



## Universal suicide screening in college primary care

Melissa Gabriele Frick, Shirley Ann Butler & David Scott deBoer

To cite this article: Melissa Gabriele Frick, Shirley Ann Butler & David Scott deBoer (2019): Universal suicide screening in college primary care, Journal of American College Health, DOI: [10.1080/07448481.2019.1645677](https://doi.org/10.1080/07448481.2019.1645677)

To link to this article: <https://doi.org/10.1080/07448481.2019.1645677>



Published online: 05 Aug 2019.



Submit your article to this journal [↗](#)



Article views: 141



View related articles [↗](#)



View Crossmark data [↗](#)

MAJOR ARTICLE



## Universal suicide screening in college primary care

Melissa Gabriele Frick, DNP<sup>a</sup>, Shirley Ann Butler, PhD<sup>b</sup>, and David Scott deBoer, PhD<sup>a</sup>

<sup>a</sup>Loyola University Chicago Wellness Center, Chicago, IL, USA; <sup>b</sup>Loyola University Chicago Marcella Neihoff School of Nursing, Chicago, IL, USA

### ABSTRACT

**Objective:** Implementation of a universal primary care (PC) suicide-screening program in a college student health center to heighten awareness, provide support and enhance education of staff and students served. Program feasibility, data collection, electronic medical record (EMR) adaptations and staff learning outcomes were examined. **Participants:** 1,607 students with PC visits during Spring 2018 semester. **Methods:** Annual Suicide Behaviors Questionnaire (SBQ-R), EMR template, safety alert, referral tracking and simulated staff training were employed. Chi-square tests assessed documentation, safety alerts and mental health referral changes. Paired *t*-tests evaluated staff learning outcomes. **Results:** 12.8% of students screened positively for suicide risk during implementation. Documentation consistency, EMR safety alert utilization, mental health referrals and subsequent appointments increased significantly. Staff learning outcomes yielded growth in knowledge and comfort with suicide screening and brief intervention. **Conclusion:** A comprehensive suicide-screening program is feasible for identifying students at-risk and promoting positive clinical changes in college PC practice settings.

### ARTICLE HISTORY

Received 22 July 2018  
Revised 14 March 2019  
Accepted 16 July 2019

### KEYWORDS

Assessment; college;  
student health; suicide

### Introduction

Suicide is the second leading cause of death in individuals ages 15–34 in the United States.<sup>1</sup> As such, suicide risk assessment among the college student population is an important issue that requires ongoing attention. The 2018 American College Health Association National College Assessment reported that 13% of undergraduate college students had seriously considered suicide, 1.9% had attempted suicide and 8.5% disclosed non-suicidal self-injury over the preceding 12 months of the evaluation.<sup>2</sup> Fundamental in the implementation of an effective suicide prevention measure is the accurate identification of individuals who are at risk. The need for suicide-specific screening protocols is supported by a 2012 report distributed by the United States (U.S.) Surgeon General and the National Alliance for Suicide Prevention, which details that suicide should be preventable for individuals connected to the care of a medical or behavioral health professional.<sup>3</sup> Healthy People 2020 cites behavioral health goals, which include decreased suicide incidence, enhanced depression screening in primary care settings, and an increased percentage of adults with mental health diagnoses who are linked to professional care.<sup>4</sup>

A review of medical records from a large U.S. sample of patients who died by suicide found elevated rates of primary healthcare service utilization preceding death. Approximately 50% of patients visited a primary care provider within the month prior to death by suicide, while under 25% had contact with a mental health professional in the month prior to death by suicide.<sup>5</sup> It is important to identify the role

primary care providers have in assessing, supporting and providing intervention to those at risk for suicidal ideation. While primary care providers are regularly charged with initial assessment and management of patients with suicidal ideation, they often do not feel adequately prepared to address this subject.<sup>6</sup> The direct questioning and documentation of suicidal thoughts and behaviors as a component of routine practice is low, even when treating patients with underlying depressive symptomatology.<sup>7</sup> The percentage of patients that directly articulate suicidal thoughts or plans without being prompted can also be low, further stressing a need for provider comfort introducing dialogue focused on suicide risk evaluation.<sup>8</sup> Practice recommendations from the American Family Physician emphasize the importance of primary care providers' direct questioning about suicidal ideation combined with utilization of behavioral health screening to determine symptom severity in order to achieve the most optimal treatment outcomes.<sup>9</sup>

### Suicide screening

Although not diagnostic in nature, standardized screening tools may serve as an adequate preliminary evaluation in the primary care setting. Suicide assessment interviews and self-report questionnaires provide a more comprehensive risk indication than diagnosis and demographic factors alone.<sup>10</sup> Such assessments typically examine suicidal ideation, intention, plan, risk factors and protective factors. The U.S. Preventative Services Task Force (USPSTF) issued a final "I

statement” in 2014 which noted current evidence was neither for nor against routine suicide assessments in the general population.<sup>11</sup> The National Strategy for Suicide Prevention (NSSP): Goals and Objectives for Action from the U.S. Surgeon General stated that “clinical preventive services, including suicide assessment and preventive screening by primary care and other health care providers, are crucial to assessing suicide risk and connecting individuals at risk for suicide to available clinical services and other sources of care.”<sup>12</sup> Population-based research specific to risk in the young adult college demographic should be reviewed to support routine screening in this patient group.

## Methods

The purpose of this quality improvement program was to implement a universal suicide-screening program in the primary care center at Loyola University Chicago, with two student health clinic locations that conduct approximately 19,000 visits annually. The primary care service is staffed by two medical doctors, five advanced practice nurses/nurse practitioners, six registered nurses and one dietician. The aims of this 3 month pilot study were: (1) to implement structured suicide screening using the Suicide Behaviors Questionnaire-Revised (SBQ-R),<sup>13</sup> (2) to develop an electronic medical record (EMR) template for primary care clinicians to record suicide assessment indicators and track mental health referrals, (3) to utilize a suicide clinical safety alert within the EMR to highlight risk and (4) to provide a behavioral health training and simulation to increase medical staff knowledge, skills and comfort in conducting suicide assessments and brief interventions. It was hypothesized that implementation of a comprehensive suicide assessment program in a primary care health center would enhance data collection, staff education, documentation consistency and referrals to mental health care.

Retrospective data comparisons were utilized to assess suicide screening, chart audits and mental health referrals from Fall 2017 to Spring 2018. The initiative incorporated any student scheduled for a primary care appointment at the student health center during the study timeframe. Screening was offered universally without regard to prior diagnoses or risk factors. No specific exclusions or prescreening procedures took place due to the universal nature of the initiative and its random sampling design; however, patients had the opportunity to opt-out or decline completion of screening at any time. A description was placed at the start of the SBQ-R electronic assessment to describe the nature of the survey and the goal of enhanced screening as part of a suicide prevention initiative. Participants who screened positively would be offered mental health services as indicated by risk stratification. Participants were given the opportunity to acknowledge and consent to participation by clicking “OK” prior to advancing the screening.

While questioning on sensitive topics such as suicide has the potential to evoke an emotional response, the student health center was adequately staffed to address urgent concerns. Mental health staff available during the time of the

study included five psychologists, seven licensed clinical social workers and one psychiatrist. Approval from the University’s Institutional Review Board (IRB) was granted prior to initiation of the project. Patient information was protected throughout data collection. Data extracted as a component of the study included de-identified reportable fields of screening scores, mental health referrals and student demographics.

Beginning Spring 2018, the SBQ-R screening was distributed to all patients upon check-in for medical appointments and set to be re-issued every 365 days. Patients were able to complete the screening at a laptop in the health center’s waiting room, on a smartphone or at a desktop computer in an exam room. The screening tool was offered only at the time of physical check-in at the clinic to allow prompt in-person intervention if needed. The results of the screening were then populated to the patient’s chart under the “survey” section of the EMR. Medical staff members were responsible for reviewing and responding to scores prior to the start of each patient visit.

