Journal of Adolescence 67 (2018) 1–11

Contents lists available at ScienceDirect

Journal of Adolescence

journal homepage: www.elsevier.com/locate/adolescence

# Assessing the impacts and outcomes of youth driven mental health promotion: A mixed-methods assessment of the Social Networking Action for Resilience study

Emily K. Jenkins[a,*], Vicky Bungay[a], Andrew Patterson[b], Elizabeth M. Saewyc[a], Joy L. Johnson[c]

[a] School of Nursing, University of British Columbia, T201-2211 Westbrook Mall, Vancouver, British Columbia, Canada, V6T 2B5
[b] University of Lethbridge, The Prentice Institute for Global and Population Economy, Suite L1184-4401 University Drive West, Lethbridge, Alberta, T1K 3M4, Canada
[c] Faculty of Health Sciences, Simon Fraser University, Blusson Hall Room 1130, 8888 University Drive, Burnaby, British Columbia, V5A 1S6, Canada

ARTICLE INFO

*Keywords:*
Mental health promotion
Youth engagement
Adolescent mental health
Resilience
Community connectedness
Community-based knowledge translation

ABSTRACT

Mental health challenges are the leading health issue facing youth globally. To better respond to this health challenge, experts advocate for a population health approach inclusive of mental health promotion; yet this area remains underdeveloped. Further, while there is growing emphasis on youth-engaged research and intervention design, evidence of the outcomes and impacts are lacking. The purpose of this paper is to contribute to addressing these gaps, presenting findings from the Social Networking Action for Resilience (SONAR) study, an exploration of youth-driven mental health promotion in a rural community in British Columbia, Canada. Mixed methods including pre- and post-intervention surveys (n = 175) and qualitative interviews (n = 10) captured the outcomes and impacts of the intervention on indicators of mental health, the relationship between level of engagement and benefit, and community perceptions of impact. Findings demonstrate the feasibility and benefits of youth engaged research and intervention at an individual and community-level.

## 1. Introduction

Mental health challenges are a leading health issue facing youth. Globally, 20% of youth experience mental health challenges in any given year (World Health Organization [WHO], 2012) and it is estimated that 31% of youth ages 15–24 have experienced mental health challenges in their lifetime (Statistics Canada, 2012). Research indicates that 70% of mental health challenges arise during adolescence, with a high likelihood of chronicity. These challenges have been found to interrupt the achievement of developmental competencies and tasks, and in turn are linked to social and economic inequality, and increased morbidity and mortality throughout the life course (National Research Council and Institute of Medicine [NRCIM], 2009; Walker, McGee, & Druss, 2015; Sharac, McCrone, Clement, & Thornicroft, 2010). To address this challenge, mental health advocates argue for a population health approach incorporating promotion, prevention, and treatment (Waddell, Shepard, Schwartz & Barican, 2014). While much research has concentrated on the prevention and treatment of mental health challenges among youth, there has been limited focus on mental health promotion.

* Corresponding author. School of Nursing, University of British Columbia, T201-2211 Westbrook Mall, Vancouver, British Columbia, V6T 2B5, Canada.
*E-mail addresses:* emily.jenkins@ubc.ca (E.K. Jenkins), vicky.bungay@nursing.ubc.ca (V. Bungay), andrew.patterson@uleth.ca (A. Patterson), elizabeth.saewyc@ubc.ca (E.M. Saewyc), joy_johnson@sfu.ca (J.L. Johnson).

https://doi.org/10.1016/j.adolescence.2018.05.009
Received 4 January 2018; Received in revised form 9 May 2018; Accepted 22 May 2018
Available online 30 May 2018

Since the 1990s, this focus on promotion has been of growing interest among developmental scientists as well, who recognize the importance of strengths-based orientations to youth development. As outlined in the model of Positive Youth Development (PYD) strategies focus on enhancing youth assets, or the 5 Cs: competence, confidence, connection, character, and compassion (Catalano, Berglund, Ryan, Lonczak, & Hawkins, 2004; Lerner, 2017). The National Research Council and Institute of Medicine (2009) have explicitly linked mental health promotion and developmental science, identifying four key features of a developmental framework that should underpin promotion efforts: 1) incorporation of age-related competencies and mental health targets; 2) recognition of multiple contexts in which development occurs (i.e., family, school, community, society); 3) attention to developmental tasks; and 4) acknowledgment of interactions between biological, psychological and social processes. Efforts to continue to advance efforts to effectively target positive mental health and equip youth with the assets required to achieve optimal outcomes, are identified as a priority (Lerner, 2017). Given these research needs, the question we explore in this study, which examines the experiences of youth in a rural community in British Columbia, Canada, is what might be the impact of a community-based youth mental health intervention focused positively on promotion?

Mental health promotion aims at enhancing *positive* mental health for all people, including the general population as well as groups known to be experiencing mental health or substance use challenges or risk (Clarke, Kuosmanen, & Barry, 2015; Herrman & Jané-Llopis, 2012). Positive mental health encompasses qualities such as self-esteem, ability to maintain employment, and the capacity to cope well with significant life change or stress (Jané-Llopis, Barry, Hosman, & Patel, 2005; WHO, 2001). Additionally, this orientation accounts for the broader social context. As an “upstream” approach, mental health promotion seeks to alter the social determinants of health and systemic barriers to good mental health, such as marginalization and population inequities, and to support individual and community capacity to optimize mental health (Clarke et al., 2015; Jané-Llopis et al., 2005; Tylee & Wallace, 2009). From a developmental science perspective, mental health promotion enhances youths' achievement of developmentally appropriate tasks, which contributes to a sense of mastery, wellbeing, inclusion and resilience (NRCIM, 2009).

While still limited relative to larger literatures on prevention and treatment, a growing body of evidence indicates that mental health promotion can contribute to the wellbeing of communities, with lasting effects (Barry & Jenkins, 2007; Barry, 2007; Barry, Clarke, Jenkins, & Patel, 2013; Friedli, 2004; Keleher & Armstrong, 2006; WHO, 2005; Wells, Barlow & Stewart-Brown et al., 2003). However, while mental health promotion offers a promising orientation to more comprehensively address the mental health needs of youth, scholars have long highlighted a gap in health research and programming targeting youth – their perspectives are not typically accounted for (Howard, Dryden, & Johnson, 1999; Jacquez, Vaughn, & Wagner, 2013; Thackeray & Hunter, 2010). This oversight is problematic because youth tend to have different values, understandings, and interpretations of their worlds. The success of interventions developed without their input is “likely to be compromised” (Howard et al., 1999, p. 308). Beyond the research context, engaging youth has recently emerged as a priority of many governments (e.g., Government of Canada, 2017; Youth Voice ON, 2017). Yet, while this approach has attracted attention across sectors – and there is general consensus that including youth in the development of health-related initiatives should be priority – there is limited scientific evidence on impacts or outcomes (Powers & Tiffany, 2006; Wong, Zimmerman, & Parker, 2010).

To address these gaps, this paper describes the outcomes and impacts of the Social Networking Action for Resilience (SONAR) study. This participatory study involved the development, implementation, and evaluation of an evidence-informed, youth-driven mental health promotion intervention. Specifically, we address three research questions: 1) can youth-driven mental health promotion programs contribute to changes in indicators of mental health? 2) does level of engagement influence the degree of benefit? and 3) what do community members perceive to be the impacts of mental health promotion interventions designed by youth? These questions allowed us to uncover the impacts and outcomes of both SONAR as a mental health promotion intervention and of youth engaged research as a process.

## 2. Materials and methods

### 2.1. Overview of the SONAR study and intervention

To provide context for the exploration of these research questions, we briefly describe the SONAR study. To inform our approach, we used the perspective of Community-based Knowledge Translation (CBKT). CBKT is underpinned by tenets of participatory inquiry and knowledge translation science and incorporates several activities to support the development, implementation, and evaluation of evidence-based and community-relevant interventions aimed at enhancing population health outcomes (Jenkins, Kothari, Bungay, Johnson, & Oliffe, 2016).

Utilizing the processes outlined in the [name removed for double-blind reviewing] Framework for CBKT (Fig. 1), the SONAR study was conducted in a rural community, which we refer to by the pseudonym Lakeview, located in North-Central British Columbia, Canada between April 2013 and September 2014. The intervention built on previous research our team had conducted in this town, which identified demand for an intervention to address the mental health of youth (see Jenkins, Johnson, Bungay, Kothari, & Saewyc, 2015 for details of previous study). The study process began with the hiring of 10 youth co-researchers (YCRs). The YCRs worked with the research team to design an evidence-based mental health promotion intervention that drew upon knowledge from a variety of sources, not the least of which were the lived experiences of youth in Lakeview. This process of working with the YCRs was aligned with the constructs of PYD and included opportunities for connection and bonding, activities that promoted social, emotional, behavioural and cognitive competence, exercises that fostered self-efficacy and self-determination, and recognition of prosocial involvement and positive behavior (Catalano et al., 2004). YCRs were compensated $15 CAD per hour for their involvement, which averaged two hours per week for the duration of the study. Identifying the focus of the SONAR intervention was an iterative process

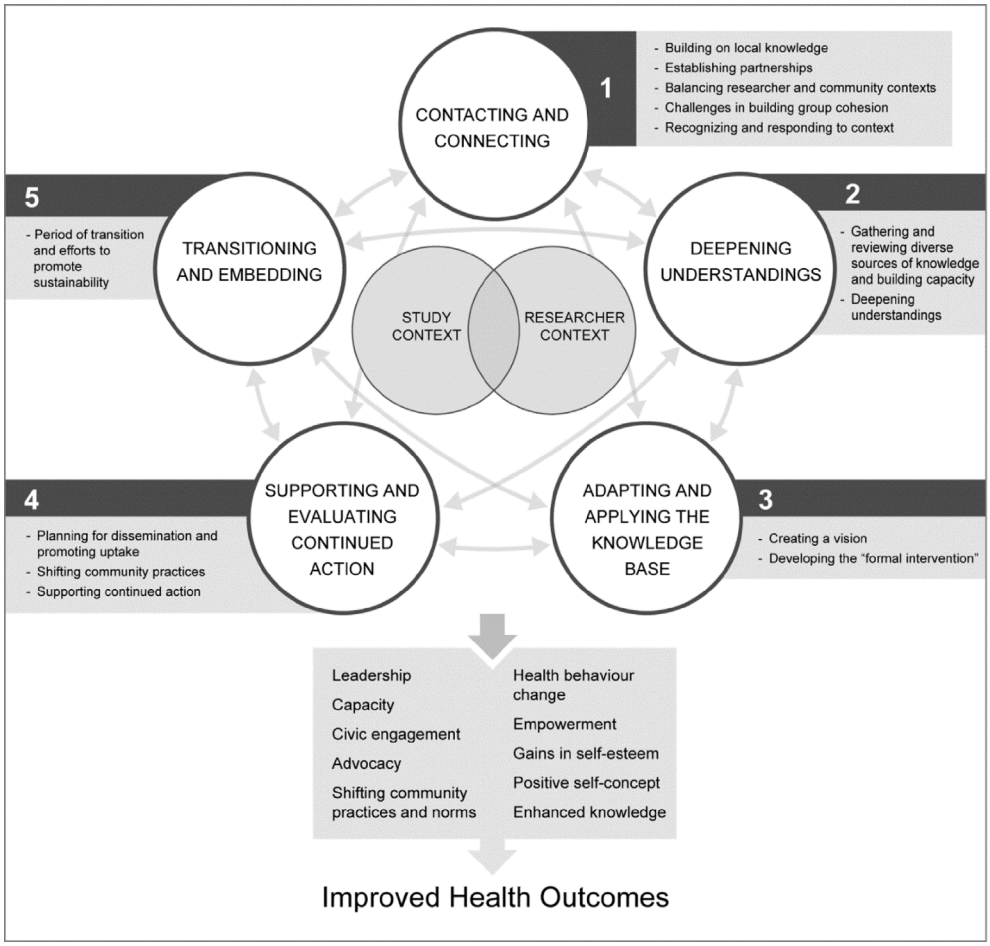


**Fig. 1.** CBKT framework (Jenkins et al., 2016).

that occurred over a 6-month period and involved examining and reflecting upon a variety of forms of knowledge and evidence about youth mental health. The materials reviewed during this stage of the study included community reports from research exploring youth mental health in Lakeview; local knowledge produced by the regional health authority detailing the local epidemiology of mental health challenges and available resources; scientific literature on the determinants of youth mental health and the effectiveness of different mental health promotion and prevention approaches (e.g., Jenkins, Ng, & Hilario, 2013; Goldner, Jenkins, Palma, & Bilsker, 2011; Wells, Barlow, & Stewart-Brown, 2003; Whitlock, 2007); and experiential knowledge of the YCRs themselves. The youth and the research team shared responsibility for identifying these sources of information and training was provided to facilitate online searches. When the materials identified were particularly complex (e.g., peer reviewed journal articles), the research team prepared plain language summaries for the youth (see Authors, 2016 for further details).

Through this process, the YCRs identified the main issues that they believed to be influencing youth mental health in Lakeview: substance use, bullying, and racism. An additional concern that was raised repeatedly by the YCRs and others was an absence of opportunities for youth to be engaged within their community and, in turn, to feel valued and to form meaningful relationships with adults and peers. After further review of youth mental health and development literature, it became evident that poor community connectedness was of central importance, likely impacting multiple mental health problems that the youth had identified (NRCIM, 2009; Oberle, Schonert-Reichl, Guhn, Zumbo, & Hertzman, 2014; Smith et al., 2014; Whitlock, 2007).

To address poor community connectedness, the youth engaged in brain storming exercises and were encouraged to "think big" about the types of initiatives that could be developed to address this concern. This task turned out to be challenging. The YRCs had great difficulty coming up with ideas, and when they did, they quickly identified reasons why they would be "impossible". In an attempt to understand this experience, the research team returned to the data from our previous study in the community. Reflecting on stories shared by youth participants, it was clear that the context in which these youth were growing up was influencing their ability to imagine new solutions. In this community, youth were not routinely exposed to opportunities or engaged in discussion about possibilities for their future. When asked about life goals, many youth struggled to identify their ambitions. There were few examples within the community in which adults, let alone youth, had been successful in creating meaningful change to remedy a concern. In an attempt to address this challenge, the research team distributed a report by Tolman et al. (2001) entitled, "*Youth Acts,*

*Community Impacts: Stories of Youth Engagement with Real Results*". This document detailed case examples from Canada and around the world where the actions of youth had resulted in community transformation; providing a source of inspiration for what could be achieved through the efforts of a group of dedicated youth. After engaging in this visioning process for a period of approximately three months, the YRCs were able to build on existing evidence as well as their experiential knowledge to identify a focus for their initiative – they decided to utilize youth-relevant technology and design a web-app to enhance community connectedness. Funding for the web-app was provided to the youth by the city council following a presentation in which they outlined their work – highlighting the importance of youth mental health and their vision for promoting youth mental health Lakeview.

Given the skill set required, a web developer from outside the community was contracted for the project. The web developer joined the weekly youth meetings via videoconference for a period of approximately six weeks. During these meetings, the youth identified that they wanted to create a web-app that would be simple and easy to navigate. They established ideas for naming and branding the web-app as SONAR and two of the youth who self-identified as "creative" worked to design a logo. The youth's drawings were sent to a graphic design consultant who made the logo ready for online use. The YRCs identified material for the app, which the web developer incorporated and the youth modified to align with their aesthetic and content preferences. When there was disagreement between the youth about decisions related to the web-app, they would discuss these in an attempt to come to an appropriate resolution. In some cases a confidential vote took place, with the majority position selected to move forward. The resulting web-app consisted of four components: 1) a "real time" database of activities and opportunities for youth; 2) a map featuring youth-identified "positive spaces" in the community derived through an asset mapping process; 3) a place for users to post ideas for positive change in their community so as to influence local policy and programming oriented to youth; and 4) links to evidence-based online resources to support youth mental health. Throughout the CBKT process the research team engaged the YCRs in activities to build skills, capacities, and sustainability of outcomes, such as opportunities to develop public speaking and advocacy skills and manage the website.

More broadly, the web-app was considered a platform upon which to spark dialogue about the needs of youth in this community and to initiate additional opportunities for positive engagement. Dissemination and implementation strategies aimed at promoting broader community engagement with the SONAR study included a variety of outreach endeavors: a community forum to enhance understanding of youth mental health and to build collaborative relationships; in-school youth mental health seminar where the youth themselves presented to their peers during a school assembly; presentations by the YCRs to the city council and local First Nations community; participation in community events; and one-to-one engagement with peers. Prizes, which consisted of promotional materials that the youth had helped design (wristbands and beanies embroidered with the study logo), were used as an incentive to download the web-app and to raise awareness about the SONAR initiative. The local newspaper featured two stories about the project, further promoting the SONAR initiative. Between January 2014 and June 2014, activity on the web-app was monitored using Google Analytics, which identified 158 unique visitors and 280 sessions, with an average site viewing of approximately four minutes. Uptake was not occurring as fast as the YRCs had hoped for and they were feeling defeated. Their hard work had not resulted in the enthusiasm that they had hoped to see among their peers. The YRCs mentioned difficulty convincing their peers to use the site, with many of their fellow students seeming uninterested in downloading and using the web-app. In an attempt to address these feelings and re-motivate the group, the research team shared evidence about the potentially slow pace of innovation uptake (Rogers, 1995); however, the feelings of discouragement continued for a period of time and required acknowledgment and opportunities to voice frustrations.

### 2.2. Study design and approach

A pre- and post-community intervention design was used to address the research questions of interest and explore the impact of the SONAR intervention on indicators of mental health. Mental health was conceptualized both in terms of positive psychological health (resilience and connectedness) and emotional distress. The term 'emotional distress' refers to a spectrum of mental health challenges, from everyday challenges like stress and grief to clinically significant mental disorders such as depression or schizophrenia (WHO, 2005). For a comprehensive picture of the impacts and outcomes of this intervention from multiple perspectives, we utilized a mixed methods approach incorporating both surveys and qualitative interviews (Creswell, 2009).

The SONAR study was situated within Lakeview Secondary School, which provides education to youth in grades 8 through 12. All 344 students enrolled in the school were invited to participate in the survey portion of the study. Qualitative interviews were conducted with 10 community stakeholders who were purposefully selected based on their involvement with or knowledge of the study. These stakeholders included YCRs, teachers, counsellors, youth workers, District of Lakeview staff, and First Nations stakeholders who could offer insights regarding the impact of the SONAR intervention from a community perspective.

Ethical approval for this study was granted by the ethics board at the lead author's institution. All survey participants were provided with a document outlining the purpose of the intervention, details regarding involvement as a participant, and ethical considerations. Potential participants were informed that returning their survey would indicate that they were providing informed consent. After reviewing the study goals, the research process and their rights as research participants using the Know your Rights with Research tool (Chabot, Shoveller, Spencer, & Johnson, 2012), the qualitative interview participants signed a consent form prior to data collection.

### 2.3. Survey data collection and analysis

Survey data were collected using a paper and pencil survey consisting of demographic questions, a standardized questionnaire

assessing emotional distress (Paediatric Index of Emotional Distress [PI-ED]) (O'Connor, Carney, House, Ferguson & O'Connor, 2010), a standardized questionnaire assessing resilience (the Child and Youth Resilience Measure [CYRM]) (Liebenberg, Ungar, & Van de Vijver, 2012), and an open-ended question assessing connectedness. Surveys were pilot tested by the YCRs. Survey data were collected at two time points: prior to intervention (web-app release) in September 2013 (n = 233 surveys received) and post-intervention in May 2014 (n = 190 surveys received). Surveys were delivered by teachers during class hours and self-administered by participants. Assistance was provided by teachers when requested. Participant codes were assigned to facilitate linkage of pre- and post-surveys while protecting the anonymity of respondents. Although the survey response rate was modest (68% pre-intervention, 55% post-intervention), it is pertinent to note that Lakeview Secondary has high rates of absenteeism. The sense from school leadership was that the majority of students who were regularly attending school had completed the survey.

The pre-intervention survey assessed gender, ethnicity, and grade as major demographic characteristics. The post-intervention survey asked whether participants had heard of the SONAR intervention and whether they had accessed the SONAR web-app. This question helped gauge the level of engagement that participants had with the intervention.

Emotional distress was measured using the PI-ED (O'Connor et al., 2010). The PI-ED is a 14-item, self-report questionnaire suitable for screening children and adolescents aged 8–16 years for symptoms of emotional distress. The PI-ED includes “cutoff” scores, above which the participant is considered to be experiencing clinically significant emotional distress (PI-ED score of $\geq 11$ for girls; PI-ED score of $\geq 10$ for boys). Cutoff points differ by gender to account for differences in sensitivity and specificity of the PI-ED for detecting clinically significant symptoms between boys and girls. The PI-ED is written at a reading level appropriate for young people 7 years and older. Tests have affirmed the reliability and validity of the PI-ED (O'Connor et al., 2010).

Resilience was measured using the Child and Youth Resilience Measure (CYRM) (Liebenberg et al., 2012). The CYRM is a 28-item questionnaire appropriate for young people aged nine through 23 years of age. Higher CYRM scores indicate greater levels of resilience. Subscales can also be scored to further delineate resilience by individual, caregiver and community factors. For both the master scale and subscales, tests suggest reliability, internal consistency, and validity (Liebenberg et al., 2012; Ungar & Liebenberg, 2011).

Connectedness was measured through an open-ended question stating, “List all the people (fellow students, teachers, counselors, etc.) at [Lakeview Secondary] who you feel like you can go to if you need support (a trusted person to talk to)”. By asking this question, we sought to understand participants' sense of connection and support within the school setting. Items within the CYRM also provided indicators of connectedness, but to the broader community.

All survey data were imported into R statistical package to facilitate analysis. Analysis began with a thorough examination of the dataset for missing data. Of the 233 participants, 181 had partial or complete data for both pre- and post-surveys. Of these, six were excluded from analysis due to missing more than 20% of the pre-test or post-test items for either the emotional distress or resilience scales. This left a total of 175 participants. In terms of the 28 item resilience measure, 36 participants were missing at least one item that was used to construct the resilience measure at the post-intervention collection point. These were assumed to be missing at random, in that no pattern to these missing data was detected (Tabachnick & Fidell, 2013), nor was any other reason known to suspect that they were problematic. A mean score based on each of these participant's available data (and adjusting the denominator to reflect the number of questions answered) was calculated for the pre- and post-test scales. Data analysis was conducted on data from these 175 participants. An anonymized identification number was used to match pre- and post-survey data.

Descriptive statistics were used to produce summaries of the demographic data. Calculations for the Cronbach's alpha coefficient (PI-ED .827 at pre-test, .812 at post-test; CYRM .932 at pre-test, .899 at post-test), demonstrated strong internal consistency of the scales used. A combination of t-tests, ANOVA, and regression models were used to address the research questions. Of particular interest was whether the SONAR intervention was associated with changes in indicators of mental health and whether youth who engaged with the intervention demonstrated greater levels of mental health promoting characteristics than those who did not.

### *2.4. Qualitative data collection and analysis*

In-depth, semi-structured qualitative interviews were conducted post-intervention with key stakeholders including YCRs (n = 2) and adults (n = 8) from the community. An interview guide was used to gain an understanding of participants' perceptions of the intervention and its impact in the community. The interview questions focused on identifying reported changes in behaviour and actions of youth throughout the study period. Questions were also posed regarding the potential impacts that participants attributed to the intervention. Interviews ranged from 30 to 60 min and took place in a private room in the school setting or in a community space. Confidentiality was ensured at the outset. Participants were informed that all identifying information would be removed from the data. All interviews were audiotaped and transcribed. Participants were offered a $20 CAD incentive for participation to acknowledge their time and contribution.

As a complement to the quantitative component of this study, the qualitative interviews offered insight into the more nuanced ways in which this study affected youth and the community of Lakeview. Thematic analysis techniques provided a flexible approach to constructing rich accounts of the qualitative data (Braun & Clarke, 2006). Interview data were uploaded to NVivo 10. These data were read several times and then organized into broad codes based on the inductive identification of predominant patterns or themes. These broad codes were then further divided into sub-codes that focused on particular types or categories of impact, a process which was informed by theoretical concepts drawn from the youth development and participatory research literatures (Boyatzis, 1998). Agreement regarding the predominant themes was reached through ongoing discussion within the study team. During analysis, key findings were circulated amongst community stakeholders and reviewed to ensure alignment with their experiences. No changes to the findings were deemed necessary following this community review process.

**Table 1**
Participant demographics (n = 175).

| | Count | Percent (%) |
|---|---|---|
| *Gender* | | |
| Male | 78 | 44.6 |
| Female | 96 | 54.9 |
| Prefer not to say | 1 | 0.6 |
| *Ethnicity* | | |
| Aboriginal or "Native" | 51 | 29.1 |
| "White" or European | 78 | 44.6 |
| "Mixed race" | 30 | 17.1 |
| Other | 12 | 6.9 |
| Missing | 4 | 2.3 |
| *Grade* | | |
| Grade 8 | 40 | 22.9 |
| Grade 9 | 38 | 21.7 |
| Grade 10 | 38 | 21.7 |
| Grade 11 | 29 | 16.6 |
| Grade 12 | 29 | 16.6 |
| Missing | 1 | 0.6 |

## 3. Results

### 3.1. Survey findings

Study participants included 175 Lakeview Secondary students for whom we had matched pre- and post-intervention survey data. Table 1 provides an overview of demographic characteristics of the study sample.

We next examined the prevalence of clinically significant emotional distress (Table 2). Over half of the sample (61.1%) met the criteria for clinically significant emotional distress. Among the demographic determinants, only gender was associated with distress, with girls having a greater tendency towards clinically significant levels of distress as compared to boys (Table 3).

Measures of mental health (i.e., emotional distress, resilience, connectedness) pre- and post-intervention were examined to assess change in scores over time (see Table 4). Results show that resilience is the only mental health characteristic to have changed amongst participants from pre-to post-intervention, and it worsened on average.

Results thus far may suggest that the SONAR study did not alter, or perhaps even worsened mental health among participants. However, these results may not offer a fair test of intervention outcomes. This is because baseline data collection occurred *after* already engaging in several months of relationship-building work within the community. As a result, change may have already began to occur at the point of baseline data collection, which makes the effect of the intervention difficult to discern based on a pre-/post-test comparison. While a randomized comparison was not possible since the intervention applied to the community as a whole, measures at post-intervention were available to assess each individual's exposure to the intervention according to whether or not they had heard of SONAR – or better – engaged with its services. A treatment-level, albeit non-randomized comparison was therefore possible. For additional results we conducted a post-test only analysis exploring whether youth who engaged with the SONAR intervention were more likely to experience benefits to mental health compared to those who did not (see Tables 5 and 6, respectively). Exposure to the intervention was categorized via a Guttman-type scale at three levels: never heard of SONAR, heard of SONAR, and accessed SONAR web-app. Responses to this item were tested from the same sample of 175 participants included in pre- and post-test analyses.

The post-test analyses indicate that there were differences in mental health based on level of engagement with the intervention. Specifically, resilience and connectedness were higher among those with a greater level of engagement.

In addition, the model results in Table 6 show that those with the greatest level of engagement (accessed SONAR web-app) had almost two additional people identified in their post-test social networks compared to those who had never heard of SONAR ($p < 0.05$).

**Table 2**
Proportion of participants meeting criteria for clinically significant emotional distress.

| Clinically Significant Distress | Yes (n) | No (n) | % Significant Emotional Distress |
|---|---|---|---|
| Boys (Distress score ≥ 10) | 44 | 34 | 56.4 |
| Girls (Distress score ≥ 11) | 63 | 34 | 64.9 |
| Total | 107 (61.6%) | 68 | |

**Table 3**
Demographic determinants of emotional distress and resilience.

| | Pre-intervention Distress (Mean Item-wise Score) | *F* | *t* | Post-intervention Distress (Mean Item-wise Score) | *F* | *t* |
|---|---|---|---|---|---|---|
| ***Emotional Distress*** | | | | | | |
| *Ethnicity* | | | | | | |
| Aboriginal or "Native" | 0.852 | 0.715 | | 0.890 | 0.242 | |
| "White" or European | 0.814 | | | 0.856 | | |
| Mixed | 0.913 | | | 0.814 | | |
| Other | 0.990 | | | 0.881 | | |
| *Gender* | | | | | | |
| Male | 0.741 | | 3.151** | 0.748 | | 3.415** |
| Female | 0.950 | | | 0.905 | | |
| *Grade* | | | | | | |
| 8 | 0.695 | 2.970* | | 0.781 | 0.610 | |
| 9 | 0.929 | | | 0.892 | | |
| 10 | 0.821 | | | 0.890 | | |
| 11 | 1.049 | | | 0.914 | | |
| 12 | 0.835 | | | 0.862 | | |
| ***Resilience*** | | | | | | |
| *Ethnicity* | | | | | | |
| Aboriginal or "Native" | 3.842 | 0.501 | | 3.722 | 0.244 | |
| "White" or European | 3.892 | | | 3.787 | | |
| Mixed | 3.729 | | | 3.710 | | |
| Other | 3.874 | | | 3.774 | | |
| *Gender* | | | | | | |
| Male | 3.747 | | 2.198* | 3.690 | | 1.708 |
| Female | 3.956 | | | 3.826 | | |
| *Grade* | | | | | | |
| 8 | 3.746 | | | 3.670 | | |
| 9 | 3.897 | | | 3.903 | | |
| 10 | 4.003 | 1.698 | | 3.730 | 1.682 | |
| 11 | 3.671 | | | 3.646 | | |
| 12 | 3.943 | | | 3.857 | | |

*Note.* $^{*}p < 0.05$ $^{**}p < 0.01$.

**Table 4**
Paired-sample T-Tests for individual (person-level) change in indicators of mental health.

| | Pre-Test Mean | *SD* | Post-Test Mean | *SD* | *t* | Cohen's *d* |
|---|---|---|---|---|---|---|
| Distress | 0.853 | 0.458 | 0.863 | 0.404 | −0.376 | 0.028 |
| Resilience | 3.858 | 0.621 | 3.763 | 0.519 | 2.616** | −0.198 |
| Connectedness | 4.549 | 4.545 | 4.162 | 3.566 | 1.232 | −0.094 |

*Note.* $^{*}p < 0.05$ $^{**}p < 0.01$.

**Table 5**
Analysis of variance (ANOVA) for effects of SONAR intervention on indicators of mental health.

| | *SS* | *MS* | *F* (2, 172) |
|---|---|---|---|
| *Differences in Item-wise Post-Test Mean for Distress* | | | |
| Level of engagement with SONAR | 0.433 | 0.217 | 1.330 |
| *Differences in Item-wise Post-Test Mean for Resilience* | | | |
| Level of engagement with SONAR | 2.770 | 1.383 | 5.400** |
| *Differences in Item-wise Post-Test Mean for Connectedness* | | | |
| Level of engagement with SONAR | 77.100 | 38.560 | 3.107* |

*Note.* $^{*}p < 0.05$ $^{**}p < 0.01$.

### *3.2. Interview findings*

To address the third research question regarding the impacts of the SONAR intervention as perceived by the community, qualitative interviews with 10 community stakeholders were analyzed. Doing so was complementary to the above quantitative findings, offering elaboration on those but also providing opportunity to address discrepant results. These findings indicated that in addition to greater levels of resilience and connectedness among YCR participants, the SONAR intervention supported individual and community-level factors to promote mental health, foster capacity, and build connectedness more broadly.

**Table 6**
OLS regression to detect post-test mental health indicators based on level of engagement.

| | Estimate | *p* value | Pearson's *r* |
|---|---|---|---|
| *Distress* | | | |
| Never heard of SONAR (reference) | | | |
| Heard of SONAR | 0.091 | 0.162 | |
| Accessed SONAR | 0.123 | 0.241 | 0.119 |
| *Resilience* | | | |
| Never heard of SONAR (reference) | | | |
| Heard of SONAR | 0.242 | 0.003** | |
| Accessed SONAR | 0.278 | 0.035* | 0.227 |
| *Connectedness* | | | |
| Never heard of SONAR (reference) | | | |
| Heard of SONAR | 1.002 | 0.082 | |
| Accessed SONAR | 1.983 | 0.031* | 0.188 |

*Note.* $*p < 0.05$ $**p < 0.01$.

### 3.3. Enhanced self-concept, knowledge and empowerment

During qualitative interviews, descriptions of how youth in Lakeview were gaining self-esteem and becoming empowered through their involvement with the SONAR intervention were shared. One adult participant from the school setting described the implications of the initiative for the YCRs: “The core group of kids who are a part of [SONAR] are impacted and feel empowered by it”. Along with being empowered, the youth were seen as taking ownership of the study and their mission: “You had this little group of students and all of a sudden they've blossomed and they're definitely – they have taken ownership, right. It's not just, oh, this little project. It's, like, my project.”

Another participant shared similar accounts of empowerment among YCRs:

> There are a few youth that I have seen really come out of their shell and start to believe in themselves more. Their self-esteem has really increased, their self-awareness and wanting to make healthier choices in their day-to-day lives. And also on weekends, be more of a role model. I've definitely seen that come out of some of the youth in SONAR.

While we heard many stories about benefits of involvement with the SONAR intervention on YCRs, we were also told of ways in which stakeholders perceived the larger community was impacted:

> Also, the assembly was fabulous. And [name of YCR] talking about her experiences, I don't think that ever would have happened if [SONAR] hadn't happened … People came and kids talked. Like, how brave. I don't think people talked about things, right? People were amazed. Kids were amazed. It was very powerful, that whole presentation. And certainly the teachers didn't realize, I think, how capable they were. And that's what we need to demonstrate.

