



# Suicide prevention skills, confidence and training: Results from the Zero Suicide Workforce Survey of behavioral health care professionals

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## Abstract

**Introduction:** In behavioral health care settings, a workforce well trained in suicide prevention is critically important for behavioral health care professionals across different disciplines and service sectors who are likely to have considerable exposure to patients at risk for suicidal behavior. This study examined the types of training behavioral health care professionals received, their self-reported skills, comfort level and confidence related to suicide prevention, the association of types and length of training with skills, comfort level and confidence, and areas in which participants would like more training.

**Methods:** The Zero Suicide Workforce Survey was administered electronically to behavioral health care professionals at six behavioral health treatment centers with both inpatient and ambulatory programs in Connecticut, USA. Item numbers and percentages were calculated for 847 respondents with behavioral health care roles. The chi-square tests were performed to determine the statistical significance of group differences. Non-parametric sign tests were performed to determine the statistical significance of the collective differences in direction among items between groups.

**Results:** Suicide prevention training is associated with increased levels of behavioral health care professionals' skills and confidence, but one-third of behavioral health care professionals in the sample received no formal training in suicide prevention/intervention. Even brief training appears to have a positive impact on behavioral health care professionals' assessment of their skills and confidence. Prominent topics for additional training include suicide-specific treatment approaches, suicide prevention and awareness, and identification of risk factors and warning signs.

**Conclusion:** Although behavioral health care professionals may often encounter patients at risk for suicide, many have not obtained any relevant training. The findings highlight the need to strengthen suicide identification, assessment and treatment within behavioral health care treatment settings as part of an effort to prevent suicide.

## Keywords

Mental health/psychiatry, suicide prevention, Zero Suicide, workforce development

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Suicide is a major public health concern that takes an immeasurable human, societal and economic toll on family, friends and communities. In 2017, the most recent year data are available, 47,173 lives were lost in the United States due to suicide making it the 10th leading cause of death overall and the second leading cause of death among young people ages 10–34 years.<sup>1</sup> The number of suicide deaths in the United States is likely to increase since suicide rates have risen almost 30% from 1999 to 2016.<sup>2</sup>

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To combat this serious public health concern, several comprehensive evidence informed suicide prevention models have emerged in recent years all of which espouse the importance of a well-trained workforce to respond to patients at risk for suicide.<sup>3-6</sup> Behavioral health care (BHC) professionals across various disciplines are likely to have considerable exposure to patients with fatal and non-fatal suicidal behavior, no matter what the psychiatric diagnosis may be. In a national study of mental health social workers, 55% reported treating a client who attempted suicide and 31% reported having a client die by suicide during their career.<sup>7</sup> Over half (55%) of nurses working in psychiatric hospitals reported having an inpatient die by suicide during their nursing career.<sup>8</sup> Half (50%) of psychiatrists and psychiatry residents surveyed experienced at least one patient suicide.<sup>9</sup> 71% of mental health counselors surveyed reported working with a client who attempted suicide and 24% of randomly selected certified or licensed counselors reported having a client die by suicide during their student training or clinical career.<sup>10,11</sup>

BHC professionals are likely to work with patients at risk for suicide. However, little is known about the pervasiveness of training in suicidology they receive in their professional roles.<sup>12</sup> BHC professionals typically receive limited suicide prevention training during their pre-service education. In a survey of pre-doctoral psychology interns, only about half reported receiving didactic training on suicide during their graduate education.<sup>13</sup> Feldman and Freedenthal<sup>14</sup> surveyed National Association of Social Workers members and found that less than a quarter of them had training in suicide prevention while in graduate school. Wozny and Zinck<sup>15</sup> found that only 6% of accredited marriage and family therapy training programs and 2% of accredited counseling education programs offered courses in suicide assessment/intervention.

Numerous research studies demonstrate positive effects of suicide prevention training among clinical professionals. A study of BHC staff in seven US states found that individuals with suicide prevention training demonstrated more suicide knowledge and confidence than those with no training regardless of profession, state and previous client death by suicide.<sup>16</sup> In a study of rehabilitation counselors (e.g. certified rehabilitation counselors, licensed counselors, licensed clinical social workers and licensed addiction counselors), investigators found that those who had received training on suicide scored significantly higher on measures related to knowledge, competency and comfort working with suicidal clients.<sup>17</sup> Suicide prevention training has also been shown to improve delivery of service and patient outcomes.<sup>18</sup> Furthermore, research suggests that the benefits of training are sustainable. Jacobson et al.<sup>19</sup> found that mental health professionals reported continued improvements in knowledge, attitudes, confidence and skills 4 months after a suicide prevention training. At the 6-month follow-up of a workshop on the assessment and treatment of suicidal behaviors for mental health professionals working for the US Air Force, 44% of practitioners reported increased confidence in

assessing suicide risk, 54% reported increased confidence in managing suicidal patients, 83% reported changing suicide care practices and 66% reported changing clinical policy.<sup>12</sup>

With the strong evidence supporting the need for and benefits of suicide-related training, it is important to know the extent to which BHC professionals are trained and the types of training they have received. Stewart et al. surveyed a random sample of American Psychology Association (APA) members who were in private practice and inquired about, among other things, logistical barriers to attending trainings on empirically supported treatments. Among the strongest objections to obtaining training was the time commitment.<sup>20</sup> Although the trainings referred to in this study were not specifically suicide related and only included APA members in private practice, the findings do shed light on length of training as a possible barrier to suicide-related training. Studies exist that examine suicide prevention trainings of different lengths. Silva et al.<sup>16</sup> investigated BHC staff's suicide knowledge and confidence working with suicidal patients who received Question, Persuade and Refer (QPR) (2h) or Applied Suicide Intervention Skills Training (ASIST) (2 days). Herron et al.<sup>21</sup> conducted a literature review of small communities that used ASIST (2 days), Connect (3 h), Campus Connect (3 h) or QPR (2 h) and focused on program efficacy and effectiveness. However, neither of these studies included length of training as a primary outcome.

