Reviewer's report

Title: Validation of a brief suicide risk screening tool in a Chinese population

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Reviewer: Masatoshi Inagaki

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Comments on the manuscript titled "Validation of a brief suicide risk screening tool in a Chinese population"

The study examined the predictive validity of the Chemises version SAD PERSONS Scale (CSPS) in 147 patients with self-harm recruited from an emergency department. The sensitivity and specificity to predict 6-month self-harm repetition among the subjects were 65.4% and 58.1%, respectively. In addition, the study evaluated the feasibility and applicability of the CSPS by a group discussion of general nurses, and the nurses found it as useful.

Major Compulsory Revisions

1. Predictive validity of the CSPS was measured using patients with self-harm recruited from the Emergency Department of Mackay Memorial Hospital. Meanwhile, the feasibility and applicability of the CSPS was discussed by general nurses in a general hospital, the National Taiwan University Hospital. Validity of a diagnostic/screening tool is usually dependent on a situation where the tool is used. And feasibility and applicability of the tool is also different from those in other settings. In the case of the study, risk for subsequent self-harm should be different between patients with self-harm recruited from the Emergency Department and those whom the general nurses are caring for. This difference is a critical problem to interpret the results of the study.

2. The target population of the CSPS in the study should be clearer. This change may influence on the title of the paper. The current title showed the "Chinese population" as the target population. However, it may or may not be "patients with self-harm transported to the Emergency Department", "patient in Family Medicine Department", or other population.

3. In addition, the manuscript did not describe sampling flow in detail. Screening performance is dependent on characteristics of target samples. Thus, the characteristics of patients who rejected to participate in the study would be useful information to interpret the generalizability of the results. In addition to the lack of information about sampling flow, inclusion and exclusion criteria were not clearly described.

Minor Essential Revisions

4. The study recruited 284 people without self-harm from the Family Medicine
Department as the controls. However, I could not find comparisons using the 284 people as the control. Table 2, Table 3, Table 4, and Table 5 seems to use only patients with self-harm recruited from the Emergency Department. Why was the control group needed in the study?

5. And, even if there is comparisons using the controls, appropriate controls would be patients without self-harm who consulted to the Emergency Department. Patients consulted to the Emergency Department may have different risks from those in patients who consulted to the Family Medicine Department. Patients who met accident and/or injury may have a risk of self-harm and suicide. Please describe rationale, advantages and/or limitations of using patients in the Family Medicine Department as controls in the manuscript.

6. Predictive performance of the CSPS was examined using 6-month self-harm act. However, the method to assess the self-harm was unclear. How did the study define the “self-harm”? Who did assess the self-harm? Was there any validity to measure the self-harm? Assessments of self-harm may be biased, because patients would not like to disclose their history of self-harm.

7. Was the researcher who assessed the self-harm at 6 month blinded (masked) to the results of the CSPS? The STARD (STAndards for the Reporting of Diagnostic accuracy studies: http://www.stard-statement.org/) statement which is to improve the accuracy and completeness of reporting of studies of diagnostic accuracy recommended to report the test methods. The checklist for reporting studies of diagnostic accuracy of the STARD statement may be useful for the study.

8. Patients with high suicide risk may have tendency not to participate in studies. In addition to describing sampling flow as mentioned above, characteristics of patients who dropped out from follow-up assessment may be useful information on discuss the results.

9. In the study, predictive performance of the CSPS was examined using repetition of self-harm after 6 month in patients with self-harm recruited in the Emergency Department. The patients may be intervened as usual treatment. The predictive performance of the CSPS might be influenced by the intervention to the patients. Please describe the treatment to the subjects in detail. In addition, if the intervention (treatment) was different between subjects whose score of the CSPS was high and those whose score of the CSPS was low, the difference of the intervention may influence the predictive performance of the CSPS. Were the intervening persons blinded (masked) to the results of the CSPS?

Discretionary Revisions

10. If the study had been registered to any of research registry database, such as the clinicaltrial.com or the Australian New Zealand Clinical Trials Registry (ANZCTR), please refer to it.

11. In introduction and discussion, a paper of systematic review and meta-analysis reported by O'Connor et al. should be referred. The review
contains many screening studies in a setting of emergency departments.

12. Not only the sensitivity, specificity, PPV, and NPV by cut-off scores of the CSPS and the ROC, but also stratum-specific likelihood ratios (SSLRs) may be informative to clinicians (Furukawa TA, Strauss S, Bucher HC, Guyatt G. Diagnostic tests. In: Guyatt G, Drummond R, Meade MO, Cook DJ, editors. Users' guides to the medical literature: a manual for evidence-based practice. 2nd ed. New York: The McGraw-Hill Companies, Inc.; 2008).

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests.