

**Received:** 2023-06-14    **Reviewed:** 2023-06-29    **Revised:** 2023-07-18    **Accepted:** 2023-07-28    **Published:** 2023-08-23**E d i t o r****R e v i e w e r s**

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**1. Round 1***1.1 Reviewer 1*

Date: 25 June 2023

I read with a great attention the original study entitled: Latent Profile Analysis of Mental Health of Students during the COVID-19 Pandemic: Multidimensional Modelling Approach Integrating Positive Psychology. The rationale of the study is interesting. However, several remarks are noted and authors are asked to consider them in order to improve the scientific quality of their paper.

**A. GENERAL REMARKS**

.Please add the short title

.Misuse of abbreviations: All abbreviations should be explained the first time they are used - unless it is a standard unit of measurement - and thereafter the use of abbreviations should be consistent throughout the paper.

.Over all the paper, change for example by eg

.Use always "vs."

.Avoid elegant variations of terms: use male/female or men/women not both, use participant or subject not both. For your information, here are the distinctions between the terms "participant," "subject," and "volunteer".

**Participant:** The term "participant" refers to an individual who takes part in a specific activity, program, event, or study. It is a broad term that can encompass various contexts. A participant can be involved in research studies, surveys, workshops, focus groups, training sessions, sports events, and many other activities. The term "participant" simply indicates that an individual is actively engaged or involved in a particular endeavor.

**Subject:** The term "subject" is primarily used in the context of research or scientific studies. A subject refers to an individual who participates in a study or experiment, typically under the observation or investigation of researchers. In research, subjects are often recruited to gather data, test hypotheses, or examine the effects of certain interventions or treatments. The term "subject" emphasizes the role of the individual in being studied or observed within the research framework.

**Volunteer:** A volunteer is someone who willingly offers their time, skills, or resources to support a cause, activity, or organization without expecting monetary compensation. Volunteers are motivated by personal interest, altruism, a desire to make a positive impact, or a sense of community involvement. Unlike participants or subjects, volunteers typically engage in activities that are not solely focused on research but can span a wide range of areas, including community service, charity work, advocacy, event support, and more.

In summary, "participant" is a general term that applies to individuals involved in various activities, "subject" specifically refers to individuals involved in research studies, and "volunteer" denotes individuals who offer their time and services for a cause or activity without expecting payment.

#### B. MAJOR REMARKS

1. The use of the term adolescent for subjects aged 18 to 24 years is a serious problem. According to Pubmed: Adolescent is a person 13 to 18 years of age (<https://www.ncbi.nlm.nih.gov/mesh/68000293>). For this study, the appropriate term that must be used is "Young adult" which is a person between 19 and 24 years of age (<https://www.ncbi.nlm.nih.gov/mesh/68055815>). Therefore, change over all the paper, adolescent (teenager) by young adults. L102; the 2 references (44 and 45) advanced by the authors to argue their definitions are no longer needed.

2. L126-133: authors are asked to move the results to the section Results: mean SD of age, gender, income variable,

3. I do not found the annex 1

#### C. MINOR REMARKS

##### 1. Abstract

L20-24: correct as: Objectives: To (a) empirically identify, from dual-factor model of mental health, different profiles among a cohort of adolescents in Tunisia based on person-centred approach, (b) outline identified profiles (created with both psychopathological symptoms and indicators of positive subjective well-being), across the sociodemographic and the academic achievement, and (c) establish predictors of these profiles.

L26: delete and males (46%)

L28: avoid capital letters

L35: define OR and CI

##### 2. Keywords

.Avoid citing as keywords some terms used in the title or the abstract

.Classify keywords by alphabetical order

##### 3. Introduction

.Should be rearranged into only three paragraphs: 1 what is known, 2 what is unknown, and 3: your aims

.Several sentences are lacking references: please add references after the world (L50), several countries (I55), restaurants etc.. (L62), over the world (I66), mental health (I76), they generate (L81), carried out (I86), health subgroups (I97), and depression (I99),

.L52: define COVID-19

.L52: change recent by some

.L79: delete relatively recent

.L79: delete WHO, delete (2015) and add the exact reference after Organisation.

.L96: LPA is a flexible...

.I102-103: this sentence is a source of confusion: Indeed, adolescence is currently defined as a period of life that extends from 10 to 24 years [44, 45] ....Your reference 45 (Sawyer SM, Azzopardi PS, Wickremarathne D, Patton GC. The age of adolescence. *Lancet Child Adolesc Health*. 2018;2:223–8) is only a proposition from a single team to change the definition of adolescent (Rather than age 10-19 years, a definition of 10-24 years corresponds more closely to adolescent growth and popular understandings of this life phase and would facilitate extended investments across a broader range of settings) and nowadays it is not accepted by scientists.