This study extended previous research that examined health care professionals' knowledge, skills and confidence in treating suicidal patients.<sup>16,22</sup> The purpose of this survey was threefold. First, we set out to document the prevalence of suicide-related training among BHC professionals. Second, we examined the effect of suicide-related training on BHC professionals' skills, comfort level and confidence to address patient suicide risk. We hypothesized that trained respondents will report greater confidence in, and comfort level with, their skills to address suicide risk. Third, we investigated the association of length of suicide-related training on BHC professionals' self-report of their skills, comfort level and confidence. Our hypothesis was that, among trained respondents, greater length of training would be associated with greater skills, comfort level and confidence. Throughout this article, we have used the term "BHC professionals" to define the study sample. The respondents all held positions in a BHC center in which they interacted with and/or cared for patients with a psychiatric illness.

## Methods

### Instrument

This multi-site study involved a workforce development survey administered at six behavioral health treatment centers in Connecticut, USA. The Zero Suicide Workforce Survey was used to assess staff's self-reported knowledge, practices and skills, comfort level and confidence in caring for patients at risk for suicide.<sup>23</sup>

The Zero Suicide Workforce Survey is an assessment instrument in the Zero Suicide Training Toolkit and was developed as an organizational needs assessment tool, not as a traditional psycho-social measurement instrument. The original instrument was developed by David Covington, one of the pioneers of the Zero Suicide Initiative. He and his colleagues used the 13-item Suicide Opinion Questionnaire (SOQ) as the basis for the instrument and added several Zero Suicide questions.<sup>16</sup> The results of a study with close to 17,000 behavioral health workers from seven states provided limited psychometric findings.<sup>12</sup> The suicide skills confidence subscale which assessed respondents' confidence in working with suicidal clients in regard to training, skills comfort and supervision demonstrated good reliability (Cronbach's  $\alpha=0.84$ ). The suicide knowledge subscale, which was based on the SOQ, had a Cronbach's  $\alpha$  of 0.40. Because the knowledge scale includes different components of knowledge related to suicide, the low reliability is reasonable.<sup>24</sup>

The survey (May 2015 version) consisted of 34 closed-ended questions grouped into five sections: (1) prevalence of suicide; (2) beliefs about suicide and people at risk of suicide; (3) current suicide care practices; (4) training, skills, confidence and supervisory support to work effectively with suicidal patients; and (5) job characteristics.<sup>23</sup> The survey uses a five-point Likert-type response scale (Strongly Disagree (1) to Strongly Agree (5)) with "Don't Know" and N/A options. In addition, respondents were asked to select the category that best described their primary professional role from a list of 13 options. They were also asked to identify all trainings they had received from a list of 16 trainings and options of "I don't remember the name of the training," "I have not completed training specifically in suicide prevention" and "I have completed a training not listed here (please describe)." Two modifications to the survey were made at the request of the site directors: (1) a question inquiring about the primary department/unit where the respondent worked was eliminated and (2) an additional response option (i.e. youth and adults) was added to a question inquiring about the primary types of clients with whom the respondent worked.

### Procedures

Six behavioral health treatment centers with both inpatient and ambulatory programs approached the investigators requesting assistance with administering the survey. The investigators adjusted the distribution of the survey to meet the needs of each site. At two of the sites, the medical directors distributed the survey link to personnel through their internal email system. One of these sites administered the survey for 8 weeks with three reminders during August to September of 2016. At the other site, surveys were administered for 8 weeks with four reminders during January to February 2016. At three other sites, the investigators emailed personnel a link to the survey using contact information provided by the organization. Of the sites using this survey distribution method, one site requested that the survey be open

from January to February for 8 weeks with two reminders, a second site had the survey open for 4 weeks with two reminders in January 2017 and the third site had the survey open for 8 weeks with three reminders from June to July 2017. One site used a combination of both distribution methods. At this site, surveys were emailed in January and February 2017 for 4 weeks with two reminders.

Survey invitations were emailed with a brief letter explaining the survey's purpose and that participation was voluntary. Respondents' identifying information was not linked to responses. At the close of the survey administration, data were retrieved from the databases, stored on a secure local server and merged for analysis.

### Participants

This study used a purposive sample. BHC professionals at six behavioral health treatment centers were recruited for the study. Staff ( $n=2115$ ) were sent a link to the survey with 1194 completing the survey (overall response rate=56%). The focus of the study sample was BHC professionals, which we defined as individuals who held a position in a BHC center in which they interacted with and/or cared for patients with a psychiatric illness. 347 surveys were excluded from analyses since they did not meet the job title inclusion criteria. This reduced the number of usable surveys to 847, 40% of distributed surveys.

Table 1 presents the distribution of respondents to the survey who were BHC professionals by job category. Behavioral health clinician (37.2%) was the job category with the largest percentage of respondents followed by technician (14.9%). Adjunct therapist (1.4%) and crisis services (2.7%) had the smallest percentage of respondents. Details on sex/gender, age or race/ethnicity are not available to report since demographic questions were not included in the survey. The data were collected as part of quality improvement efforts for the respective organizations. As such, the data do not qualify as research under the US Department of Health and Human Services, Office of Human Research Protections.<sup>25</sup>

### Data analysis

Item numbers and percentages were calculated in IBM SPSS Statistics for Windows, 2016, Version 24.<sup>26</sup> For both hypotheses, chi-square tests were performed to determine the statistical significance of group differences. To test the effect of length of training, non-parametric sign tests were performed to determine the statistical significance of the collective differences in direction among items between groups.

### Results

Over 42% of BHC professionals ( $n=360$ ) reported that they had worked with a client who had ended his or her life by suicide. Table 1 presents the number and percentage of BHC professionals in each type of job category who worked with

**Table 1.** Distribution of respondents by job category and percent trained in suicide prevention.

Job category	Examples of job titles listed in survey	Number of respondents	Percent responded	Number with one or more suicides	Percent with one or more suicides	Number of respondents trained	Percent trained
Adjunct therapist	Activity, occupational, physical, rehabilitation	12	1.4	7	58.3	3	25.0
Behavioral health clinician	Counselor, social worker, substance abuse counselor, therapist, psychologist	315	37.2	121	38.4	231	73.3
Case management	(No examples of job titles were listed in survey)	89	10.5	21	23.6	64	71.9
Crisis services	(No examples of job titles were listed in survey)	23	2.7	15	65.2	21	91.3
Management	Administrators, supervisors, managers, coordinators	118	13.9	54	45.8	65	55.1
Nursing/physical health care/medication management	Nurse, registered nurse, physician, nurse practitioner, physician's assistant	87	10.3	48	55.2	55	63.2
Psychiatry	Psychiatrist, psychiatric nurse practitioner	77	9.1	48	62.3	45	58.4
Technician	Mental health technician, behavioral technician, patient care assistance, residential technician	126	14.9	46	36.5	84	66.7
	Total	847	100.0	360	42.5	568	67.1

a client who died by suicide. More than half of the BHC professionals in four job categories reported experiencing the suicide of a client/patient: crisis services ( $n=23$ , 65.2%), psychiatry ( $n=48$ , 62.3%), nursing/physical health care/medication management ( $n=48$ , 55.2%) and adjunct therapist ( $n=7$ , 58.3%). Although case managers were least likely to have experienced a suicide, the rate in this job category approached 1 in 4 ( $n=21$ , 23.6%).

Respondents were asked to select from a list the suicide prevention trainings they had received. Table 1 presents the percentage of BHC professionals in each job category trained in suicide prevention. Approximately two-thirds of the respondents reported having some type of suicide prevention training, with substantial variation across job categories. Crisis service professionals were most likely to be trained in suicide prevention (91.3%) while adjunct therapists were least likely (25.0%).

Table 2 presents the suicide prevention programs included in the survey, along with the length of training. Training length varies from 1–2 h to more than 2 days. Table 2 presents the numbers and percentages of respondents who received suicide prevention trainings by training program and job category. Kognito, Question Persuade and Refer (QPR) and Recognizing and Responding to Suicide Risk (RRSR) each offer multiple courses tailored to specific end users. The courses within each training program were combined and listed under the overall training program name. 67% of the respondents reported that they received some type of suicide prevention training. Adjunct therapists (75.0%) were most likely to report having

no suicide prevention training. Over half of the respondents in the remaining job categories received at least one type of training, with the crisis service respondents reporting the largest percentage (91.3%). Dialectical behavioral therapy (DBT) was the most frequently selected training (26.4%). Behavioral health clinicians were most likely to report receiving DBT training (34.3%). Less than 10% of respondents selected any of the other training programs and none of the respondents reported receiving Kognito training.

We hypothesized that respondents' training in suicide prevention would be associated with higher self-perceived levels of clinical skill and greater confidence and comfort in the prospect of assessing, managing and treating suicidal clients. Specifically, we hypothesized that trained respondents would report greater confidence and comfort level with their skills to address suicide risk.

Respondents' perceptions of their skills to address suicide risk, and confidence and comfort level with those skills, are presented in Table 3. Response options ranged from "Strongly Disagree" to "Strongly Agree" on a five-point scale along with "Don't Know" and "N/A." Response options indicating agreement ("Strongly Agree" and "Agree") were combined. Training prevalence was calculated for all respondents, and separately for those trained and untrained in suicide prevention. Respondents who did not endorse any trainings were classified as not being trained; all other respondents were categorized as trained.

Table 3 is sorted in descending order by the percent difference in responses between those with and without training

**Table 2.** Number and percent of training type job category.

Job category	AMSR		ASIST		CAMS		CASE		CBT-SP		DBT		Kognito*	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Adjunct therapist	0	0	0	0	1	8.3	0	0	1	8.3	2	16.7	0	0
Behavioral health clinician	17	5.4	14	14.4	3	1.0	7	2.2	43	13.7	108	34.3	0	0
Case management	2	2.2	2	2.2	1	1.1	4	4.5	7	7.9	15	16.9	0	0
Crisis services	3	13.0	1	4.3	1	4.3	0	0	1	4.3	6	26.1	0	0
Management	1	0.8	2	1.7	1	0.8	3	2.5	8	6.8	30	25.4	0	0
Nursing/physical health care/ medication management	2	2.3	1	1.1	1	1.1	1	1.1	6	6.9	9	10.3	0	0
Psychiatry	1	1.3	0	0	0	0	3	3.9	4	5.2	19	24.7	0	0
Technician	4	3.2	3	2.4	1	0.8	2	1.6	7	5.6	35	27.8	0	0
Total	30	3.5	23	2.7	9	1.1	20	2.4	77	9.1	224	26.4	0	0

Job category	QPR**		RRSR***		SafeTALK		Suicide Care		Do not recall name		Training not listed		No SP training	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Adjunct therapist	0	0	0	0	0	0	0	0	1	8.3	1	8.3	9	75.0
Behavioral health clinician	12	3.8	7	2.2	5	1.6	16	5.1	70	22.2	78	24.8	84	26.7
Case management	8	9.0	4	4.5	1	1.1	2	2.2	24	27.0	26	29.2	25	28.
Crisis services	2	8.7	0	0	0	0	2	8.7	4	17.4	14	60.9	2	8.7
Management	4	3.4	2	1.7	2	1.7	3	2.5	19	16.1	24	20.3	53	44.9
Nursing/physical health care/ medication management	1	1.1	3	3.4	2	2.3	7	8.0	21	24.1	27	31.0	32	36.6
Psychiatry	2	2.6	1	1.3	0	0	0	0	9	11.7	24	31.2	32	41.6
Technician	10	7.9	5	4.0	2	1.6	5	4.0	29	23.0	21	16.7	42	33.3
Total	39	4.6	22	2.6	12	1.4	35	4.1	177	20.9	215	25.4	279	32.9

AMSR: Assessing and Managing Suicide Risk; ASIST: Applied Suicide Intervention Skills Training; CAMS: Collaborative Assessment and Management of Suicidality; CASE: Chronological Assessment of Suicide Events Approach; CBT-SP: Cognitive Behavior Therapy for Suicide Prevention; DBT: Dialectical Behavior Therapy; QPR: Question, Persuade and Refer; RRSR: Recognizing and Responding to Suicide Risk; SP: suicide prevention.

\*It includes Kognito At-Risk in Primary Care and Kognito At-Risk for the ED.

\*\*It includes QPR Gatekeeper training, QPR for Nurses and QPR for Physicians, Physician Assistants and Nurse Practitioners.

\*\*\*It includes RRSR and RRSR in Primary Care.

in suicide risk. Compared to untrained respondents, trained respondents agreed to all items in greater and statistically significant percentages (chi-square values (with 1 degree of freedom (df) and  $n=847$ ) ranged from 24.4 to 50.7, all  $p < 0.001$ ). The item that most differentiated trained and untrained respondents was “I am confident in my ability to treat a patient/client’s suicidal thoughts and behavior using an evidence-based approach such as DBT or CBT,” with 61.1% of trained and 28.3% of untrained respondents agreeing with this statement. In general, the gap between the percentage of trained and untrained respondents was greatest for statements that addressed specific skills in treating and managing suicidal clients and confidence related to these skills. These skills involved screening and assessing a client for suicide risk, treating people with suicidal desire and/or intent, addressing access to lethal methods and comfort connecting clients with community resources.

In general, respondents tended to be comfortable inquiring about a client’s suicidal intent. Approximately 80% or more of all respondents agreed with the following items: “I am comfortable asking direct and open questions about suicide;”

“I bring up the topic of suicide with clients whenever I suspect they may be at risk;” “I know how to gather information about suicide warning signs, risk factors and protective factors from suicidal clients;” and “I bring up the topic of suicide with clients when their record indicates any history of suicidal thoughts or behaviors.” Although trained respondents agreed with these statements at a higher rate than untrained respondents did, 70% or more of untrained respondents also agreed with these items.

Overall, fewer respondents agreed with items that expressed direct application of skills and confidence treating suicidal clients. For example, “I have the skills I need to treat people with suicidal desire and/or intent” was endorsed by 75.9% of trained and 46.6% of untrained respondents. “I am confident in my ability to manage a patient/client’s suicidal thoughts and behavior” was endorsed by 71.5% of trained and 44.1% of untrained respondents.

We hypothesized that among trained respondents, greater length of training would be associated with greater confidence and comfort level with implementing suicide prevention skills. As a proxy for the extent of training, we

**Table 3.** Knowledge, beliefs and confidence.

Zero Suicide Survey item	Training			Training length						All respondents					
	Trained (n = 568)			Untrained (n = 279)			Percent difference trained versus untrained			> 1 day (n = 241)		≤ 1 day (n = 74)		Percent difference > 1 day versus ≤ 1 day	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n
I am confident in my ability to treat a patient/client's suicidal thoughts and behavior using an evidence-based approach such as DBT or CBT <sup>a,b</sup>	347	61.1	79	28.3	32.8	191	79.3	45	60.8	18.5	426	50.3			
I have the skills to screen and assess a patient/client's suicide <sup>a</sup>	471	82.9	141	50.5	32.4	220	91.3	62	83.8	7.5	612	72.3			
I have received the training I need to engage and assist those with suicidal desire and/or intent <sup>a</sup>	439	77.3	127	45.5	31.8	197	81.7	59	79.7	2.0	566	66.8			
I am confident in my ability to assess a patient/client's suicide risk <sup>a</sup>	457	80.5	140	50.2	30.3	208	86.3	64	86.5	-0.2	597	70.5			
I have the skills I need to treat people with suicidal desire and/or intent <sup>a</sup>	431	75.9	130	46.6	29.3	204	84.6	58	78.4	6.2	561	66.2			
I am confident in my ability to manage a patient/client's suicidal thoughts and behavior <sup>a</sup>	406	71.5	124	44.1	27.4	193	80.1	52	70.3	9.8	529	62.5			
I am comfortable connecting my suicidal clients with the resources they need in the community, for example, housing, transportation, vocational programs, volunteer opportunities and additional treatment providers <sup>a</sup>	454	79.9	158	56.6	23.3	206	85.5	62	83.8	1.7	612	72.3			
I address access to lethal methods, for example, firearms with all clients who report thoughts of suicide and involve family members in the removal or restriction of means <sup>a</sup>	441	77.6	154	55.2	22.4	207	85.9	60	81.1	4.8	595	70.2			
I use supervision when working with suicidal clients <sup>a</sup>	458	80.6	164	58.8	21.8	206	85.5	59	79.7	5.8	622	73.4			
I always ask about suicide with new clients <sup>a</sup>	439	77.3	158	56.6	20.7	203	84.2	60	81.1	3.1	597	70.5			
I involve family members or other supportive persons in my treatment and discharge plans for clients at risk for suicide <sup>a</sup>	429	75.5	154	55.2	20.3	202	83.8	57	77.0	6.8	583	68.8			
I know how to gather information about suicide warning signs, risk factors and protective factors from suicidal clients <sup>a</sup>	505	88.9	195	69.9	19.0	224	92.9	65	87.8	5.1	700	82.6			
I develop a collaborative safety plan with all suicidal clients <sup>a</sup>	451	79.4	169	60.6	18.8	207	85.9	59	79.7	6.2	620	73.2			
I bring up the topic of suicide with clients whenever I suspect they may be at risk <sup>a</sup>	506	89.1	198	71.0	18.1	225	93.4	69	93.2	0.2	704	83.1			
I have the support/supervision I need to engage and assist people with suicidal desire and/or intent <sup>a</sup>	460	81.0	178	63.8	17.2	203	84.2	60	81.1	3.1	638	75.3			
I bring up the topic of suicide with clients when their record indicates any history of suicidal thoughts or behaviors <sup>a</sup>	478	84.2	194	69.5	14.7	214	88.8	63	85.1	3.7	672	79.3			
I am comfortable asking direct and open questions about suicide <sup>a</sup>	534	94.0	226	81.0	13.0	235	97.5	71	95.9	1.6	760	89.7			

DBT: dialectical behavioral therapy; CBT: cognitive behavior therapy.