The community outreach and, in particular, the presentation that the YCRs made about the intervention during a school assembly, was described repeatedly by interview participants as having a meaningful impact within the school community, both for adults and students. Interviewees identified YCRs as having gained self-esteem, skills in public speaking, and leadership experience, while the broader school community was described as benefiting from increased knowledge about mental health. This inspired dialogue about this health issue and more nuanced understandings: “they have a whole definition now … a more proactive one … it's not that it's a problem and you deal with it because you got it, sort of thing, right? There's ways of trying to prevent it.” The YCRs were viewed as having had the “courage to address something that is really big. It doesn't just affect our young people, it's everyone.”

### 3.4. Youth leadership, advocacy and shifting community practices

Participants spoke about how the SONAR intervention led to important changes within the broader Lakeview community. Youth were described as being more active within the community and their visibility was increasing. Participation in community advocacy became more accessible to youth through shifts in how community meetings were now being planned:

> Having more of a youth presence on our local committees, having their input. I mean, we're planning our community centre right now, so having youth around the table while we are talking about what to include there, that's huge … and in fact, we deliberately plan our meetings at the high school so youth can attend.

This change in community practice demonstrates a greater valuing of young voices, the broad presence of which appeared to be lacking prior to the intervention. Another participant shared experiences of enhanced youth visibility within community life:

> What I do see is a physical presence of the SONAR group at different community events. It gives us a means as local leaders to actually get in contact with the youth who would want to be participating on different committees or projects … so it helps give us an avenue for engagement.

A participant from the community setting spoke in more detail about changes in adults' perceptions of youth:

> Adults talk about teenagers a little bit differently right now. 'Oh, I see them out doing this' or 'what's that thing they're doing? What do you call that, SONAR?' They are seeing [the youth] do things and be active and I think that's actually becoming very positive.

### 3.5. Blurring boundaries

The adult stakeholders who were interviewed described important changes in the relationship between youth and the larger community, thereby enabling the building and sustaining of greater connections across generations. Through the SONAR intervention, youth became viewed as making important contributions to the community. In addition to changes in community practices and perceptions of youth, participants also described changes in interactions in ways that may have removed sociocultural boundaries within the community. One participant shared an account of how the SONAR study supported people from different backgrounds to come together:

> … bringing together groups of people that seem dissimilar at first. That conversation is the most important element of this project. Different kids talking to different kids about the same thing … All different grade levels, different genders, different socioeconomic groups, different cultural groups, different academic levels, that conversation … I see all these [youth co-researchers] talking to each other and the other kids notice.

In a community in which perceived "difference" and related experiences of discrimination, bullying, abuse, and disconnection were identified as a key contextual factors contributing to the mental health of youth (see Jenkins et al., 2015), this change in the ways youth are described is powerful.

Stories of youth uniting across previously held boundaries were shared by other participants, which marks an important shift in creating a healthier, more connected community. Additional accounts related ways in which the intervention appeared to unite the school and broader community with a common purpose. One participant shared her perspective on the importance of the mixing of these communities:

> I want school to be more of a two-way street, things from the community coming in and things from the school going out. So what I really liked about SONAR was that it took kids and you met here but you were actually talking about community things that were relevant outside … It's so cool to have kids bringing some of that community stuff into the school. I want us to be more open … mixing in the community and youth and involving the school. Bringing people from outside to get different perspectives and different thoughts. It really made our teachers and students think differently. Making connections with other people and looking at people differently …

## 4. Conclusions

Mental health challenges among youth remain a pressing population health concern with incidence steadily rising (Mojtabai, Olfson, & Han, 2016). Although programming to respond to youth mental health challenges is identified as priority, there has been limited attention to programs that include meaningful engagement of youth in their development and implementation. Without youth as active participants, current interventions may be limited to effectively promote and protect the mental health of youth locally and globally. This study provides evidence identifying the types of outcomes and impacts that can be achieved through youth-driven mental health promotion – findings that help to address a key gap in youth health programming (Howard et al., 1999; Jacquez et al., 2013; Thackeray & Hunter, 2010). The SONAR intervention illustrates the feasibility of engaging youth in mental health promotion and a variety of the positive youth development effects associated with this collaborative approach. The involvement of youth during all stages of the intervention was seen to enhance its relevance to stakeholders. It also appeared to foster constructs aligned with PYD including leadership skills, self-confidence, knowledge development, capacity and community change to promote health and development over the longer term. These findings align with the outcomes of other youth mental health promotion research (Browne, Gafni, Roberts, Bryne & Majumdar, 2004; Wells et al., 2003), PYD research (Catalano et al., 2004; Curran & Wexler, 2017), as well as with research of the benefits of "youth-driven" versus "adult-driven" youth programming (Larson, Walker & Pearce et al., 2005).

While this study indicates the potential that youth-led mental health promotion holds for creating healthier communities, approaches involving youth in meaningful ways to create community change remain limited (Checkoway et al., 2003; Finn & Checkoway, 1998; Jacquez et al., 2013; Thackeray & Hunter, 2010). In their review of youth engagement in participatory research, Jacquez et al. (2013) report that collaborative research involving youth remains infrequent. Thackeray and Hunter (2010) argue that youth have "been handed a second-class ticket in democracy – they are not allowed to vote, yet pertinent policies and legislation are made that directly affect their health" (p. 576). Furthermore, these authors contend that "[a]dolescents ages 12–17 are a largely untapped resource within communities; they are part of the community and can become part of the solution to its problems" (p. 578). Similarly, Checkoway et al. (2003) problematize the dominant view that depicts youth as vulnerable, troubled and incapable. This perception has been perpetuated by media, research and practice. Further research is necessary to build the evidence base on the impacts of youth-engaged research, program, and policy development.

There are important limitations to acknowledge within this study. While findings indicate that exposure to the SONAR intervention was associated with higher levels of positive mental health characteristics (i.e., resilience and connectedness), we do not see

decreases in emotional distress within the sample over time. Further, the effects of the intervention on resilience and connectedness were small. On the other hand, enhancing population-level health is a slow process under most circumstances (Burnes, 2004; Roussos & Fawcett, 2000). Limited resources also restricted the study duration, representing a very short time within which to achieve and measure outcomes (Wells et al., 2003) – particularly in a community where the prevalence of emotional distress is high. In other words, the "dose" of the intervention was small, and may have affected the strength of findings.

As discussed briefly in the findings, there were also issues of study design that need to be acknowledged. Specifically, the timing of the baseline data collection was not aligned with a pre-intervention sample. While this influenced the types of statistical procedures that could be utilized in the analysis, this early engagement was critical to the collaborative, CBKT research approach used. In addition to issues with the timing of data collection, missing data among participants of the quantitative survey represents a limitation. While these data were assessed to be missing at random, one cannot ultimately know what impact this had on the results.

