schools. The two high schools chosen for the implementation were the two closest to where the university campus is located. Both have been previously involved with the research team in various education-related collaborations. The lead researcher introduced KBYG to the school administrator and teachers, and both schools volunteered to participate in this field test. The intervention took place between the months of February

and April 2018. All Grade 12 students ( $N = 212$ ) enrolled at the two high schools were invited to engage in the MHL seminar, play the board game, and read an online format of KBYG. The in-classroom sessions were 90 minutes in total and were led by the BEd students, who engaged in the following activities to prepare for and then administer the intervention:

- update their learning on core MHL information from KBYG;
- create a 45-minute MHL board game (*Thrive*);
- create a 30-minute MHL PowerPoint seminar;
- facilitate the pre-test of the Grade 12 students;
- deliver the 30-minute PowerPoint seminar followed by a 45-minute facilitation of the board game to the Grade 12 students; and
- facilitate the post-test of the Grade 12 students.

A one-month follow-up test was conducted by the lead researchers and the administrators of the two high schools.

The PowerPoint seminar was a single set of slides, which included information about KBYG and instructions on how to play the game. Each slide consisted of either text that the BEd students could read aloud or graphical information accompanied by detailed notes that they used to explain the content of the slide. This introduced the topic, explained how the game was used, and helped ensure the same content was delivered to all participants.

The board game relies upon scenario cards involving direct examples where KBYG knowledge would be helpful. The scenarios are complex and real to life. Because of the sensitive nature of the scenario cards, PowerPoint slides addressing respectful game play were included. Students were reminded that in engaging with the game and the content, they were responsible for thinking of the experiences of others in the room and were asked to engage respectfully with the content. Finally, several slides introduced the students to the electronic version of KBYG and provided information about where and how to access it. Students' electronic access of the resource was not tracked in this field test.

Depending on the availability of the school sites and our intervention team, and due to our hope to assess the impact of different approaches to implementing KBYG, slightly different delivery approaches were applied at the sites. We attempted to follow a version of a non-randomized, stepped-wedge design (Hemming et al., 2015; Hussey & Hughes, 2007), but because of changing school schedules we were not fully able to time the surveys appropriately. At what we describe as the early-intervention school, students were gathered in groups to engage with the board game immediately upon introduction of the online resource and a seminar at the school. At what we describe as the delayed-intervention school, the board game application was put off until two weeks after the initial introduction to the

online resource. Through this design, data from the early-intervention site and delayed-intervention site were to be compared, which would help inform whether immediate play of the board game was a more powerful tool for increasing MHL than exposure to the resource over a two-week period followed by board game play. We did not include a group of Grade 12 students who would simply play the board game without an introductory seminar because board game play relies upon an understanding of the stress curve, which is found in the resource but more easily explained directly in the seminar. Furthermore, we felt that setting the context for the importance of the topic through the seminar would help with student engagement during board game play.

At the delayed-intervention school, students received a seven-slide PowerPoint introduction to the resource without immediate application of the board game. The seminar was similarly delayed. In this introduction, students saw a slide about KBYG and then two slides with the outline of the content they would find in the KBYG resource. Then, students saw one slide explaining that the BEd students had made a board game but did not receive any information on how the board game was to be played—only that the BEd students would be visiting again in two weeks to play it. Over the course of the next three slides, students completed the Google Form pre-test, received a QR code that they could use to access a free PDF version of the resource, and were encouraged to review the online format of KBYG over the next two weeks. Two weeks later, students at this site were exposed to the board game applied in similar fashion to the one provided earlier to students at the early-intervention school. This design allowed students in both schools to read KBYG during the same two-week period, but the board game and mental health seminar were delayed at one site so that the researchers could investigate whether the delivery timing of the board game and seminar would make a difference on the measured outcomes.

