SUICIDE PREVENTION IS A COMMUNITY'S RESPONSIBILITY: EVALUATING THE IMPLEMENTATION OF A SUICIDE PREVENTION TRAINING IN A FACULTY OF APPLIED SCIENCE & ENGINEERING

Melissa Fernandes and Cori Hanson

University of Toronto

melissa.fernandes@utoronto.ca and cori.hanson@utoronto.ca

Abstract – Suicide prevention is a societal responsibility which Engineering Faculties can address by implementing community-wide interventions to educate staff, faculty and students on how to recognize, respond and connect people in need. COVID-19 has necessitated a reimagining of the way suicide prevention programs are delivered and this paper will highlight the implementation and program evaluation of a new online asynchronous suicide prevention training program at a university's Faculty of Applied Science & Engineering which proved to be effective.

Keywords: suicide prevention, mental health, health promotion, online training, wellness, engineering, faculty

1. INTRODUCTION

Fostering a culture of care and a sense of belonging are aspirations of many engineering faculties, schools and programs across Canada. However, these aspirations are amidst the Canadian Federation of Engineering Students' stance that engineering students confront negative mental health outcomes at rates exceeding the general population as a consequence of the structure and workload demands [1] and claims that engineering students experience one of the highest rates of mental distress among student groups and are the least likely to seek help for a mental illness [2].

Suicide ideation and attempt are experiences that are prevalent on university and college campuses. The 2019 National College Health Assessment (NCHA) found that 16.4% of its 55,284 Canadian respondents seriously considered suicide at some time within the last 12 months, while 2.8% attempted suicide at some time within the last 12 months [3]. Our Faculty's NCHA subset (n=250) does not show a statistically significant difference in suicide ideation and attempt in comparison to the rest of our university's population or the national average. Additionally, that same year, the suicide rate (the number of deaths from suicide and intentional self-harm) in Canada for those between 20 and 24 years of age reached 12.4 per 100,000 population [4].

Since the 1960's models of community health have contributed to suicide prevention being considered as a societal responsibility rather than limited to specialized professionals and individual help-seeking [5] [6]. With Engineering students being close knit communities on post-secondary campuses this concept of suicide prevention being an aspect of community care and responsibility can be extended to a faculty of applied science and engineering context.

Implementing community-wide interventions like making effective suicide prevention training programs free and available are among the most important initiatives campuses can undertake to address the issue of suicide within campus communities [7]. This paper will highlight the implementation and program evaluation of a new suicide prevention training program at a university's Faculty of Applied Science & Engineering.

2. BACKGROUND & IMPLEMENTATION

Prior to the current global pandemic (COVID-19) and the transition to remote working/learning, many post-secondary institutions across Canada included in-person suicide alertness training as a central component of their suicide prevention efforts. For many years, our Faculty had collaborated with our health-focused student affairs professionals to offer the most prevalent suicide prevention training for universities and colleges in Canada—LivingWorks safeTALK. However, difficulties scheduling these trainings and finding facilitators meant this training was not offered consistently. With the implementation of a Mental Health Programs Officer, our Faculty committed to offering regular LivingWorks safeTALK trainings as a way to continue to foster a culture of caring and support and destigmatize mental health challenges.

2.1 The Need to Adopt a New Suicide Prevention Training Program

COVID-19 has necessitated reimagining the delivery of engineering education and pivoting to

online delivery for not solely curricular content, but also for extra-curricular initiatives as well—suicide prevention programs being included. In March 2020, LivingWorks announced that LivingWorks safeTALK could not be delivered online due to the inability to guarantee safety, limitations on the interactive components, and inability to effectively distribute materials and feedback forms. Additionally, the evidence that substantiates LivingWorks safeTALK's training is based on its in-person format and delivery and could not be extended with confidence to an online synchronous delivery format. As a result, campus safeTALK trainers were prohibited from delivering the training virtually during the global pandemic. This gap in programming prompted our Faculty to adopt another evidence-based training program, LivingWorks Start. The LivingWorks Start training had been recently piloted at mid-sized universities in Canada, and many Ontario university & college health promoters were pivoting to it as a result of the COVID-19 restrictions placed on the LivingWorks safeTALK program.