Medical staff members that took part in the educational training, *Kognito At Risk in Primary Care*, were provided 1.50 h of continuing medical education (CME) for their participation. Clinicians assigned to take part in the educational component of the program included all primary care members responsible for initial patient assessments and included five advanced practice nurses, six registered nurses and one registered dietician. The *Kognito* educational simulation has proven successful in similar behavioral health training experiences, which allow the user to interact with simulated patients in a virtual clinic setting.<sup>14</sup> Primary care staff were issued pre- and post-training surveys to evaluate program learning outcomes. These results were further utilized to assess provider knowledge and comfort with mental health screening, using a 5-point Likert scale, scoring feedback from “Very Low” to “Very High.”

Primary care referrals to mental health providers and mental health appointments scheduled were tracked prior to program implementation and following its inception using a template in which clinicians utilized check-boxes to record actions within EMR progress notes. Built-in check-box choices included (1) SBQ-R reviewed, SBQ-R score <7, (2) SBQ-R score ≥ 7 and mental health triage appointment scheduled or (3) SBQ-R score ≥ 7 and mental health urgent care visit scheduled. Students who screened positively on the SBQ-R were additionally asked four safety questions from the Columbia Suicide Screening Rating Scale (C-SSRS) to assist the medical provider’s determination if the referral should be an urgent, same-day appointment, or if the patient may be placed in a triage appointment schedule.<sup>15</sup> Routine triage appointments were scheduled within one to three business days, depending on clinic availability.

A unique EMR progress note search function was used to retrieve the number of occurrences that primary care clinicians documented on “suicide” within chart notes pre- and post-implementation. A suicide-specific safety flag was built into the EMR by linking an indicator of “suicidal ideation” in the problem list to prompt the safety alert. This alert was

applied for positive SBQ-R scores during program implementation to more visibly highlight patients with suicide risk history at subsequent visits. The usage of the safety feature pre- and post-program implementation was evaluated.

Quantitative feedback from mental health professionals regarding appropriateness of referrals obtained as part of the screening initiative was evaluated for future project sustainability and improvement efforts. The budget for the program was \$780 for licenses for the medical staff training, which was funded by the health center.

## Tools

When selecting the most appropriate suicide-specific screening tool for this initiative, multiple factors were considered. Single-item suicide assessments, such as those included in the Patient Health Questionnaire (PHQ-9) and the Beck Depression Inventory II (BDI II) were avoided, as scales with a single-item suicide question did not perform as well as multiple-item measures in terms of validity for independent suicide assessment.<sup>16</sup> The use of dichotomous responses were avoided due to an assumption that validity may be limited from constraining the level of sensitive information obtained.<sup>17</sup> Certain psychometricians deem the optimal count of survey response items to be between 4 and 7.<sup>18</sup> The SBQ-R tool was selected due to its brevity of four questions, ease of scoring, permission for use without additional associated cost, and ability to yield non-dichotomous answers for students who may have difficulty elaborating on suicidal thoughts or history in another manner. A positive SBQ-R score of  $\geq 7$  was found to have 0.93 sensitivity and 0.95 specificity (PPV 0.70, AUC 0.96) in an undergraduate college reference group, which further strengthened the selection of this particular tool for this program.<sup>13</sup>

The SBQ-R questions evaluate history of lifetime suicide ideation and/or suicide attempts, frequency of suicidal ideation over the last 12 months, threat of suicide attempt history and the likelihood of future suicidal behavior. Students who screened positively on the SBQ-R were also asked four safety questions from the Columbia Suicide Screening Rating Scale (C-SSRS), to determine urgency of mental health follow-up needed. The C-SSRS uses dichotomous responses to explore suicidal intent, possibility of specific plan for suicide, lifetime attempt and attempts within the last 1 month, which was a useful time parameter in stratifying recent risk in this setting.<sup>15</sup>

## Statistical analysis

Descriptive statistics were run on SBQ-R scores to ascertain mean, standard deviation and percentage of screenings. Positive screening results were then grouped by academic class, race and ethnicity and gender/gender identity. Frequencies of unique entries of suicide documentation as located in medical staff chart notes, EMR suicide safety alerts, mental health referrals recommended and mental health appointments scheduled were assessed pre- and post-program implementation. A Pearson chi square test was

**Table 1.** SBQ-R scores by academic class.

	Positive	Negative	Total
Freshman	55 (11.58%)	420 (88.42%)	475
Sophomore	61 (17.68%)	284 (82.32%)	345
Junior	36 (11.88%)	267 (88.12%)	303
Senior	35 (10.87%)	287 (89.13%)	322
Graduate	15 (11.03%)	121 (88.97%)	136
Missing	4 (15.38%)	22 (84.62%)	26
Total	206	1,401	1,607

**Table 2.** SBQ-R Scores by race/ethnicity.

	Positive	Negative	Total
American Indian	8 (34.78%)	15 (65.22%)	23
Asian	33 (12.50%)	231 (87.5%)	264
Black	13 (13.83%)	81 (86.17%)	94
Hawaiian	0	1 (100%)	1
Hispanic	31 (14.22%)	187 (85.78%)	218
Caucasian	115 (11.92%)	850 (88.08%)	965
Other	3 (9.09%)	30 (90.91%)	33
Missing	3 (33.33%)	6 (66.67%)	9
Total	206	1,401	1,607

used to analyze categorical data association between variables. A paired samples *t*-test was utilized to describe outcome measures of the Kognito staff training. IBM SPSS 24 was used for statistical processing and review.

## Results

### Suicide screening data

Assessment using the SBQ-R screened 1,607 students during the three-month pilot period, of which 12.8% ( $N=206$ ) were positive for suicide risk. The Mean SBQ-R score for all students assessed was 4.22 (Std. Deviation: 2.19). Four students declined to participate in the screening. Of students who screened positively (SBQ-R  $\geq 7$ ), the majority were sophomores (17.68%). Suicide risk was similar among freshman (11.58%), junior (11.88%), senior (10.87%) and graduate (11.03%) students. Please refer to [Table 1](#) for screening data according to academic class. Positive scores were also evaluated by race and ethnicity, noting the greatest percentage of suicidality among American Indian (34.78%) students. Comparable percentages of positive scores were noted among Hispanic (14.22%), Black (13.83%), Asian (12.50%) and Caucasian (11.92%) students. Please refer to [Table 2](#) for screening data according to race and ethnicity. Additionally, gender and gender identity were assessed among students that screened positively; observing the percentage of male (11.5%) and female (12.7%) students endorsing suicidality was fairly similar. Please refer to [Table 3](#) for gender reporting breakdown.

### Documentation improvement

A unique progress note search function of the EMR retrieved 11 notations of suicide addressed in medical chart notes prior to program implementation and 93 notations after program implementation. Difference in documentation was compared between registered nurses and advanced practice nurses, noting that while both clinicians showed an

**Table 3.** SBQ-R Scores by gender, gender identity.

	Positive	Negative	Total
Male	47 (11.58%)	359 (88.42%)	406
Female	151 (12.69%)	1,039 (87.31%)	1,190
Transmale/FTM	2 (50%)	2 (50%)	4
Transfemale/MTF	0	1 (100%)	1
Different Identity	2 (100%)	0	2
Undefined	1 (100%)	0	1
Missing	3 (100%)	0	3
Total	206	1,401	1,607

**Table 4.** Suicide documentation in chart notes by advanced practice registered nurse staff.

		YES- suicide addressed	NO- suicide not addressed	Total
Phase	Pre-implementation	9 (0.76%)	1,180 (99.24%)	1,189
	Post-implementation	56 (3.42%)	1,581 (96.58%)	1,637
Total		65 (2.30%)	2,761 (97.69%)	2,826

Pearson  $\chi^2$  (1,  $N = 2,826$ ) = 21.751<sup>a</sup>,  $p < .001$ .

**Table 5.** Suicide documentation in chart notes by registered nurse staff.

		YES- suicide addressed	NO- suicide not addressed	Total
Phase	Pre-implementation	2 (0.11%)	1,793 (99.89%)	1,795
	Post-implementation	37 (1.59%)	2,288 (98.41%)	2,325
Total		39 (0.95%)	4,081 (99.05%)	4,120

Pearson  $\chi^2$  (1,  $N = 4,120$ ) = 23.663<sup>a</sup>,  $p < .001$ .

increase in attention to addressing suicide within chart notes, advanced practice nurses showed a greater increase (2.84%) when compared to registered nurses (1.48%). A Pearson chi-square test showed statistical significance [ $\chi^2$  (1,  $N = 2,826$ ) = 21.751<sup>a</sup>,  $p < .001$ ] for advanced practice nurse documentation compliance pre- and post-implementation. There was also a statistically significant change in documentation among registered nurses pre- and post-implementation [ $\chi^2$  (1,  $N = 4,120$ ) = 23.663<sup>a</sup>,  $p < .001$ ]. Please refer to Tables 4 and 5 for suicide documentation changes evidenced by clinic nursing staff.

### Mental health referral tracking

A chart review discovered 66 mental health referral recommendations made prior to program implementation and 237 made following implementation. A Pearson chi-square test noted statistical significance [ $\chi^2$  (1,  $N = 6,361$ ) = 95.408<sup>a</sup>,  $p < .001$ ] for mental health referrals recommended during the course of the program. The number of mental health appointments scheduled were also assessed for change, determining 30 appointments were scheduled before implementation and 66 were scheduled post-implementation. A Pearson chi-square test showed statistical significance [ $\chi^2$  (1,  $N = 6,361$ ) = 12,508<sup>a</sup>,  $p < .001$ ] for associated mental health appointments scheduled over the implementation period. No mental health referrals made through this initiative resulted in subsequent hospitalization. Please refer to Tables 6 and 7 for mental health referrals recommended and appointments scheduled over the course of the study.

**Table 6.** Mental health referrals recommended.

		Yes- recommended	No- not recommended	Total
Phase	Pre-implementation	66 (2.11%)	3,061 (97.89%)	3,127
	Post-implementation	237 (7.33%)	2,997 (92.67%)	3,234
Total		303 (4.76%)	6,058 (95.24%)	6,361

Pearson  $\chi^2$  (1,  $N = 6,361$ ) = 95.408<sup>a</sup>,  $p < .001$ .

**Table 7.** Mental health appointments scheduled.

		YES- scheduled	NO- not scheduled	Total
Phase	Pre-implementation	30 (0.96%)	3,097 (99.04%)	3,127
	Post-implementation	66 (2.04%)	3,168 (97.96%)	3,234
Total		96 (1.51%)	6,265 (98.49%)	6,361

Pearson  $\chi^2$  (1,  $N = 6,361$ ) = 12.508<sup>a</sup>,  $p < .001$ .

**Table 8.** Suicide safety flag usage.

		YES- suicide flag issued	NO- suicide flag not issued	Total
Phase	Pre-implementation	2 (0.29%)	677 (99.71%)	679
	Post-implementation	58 (7.87%)	679 (92.13%)	737
Total		60 (4.24%)	1,356 (95.76%)	1,416

Pearson  $\chi^2$  (1,  $N = 1,416$ ) = 49.978<sup>a</sup>,  $p < .001$ .

### EMR safety alert usage

The suicide clinical safety alert employed within the EMR was issued for two unique patients during pre-implementation and for 58 unique patients during post-implementation. This 7.58% increase in utilization of the safety alert flag was statistically significant [ $\chi^2$  (1,  $N = 1,416$ ) = 49.978<sup>a</sup>,  $p < .001$ ]. EMR suicide safety alert usage data is available in Table 8. Another safety compliance mechanism within the EMR was the adoption of a macro-text phrase in which clinicians were able to type the phrase “safety” within the body of a progress note to produce an automated message of “Safety contacts card provided and crisis resources reviewed with patient.” Chart review during the pilot period retrieved usage of the macro-text phrase 114 times. The safety contact cards, which listed local and national text and hotline resources, were counted pre- and post-program implementation. It was determined that approximately 450 safety cards were distributed over the 3-month program period.

### Simulated training

Each medical staff member ( $N = 12$ ) that took part in the Kognito At-Risk in Primary Care training was coded with a descript identifier and outcome data was made available at the conclusion of training. A paired  $t$ -test was conducted on 10 learning outcomes evaluated as part of the training, noting 8 of 10 as statistically significant for positive growth as reflected by the improved rating scores. The most statistically significant changes witnessed were in terms of staff preparedness to screen patients for mental health concerns ( $p = .005$ ), staff preparedness to provide information about the importance of mental health for patients' overall health

**Table 9.** Kognito at-risk in primary care- paired differences pre- and post-training.

N = 12		Pre-mean	Post-mean	t	p
Pair 1	Preparedness to screen patients for mental health concerns.**	3.83	4.50	-3.546	.005
Pair 2	Preparedness to engage patients who screen positive in a conversation about mental health.	3.83	4.33	-2.171	.053
Pair 3	Preparedness to provide information about the importance of mental health for patients' overall health.**	3.75	4.58	-3.458	.005
Pair 4	Preparedness to use motivational interviewing techniques to enhance patients' motivation to address their mental health.**	3.33	4.33	-4.690	.001
Pair 5	Preparedness to collaborate with patients to create an action plan to improve their mental health.**	3.58	4.50	-3.527	.005
Pair 6	Preparedness to schedule a follow-up visit or refer patients to additional support services when needed.*	3.83	4.66	-3.079	.010
Pair 7	Likelihood to conduct mental health screening, brief intervention and referral.*	3.41	3.75	-2.345	.039
Pair 8	Confidence in ability to screen patients for mental health concerns.*	3.00	3.50	-2.569	.026
Pair 9	Confidence in ability to provide brief motivational counseling for mental health.**	2.75	3.41	-3.546	.005
Pair 10	Confidence in ability to refer a patient to additional mental health support services.	3.16	3.58	-2.159	.054

Note. \*p value < .05, \*\*p value < .01, \*\*\*p value < .001.

( $p = .005$ ), staff preparedness to use motivational interviewing techniques to enhance patients' motivation to address their mental health ( $p = .001$ ) and overall confidence in the ability to provide brief motivational counseling for mental health ( $p = .005$ ). Please see Table 9 for paired samples statistics.

### Mental health professional appraisal

Quantitative feedback from 10 mental health professionals (MHP) at the student health center was obtained at the end of the program as an appraisal of the primary care suicide screening approach. Questions posed via confidential electronic survey were scored on a 5-point Likert scale with responses ranging from "Strongly Disagree" to "Strongly Agree." In terms of MHP assessment that referrals received from the program were appropriate, 50% agreed, 20% were undecided and 30% disagreed. When questioned if referrals received were time intensive, 50% of MHPs agreed, 30% were undecided and 20% disagreed. Lastly, when questioned if primary care suicide screening at the student health center should continue, 30% of MHPs strongly agreed and 50% agreed, while 10% were undecided and 10% disagreed.