<sup>a</sup>Differences in trained versus untrained,  $p < 0.05$ .<sup>b</sup>Differences in training length of more than 1 day versus 1 day or less,  $p < 0.05$ .

**Table 4.** Training programs listed in the survey.

Training	Training length > 1 day	Training length ≤ 1 day
AMSR: Assessing and Managing Suicide Risk		X
ASIST: Applied Suicide Intervention Skills Training	X	
CAMS: Collaborative Assessment and Management of Suicidality		X
CASE: Chronological Assessment of Suicide Events Approach		X
CBT-SP: Cognitive Behavior Therapy for Suicide Prevention		X
DBT: Dialectical Behavior Therapy	X	
Kognito: Kognito At-Risk in Primary Care		X
Kognito: Kognito At-Risk in the ED		X
QPR: "Question, Persuade and Refer" Gatekeeper training		X
QPR: "Question, Persuade and Refer" for Nurses		X
QPR: "Question, Persuade and Refer" for Physicians, Physician Assistants and Nurse Practitioners		X
QPR: "Question, Persuade and Refer" Suicide Risk Assessment and Management Training	X	
RRSR: "Recognizing and Responding to Suicide Risk"	X	
RRSR: "Recognizing and Responding to Suicide Risk" in Primary Care		X
SafeTALK		X
Suicide Care		X

categorized respondents by the length of the training program they attended. Training lengths for suicide prevention trainings are presented in Table 4. The length of training programs was dichotomized into 1 day or less versus more than 1 day. In cases where multiple trainings were selected, respondents were assigned to the longer training. Responses were omitted in instances in which the only option selected by the respondent was the "do not remember the name of the training" or "completed a training not listed on the survey." Five types of trainings (i.e. Collaborative Assessment and Management of Suicidality (CAMS), Chronological Assessment of Suicide Events (CASE), Cognitive Behavioral Therapy for Suicide Prevention (CBT-SP), DBT and Suicide Care) did not include training length as part of their description in the survey. These trainings were determined in an online search to last 1 day or less.<sup>27-31</sup>

Length of training appeared to influence self-reported skills, comfort level and confidence in suicide prevention. Respondents who completed more than 1 day of training were more likely to report skills and confidence related to suicide prevention for all items (with the exception of "I am confident in my ability to assess a patient/client's suicide risk") than respondents reporting 1 day or less of training (sign test,  $n = 17$ , exact two-tailed,  $p < .001$ ). In general, the length of training appears to have the greatest influence for statements that addressed specific skills in screening, assessing, treating and managing suicidal clients and confidence related to these skills. These differences were statistically significant for only one item, however: "I am confident in my ability to treat a patient/client's suicidal thoughts and behavior using an evidence-based approach such as DBT or CBT" ( $\Delta = 18.5\%$ ,  $\chi^2(1, n = 315) = 10.2$ ,  $p < 0.01$ ). It should be noted that respondents who attended brief training (1 day or less) endorsed all items in greater

percentages than untrained respondents (sign test,  $n = 17$ , exact two-tailed,  $p < .001$ ).

Finally, our survey assessed respondents' interest regarding additional education in suicide prevention. Table 5 presents areas in which respondents reported that they would like more training, resources or support. Respondents were most interested in training related to suicide prevention and treatment. Half of the respondents expressed a desire for general suicide prevention and awareness, and suicide-specific treatment approaches. About 40% expressed a desire for specific types of training: identifying risk factors and warning signs, formal screening and assessment practices, managing suicidal clients and safety planning. In general, respondents specializing in adjunct therapies, behavioral health, case management, crisis services and nursing reported a desire for training in suicide prevention, suicide treatment and transition of care. Respondents in psychiatry reported the greatest interest in training related to policies and procedures, navigating ethical and legal considerations, and the latest research findings. Respondents in management reported the lowest desire for additional training in five of the six suicide treatment items.

## Discussion

### *Suicide prevention training increases self-reported skills and confidence*

The findings suggest that training improves skills and confidence in caring for patients at risk for suicide. Respondents who received suicide prevention training expressed greater skills and confidence in their abilities to identify and intervene with suicidal patients than untrained respondents. However, less than two-thirds of BHC professionals, and

**Table 5.** Areas which clinical staff want more training, resources or support by job category.

	Adjunct therapist		Behavioral health clinician		Case management		Crisis services		Management		Nursing/physical health care/ medication management		Psychiatry		Technician		Total (n=847)	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
<b>Suicide prevention</b>																		
Suicide prevention and awareness	8	66.7	153	48.6	55	61.8	5	21.7	51	43.2	43	49.4	29	37.7	78	61.9	422	49.8
Identifying risk factors and warning signs	9	75.0	140	44.4	52	58.4	7	30.4	38	32.2	43	49.4	239	29.9	60	47.6	372	43.9
Formal screening and assessment practices	4	33.3	146	46.3	30	33.7	12	52.2	36	30.5	42	48.3	31	40.3	44	34.9	345	40.7
<b>Suicide treatment</b>																		
Determining appropriate levels of care	2	16.7	81	25.7	27	30.3	6	6.1	15	12.7	27	31.0	18	23.4	23	18.3	199	23.5
Suicide-specific treatment approaches	7	58.3	184	58.4	42	47.2	13	56.5	40	33.9	50	57.5	37	48.1	59	46.8	432	51.0
Managing suicidal patients/client	4	33.3	151	47.9	38	42.7	10	43.5	27	22.9	42	48.3	22	28.6	48	38.1	342	40.4
Safety planning	5	41.7	143	45.4	41	46.1	5	21.7	38	32.2	37	42.5	19	24.7	55	43.7	343	40.5
Communicating with patients/client	6	50.0	70	22.2	30	33.7	5	21.7	18	15.3	29	33.3	12	15.6	44	34.9	214	25.3
Crisis response procedures and de-escalation techniques	5	41.7	128	40.6	39	43.8	9	39.1	23	19.5	36	41.4	26	33.8	43	34.1	309	36.5
<b>Transition of care</b>																		
Procedures for referring potentially suicidal patients/client	5	41.7	103	32.7	30	30.0	6	26.1	24	20.3	30	34.5	24	31.2	32	25.4	254	30.0
<b>Aftercare and follow-up</b>																		
Aftercare and follow-up	1	8.3	90	28.6	25	28.1	6	26.1	23	19.5	25	28.7	21	27.3	29	23.0	220	26.0
Family, caregiver and community supports	4	33.3	105	33.3	23	25.8	3	13.0	26	22.0	24	27.6	25	32.5	31	24.6	240	28.5
<b>Organizational aspects</b>																		
Staff roles and responsibilities within your work environment	3	25.0	80	25.4	28	31.5	5	21.7	37	31.4	41	47.1	19	24.7	64	50.8	277	32.7
Policies and procedures within your work environment	2	16.7	80	25.4	24	27.0	5	21.7	29	24.6	30	34.5	31	40.3	32	25.4	233	27.5
Understanding and navigating ethical and legal considerations	2	16.7	114	36.2	28	31.5	9	39.1	26	22.0	31	35.6	35	45.5	30	23.8	275	32.5
<b>Epidemiology</b>																		
Epidemiology and the latest research findings	1	8.3	88	27.9	10	11.2	8	34.8	22	18.6	31	35.6	30	39.0	25	19.8	215	25.4



about a quarter of untrained BHC professionals, were confident in their ability to treat patients using an evidence-based approach. This finding suggests that additional training in evidence-based approaches is needed to expand the pool of BHC professionals capable of treating clients at risk for suicide. This might involve augmented training in existing programs and/or “booster” sessions to periodically freshen previously obtained skills.

### *Suicide prevention training has limited impact on BHC professionals’ comfort inquiring about suicidal thoughts and behaviors*

Large percentages of both trained and untrained respondents endorsed items related to engaging clients in a discussion related to suicidal intent. Although greater percentages of trained than untrained respondents agreed with statements on this topic, the percent difference was smaller than what was found on other items. Suicide prevention training may have less of an effect on BHC professionals’ comfort asking about suicide since they may be accustomed to discussing risk behavior including suicidal intent.

### *Brief suicide prevention training may improve skills and confidence*

Respondents who attended trainings lasting more than 1 day endorsed all but one statement regarding skills, comfort level and confidence in greater percentages than those who attended trainings lasting 1 day or less. However, the percent difference between the length of training (more than 1 day vs. 1 day or less) was considerably smaller than the percent difference between training lasting 1 day or less and no training at all. This finding suggests that even brief training may have a positive impact and is supported by previous research that demonstrated the effectiveness of brief (1–2h) suicide prevention programs among community members, college students and medical staff in Japan.<sup>32–34</sup> This is good news for organizations with limited resources and time for workforce development.

### *Desire for more training*

The most sought after training topics were those directly related to suicide prevention and treatment. Around half of the respondents wanted training in suicide-specific treatment approaches, suicide prevention and awareness, and identifying risk factors and warning signs. Interest in training topics varied by job category. Fewer respondents in the management job category reported the desire for additional training, resources or support. Managers, by the nature of their position, are likely to have supervisory roles with less direct client interaction and, therefore, less perceived need for suicide prevention training. They also may have moved into a managerial position based in part by having suicide prevention skills obtained through an advanced degree and/or professional

experience, thus reducing the need for additional training. Respondents in psychiatry reported the greatest interest in training related to policies and procedures, navigating ethical and legal considerations, and the latest research findings; this suggests that they may be more likely to have administrative responsibilities that involve organizational oversight. Adjunct therapists reported a desire for training in a greater number of topics than persons in other job categories. Based on the examples of job titles listed on the survey, adjunct therapists specialize in activity, occupational, physical and rehabilitation therapy rather than behavioral health and, therefore, may have fewer opportunities for training in suicide prevention. The positive message here is that adjunct therapists’ interest in additional training supports the ZS approach that everyone in an organization, not just BHC professionals, should be actively engaged in suicide prevention, and training can provide the necessary skill development.

This study shows the impact of suicide prevention training on BHC professionals’ skills and confidence in assessing, treating and managing at-risk clients. It also provides an overview of the types of suicide prevention trainings BHC professionals have obtained. Of particular importance is the identification of areas where BHC professionals in different job categories would like additional training, resources and support. These findings may be very useful in guiding professional development offerings and resource allocation.

### *Limitations*

Although the goal of the study was to survey the entire clinical workforce at the sampled behavioral health treatment centers, we did not receive 100% participation and do not know how representative the respondents are to the entire workforce in terms of job category and other characteristics. Thus, caution should be exercised when drawing conclusions based on the findings. For example, DBT was the most frequently endorsed type of training (26.4%) which may be driving some of the specific findings related to skills, confidence and desire for future training.

Another limitation is that we were unable to discern the actual skill level of the respondents. It is not clear whether respondents who reported high levels of confidence and skills actually have high skill levels. In a study designed to investigate level of suicide intervention skills in health and community professionals, Scheerder et al.<sup>35</sup> found a high association between actual and perceived suicide intervention skills concluding that most professionals had a realistic view of their competencies. However, the association was strongest among highly skilled groups while lower skilled individuals tended to overestimate their skill levels. In future studies, it would be valuable to further investigate whether those in need of training the most are aware of this need and possibly organizational policies that may be put into place to ensure these individuals attend training. It would also be worth examining how perceived skills are related to actual

skills in suicide prevention and how these skills may translate to patient outcomes.

