Author’s response to reviews

**Title:** Questionnaires on stigmatizing attitudes among healthcare students in Taiwan: Development and validation

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Yesim Senol (Reviewer 1):

Minor Essential Revisions

- The issue is important for healthcare professionals. But there are some problems in the method section. More information should be provided regarding validation. It is recommended to determine the sample according to the number of items. Exploratory Factor Analysis and Confirmatory factor analysis wasn't performed. Therefore an additional statistical support can be take.

REPLY: We have added more information about our sample size estimation (p. 9, line 139—145).

“Our sample size was determined based on two perspectives: (1) the appropriate minimum size for the conditions required for factor analysis, and (2) the minimum necessary to be representative of the population of interest. Regarding the first, according to Fabrigar &amp; Wegener [22], under moderately good conditions (communalities of .40 to .70 with at least 3 measured variables loading on each factor), a sample of at least 200 is adequate. Regarding the second, we estimated our sample size based on the data from the Ministry of Education in Taiwan ....”

Reference:


In addition, we have conducted exploratory factor analysis (p. 10, line 162) to derive factor structure.
• "Discussion", more comprehensive comparison should be made between the result of current study and the previous investigation done in Taiwanese population.

REPLY: We have added a paragraph in Discussion about the stigma research in Taiwan (p. 20, line 283–297).

• The English writing of the manuscript is fine.

REPLY: Thank you. We have our manuscript edited by EDITAGE.com.

Claire Henderson (Reviewer 2):

• Suggest rephrase 'negative knowledge' e.g. lack of knowledge

REPLY: We have revised as suggested (p. 4, line 54).

• 'Particularly for occupational therapy'- this implies the scale is for or mainly for occupational therapy students, but this is not clear. Clarify whether this is the aim in the abstract and the end of the introduction - at the moment it is not clear until the start of the methods.

REPLY: Among a diversity of clinical populations, we chose people with mental illness, emotional and behavioral disorders, and disabilities as the focus of our questionnaires because these are the major populations occupational therapy practitioners treat in clinical practice. But we believe that the questionnaires are also applicable to other healthcare students, because they may also encounter these populations in their clinical practice. Therefore, the purpose of this paper was to develop the questionnaires for healthcare students.

In accordance with the purpose, we moved this passage to the end of the introduction (p. 7, line 103–107) and revised the text as follows:

“Students entering healthcare professions are also members of the general public who may share the public stigma rooted in our sociocultural system [14]. While all healthcare practitioners are likely to interact with members of these often-stigmatized populations, the practice of occupational therapy is primarily concerned with people with mental illness, children with EBP, and people with physical or intellectual disabilities. Therefore, it is important to understand the stigmatizing attitudes of healthcare students, including students of occupational therapy, towards people with mental illness, EBP, and disabilities. The purpose of this study was to develop and validate questionnaires to evaluate the stigmatizing attitudes of healthcare students towards these populations.”

The aim in the abstract was kept the same as stated in the title: among healthcare students.
• People with mental illness are not usually in need of long term health care- do the authors mean severe mental illnesses, such as psychosis and bipolar disorder? Even for these illnesses the course of illness is highly variable, e.g. with many people having a single episode of psychosis and no further problems.

REPLY: We agree with the reviewer’s comment and have deleted the wording “long-term”.

“People with mental illness or disabilities and children with EBD are usually in need of long-term healthcare and rehabilitation services to assist them in adapting to their difficulties and achieving their full potential.” (p. 6, line 97)

“People with mental illness, children with EBD, and people with disabilities often require long-term healthcare and rehabilitation services to adapt to their difficulties and optimize their strengths.” (p. 22, line 324)

• For the methods I think the scale development should be described first and then the methods for how its properties were evaluated.

REPLY: We have reorganized as suggested. Item development and selection is now the first subsection in Methods (p. 8, line 122).

• For scale development, the sample size required is based on what is needed to evaluate the psychometric properties of the scale. I did not understand why it is instead based on the size of the population.

REPLY: We have added more information about our sample size estimation (p. 9, line 139-145).

“Our sample size was determined based on two perspectives: (1) the appropriate minimum size for the conditions required for factor analysis, and (2) the minimum necessary to be representative of the population of interest. Regarding the first, according to Fabrigar & Wegener [22], under moderately good conditions (communalities of .40 to .70 with at least 3 measured variables loading on each factor), a sample of at least 200 is adequate. Regarding the second, we estimated our sample size based on the data from the Ministry of Education in Taiwan ….”

Reference:


• There are already a number of scales developed to assess stigma in healthcare professionals and/or students including Opening Minds Stigma Scale for Health Care Providers (OMS-HC) and Mental illness Clinicians' Attitudes scale (MICA), or which have been used in healthcare professionals because of greater suitability than many of those developed for the general population- for example the scale developed by Crisp et
al which asks about specific diagnoses. While these might require adaptation they see a more obvious place to start than those used. Were they identified by the searches? If so what was the rationale for not using them? If not, I think the searches were deficient.

REPLY: In our search we did identify OMS-HC, but we did not use it because we think some items are designed for professionals, who have already worked and have colleagues, and thus not very appropriate for students. For example, “If I were under treatment for a mental illness I would not disclose this to any of my colleagues.” “Health care providers do not need to be advocates for people with mental illness.” “If a colleague with whom I work told me they had a managed mental illness, I would be as willing to work with him/her.”

Although we did not identify the MICA in our search, we determined that some of the items were not appropriate for our student population, which includes allied health students. For example, “I just learn about psychiatry because it is in the exam and would not bother reading additional material on it.” “Being a psychiatrist is not like being a real doctor.” “If a consultant psychiatrist instructed me to treat people with mental illness in a derogatory manner, I would not follow the consultant’s instructions.”

We have added a paragraph in the Discussion to address this point (p. 19, lines 272–282).

“Other surveys have been developed to assess stigmatizing attitudes in healthcare professionals towards people with mental illness, such as the Mental Illness Clinicians’ Attitudes (MICA) Scale [31] and the Opening Minds Stigma Scale for Health Care Providers (OMS-HC) [32]. However, we did not use these scales because we determined that students are in a different stage involving different experiences compared to working professionals, thus some items that are related to professional practice and interaction with colleagues may not be appropriate to the student participants. … Future research aiming to evaluate the outcome of anti-stigma program should choose the survey according to the recipients of the program.”

• No reference is made to standards for psychometric assessment such as the Terwee criteria. The authors acknowledge the lack of validation however there is no 'gold standard'- instead scales measuring related constructs e.g. mental health literacy can be used for convergent validity and unrelated constructs for divergent. I take the point about respondent burden but for example there are measures of desire for social distance which could have been used, the shortest of which is just 4 items, i.e. the intended behaviour subscale of the RIBS (Evans-Lacko et al).

REPLY: Thank you for the constructive comments. We have addressed this point in the Discussion (p. 21, line 310–319).

“Second, in this paper, we reported instrument structure and internal consistency. It should be noted that development of a questionnaire requires continual effort. Other measurement properties have to be established too, such as test-retest reliability, criterion validity, and responsiveness [44]. In the present study, because we tested three questionnaires at a time, in order not to overburden our participants, we did not include other measures to test criterion validity. For future research, some short surveys could be included to examine construct validity.
For example, the Reported and Intended Behavior Scale (RIBS)[45] that tests behavioral discrimination against people with mental health problems could be used to examine the convergent validity of our Questionnaire on Stigmatizing Attitudes Toward Mental Illness.”

References:


Ellie K. Taylor (Reviewer 3): Overall, a strong paper, addressing a significant need.

A few minor suggestions:

• Line 51-53 - it seems unusual to single out occupational therapy; arguably this is a significant issue for all healthcare providers given the prevalence of mental illness in the community.

REPLY: We have moved the sentence to the end of the Introduction to justify why we purposefully included OT students as participants (p. 7, lines 104–107).

• Line 53 - in the interest of using person-centered language, please change 'these people' to 'people living with mental illness' or similar.

REPLY: We have revised as suggested (p. 4, line 58).

• Line 57 - citation #6 - surely there are more, relevant references to emphasise this point? The impact of stigma on people living with mental illness, in particular, can be incredibly detrimental and this needs to be emphasised further.

REPLY: We have added two more references and a sentence to emphasize this point.

“… some patients with mental illness even reported stigma-related experience when interacting with healthcare professionals [6-8]. Such experiences of stigma are likely to aggravate patients’ feelings of rejection and incompetence, and thus are detrimental to patients’ treatment-seeking and ongoing participation in treatment [9].” (p. 4, lines 61–64)
References:


- Line 59 - what is meant by 'anti-stigma programs'? I think this needs to be made clear to the reader.

REPLY: We have rephrased as “educational interventions to enhance stigma awareness and reduce stigmatizing attitudes and behaviors (i.e., anti-stigma programs)” (p. 4, line 65).

- Line 62 - soften the language here, 'can' or 'may' result in discriminatory behaviours. This is often the case, but not always.

REPLY: We have revised as suggested.

“Such negative stereotypes are highly associated with fear and may result in discriminatory behaviors towards people with mental illness such as avoidance and withdrawal” (p. 5, line 71).

- Line 78 - should be "people with physical and intellectual disabilities" - the disabilities themselves cannot be stigmatised against.

REPLY: We have corrected as suggested (p. 6, line 88).

- Line 93 - "healthcare professions" not "healthcare professionals"

REPLY: We have corrected as suggested (p. 7, line 103).

- In the discussion, more could be said in relation to the implications for teaching future health professionals. If stigmatising beliefs are engrained early on, there is great need to address this during their studies and, in particular, during placement.

REPLY: We have added a paragraph in the Discussion to address this point (p. 21, line 298–304).
Finally, we changed “emotional and behavioral problems (EBP)” to “emotional and behavioral disorders (EBD)” in the manuscript in order not to be confused with “evidence-based practice (EBP)”.