### *Participants*

A total of 212 students (102 male, 103 female, 3 other, and 4 who “prefer not to say”) participated in the KBYG intervention. All but one participant were in their Grade 12 year. Most of the participants were in the early-intervention school ( $n = 179$ , 84.4%) compared to the delayed-intervention school ( $n = 33$ , 15.6%). A power analysis revealed that, based on the difference between two group means (matched pairs), comparison effect size observed in previous similar mental health literacy studies ( $d = .20$ ), an  $n$  of approximately 199 would be needed to obtain statistical power at the recommended .80 level (Cohen, 1988).

### *Measures and Statistical Analysis*

For all measures, Google Forms (a cloud-based survey tool) or paper copies of the assessment tools were used. In all tests, knowledge was assessed using a 20-question *true, false, or do not know* survey. These tests included questions addressing life skills such as sexuality, relationships, identity, and resilience.

They also included questions on mental health and related topics, such as sad feelings, stress, anxiety disorders, suicide, self-harm, and psychosis. Questions were designed by the resource developer based on the content of KBYG and reviewed by mental health researchers, educators, and Grade 12 students, therefore demonstrating face validity. A principal component analysis was conducted on the 20-item questionnaire with varimax for factor loading using the baseline data. Factors with eigenvalues greater than 1 were kept, resulting in four factors: factor 1 addressing identity, spirituality, stress, self-esteem, and feelings; factor 2 addressing specific mental disorders; factor 3 addressing learning styles; and factor 4 addressing sleep. These four factors combined accounted for 57.83% variances. The internal consistency reliability of the questionnaire was  $\alpha = .079$  for the current sample. Students were encouraged to check the *do not know* option rather than guessing to reduce false-correct answers. A correct response received a score of 1, and an incorrect or *do not know* response received a score of 0, with a total maximum score of 20 and minimum score of 0 for the knowledge outcome.

Participants completed the 20 knowledge questions at all three time points. On the post and follow-up tests, the measure of readiness for post-secondary life consisted of five questions to assess participants' perception of preparedness / readiness for post-secondary life, given their participation in the KBYG seminar and board game. Students chose one of six possible responses on a Likert rating scale, ranging from *strongly disagree* to *strongly agree*. Similarly, a three-question measure of perceived benefit was created using the same six-point Likert scale (see Appendix for all measures).

Data were analyzed using the Statistical Package for the Social Sciences (SPSS) 24. Knowledge scores were compared between pre-, post-, and follow-up tests using paired samples *t*-tests. ANCOVAs were used to further analyze the effects of gender, school, and previous mental health training on post-test and follow-up scores, using pre-test scores as a covariate. The significance level was set at  $\alpha = .05$  for all data analysis. Bonferroni correction was applied to paired samples *t*-tests for a significance level of  $\alpha = .025$ .

## RESULTS

### *Knowledge*

Participants completed knowledge surveys:

- before participating (a pre-test,  $n = 161$ );
- immediately after (a post-test,  $n = 54$ ); and
- after a one-month period (a follow-up test,  $n = 95$ ).

Paired sample *t*-tests were applied to examine differences in whole-group knowledge scores from pre- to post-test and from pre- to follow-up test (47 days for the



delayed-intervention school, 39 days for early-intervention school). At pre-test, participants' mean score was  $M = 12.26$  (61.30% correct,  $SD = 3.57$ ,  $n = 161$ ) out of a possible maximum score of 20. At post-test, the mean score had increased non-significantly to  $M = 12.29$  (61.45% correct,  $SD = 3.93$ ,  $n = 38$ ,  $t(37) = -.070$ ,  $p = .944$ ,  $d = .008$ ). Follow-up knowledge scores increased significantly compared to pre-test scores with  $M = 13.32$  (66.60% correct,  $SD = 4.22$ ) from the pre-test ( $M = 12.31$ , 61.55%,  $SD = 3.83$ ,  $n = 68$ ) scores,  $t(67) = -3.28$ ,  $p = .002$ ,  $d = .251$ .