This study focused on responses by BHC professionals. However, ZS takes a systems approach to improving outcomes for individuals at risk for suicide within health and BHC settings and strongly encourages suicide prevention training of all staff. ZS posits that everyone can play a pivotal role in suicide prevention since large percentages of individuals who die by suicide have recently accessed some type of health care, including outpatient behavioral health, primary care and emergency.<sup>36–38</sup> These contacts provide opportunities to identify, assess and treat patients which support expanding training and education to professionals across different disciplines and service sectors. The benefits of training personnel who work in areas other than behavioral health have been demonstrated in a study that found suicide prevention training significantly increased non-psychiatric nurses' self-efficacy in caring for patients at risk for suicide.<sup>39</sup> Future studies could build on these findings by comparing the responses regarding skills, comfort level and confidence among non-clinical, medical and behavioral health professionals. Findings could shed light on preparedness of staff and potential training needs for specific professional roles. Another limitation of the study is that the survey did not collect information that would be useful for more in-depth analyses. For example, we do not know how long ago participants completed training and whether length of time since training completion effected self-reported skills, comfort level and confidence. Studies have shown that suicide-related training effectiveness can be sustained 4–6 months post-training.<sup>12,19</sup> However, the current survey does not allow for validating these findings with the present sample. Future studies could examine sustainability of training effects and possible need for and/or timing of refresher courses.

The survey did not collect information on patient characteristics that the respondents typically treat which would have allowed for more refined analyses. CDC has identified some population groups that are disproportionately impacted by suicide.<sup>40</sup> For example, non-Hispanic American Indians/Alaska Natives (AI/AN) and non-Hispanic Whites have the highest suicide rate among race/ethnicity groups. Males are three times as likely to die by suicide as females. Other groups at increased risk of suicide include veterans and other military personnel, workers in certain occupational fields such as construction and sexual minority youth. In addition, individuals experiencing mental illness (e.g. schizophrenia, major depression, bipolar disorder and substance misuse), emotional turmoil or health issues and those who have access to lethal means are also at increased risk for suicide. These dynamic risk factors are often associated with complex fluctuations in presentation and pose a major challenge to clinicians due to their limited predictability.<sup>41,42</sup>

In addition to training, experience working with suicidal patients may effect BHC professionals' skills, comfort level and confidence. The survey inquired whether respondents experienced a patient suicide. Although analyses of experience of a suicide death are beyond the scope

of this study, it would be a valuable a line of inquiry since previous research suggests diverse findings. Ruskin et al. found that psychiatrist and psychiatric trainees who experienced a patient suicide scored higher on an acute stress disorder and a post-traumatic stress disorder symptom checklist.<sup>9</sup> The increased stress response may have a negative effect on a BHC professional's confidence. Conversely, Silva et al.<sup>16</sup> found that BHC professionals who experienced a patient die by suicide had significant positive relationships with suicide knowledge and confidence. Future research may include questions detailing professional experiences treating suicidal and/or at-risk patients. Findings may contribute to a greater understanding of training needs and potential ways to tailor training for specific professional roles.

## Conclusion

BHC professionals play a critical role in suicide prevention. Although they may regularly encounter clients at risk for suicide, not every BHC professional has obtained the necessary training. Findings indicate that suicide prevention training is associated with increased levels of BHC professionals' skills and confidence, but as many as one-third of BHC professionals in behavioral health treatment centers have received no formal training in suicide risk detection and intervention. Even brief training (1 day or less) appears to have a positive impact on BHC professionals' assessment of their own skills in this area. Prominent topics on which BHC professionals would like additional training include suicide-specific treatment approaches, suicide prevention and awareness, and identifying risk factors and warning signs.

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## Ethical approval

Ethical approval was not sought for this study because the data were collected as part of Quality Improvement efforts for the respective organizations. As such, the data do not qualify as research under the US Department of Health and Human Services, Office of Human Research Protections.

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## Trial registration

It is not applicable for this study.

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## Supplemental material

Supplemental material for this article is available online. Zero Suicide Workforce Survey, <http://zerosuicide.sprc.org/toolkit> (accessed 20 September 2016).