These limitations illustrate a central challenge of assessment and measurement in community-based research – tensions arise between internal, external and ecological sources of validity. In this study, the challenges experienced in capturing the outcomes associated with the SONAR intervention demonstrate the "messiness" often encountered when conducting this type of research, and the threats that arise in relation to internal validity. However, as indicated by scholars working in the community-based research field, there is sound justification for privileging external and ecological validity in these environments, where process and contextual fit are of particular interest (Green, Ottoson, Garcia & Hiatt et al., 2009; Miller & Shinn, 2005). Efforts to maintain clarity regarding the research purpose and the ways in which different forms of validity will be impacted by study aims will help researchers working in community settings to select appropriate methods.

Despite the limitations, this study makes an important contribution to the adolescent mental health and PYD literature. Research on collaborative, adolescent mental health promotion interventions is limited, in part because of the complexity of assessing complex, community-based interventions (Roussos & Fawcett, 2000; Wells et al., 2003). The mixed method design allowed opportunities for richer examination, which yielded additional insights as to the outcomes and impacts of the intervention and enhanced rigour of the research. For example, while the quantitative findings appeared discrepant, the qualitative data provide further details regarding the contributions of the intervention, while also gaining insight into the community's perspectives. Future research is required to further inform the intensity and duration of interventions. Longitudinal designs may provide more robust evidence of community-level change over time and provide important insights into the stability of change achieved through youth-engaged mental health promotion.

## Declarations of interest

None.

## Acknowledgements

This work was supported by the Canadian Institutes of Health Research (CIHR) (Grant number MOP-120776). Trainee support was provided to the first author through a CIHR Canada Graduate Scholarship Doctoral Award and a Strategic Training Initiative in Health Research award from Knowledge Translation Canada. Special thanks to the youth co-researchers for sharing their expertise and demonstrating how youth can meaningfully contribute to mental health promotion interventions. Thanks also to the youth and adult participants and broader community of Lakeview for sharing your experiences and engaging with our research team. We are appreciative of the help we received from Allie Slemon and Liza McGuiness in preparing the article for submission.

## References

Barry, M. M. (2007). Generic principles of effective mental health promotion. *International Journal of Mental Health Promotion, 9*(2), 4–16. https://doi.org/10.1080/14623730.2007.9721834.

Barry, M. M., Clarke, A. M., Jenkins, R., & Patel, V. (2013). A systematic review of the effectiveness of mental health promotion interventions for young people in low and middle income countries. *BMC Public Health, 13*, 835. https://doi.org/10.1186/1471-2458-13-835.

Barry, M. M., & Jenkins, R. (2007). *Implementing mental health promotion.* Oxford, UK: Churchill Livingstone Elsevier.

Boyatzis, R. E. (1998). *Transforming qualitative information: Thematic analysis and code development.* Thousand Oaks, CA: SAGE Publications.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101. http://dx.doi.org/10.1191/1478088706qp063oa.

Browne, G., Gafni, A., Roberts, J., Byrne, C., & Majumdar, B. (2004). Effective/efficient mental health programs for school-age children: A synthesis of reviews. *Social Science & Medicine, 58*(7), 1367–1384. https://doi.org/10.1016/S0277-9536(03)00332-0.

Burnes, B. (2004). Kurt lewin and the planned approach to change: A re-appraisal. *Journal of Management Studies, 41*(6), 977–1002. https://doi.org/:10.1111/j.1467-6486.2004.00463.x.

Catalano, R. F., Berglund, M. L., Ryan, J. A. M., Lonczak, H. S., & Hawkins, J. D. (2004). Positive development: Realizing the potential of youth. *The Annals of the American Academy of Political and Social Science, 591*, 98–124.

Chabot, C., Shoveller, J. A., Spencer, G., & Johnson, J. L. (2012). Ethical and epistemological insights: A case study of participatory action research with young people. *Journal of Empirical Research on Human Research Ethics, 7*(2), 20–33. https://doi.org/10.1525/jer.2012.7.2.20.

Checkoway, B., Richards-Schuster, K., Abdullah, S., Aragon, M., Facio, E., Figueroa, L., et al. (2003). Young people as competent citizens. *Community Development Journal, 38*(4), 298–309. https://doi.org/10.1093/cdj/38.4.298.

Clarke, A. M., Kuosmanen, T., & Barry, M. M. (2015). A systematic review of online youth mental health promotion and prevention interventions. *Journal of Youth and Adolescence, 44*, 90–113. https://doi.org/10.1007/s10964-014-0165-0.

Creswell, J. W. (2009). *Research design: Qualitative, quantitative and mixed methods approaches.* Thousand Oaks: Sage.

Curran, T., & Wexler, L. (2017). School-based positive youth development: A systematic review of the literature. *Journal of School Health, 87*(1), 71–80.

Finn, J. L., & Checkoway, B. (1998). Young people as competent community builders: A challenge to social work. *Social Work, 43*(4), 335–345. https://doi.org/10.