Another set of paired sample *t*-tests was used to further examine knowledge scores within each of the two schools studied. For the delayed-intervention school, the mean knowledge scores remained the same for the pre-test ( $M = 12.92$ , 64.60% correct,  $SD = 3.07$ ,  $n = 25$ ) and post-test ( $M = 12.92$ , 64.60% correct,  $SD = 3.74$ ),  $t(24) = 0.00$ ,  $p = 1.000$ ,  $d = .000$ . In contrast, average pre-test knowledge score ( $M = 12.66$ , 63.30% correct,  $SD = 3.84$ ,  $n = 50$ ) showed a significant increase to  $M = 13.80$  (69.00%,  $SD = 4.17$ ,  $n = 50$ ) during follow-up testing,  $t(49) = -3.02$ ,  $p = .004$ ,  $d = .284$ . However, for the early-intervention school, no significant improvement was seen in knowledge scores between pre-test ( $M = 11.00$ , 55.00% correct,  $SD = 4.22$ ,  $n = 13$ ) and post-test ( $M = 11.08$ , 55.40% correct,  $SD = 4.15$ ,  $t(12) = -0.23$ ,  $p = .819$ ,  $d = .019$ ). This also held true for the pre-test ( $M = 11.33$ , 56.65% correct,  $SD = 3.74$ ,  $n = 18$ ) and follow-up ( $M = 12.00$ , 60.00% correct,  $SD = 4.20$ ) knowledge scores,  $t(17) = -1.29$ ,  $p = .215$ ,  $d = .168$ .

One-way ANCOVAs were performed on the whole sample to identify any significant differences between pre-, post-, and follow-up knowledge scores when considering gender, school attended, and previous mental health training, while controlling for pre-test scores. Unfortunately, only 24 participants could be matched at all three time points. Reasons for this significant drop in matched surveys include students not taking seriously the need to complete the identifying information consistently and accurately at the top of each survey and a miscommunication in one school, which led to a significant drop in participants in a post-survey. No significance was found between gender with post-test knowledge scores,  $F(1, 35) = 1.05$ ,  $p = .312$ ,  $\eta^2 = .029$ ; or with follow-up knowledge scores,  $F(1, 65) = 1.06$ ,  $p = .307$ ,  $\eta^2 = .016$ . School site was also found to have no significant effect on post-test scores,  $F(1, 35) = 0.02$ ,  $p = .878$ ,  $\eta^2 = .001$ ; or on follow-up scores,  $F(1, 65) = 0.83$ ,  $p = .367$ ,  $\eta^2 = .013$ . Concurrently, previous exposure to mental health training had no significant effect on post-test knowledge scores,  $F(1, 35) = 0.11$ ,  $p = .740$ ,  $\eta^2 = .003$ ; or the follow-up knowledge scores,  $F(1, 65) = 0.04$ ,  $p = .841$ ,  $\eta^2 = .001$ . See Table 1 for means and comparisons.

TABLE 1. Means and Standard Deviations for Pre-Test and Follow-Up Knowledge Scores (Gender, School, Previous MH Training)

|           | Gender          |                 | Prefer not to say | School          |                 | Previous MH Training |                 |
|-----------|-----------------|-----------------|-------------------|-----------------|-----------------|----------------------|-----------------|
|           | Male            | Female          |                   | Delayed         | Early           | Yes                  | No              |
| Pre-test  | 11.45<br>(4.10) | 12.60<br>(3.84) | 9.25<br>(4.71)    | 12.08<br>(4.06) | 11.31<br>(3.78) | 13.50<br>(3.02)      | 10.22<br>(4.31) |
| Post-test | 11.11<br>(4.13) | 13.35<br>(3.51) |                   | 12.92<br>(3.74) | 11.08<br>(4.15) | 13.72<br>(3.29)      | 11.00<br>(4.09) |
| Follow-up | 12.00<br>(5.27) | 14.00<br>(3.45) |                   | 13.80<br>(4.17) | 12.00<br>(4.20) | 14.50<br>(3.52)      | 11.83<br>(4.62) |

**Post-Secondary Readiness, Perceived Benefits, and Recommendations**

Overall, after receiving KBYG, 52% of participants stated that they felt “more” to “very much more” ready for post-secondary schooling; however, 10% reported feeling “less” ready. This changed to 39% (ready or more ready) and 13% (less ready), respectively, at follow-up. At post-test, 68% reported “agree” or “strongly agree” that other Grade 12 students would benefit from a similar exposure. This remained relatively constant at 62% at follow-up.

Participants’ responses to the statement “I would recommend Know Before You Go to my friends who are thinking about going to university or college” demonstrated that 47 out of 66 participants (72%) would recommend KBYG to their friends at post-test, compared to 53% (n = 52 out of 99) at follow-up.

**DISCUSSION**

This is the first study to evaluate the impact of KBYG, a campus preparation mental health resource designed to assist youth in their transition from high school to post-secondary school life. We found that participant knowledge about mental health and life skills did not improve at post-test but was enhanced significantly by the one-month follow-up test after the intervention, this when aggregating data from both schools. Further analysis showed that student knowledge at the delayed-intervention school improved at follow-up, but not with the early-intervention school. These results when taken together may suggest that knowledge uptake may take some time, especially when presenting this type of information to high school students. It is also possible that further school-based instruction on mental health literacy occurred post-KBYG intervention.

Furthermore, the delivery format may have played an important role in influencing participants understanding of the content of KBYG. In the early-intervention school, we introduced the KBYG resource and played the game at the same

time. In the delayed-intervention school, we introduced the KBYG resource and two weeks later played the game. This means that the students in the delayed-intervention school had two weeks to become familiar with the KBYG resource prior to engaging with the game. The school guidance counsellor encouraged students to review KBYG on their own time; however, no formal assignment was given by the educators to review the resource. Thus, a self-directed reading followed by a group game activity may have greater impact on the outcome measures selected than just a game intervention plus introduction alone. This finding suggests that having students engage with the resource over time might be more pedagogically impactful than a one-time introduction.

We found that a high percentage of students (52%) reported they were more ready for post-secondary school life at post-test, albeit with a drop to 39% at one-month follow-up. It is essential to note this is a very high percentage of readiness resulting from a 90-minute game-oriented session plus a voluntary reading of KBYG. It implies that an MHL intervention with embedded life skills may be a useful resource for Grade 12 students during this significant life transition stage. Further, 68% of students considered KBYG a beneficial resource for other Grade 12 students and 72% would recommend it to others. These results are in the same positive direction as our findings that student knowledge about mental health improved as well as potential benefits of sharing information about KBYG with others. These findings are also consistent with our previous research on the impact of similar MHL resources created specifically for first-year post-secondary students (Gilham et al., 2018; Kutcher, Wei, & Morgan, 2015; Potvin-Boucher et al., 2010).

## CONCLUSION

This is the first field test of KBYG. We used a unique intervention to introduce the resource to a sample of Grade 12 students (short seminar and board game play) in two rural high schools in Atlantic Canada. This intervention demonstrated some positive albeit modest outcomes across several measures related to MHL and post-secondary schooling preparation. The intervention increased the Grade 12 students' knowledge of mental health and participants demonstrated relatively high perceived sense of preparedness for post-secondary education. They regarded KBYG as being of benefit to them and were even likely to recommend KBYG to their peers.

However, prior to further use of this resource, additional studies are needed. Because of the small sample size in the present study ( $n = 24-50$ ), limited statistical power may have played a role in limiting the significance of some of the statistical comparisons conducted. Future studies may focus on the impact of KBYG with student samples from different locations with other demographic characteristics and varied ways of introducing the resource (e.g., via online tutorial). A more thematic teaching unit for use with the resource and having students engage with it over time might be more pedagogically impactful than a

one-time introduction. The impact of the KBYG resource on parents as partners in their child's transition process should also be determined. Should such other applications prove promising, larger cluster-controlled studies could be considered as well as investigations into the process of implementation. Some of the above additional investigations are currently underway or are being planned.

KBYG was created to support students through both the challenges and opportunities they face in the transition from high school to post-secondary settings. Given that the onset of most major mental disorders occurs during the ages young people attend high school and post-secondary school, and because young people may not be able to recognize whether the emotional and cognitive conditions they are experiencing could be due to a mental disorder that requires assistance, we believe KBYG is a much-needed resource. This pilot evaluation resulted in an increase in the Grade 12 students' knowledge of mental health and a relatively high perceived sense of preparedness for post-secondary education. Furthermore, the students were likely to recommend KBYG to their peers. Given this, the KBYG resource holds promise for easing the challenges often experienced by youth making the transition from Grade 12 to post-secondary settings.

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#### REFERENCES

- American College Health Association. (2017). *American College Health Association-National College Health Assessment II: Undergraduate student reference group data report*. [https://www.acha.org/documents/ncha/NCHA-II\\_FALL\\_2017\\_REFERENCE\\_GROUP\\_DATA\\_REPORT\\_UNDERGRADS\\_ONLY.pdf](https://www.acha.org/documents/ncha/NCHA-II_FALL_2017_REFERENCE_GROUP_DATA_REPORT_UNDERGRADS_ONLY.pdf)
- Canadian Association of College & University Student Services and Canadian Mental Health Association. (2013). *Post-secondary student mental health: Guide to a systematic approach*. <https://www.cacuss.ca/resources/publications-and-webinars.html#2013,%20Post-Secondary%20Student%20Mental%20Health:%20A%20Guide%20to%20a%20Systemic%20Approach>
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum.
- Ettner, S.L., Frank, R.G., & Kessler, R.C. (1997). The impact of psychiatric disorders on labor market outcomes. *Industrial and Labor Relations Review*, 51(1), 64-81. <https://doi.org/10.1177/001979399705100105>
- Giamos, D., Lee, A. Y. S., Suleiman, A., Stuart, H., & Chen, S. P. (2017). Understanding campus culture and student coping strategies for mental health issues in five Canadian colleges and universities. *Canadian Journal of Higher Education/Revue canadienne d'enseignement supérieur*, 47(3), 136-151.
- Gilham, C., Austen, E. L., Wei, Y., & Kutcher, S. (2018). Improving mental health literacy in post-secondary students: Field testing the feasibility and potential outcomes of a peer-led approach. *Canadian Journal of Community Mental Health*, 37(1), 1-12.
- Gulliver, A., Griffiths, K.M., & Christensen, H. (2010). Perceived barriers and facilitators to mental health help-seeking in young people: A systematic review. *BMC Psychiatry*, 10, 113. <https://doi.org/10.1186/1471-244X-10-113>

- Hemming, K., Haines, T. P., Chilton, P. J., Girling, A. J., & Lilford, R. J. (2015). The stepped wedge cluster randomized trial: Rationale, design, analysis, and reporting. *British Medical Journal*, 350(h391). <https://doi.org/10.1136/bmj.h391>
- Holmes, A., Silvestri, R., & Kostakos, M. (2011). *The impact of mental health problems in the community college student population*. Higher Education Quality Council of Ontario.
- Hussey, M.A., & Hughes, J. P. (2007). Design and analysis of stepped wedge cluster randomized trials. *Contemporary Clinical Trials*, 28(2), 182–191. <https://doi.org/10.1016/j.cct.2006.05.007>
- Jorm, A. F., & Kitchener, B. A. (2011). Noting a landmark achievement: Mental health first aid training reaches 1% of Australian adults. *Australian & New Zealand Journal of Psychiatry*, 45(10), 808–813. <https://doi.org/10.3109/00048674.2011.594785>
- Kelly, C., Jorm, A., & Wright, A. (2007). Improving mental health literacy as a strategy to facilitate early intervention of mental disorders. *Medical Journal of Australia*, 187(S7), s26–30. <https://doi.org/10.5694/j.1326-5377.2007.tb01332.x>
- Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., & Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry*, 62(6), 593–602. <https://doi.org/10.1001/archpsyc.62.6.593>
- Kessler, R. C., Amminger, G. P., Aguilar-Gaxiola, S., Alonso, J., Lee, S., & Üstün, T. B. (2007). Age of onset of mental disorders: A review of recent literature. *Current Opinion in Psychiatry*, 20(4), 359–364. <https://doi.org/10.1097/YCO.0b013e32816ebc8c>
- Kutcher, S., Wei, Y., & Morgan, C. (2015). Mental health literacy in postsecondary students. *Health Education Journal*, 75(6). <https://doi.org/10.1177/0017896915610144>
- Kutcher, S., Wei, Y., & Morgan, C. (2015). Successful application of a Canadian mental health curriculum resource by usual classroom teachers in significantly and sustainably improving student mental health literacy. *Canadian Journal of Psychiatry*, 60(12), 580–586. <https://doi.org/10.1177/070674371506001209>
- Kutcher, S., Wei, Y., Costa, S., Gusmao, R., Skokauskas, N., & Sourander, A. (2016). Enhancing mental health literacy in young people. *European Child Adolescent Psychiatry*, 25(6), 567–569. <https://doi.org/10.1007/s00787-016-0867-9>
- Kutcher, S., Wei, Y. & Coniglio, C. (2016). Mental health literacy: Past, present and future. *The Canadian Journal of Psychiatry*, 61(3), 154–158. <https://doi.org/10.1177/0706743715616609>
- Larsen, T. K., Melle, I., Auestad, B., Haahr, U., Joa, I., Johannessen, J.O., Opjordsmoen, S., Rund, B.R., Rossberg, J.L., Simonsen, E., Vaglum, P., Eriis, S., & McGlashan, T. (2011). Early detection of psychosis: Positive effects on 5-year outcome. *Psychological Medicine*, 41, 1461–1469. <https://doi.org/10.1017/S0033291710002023>
- Mann, J. J. (2002). A current perspective of suicide and attempted suicide. *Annals of Internal Medicine*, 136(4), 302–311. <https://doi.org/10.7326/0003-4819-136-4-200202190-00010>
- McGorry, P. D., Purcell, R., Goldstone, S., & Amminger, P. (2011). Age of onset and timing of treatment for mental and substance use disorders: Implications for preventive intervention strategies and models of care. *Current Opinion in Psychiatry*, 24, 301–306. <https://doi.org/10.1017/S2045796011000746>
- McLuckie, A., Kutcher, S., Wei, Y., & Weaver, C. (2014). Sustained improvements in students' mental health literacy with use of a mental health curriculum in Canadian schools. *BMC Psychiatry*, 14(1), 379. <https://doi.org/10.1186/s12888-014-0379-4>
- Milin, R., Kutcher, S., Lewis, S., Walker, S., Wei, Y., Ferrill, N., & Armstrong, M. (2016). Impact of a mental health curriculum on knowledge and stigma among high school students: A randomized controlled trial. *Journal of American Academy of Child and Adolescent Psychiatry*, 55(5), 383–391. <https://doi.org/10.1016/j.jaac.2016.02.018>
- Mojtabai, R., Stuart, E. A., Hwang, I., Eaton, W. W., Sampson, N., & Kessler, R. C. (2015). Long-term effects of mental disorders on educational attainment in the National Comorbidity Survey ten-year follow-up. *Social Psychiatry and Psychiatric Epidemiology*, 50, 1577–1591. <https://doi.org/10.1007/s00127-015-1083-5>