## References

1. Curtin SC and Heron M. *Death rates due to suicide and homicide among persons aged 10–24: United States, 2000–2017*. NCHS data brief no 352, October 2019. Hyattsville, MD: National Center for Health Statistics.
2. Centers for Disease Control and Prevention. Vital signs: trends in state suicide rates: United States, 1999–2016 and circumstances contributing to suicide: 27 states. *Morbidity and Mortality Weekly Report* 2018; 67(22): 617–624.
3. 21st Century Cures Act, Pub.L. 114-255, 130Stat.1033, 2016.
4. SAMHSA's strategic prevention framework (SPF), <https://www.samhsa.gov/sites/default/files/20190620-samhsa-strategic-prevention-framework-guide.pdf> (accessed 12 October 2017).
5. Jed Foundation (JED) and Suicide Prevention Resource Center (SPRC). A comprehensive suicide prevention and mental health promotion, <https://www.sprc.org/effective-prevention/comprehensive-approach> (accessed 12 October 2017).
6. National action alliance for suicide prevention's zero suicide in health and behavioral healthcare (zero suicide), <http://zerosuicide.sprc.org/> (accessed 12 October 2017).
7. Sanders S, Jacobson J and Ting L. Preparing for the inevitable: training social workers to cope with client suicide. *J Teach Social Work* 2008; 28(1/2): 1–18.
8. Takahashi C, Chida F, Nakamura H, et al. The impact of inpatient suicide on psychiatric nurses and their need for support. *BMC Psychiat* 2011; 11: 38.
9. Ruskin R, Sakinofsky I, Bagby R, et al. Impact of patient suicide on psychiatrists and psychiatric trainees. *Acad Psychiat* 2004; 28(2): 104–110.
10. Rogers JR, Gueulette CM, Abbey-Hines J, et al. Rational suicide: an empirical investigation of counselor attitudes. *Journal of Counseling & Development* 2001; 79: 365–372.
11. McAdams C and Foster V. Client suicide: its frequency and impact on counselors. *J Ment Health Counsel* 2002; 22(2): 107–121.
12. Oordt M, Jobes D, Fonseca V, et al. Training mental health professionals to assess and manage suicidal behavior: can provider confidence and practice behaviors be altered? *Suicide Life Threat Behav* 2009; 39(1): 21–32.
13. Dexter-Mazza ET and Freeman KA. Graduate training and the treatment of suicidal clients: the students' perspective. *Suicide Life Threat Behav* 2003; 33(2): 211–218.
14. Feldman BN and Freedenthal S. Social work education in suicide intervention and prevention: an unmet need. *Suicide Life Threat Behav* 2006; 36(4): 467–480.
15. Wozny DA and Zinck K. Development of a suicide intervention training workshop: utilizing counselor focus groups, 2007, [https://www.counseling.org/docs/default-source/vistas/vistas\\_2007\\_wozny1.pdf](https://www.counseling.org/docs/default-source/vistas/vistas_2007_wozny1.pdf) (accessed 23 January 2020).
16. Silva C, Smith AR, Dodd DR, et al. Suicide-related knowledge and confidence among behavioral health care staff in seven states. *Psychiatr Serv* 2016; 67(11): 12405–12124.
17. Lund EM, Schultz JC, Nadorff MR, et al. Experience, knowledge, and perceived comfort and clinical competency in working with suicidal clients among vocational rehabilitation counselors. *Rehabil Counsel Bull* 2017; 61(1): 54–63.
18. Mann JJ, Apter A, Bertolote J, et al. Suicide prevention strategies: a systematic review. *JAMA* 2005; 294(16): 2064–2074.
19. Jacobson JM, Osteen P, Jones A, et al. Evaluation of the recognizing and responding to suicide risk training. *Suicide Life Threat Behav* 2012; 42(5): 471–485.
20. Stewart RE, Chambless DL and Baron J. Theoretical and practical barriers to practitioners' willingness to seek training in empirically supported treatments. *J Clin Psychol* 2012; 68(1): 8–23.
21. Herron FB, Patterson DA, Nugent WR, et al. Evidence-based gatekeeper suicide prevention in a small community context. *Journal of Human Behavior in the Social Environment* 2016; 26(1): 25–36.
22. Smith A, Silva C, Covington D, et al. An assessment of suicide-related knowledge and skills among health professionals. *Health Psychol* 2014; 33(2): 110–119.
23. Zero Suicide Workforce Survey, <http://zerosuicide.sprc.org/toolkit> (accessed 20 September 2016).
24. Taber KS. The use of Cronbach's alpha when developing and reporting research instruments in science education. *Res Sci Educ* 2018; 48: 1273–1296.
25. U.S. Department of Health and Human Services. Office for Human Research Protection. Quality improvement activities FAQs, <https://www.hhs.gov/ohrp/regulations-and-policy/guidance/faq/quality-improvement-activities/index.html> (accessed 12 October 2017).

26. IBM Corporation. *IBM SPSS statistics for windows*, version 24.0. Armonk, NY: IBM Corporation, 2016.
27. Collaborative assessment and management of suicidality (CAMS): a collaborative approach, <http://www.empathosresources.com/news-2/2015-mar11/> (accessed 6 March 2019).
28. Chronological Assessment of Suicide Events (CASE). Experiential training in the chronological assessment of suicide events (CASE approach), <http://www.sprc.org/resources-programs/experiential-training-chronological-assessment-suicide-events-case-approach> (accessed 12 October 2017).
29. Cognitive behavioral therapy for suicide prevention (CBT-SP), <https://beckinstitute.org/cbt-for-suicide-prevention/> (accessed 12 October 2017).
30. Dialectical behavior therapy (DBT), <https://behavioraltech.org/training/> (accessed 12 October 2017).
31. Suicide care, <https://www.wapsychiatry.org/suicide-care> (accessed 12 October 2017).
32. Cross W, Matthieu MM, Lezine D, et al. Does a brief suicide prevention gatekeeper training program enhance observed skills. *Crisis* 2010; 31(3): 149–159.
33. Rallis BA, Esposito-Smythers C, Disabato DJ, et al. A brief peer gatekeeper suicide prevention training: results of an open pilot trial. *J Clin Psychol* 2018; 74(7): 1106–1116.
34. Nakagami Y, Kubo H, Katsuki R, et al. Development of a 2-h suicide prevention program for medical staff including nurses and medical residents: a two-center pilot trial. *Journal of Affective Disorders* 2018; 225: 569–576.
35. Scheerder G, Reynders A, Andriessen K, et al. Suicide intervention skills and related factors in community and health professionals. *Suicide Life Threat Behav* 2010; 40(2): 115–124.
36. Ahmedani BK, Simon GE, Stewart C, et al. Health care contacts in the year before suicide death. *J Gen Intern Med* 2014; 29(6): 870–877.
37. Luoma JB, Martin CE and Pearson JL. Contact with mental health and primary care providers before suicide: a review of the evidence. *Am J Psychiatry* 2002; 159(6): 909–916.
38. Da Cruz D, Pearson A, Saini P, et al. Emergency department contact prior to suicide in mental health patients. *Emerg Med J* 2011; 28(6): 467–471.
39. Blair EW, Chhabra J, Belonick C, et al. Non-psychiatric nurses' perceived self-efficacy after an educational intervention on suicide prevention and care. *Psychosoc Nurs Ment Health Serv* 2018; 56(6): 43–51.
40. Stone DM, Holland KM, Bartholow B, et al. *Preventing suicide: a technical package of policies, programs, and practices*. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention, 2017.
41. Rudd MD, Berman AL, Joiner TE, et al. Warning signs for suicide: theory, research, and clinical applications, suicide and life-threatening behavior 2006; 36(3): 255–262.
42. Welton RS. The management of suicidality: assessment and intervention. *Psychiatry* 2007; 4(5): 25–34.