2.2 LivingWorks Start Suicide Prevention Training

LivingWorks Start is an asynchronous, virtual suicide prevention training that complies with the US Substance Abuse and Mental Health Services Administration (SAMHSA)'s Tier III evidence-based training criteria. The training can be completed at the determined pace of the participant and it is advertised as taking 90 minutes to complete. Built within a learning software system, participants are able to log out of the training and return to it as they wish.

Participants engage in a pre-training survey, then learn a four-step model called "TASC" to keep someone safe from suicide (Tune-In, Ask, Serious, Connect) and conclude the training with a skills practice followed by a post-training survey. Throughout the training there are interactive simulations for the learner to engage in, including a text conversation with a friend, a video that allows participants to take time-stamped notes, and a voice recording exercise that allows the learner to hear what they sound like when asking someone about suicide ideation. General safety resources and support are available throughout the program.

2.3 Implementing LivingWorks Start

Since its adoption, LivingWorks Start has been made free and available to any student, staff or faculty member affiliated with the Faculty. This decision was made to ensure that participants did not experience

financial barriers to accessing suicide prevention training.

Within the Faculty, suicide prevention training is mandated for some student leaders hired within the Faculty and highly encouraged for volunteer student leaders, staff, and faculty. However, any student, staff or faculty member can request access to the suicide prevention training using a request form located on the Faculty's Mental Health & Wellness webpage.

At the Faculty, a person can request access to the training for themselves or for multiple people affiliated with a group (e.g., orientation leaders, department staff teams, student staff teams). Once received by the administrator, participant accounts are created, and participants are provided with access information by email.

Participants are encouraged to complete the training within 60 days since access to LivingWorks Start expires 60 days after account creation. Once an account has expired participants still have access to a summary of the key learnings and the resource tools in the Connect platform, including the "Find Safety" feature.

A follow-up synchronous session is also booked with each participant (either in a group or one-to-one setting) to contextualize the training and to provide resources specific to the local setting. This follow-up session was also established to encourage training completion and to ensure additional supports are provided for participants if needed.

2.4 Evaluating LivingWorks Start

A pre-training survey and a post-training survey are integrated into the LivingWorks Start program. The pre-training survey consists of one question which allows for a pre-post survey analysis of a participant's willingness, belief, knowledge, and confidence to apply their suicide intervention skills. The pre-post survey uses a 4-point scale to evaluate the participant's: willingness to talk to someone who may be thinking of suicide (1.a); belief that they could recognize the signs that someone might be thinking about suicide (1.b); knowledge of how and where to get help for someone who may be thinking about suicide (1.c); and, confidence of their ability to help someone who may be thinking about suicide (1.d).

The post-training survey also gathers information using categorical variables on: the participant's likelihood to implement the TASC model (5-point scale); the amount of previous training in suicide prevention the participant has had (range of hours); who the participant feels these skills would be useful for helping (7 not mutually exclusive categories); whether the participant has someone in mind that they would like to use their new skills with (binary: yes/no),

whether the participant knows how to use the resources provided to get help for themselves (binary: yes/no); the role that the participant would like to play in suicide prevention (4 not mutually exclusive categories); the likelihood of recommending LivingWorks Start to someone else (binary: yes/no); and, whether the participant would like more training (binary: yes/no). In the post-survey there are also open text responses collected for the following: the participant's favourite parts of learning; what, if anything, would deepen participant learning; what parts of the program were challenging and beneficial; and any other comments.

