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ORIGINAL ARTICLE

Predictive validity of a five-item symptom checklist to screen psychiatric morbidity and suicide ideation in general population and psychiatric settings

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suicide risk screening

Background/purpose: Suicide is a major concern in public health worldwide. Early identification of individuals at risk is critical for suicide prevention. The present study revised the 5-item Brief Symptom Rating Scale (BSRS-5) to a checklist format (BSRS-5R) and validated the BSRS-5R into a screening tool for psychiatric morbidity and suicide ideation in the general public.
Methods: The study participants consisted of two subsets of sample from community residents and psychiatric patients. The community subjects were recruited from stratified proportional randomization sampling in a nationwide community survey, while the psychiatric patients were from psychiatric outpatient service and psychiatric daycare unit in a teaching hospital in northern Taiwan. All participants responded to the questionnaire investigating the BSRS-5, personal experience with suicide, and demographic information.
Results: In total, 2147 community respondents and 700 respondents from psychiatric settings completed the survey questions. The BSRS-5R was highly correlated to BSRS-5 with good internal consistency in our study sample. For the community subjects, *receiver operating*

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characteristic curve analysis revealed an optimal cutoff of 2/3 for BSRS-5R to discriminate psychiatric morbidity or suicide ideation. The BSRS-5R could also identify psychiatric morbidity in psychiatric outpatients and daycare patients. In addition, the cutoff of 4/5 for BSRS-5R to determine suicide ideation yielded moderately good predictive validity in psychiatric outpatients and in daycare patients.

Conclusion: The BSRS-5R was validated as an efficient checklist to screen for psychiatric morbidity and suicide ideation in the general public. The result is valuable in translating into general medical and community settings for early detection of suicide ideation.

Introduction

Suicide has been recognized as a major public health issue worldwide and is one of the first causes of potential loss of life.[1] It involves multiple determinants with a complex process from initiation of ideation, planning, attempting, and finally to completed behaviors.[2] Suicide risks can be formulated as an interaction between relatively stable risk factors or predisposing characteristics, protective factors, and acute precipitants.[3] Individuals should be screened and assessed for suicide risks along a timeline of imminent, near-term, and long-term risk.[4] Psychological autopsy studies have demonstrated that a majority of suicides occur on the individual's first attempt.[5,6] Thus, earlier identification of high-risk individuals with suicide ideation (SI) is crucial for early intervention prior to an attempt. Moreover, SI was reported to closely link to a suicide attempt and completed suicide, and have a long-term effect on the development of future mental health problems.[7] The reported prevalence rates of SI varied widely by various definitions, in different settings, and for diverse populations.[8] The estimated prevalence of SI in the general population ranges widely from 2.3% to 14.6% for 1-year SI and from 10% to 14% for lifetime SI.[5,9–12] Well-established risk factors for suicide included mental disorders and severe psychosocial stress, especially mood disorders, anxiety disorders, substance use disorders, and schizophrenia.[9,13–23] Mental disorders presenting with anxiety, depression, or suicide ideation are common in the community as well as in medical settings including primary care clinics and inpatient units.[24–27] However, only a minority of the high-risk individuals sought professional help and were correctly identified by nonpsychiatric physicians.[12,28–30]

A number of tools for screening or indepth assessment for suicide were designed to capture potential risk factors for further management.[4,31] Among all screening tools for suicide risk factors, relatively few were invented for universal application across different medical settings and populations.[4] This may be due to the fact that completed or attempted suicides are rare events, making prediction difficult simply based on screening results. Therefore, proactive detection of the aforementioned risk factors to uncover early-stage suicide ideation plays a key role in suicide prevention in the suicidal process. Previously our research team has proved that the 5-item Brief Symptom Rating Scale (BSRS-5) is a satisfactory instrument to screen for psychiatric morbidity or SI in a variety of settings with a wide application in Taiwan. It is adopted as a routine screening among medical inpatients at admission or individuals receiving general health examination.[32–37] In order to increase the feasibility of BSRS-5 as a more efficient and widely acceptable screening tool, the authors revised the 5-point ratings of BSRS-5 to a yes/no response format, the BSRS-5R, and examined its reliability and validity in both general population and psychiatric settings. It was expected that the revised format would be easier and shorter to use either by self-report or by interview in diverse situations.

Methods

Participants

The study sample comprised individuals recruited from the following two populations:

(1) *Community subjects*
The community sample was enrolled using a standardized computer-assisted telephone interview system. The telephone numbers were selected using a stratified proportional randomizing method from the telephone-number bank according to the distribution of population size in different geographic areas of Taiwan. All the respondents aged 15 years and older were invited to answer a series of surveyed questions. In total, 2147 respondents (43.5% males) who completed all the surveyed questions were included as study participants.

(2) *Psychiatric patients*
The psychiatric patients came from two sources in the study hospital: (1) patients who received the outpatient service provided by the corresponding author (Lee MB); and (2) patients who attended the 60-bedded daycare psychiatric rehabilitation program. The candidates were invited to complete the aforementioned survey questions. Within the 8-month study period, 636 outpatients and 64 daycare patients completed the surveyed questions, resulting in a total of 700 psychiatric patients (65.9% females) collected in the study.

Surveyed questions and procedure

All the participants were asked to complete the questions of BSRS-5, which is a 5-item Likert scale (scores of 0 to 4) by self-report or by interview for measurement of the severity