### Comment

The universal suicide-screening program allowed for comprehensive data collection, improved staff education, enhanced chart documentation and additional mental health referrals. The EMR template additions allowed for more complete and consistent suicide assessment and associated documentation for quality adherence. The number of mental health referral recommendations increased as expected and the number of mental health appointments scheduled increased as well. The primary rationale for students who declined mental health referral at the student health center was due to already being connected to the care of an outside community provider. This outreach was ultimately viewed as positive availing the center the opportunity to provide local resources and safety information should the student's need for urgent intervention arise. The number of safety contact cards distributed far exceeded the number of positive suicide screening results obtained, demonstrating the thorough engagement of primary care staff in mental health-related conversations and openness in offering crisis

resources as a component of routine care. The EMR safety flag usage increased significantly, which allowed clinicians to easily identify students with a history of suicidal ideation so that it may be addressed at subsequent follow-up visits, as a key indicator of future suicide risk is a previous history of suicidal ideation.<sup>19</sup> Staff documentation practices and comfort with mental health-related dialogue was possibly one of the most successful components of the program. Primary care staff members were consistently committed to the program goals and were engaged with intent and purpose to improve care provided to students. Assessment of learning outcomes from the simulated training confirmed that medical staff would be interested in future mental health training opportunities.

Commentary from mental health providers included statements regarding the usefulness of the program, associating the linkage between results and timely treatment, and concurring that the program provided collaborative, compassionate and integrated care for students. Mental health providers that did not find referrals received appropriate noted that the addition of safety questions on suicidal intent, plan and attempts with time stratification of the last 1 month was a useful parameter to more adequately reflect more imminent safety risk. Mental health providers further strengthened the recommendation and importance of ongoing training for medical staff members on mental health topics.

### Limitations

Future studies in this setting may consider oversampling racial and ethnic minorities to gain a more meaningful assessment of differences. A limitation to the EMR system is in the ability to report on additional unique fields. Currently, sexual orientation and gender identity data is not assessed routinely in a standardized way, so the reporting of sexual orientation and gender minorities retrieved from this program was minimal. Consideration of this information is recommended, but would necessitate an additional practice change in order to retrieve such data. Other unique segments of the student population that may have been assessed if possible included student athletes and off-campus commuters. Lastly, appraisal of the program through assessment of students' perceptions of suicide screening methods in a standardized matter would have been useful.

## Conclusion

Suicide prevention initiatives are currently at the forefront of many academic institutions across the country with a common goal of decreasing the incidence of suicide-related deaths on college campuses through enhanced awareness, support and education. A goal of strengthening knowledge and support for staff members conducting assessments is essential because working with patients at risk for suicide can be a challenge for providers. Assessing patients about suicidal ideation in a direct and methodical manner during a clinic encounter is fundamental.<sup>20</sup> As additional research regarding the various individual, interpersonal and community aspects for this vital issue is ongoing, academic institutions should evaluate and implement their own methods of clinician assessment, interventions and service options for students at increased risk for suicide.

## Conflict of interest disclosure

The authors have no conflicts of interest to report. The authors confirm that the research presented in this article met the ethical guidelines, including adherence to the legal requirements, of the United States and received approval from the Institutional Review Board of Loyola University Chicago.