3. RESULTS AND DISCUSSION

3.1 Aspects of Implementation Success

Knowing that LivingWorks Start received high satisfactory ratings from their pilot programs and trusting in the legacy and quality of the parent company LivingWorks allowed for the implementation stakeholders to view this product as an acceptable alternative which allowed for quick adoption. With its evidence-based approval from SAMHSA and its asynchronous platform delivery this new training fit our needs for a replacement suicide prevention training that could be delivered in an online context with fidelity.

When planning to adopt the LivingWorks Start suicide prevention program, the Mental Health Programs Officer set a goal to enroll 100 people in LivingWorks Start between April 30, 2020 and May 1, 2021 with the hope of a 75% completion rate. To their surprise, this goal was easily reached proving that it was feasible to successfully implement LivingWorks Start in the current context. Between April 30, 2020 to March 1, 2021, 101 LivingWorks Start licenses were distributed thereby achieving one aspect of the set goal. Having LivingWorks Start as a mandated training integrated into student-facing support roles was a necessary factor to its uptake and success.

Out of the licenses distributed, 96 participants successfully completed the training, and 5 participants are currently in the process of completion—demonstrating a high completion rate of 95%. Out of the 101 participants, 96 participants were students, and 5 participants were staff and faculty members. While a distribution skewed to more student uptake was expected, more efforts for engaging staff and faculty will be needed to be made for future iterations of this program.

Of the 96 student participants, 54 were mandated to complete the program due to a role-specific training requirement while, 42 students seem to have chosen to

complete the training on their own accord or because they were encouraged to do so.

Most of the licenses, 78.2 % (n=79), were requested directly through the program administrator via email or conversation, while 21.8% licenses (n=22) were requested through the webform. This skewed distribution suggests that having a dedicated staff, the Mental Health Programs Officer, within the Faculty helped to promote the uptake of the training.

The financial impact of implementing LivingWorks Start within the Faculty was within reason. LivingWorks initially offered a COVID-19 discount which resulted in each license costing \$15 CAD. In comparison to safeTALK, this was only \$5 more per license. However, eventually the price per license increased and currently each license costs \$27.95 CAD. This price point is still within reason for our Faculty since the administration of LivingWorks Start is less time consuming for our staff in comparison to LivingWorks safeTALK since the delivery of core-content does not have to be accounted for.

At our Faculty, LivingWorks Start has been made free and available to any affiliated student, staff or faculty member, and this means that the Faculty does absorb all costs. Anecdotal evidence from the follow-up session conversations and comments provided throughout the post-survey suggest that students, staff and faculty appreciated that the Faculty had made this type of training free and easily available to its members. Thus, continuing to ensure that participants can access LivingWorks Start training without experiencing financial barriers will be an important implementation aspect to retain.

3.2 Participant Willingness, Belief, Knowledge and Confidence to Apply their Suicide Intervention Skills (Pre-Post Survey Analysis)

LivingWorks Start's pre-post survey gathers information on each participant's willingness, belief, knowledge, and confidence in applying their suicide intervention skills using a 4-point scale (strongly agree, agree, disagree, strongly disagree).

A Wilcoxon signed ranks test (Table 1) showed that the completion of the LivingWorks Start training elicited a statistically significant change resulting in participants: believing they could recognize the signs that someone might be thinking about suicide ($Z=-7.499$, $p < 0.01$), knowing how and where to get help for someone who may be thinking about suicide ($Z=-7.562$, $p < 0.01$), and feeling confident in their ability to help someone who may be thinking about suicide ($Z=-7.657$, $p < 0.01$). Since there were more ties than positive ranks for the statement where participated

rated their willingness to talk to someone who may be thinking about suicide ($Z=-3.981$, $p < 0.01$) we cannot say with confidence that this factor would increase as a result of the training, instead we can say that with confidence that it does not regress in this category.