1093/sw/43.4.335.
Friedli, L. (2004). *Making it effective: A guide to evidence based mental health promotion.* Retrieved 20 November 2017 from http://www.thehealthwell.info/node/24493.
Goldner, E., Jenkins, E., Palma, J., & Bilsker, D. (2011). *A concise introduction to mental health in Canada.* Toronto, ON: Canadian Scholars' Press.
Government of Canada (2017). *Prime Minister's youth council member biographies.* Retrieved 20 November 2017 from https://www.canada.ca/en/campaign/prime-ministers-youth-council/biographies-first-wave-members.html.
Green, L. W., Ottoson, J. M., Garcia, C., & Hiatt, R. A. (2009). Diffusion theory and knowledge dissemination, utilization, and integration in public health. *Annual Review of Public Health, 30,* 151–174. https://doi.org/10.1146/annurev.publhealth.031308.100049.
Herrman, H., & Jané-Llopis, E. (2012). The status of mental health promotion. *Public Health Reviews, 34*(2), 1–21. https://doi.org/10.1007/BF03391674.
Howard, S., Dryden, J., & Johnson, B. (1999). Childhood resilience: Review and critique of literature. *Oxford Review of Education, 25*(3), 307–323.
Jacquez, F., Vaughn, L. M., & Wagner, E. (2013). Youth as partners, participants or passive recipients: A review of children and adolescents in community-based participatory research (CBPR). *American Journal of Community Psychology, 51*, 176–198. https://doi.org/10.1007/s10464-012-9533-7.
Jané-Llopis, E., Barry, M., Hosman, C., & Patel, V. (2005). Mental health promotion works: A review. *Global Health Promotion,* (Suppl. 2), 9–25. https://doi.org/10.1177/10253823050120020103x.
Jenkins, E., Johnson, J. L., Bungay, V., Kothari, A., & Saewyc, E. M. (2015). Divided and disconnected—An examination of youths' experiences with emotional distress within the context of their everyday lives. *Health & Place, 35*, 105–112.
Jenkins, E., Kothari, A., Bungay, V., Johnson, J. L., & Oliffe, J. (2016). Strengthening population health interventions: developing the collaboraktion framework for community-based knowledge translation. *Health Research Policy and Systems, 14*, 65. http://dx.doi.org/10.1186/s12961-016-0138-8.
Jenkins, E., Ng, C., & Hilario, C. (2013). *Community report 2013: Town A.* Retrieved May 25, 2015 from: https://radarresearch.files.wordpress.com/2013/08/town-a-community-report-1-for-website1.pdf.
Keleher, H., & Armstrong, R. (2006). *Evidence-based mental health promotion resource.* Melbourne, Australia: Department of Human Services and VicHealth. Retreived from https://www2.health.vic.gov.au/about/publications/policiesandguidelines/Evidence-based-mental-health-promotion-resource—entire-resource.
Larson, R., Walker, K., & Pearce, N. (2005). A comparison of youth-driven and adult-driven youth programs: Balancing inputs from youth and adults. *Journal of Community Psychology, 33*(1), 57–74. https://doi.org/10.1002/jcop.20035.
Lerner, R. M. (2017). Commentary: Studying and testing the positive youth development model: A tale of two approaches. *Child Development, 88*(4), 1183–1185. http://dx.doi.org/10.1111/cdev.12875.
Liebenberg, L., Ungar, M., & Van de Vijver, F. (2012). Validation of the child and youth resilience Measure-28 (CYRM-28) among Canadian youth. *Research on Social Work Practice, 22*(2), 219–226. https://doi.org/10.1177/1049731511428619.
Miller, R. L., & Shinn, M. (2005). Learning from communities: Overcoming difficulties in dissemination of prevention and promotion efforts. *American Journal of Community Psychology, 35*(3–4), 169–183. https://doi.org/10.1007/s10464-005-3395-1.
Mojtabai, R., Olfson, M., & Han, B. (2016). National trends in the prevalence and treatment of depression in adolescents and young adults. *Pediatrics, 138*(6), e20161878. https://doi.org/10.1542/peds.2016-1878.
National Research Council and Institute of Medicine (2009). Preventing mental, emotional, and behavioral disorders among young people: Progress and possibilities. Committee on the prevention of mental disorders and substance abuse among children, youth, and young Adults: Research advances and promising interventions. In M. E. O'Connell, T. Boat, & K. E. Warner (Eds.). *Board on children, youth, and families, division of behavioral and social sciences and education.* Washington, DC: The National Academies Press.
Oberle, E., Schonert-Reichl, K. A., Guhn, M., Zumbo, B. D., & Hertzman, C. (2014). The role of supportive adults in promoting positive development in middle childhood: A population-based study. *Canadian Journal of School Psychology, 29*(4), 296–316. https://doi.org/10.1177/0829573514540116.
O'Connor, S., Carney, T., House, E., Ferguson, E., & O'Connor, R. (2010). *PI-ED.* London: GL Assessment.
Powers, J. L., & Tiffany, J. S. (2006). Engaging youth in participatory research and evaluation. *Journal of Public Health Management and Practice, 12*, S79–S87.
Rogers, E. M. (1995). *Diffusion of innovations* (4th ed.). New York: The Free Press.
Roussos, S. T., & Fawcett, S. B. (2000). A review of collaborative partnerships as a strategy for improving community health. *Annual Review of Public Health, 21*, 369–402. https://doi.org/10.1146/annurev.publhealth.21.1.369.
Sharac, J., McCrone, P., Clement, S., & Thornicroft, G. (2010). The economic impact of mental health stigma and discrimination: A systematic review. *Epidemiology and Psychiatric Sciences, 19*(3), 223–232. https://doi.org/10.1017/S1121189X00001159.
Smith, A., Stewart, D., Poon, C., Peled, M., Saewyc, E., & McCreary Centre Society (2014). *From hastings street to Haida Gwaii: Provincial results of the 2013 BC adolescent health survey.* Vancouver, BC: McCreary Centre Society.
Statistics Canada (2012). *Canadian community health survey – mental health.* Retrieved 20 November 2017 from http://www5.statcan.gc.ca/cansim/a47.
Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics* (6th ed.). New Jersey: Pearson Education.
Thackeray, R., & Hunter, M. (2010). Empowering youth: Use of technology in advocacy to affect social change. *Journal of Computer-Mediated Communication, 15*(4), 575–591. https://doi.org: 10.1111/j.1083-6101.2009.01503.x.
Tolman, J., Pittman, K., with Cervone, B., Cushman, K., Rowley, L., Kinkade, S., et al. (2001). Youth acts, community impacts: Stories of youth engagement with real results. *Community & youth development series: Vol. 7.* Takoma Park, MD: The Forum for Youth Investment, International Youth Foundation.
Tylee, A., & Wallace, A. (2009). Mental health promotion. In L. Gask, H. Lester, T. Kendrick, & R. Peveler (Vol. Eds.), *Primary care mental health: 351-365.* London: RCPsych Publications.
Ungar, M., & Liebenberg, L. (2011). Assessing resilience across cultures using mixed methods: Construction of the child and youth resilience measure. *Journal of Mixed Methods Research, 5*(2), 126–149. https://doi.org/10.1177/1558689811400607.
Waddell, C., Shepherd, C., Schwartz, C., & Barican, J. (2014). *A research report for the British Columbia ministry of children and family development.* Retrieved 20 November 2017 from http://childhealthpolicy.ca/wp-content/uploads/2015/12/2015-10-05-Waddell-et-al-Report-2014.06.16-w-errata.pdf.
Walker, E. R., McGee, R. E., & Druss, B. G. (2015). Mortality in mental disorders and global disease burden implications: A systematic review and meta-analysis. *JAMA Psychiatry, 72*(4), 334–341. http://dx.doi.org/10.1001/jamapsychiatry.2014.2502.
Wells, J., Barlow, J., & Stewart-Brown, S. (2003). A systematic review of universal approaches to mental health promotion in schools. *Health Education, 103*(4), 197–220.
Whitlock, J. (2007). The role of adults, public space, and power in adolescent community connectedness. *Journal of Community Psychology, 35*(4), 499–518. https://doi.org:10.1002/jcop.20161.
Wong, N. T., Zimmerman, M. A., & Parker, E. A. (2010). A typology of youth participation and empowerment for child and adolescent health promotion. *American Journal of Community Psychology, 46*, 100–114. https://doi.org:10.1007/s10464-010-9330-0.
World Health Organization (2001). *The world health report— mental health: New understanding, new hope.* Retrieved 20 November 2017 from http://www.who.int/whr/2001/en/whr01_en.pdf?ua=1.
World Health Organization (2005). *Promoting mental health: Concepts, emerging evidence, practice.* Retrieved 20 November 2017 from http://www.who.int/mental_health/evidence/MH_Promotion_Book.pdf.
World Health Organization (2012). *Adolescent mental health: Mapping actions of nongovernmental organizations and other international development organizations.* Retrieved from http://apps.who.int/iris/bitstream/10665/44875/1/9789241503648_eng.pdf.
Youth Voice ON (2017). *Premier's council on youth opportunities.* Retrieved 20 November 2017 from http://youthvoiceontario.ca/pcyo/.