## References

- 10 leading causes of death by age group, United States-2015. Centers for Disease Control. Available at: [https://www.cdc.gov/injury/wisqars/pdf/leading\\_causes\\_of\\_death\\_by\\_age\\_group\\_2015-a.pdf](https://www.cdc.gov/injury/wisqars/pdf/leading_causes_of_death_by_age_group_2015-a.pdf). Published 2015. Accessed January 1, 2018.
- American College Health Association. National Health Assessment II: Reference Group Executive Summary. Available at: [https://www.acha.org/documents/ncha/NCHA-II\\_Spring\\_2018\\_Undergraduate\\_Reference\\_Group\\_Executive\\_Summary.pdf](https://www.acha.org/documents/ncha/NCHA-II_Spring_2018_Undergraduate_Reference_Group_Executive_Summary.pdf). Spring 2018. Accessed November 15, 2018.
- U.S. Department of Health and Human Services (HHS) Office of the Surgeon General and National Action Alliance for Suicide Prevention. *2012 National Strategy for Suicide Prevention: Goals and Objectives for Action*. Washington, DC: HHS; 2012.
- Department of Health and Human Services, Office of Disease Prevention and Health Promotion. *Healthy People 2020*. Washington, DC: U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion; 2016. Available at: <https://www.healthypeople.gov/2020/topics-objectives/topic/mental-health-and-mental-disorders/objectives>. Accessed June 16, 2017.
- 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. doi:10.1007/s11606-014-2767-3.
- Bostwick JM, Rackley S. Addressing suicidality in primary care settings. *Curr Psychiatry Rep*. 2012;14(4):353–359. doi:10.1007/s11920-012-0286-7.
- Hooper LM, Epstein SA, Weinfurt KP, Decoster J, Qu L, Hannah NJ. Predictors of primary care physicians' self-reported intention to conduct suicide risk assessments. *J Behav Health Serv Res*. 2012;39(2):103–115. doi:10.1007/s11414-011-9268-5.
- Schulberg HC, Bruce ML, Lee PW, Williams JW, Dietrich AJ. Preventing suicide in primary care patients: the primary care physicians role. *Gen Hosp Psychiatry*. 2004;26(5):337–345. doi:10.1016/j.genhosppsych.2004.06.007.
- Norris D, Clark MS. Evaluation and treatment of the suicidal patient. *Am Fam Physician*. 2012;85(6):602–605.
- Sommers-Flanagan J, Shaw SL. Suicide risk assessment: what psychologists should know. *Prof Psychol Res Pr*. 2017;48(2):98–106. doi:10.1037/pro0000106.
- Final Update Summary: Suicide risk in adolescents, adults and older adults: Screening. U.S. Preventive Services Task Force. Available at: <https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/suicide-risk-in-adolescents-adults-and-older-adults-screening>. Published 2014. Accessed June 21, 2018.
- National Strategy for Suicide Prevention: Goals and Objectives for Action. Washington, D.C.: United States Department of Health and Human Services Office of the Surgeon General and National Action Alliance for Suicide Prevention. Available at: <https://www.surgeongeneral.gov/library/reports/national-strategy-suicide-prevention/full-report.pdf>. Published 2012. Accessed May 1, 2017.
- Osman A, Bagge CL, Gutierrez PM, Konick LC, Kopper BA, Barrios FX. The suicidal behaviors questionnaire-revised (SBQ-R): Validation with clinical and nonclinical samples. *Assessment*. 2001;8(4):443–454. doi:10.1177/107319110100800409.
- Koetting C, Freed P. Educating undergraduate psychiatric mental health nursing students in screening, brief intervention, referral to treatment (SBIRT) using an online, interactive simulation. *Arch Psychiatr Nurs*. 2017;31(3):241–247. doi:10.1016/j.apnu.2016.11.004.
- Posner K, Brown GK, Stanley B, et al. The Columbia–Suicide Severity Rating Scale: initial validity and internal consistency findings from three multisite studies with adolescents and adults. *Am J Psychiatry*. 2011;168(12):1266–1277. doi:10.1176/appi.ajp.2011.10111704.
- DeVellis RF. *Scale Development: Theory and Applications*. 3rd ed. Los Angeles, CA: Sage; 2012.
- Cox A, Pant H, Gilson AN, et al. Effects of augmenting response options on MMPI–2 RC scale psychometrics. *J Pers Assess*. 2012;94(6):613–619. doi:10.1080/00223891.2012.700464.
- Lozano LM, García-Cueto E, Muñiz J. Effect of the number of response categories on the reliability and validity of rating scales. *Methodology*. 2008;4(2):73–79. doi:10.1027/1614-2241.4.2.73.
- Bebbington PE, Minot SS, Cooper CC, et al. Suicidal ideation, self-harm and attempted suicide. Results from the British Psychiatric Morbidity Survey 2000. *Eur Psychiatry*. 2010;25(7):427–431. doi:10.1016/j.eurpsy.2009.12.004.
- Sinclair L, Leach R. Exploring thoughts of suicide. *BMJ*. 2017;356:j1128. doi:10.1136/bmj.j1128.