Table 1 shows that 9 participants had a lower post-survey rating for question 1. a) which asked if participants were willing to talk someone who may be thinking of suicide, however 35 participants had higher ratings after the training and 52 participants had no change in their rating. For question 1. b) which asked if participants believed they could recognize the signs that someone might be thinking about suicide, only one person had a lower post-survey rating, while 64 participants had higher ratings after the training and 31 participants had no change in their rating. For question 1. c) which asked if participants know how & where to get help for someone who may be thinking about suicide, there were no participants who had a lower post-survey rating, however, 65 participants had higher ratings after the training and 31 participants had no change in their rating. For question 1. d) which asked if participants feel confident in their ability to help someone who may be thinking about suicide, there were no participants who had a lower post-survey rating, however, 68 participants had higher ratings after the training and 28 participants had no change in their rating.

Table 1: Pre-Post Survey Wilcoxon signed ranks test (Questions 1. a-d) (N=96).

Rate how strongly you agree with each of the statements of question:	Negative Ranks	Positive Ranks	Ties
1. a) Willing to Talk	9	35	52
1. b) Recognize Signs	1	64	31
1. c) Getting Help	0	65	31
1. d) Confidence	0	68	28

As shown in Table 2, these shifts were validated by a change in the participants' median responses moving from "agree" (rating of 3) in the pre-survey to "strongly agree" (rating of 4) in the post-survey when asked to rate how strongly they agree with the statements of questions 1. a)-c) and from "disagree" (rating of 2) in the pre-survey to "agree" (rating of 3) in the post-survey when asked to rate how strongly they agree with the statement of question 1. d).

Table 2: Pre-Post Survey Median Statistic Results (Questions 1. a-d) (N=96).

Rate how strongly you agree with each of the statements below:	Pre-Training Median	Post-Training Median
1. a) Willing to Talk	"agree" (3)	"strongly agree" (4)
1. b) Recognize Signs	"agree" (3)	"strongly agree" (4)
1. c) Getting Help	"agree" (3)	"strongly agree" (4)
1. d) Confidence	"disagree" (2)	"agree" (3)

Implementing LivingWorks Start training in the Faculty led to high self-reported levels of belief, knowledge, and confidence in applying their suicide intervention skills, with the most significant shifts witnessed in a participant's self-reported belief, knowledge, and confidence. Through this analysis we learned that the LivingWorks Start training demystified the process of helping someone who may be contemplating suicide. While this evidence is promising of a successful training program, to understand the retention of these factors and how they correlate with the actual behaviour of talking to students thinking about suicide, further evaluation will need to be completed.

3.3 Assessing Participant Training Needs by Comparing Previous Training Experience and Future Training Aspirations

When asked how much previous training in suicide prevention participants (N=96) have had, 2.1% of participants indicated having 14 or more hours, 6.3% of participants indicated having 6-13 hours, 31.3% of participants indicated having between 2-5 hours, 26% of participants indicated having less than 1 hour and 34.4% of participants indicated having no previous training. With 60.4% of participants having had under 1 hour of previous training in suicide prevention, these results suggest that this intervention was successful in reaching an audience with little to no previous suicide prevention training.

When asked whether they would like more training, 57.9% of participants answered yes, 42.1% of participants answered no, and 1% of participants did not provide an answer. With 57.9% of participants looking for more training, this provides rationale for the post-training debrief which we offer in addition to

the online learning module for further contextualization and information on referral resources.

3.4 Participant Likelihood to Implement the TASC Model

The LivingWorks Start training uses the TASC model to teach participants how to: Tune in to the possibility of suicide, Ask an individual if they are thinking about suicide, tell someone thinking about suicide that suicide is Serious, and Connect an individual thinking about suicide with helping resources. After completing LivingWorks Start, 94 participants (97.9%) rated that if they were to encounter a person who they think might be considering suicide they were either “very likely” or “likely” to tune into the possibility of suicide (the two remaining participants chose to not answer), as shown in Fig. 1.

Fig. 1. Participant likelihood to tune into the possibility of suicide.