Navaneelan, T. (2012, July). *Suicide rates: An overview*. Statistics Canada, Catalogue no. 82-624-X. <http://www.statcan.gc.ca/pub/82-624-x/2012001/article/11696-eng.pdf>

Perkins, D. O., Gu, H., Boteva, K., & Lieberman, J. A. (2005). Relationship between duration of untreated psychosis and outcome in first-episode schizophrenia: A critical review and meta-analysis. *American Journal of Psychiatry*, 162(10), 1785–1804. <https://doi.org/10.1176/appi.ajp.162.10.1785>

Porvin-Boucher J, Szumilas M, Sheikh T, Kutcher S (2010). Transitions: a mental health literacy program for post-secondary students. *Journal of College Student Development*, 51(6), 723–727

Prince, J. P. (2015). University student counseling and mental health in the United States: Trends and challenges. *Mental Health & Prevention*, 3(1–2), 5–10. <https://doi.org/10.1016/j.mhp.2015.03.001>

Ravindran, A., Herrera, A., da Silva, T., Henderson, J., Castrillo, M., & Kutcher, S. (2018). Evaluating the benefits of a youth mental health curriculum for students in Nicaragua: A parallel-group, controlled pilot investigation. *Global Mental Health*, 5, 1–12. <http://dx.doi.org/doi:10.1017/gmh.2017.27>

Reavley, N. J., McCann, T. V., & Jorm, A. F. (2012). Actions taken to deal with mental health problems in Australian higher education students. *Early Intervention in Psychiatry*, 6(2), 159–165. <https://doi.org/10.1111/j.1751-7893.2011.00294.x>

Rickwood, D., Deane F. P., Wilson, C. J., & Ciarrochi, J., (2005). Young people's help-seeking for mental health problems. *Australian eJournal for the Advancement of Mental Health*, 4(3), 1–34. <https://doi.org/10.5172/jamh.4.3.218>

Ross, A. M., Hart, L. M., Jorm, A. F., Kelly, C. M., & Kitchener, B. A. (2012). Development of key messages for adolescents on providing basic mental health first aid to peers: A Delphi consensus study. *Early Intervention in Psychiatry*, 6(3), 229–238. <https://doi.org/10.1111/j.1751-7893.2011.00331.x>

Scott, D., & Happell, B. (2011). The high prevalence of poor physical health and unhealthy lifestyle behaviors in individuals with severe mental illness. *Issues in Mental Health Nursing*, 32(9), 589–597. <https://doi.org/10.3109/01612840.2011.569846>

Storrie, K., Ahern, K., & Tuckett, A. (2010). A systematic review: Students with mental health problems – A growing problem. *International Journal of Nursing Practice*, 16(1), 1–6. <https://doi.org/10.1111/j.1440-172X.2009.01813.x>

APPENDIX

*Know Before You Go*: Information Quiz

To help us match your anonymous responses between surveys done at the start and end of this research, please tell us:

- a) The name of your first pet: \_\_\_\_\_
- b) The month you were born: \_\_\_\_\_
- c) Your postal code: \_\_\_\_\_
- d) Your shoe size: \_\_\_\_\_
- e) The last two digits / numbers of your cell phone: \_\_\_\_\_

Today's date: \_\_\_\_\_

What district is your school in?: \_\_\_\_\_

Gender: Male: \_\_\_\_\_ Female: \_\_\_\_\_ Other: \_\_\_\_\_

What grade are you currently in?: \_\_\_\_\_

Have you received any courses / sessions on mental health? Yes: \_\_\_ No: \_\_\_

If you have received any course / session on mental health, please specify what it is: \_\_\_\_\_

Section A: For each of the following statements, select *true*, *false*, or *do not know* by marking an X in the appropriate box.