Figure 2 shows that after completing LivingWorks Start 89 participants (92.7%) rated that if they were to encounter a person who they think might be considering suicide they were either “very likely” or “likely” to ask the individual if they were thinking about suicide. Six participants (6.25%) rated that they were “neither likely nor unlikely” to ask while the one remaining participant chose to not answer.

Fig. 2. Participant likelihood to ask an individual if they are thinking about suicide.

Figure 3 shows that after completing LivingWorks Start 95 participants (99%) rated that if they were to encounter a person who they think might be considering suicide they were either “very likely” or “likely” to tell them that thinking about suicide is serious (the one remaining participant chose to not answer).

Fig. 3. Participant likelihood to tell someone thinking about suicide that suicide is serious.

Figure 4 shows that after completing LivingWorks Start 95 participants (99%) rated that if they were to encounter a person who they think might be considering suicide they were either “very likely” or “likely” to connect the individual with helping resources (the one remaining participant chose to not answer).

Fig. 4. Participant likelihood to connect an individual thinking about suicide with helping resources.

These findings suggest that the Faculty’s LivingWorks Start participants had a high self-reported likelihood of implementing the TASC framework. While this evidence is promising of a successful training program, to understand the retention of this framework and how an individual’s self-reported likelihood to implement TASC correlates

with their actual behaviour requires further investigation.

3.5 Participant Choice of Role in Suicide Prevention

When asked to identify the role that they would like to play in suicide prevention in the post-survey most participants indicated they would like to be alert to suicide” and listen to help a person with suicide thoughts stay safe (97.9%). This was closely followed by 94.7% of participants who wished to be in a role that would identify a person with thoughts of suicide and connect them to a helping resource. Less popular roles chosen were ones which provide an intervention to a person with suicide thoughts to create a safety plan (69.5%) and provide long-term recovery and growth support in a professional context (28.4%). This pattern can be explained by the more popular roles being ones that fit with the content deliver in the training, while the less popular ones were more specialized roles which participants were not provided the skills to perform through this training program.

3.6 Participant Intention to Use Their Suicide Intervention Skills

The skills taught in LivingWorks Start proved to be ones that participants felt would be useful for helping an array of people including friends (97.9%), classmates (90.5%), work colleagues (89.5%), family (88.4%), acquaintances (77.9%), youth (76.8%), and individuals in their community (76.8%). In fact, by the end of the training, there were 26 participants (27.4%) who already had someone in mind that they could use their new skills with and 97.9% of participants identified that if they themselves were struggling with thoughts of suicide they would know how to use the resources provided in the training to get help. Knowing that participants intended to use their skills in these ways proves that LivingWorks Start met participant needs and indicates that it is an important training for us to be administering.

By supplementing the LivingWorks Start training with a training session that was led by the Mental Health Programs Officer, participants were oriented to the local resources of the Faculty, the University, and at times their geographical location. The follow-up training provided solutions to the challenges of applying suicide prevention skills online and/or asynchronously while also providing an opportunity for participants to debrief. While debriefing the training, participants brought up historical and present concerns about themselves, their friends, and their family members, they asked questions regarding

boundary setting, they unlearned myths about asking about suicide all while expressing their appreciation for the opportunity to complete the training.

3.7 Favourite, Challenging & Beneficial Learning Components

The responses from the post-survey’s open-text questions were analyzed quantitatively using a keyword analysis tool which measured the frequency of word uses. When participants were asked to describe their favourite parts of learning they used words like: video(s) (21 uses), interactive (17 uses), text (15 uses), conversation(s) (14 uses), real (10 uses), scenarios (5 uses), apply (5 uses), practice (5 uses), tools (4 uses), audio (3 uses), engage (3 uses) and choosing (3 uses). These word frequencies suggest that participants enjoyed the interactive components of the training including the texting conversations, video and audio playback tools in addition to the practice scenarios they were able to engage in. One participant’s answer is an example of this, they said, “the explaining behind the decisions. I took a training before that also asked to explicitly ask someone if they’re thinking about suicide, but it felt not useful because I didn’t understand the importance of it. The [training] explained the effects of our actions and how people are likely to receive it. Audio practice! I never realized how awkward it would be to try at first, but it got me feeling more comfortable asking about suicide.”