| Question  | True | False | Do Not Know |
|---|------|-------|-------------|
| Some types of common learning styles include all of the following: auditory learning; tactile learning; and productive learning.  |      |       |             |
| Your usual sleep wake cycle may be an important consideration when thinking about selecting your courses at university or college.  |      |       |             |
| Building resiliency means getting control of your finances and using apps to manage your worries.   |      |       |             |
| Having a partner who tries to control how you dress, whom you are friends with, or what you spend your money on may be a sign of being in a potentially abusive relationship. |      |       |             |

|   |  |  |  |
|---|--|--|--|
| Solitude and loneliness are the same thing and can be best addressed by making new friends or keeping in touch with old friends.  |  |  |  |
| Most everyday stress is harmful to a person's health and should be avoided if possible.   |  |  |  |
| All of the following can influence a person's sexuality: culture; religion; family; and friends.  |  |  |  |
| All of the different components of our identity are usually fully developed by age 20 and will not change as we get older.  |  |  |  |
| Sexual consent is a concept used to manage and monitor student behaviour on campus and has no legal definition in Canada.   |  |  |  |
| Craving drinking and having difficulty reducing the amount you are drinking even if you want to are BOTH signs that a person may be misusing or abusing alcohol.                |  |  |  |
| Social anxiety disorder includes intense embarrassment in the presence of others PLUS avoidance of situations that put a person in the public spotlight.                        |  |  |  |
| Spirituality and religion are two words used to mean the same thing: a belief in God or some other supreme being.   |  |  |  |
| Feeling sad because you did not do well on an examination or because you have had a fight with a friend are signs that a person likely has mental disorder, perhaps depression. |  |  |  |
| Since most people learn nothing from failure apart from getting low self-esteem, it is important to try and limit your chance of failing in academics and social activities.    |  |  |  |
| Gender expression is a biologically hard-wired phenomenon that culture and society have limited influence on.   |  |  |  |
| Most people who have lost someone close to them will grieve in the same way and will experience gradually diminishing emotional pain over time.                                 |  |  |  |
| The mental illness called schizophrenia usually begins before age 25 years AND includes BOTH delusions and hallucinations.  |  |  |  |
| Self-harm is usually a healthy coping strategy that helps people solve the problems in their lives.   |  |  |  |



|   |  |  |  |
|---|--|--|--|
| ALL of the following are ways to help you develop positive mental health: getting lots of exercise; getting between 8–9 hours of sleep per night; organizing your daily activities. |  |  |  |
| Cramming before a test or an examination instead of sleeping is a very good way of learning the material you need to know.  |  |  |  |

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Section B: For each of the following statements, please mark an X in the box that you feel best describes your response toward the statement. Please select only one answer for each statement.

As a result of engaging with Know Before You Go, I am:

| Question   | Strongly Disagree | Disagree a lot | Disagree | Not sure | Agree | Strongly Agree |
|--|-------------------|----------------|----------|----------|-------|----------------|
| Less ready for post-secondary school life than before                              |                   |                |          |          |       |                |
| Have about the same amount of readiness for post-secondary school life than before |                   |                |          |          |       |                |
| More ready for post-secondary school life than before                              |                   |                |          |          |       |                |
| Much more ready for post-secondary school life than before                         |                   |                |          |          |       |                |

|   |  |  |  |  |  |  |
|---|--|--|--|--|--|--|
| Very much more ready for post-secondary school life than before |  |  |  |  |  |  |
|---|--|--|--|--|--|--|

With regard to other Grade 12 students engaging with Know Before You Go, I would suggest:

| Question   | Strongly Disagree | Disagree a lot | Disagree | Not sure | Agree | Strongly Agree |
|--|-------------------|----------------|----------|----------|-------|----------------|
| That they likely would not benefit from it       |                   |                |          |          |       |                |
| That they likely would benefit from it           |                   |                |          |          |       |                |
| That they likely would very much benefit from it |                   |                |          |          |       |                |

I would recommend Know Before You Go to my friends who are thinking about going to university or college: Yes: \_\_\_ No: \_\_\_

Please take as much space as you would like and provide us with feedback on the game you played last week. Thank you!