When participants were asked to describe the part of the program that was challenging and beneficial, they used words like: recording (11 uses), video(s) (14 uses), directly (6 uses), practice (6 uses), scenarios (5 uses), voice (4 uses), loud (4 uses), watching (4 uses), conversation (4 uses), and Fiona (4 uses). These word frequencies suggest that participants found the interactive components of the training including the texting conversations, videos and audio playback tools in addition to the practice scenarios to be challenging and beneficial. One participant’s answer is an example of this, they said, “The rawness of the audio/video conversations was very heavy as I saw both my old self and friends in them. However, I found them to be the most beneficial because they turned a series of steps on paper into a variety of interactions I can see myself having and something I feel confident mapping onto my own life.”

3.8 Ways to Deepen Participant Learning

All of the answers to this question of the post-survey were read and categorized into themes. While many participants replied in the post-survey saying the training met their needs, the common themes that

emerged were: the need for more practice scenarios, the need for local setting resources, the need for context setting for the university youth experience, and the need to experience examples of suicide ideation that were more subtle and complex in nature. While some of these topics and themes are currently covered in the follow-up training, all of them should be integrated into a follow-up training to address this gap.

3.9 Participant Likelihood to Recommend & Additional Comments

When participants were asked how likely they would be to recommend LivingWorks Start to someone else, 89.5% indicated they would be very likely or likely to recommend, 8.5% were undecided and 2.1% were unlikely to recommend.

Almost all the additional comments provided were participants expressing their appreciation for the training and its helpfulness. One participant exclaimed that, "This is the best training I've received for suicide prevention by far." Another participant answered, "LivingWorks Start is a very well put together module that provides individuals with the tools needed to help anyone truly in need. Good work!"

Two comments specifically outlined how it was helpful to see different age groups and social roles represented but wished to have scenarios and resources pertaining to high-risk groups (e.g., LGBTQ, Indigenous and elderly people). These comments will be helpful for LivingWorks to consider for future iterations and for the Mental Health Programs Officer to address in the follow-up debriefing training.

3.10 Next Steps

Our Faculty plans to continue offering LivingWorks Start as a community-wide suicide prevention intervention to staff, faculty and students for free regardless of whether we stay in an online learning context or not. Although we gained enough information from our program evaluation to justify continued support for this program, moving forward qualitative thematic analysis of the open-ended questions will be considered to gain additional depth and understanding of participant responses. One aspect of implementation that we are already planning for is the integration of LivingWorks Start into a Faculty-endorsed certificate program specifically for staff and faculty offered through our institutions learning management system. We hope that this effort will extend our reach and encourage more staff and faculty to engage with this program.

4. CONCLUSION

Suicide prevention training is only one component of addressing the issue of suicide within our campus communities. In their landmark study Drum et al., [7] called for a paradigm shift in suicide prevention which is problem-focused and intervenes at multiple points in the continuum of suicidal ideation. Their research demonstrated how community-wide interventions like making effective suicide prevention training programs free and available are among the most important initiatives campuses can undertake at the earliest points in that continuum. LivingWorks Start training proved to be an all-around effective training for an online COVID-19 context at a Faculty of Applied Science & Engineering according to our program evaluation. LivingWorks Start has also proved to be a sustainable option that we will be able to maintain and embed into our Faculty for the upcoming year and beyond a COVID-19 setting. We hope that our findings can inspire others to consider LivingWorks Start for their campuses and Engineering communities as well.

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By using LivingWorks Education's websites participants accept their terms and conditions of use which include sharing personal information with employers and host organizations to understand training uptake and related activity.

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