.L106-110: change as "Therefore, the objectives of this study were to (a) empirically identify, from dual-factor model of mental health, different profiles among a cohort of adolescents in Tunisia based on person-centered approach, (b) outline identified profiles (created with both psychopathological symptoms and indicators of positive subjective well-being), across the sociodemographic and the academic achievement, and (c) establish predictors of these profiles

##### 4. Methods

.Rename this section as Population and methods not Materials and methods

.For all applied questionnaires/scales: inform readers about the language of the questionnaire, its validity in the local language,

.What is the study design?

.Add a figure: flowchart

.The recruitment method needs more details

.What about the sample size calculation?

.What is the exact period of the study? Start-end

.What about the exclusion criteria (files with lacking data for example?)

.Authors are asked to cite some numerical data related to the pandemic during July 2021 (number of cases, number of death, is there lockdown or not)

.L135: The study was performed in Tunisia: there is no reason to obtain an Italian ethical approval from the University of Genova?

.L137: add the name of the Local research ethics committee (local refers to what)?

.L147: define DASS (first use)

.L153: coefficient

.L168-169: delete Spiritual...Scale

.L175: add a reference after satisfaction

.L190-195: what about models 4 and 5? Why only model 1, 2, 3 and 6?

## 5. Results

.This section must begin by the description of the population

.please avoid redundancy between text and illustrations

.L221: what is ASH???

.L235: unclear and incomplete sentence: The three profiles.....(See Table 2)?

.L238: ANCONA

.L244: Avoid number at the beginning of a sentence: 53.6%

.L249: delete and males (44.4%)

.L245: delete and 49% men

.L274: standard error (SE) and adjusted odds ratio (OR) was not introduced in the statistical analysis subsection?

## 6. Tables

Table 1. Please define all used abbreviations in the bottom of the table. What about Model 4 and 5? Data were?

Table 2. Please define all used abbreviations in the bottom of the table.

Table 3. Please define all used abbreviations in the bottom of the table.

## 7. Discussion

.L294-297: delete the sentence "The objective .....cohort clusters"

.Change the style of citing authors' names inside the paper: For example L320: change Browning et al. 2021 by Browning et al. [ref]. Please apply this correction to the remaining examples.

.L322: add a reference after constructs

.L324: add a reference after health

.Please develop the section study limitations. Other limitation exist such as the use of survey: see <https://doi.org/10.1080/13645579.2020.1805550>

## 8. References

Ref 8. Journal name? book? Website?

Ref 10, 30, 52, 68: journal abbreviated name,

## 1.2 Reviewer 2

Date: 29 June 2023

The objective of this study to empirically identify different profiles of mental health among a cohort of Tunisian adolescents based on a person-centered approach is highly relevant, particularly considering the context of the COVID-19 pandemic. The integration of psychopathological symptoms and indicators of positive subjective well-being in the profiles adds depth and comprehensiveness to the analysis.

The cross-sectional data collected from a sample of 1185 teenage university students in Tunisia further strengthens the study's credibility. The inclusion of socio-demographic characteristics, academic achievement, and various mental health measures, such as stress, depression, anxiety, spiritual well-being, life satisfaction, and happiness, allows for a multidimensional understanding of mental health in this population.

The analysis of latent profiles revealed three distinct mental health classes: a poor mental health class, a moderate mental health class, and a good mental health class. The identification of these classes and the subsequent examination of their associations with family income and academic completion provide valuable insights. The finding that low family income and failed academic achievement are associated with poor mental health is particularly important and highlights vulnerable groups within the student population.

The use of multinomial logistic regression analysis to establish predictors of mental health profiles adds further depth to the study. The identification of specific associations between family income, living arrangements, and academic achievement with different mental health classes contributes to our understanding of the factors influencing mental well-being in university adolescents.

Overall, this study makes a significant contribution to the field of mental health among university students during the COVID-19 pandemic. The integration of positive psychology and the adoption of a person-centered approach provide a nuanced perspective on mental health profiles. The findings underscore the need for targeted interventions and support for vulnerable student groups.

I commend the authors on their rigorous methodology, comprehensive analysis, and clear presentation of results and conclusions. This manuscript is a valuable addition to the literature, and I believe it will be of interest to researchers, educators, and policymakers concerned with the mental well-being of university students.

## 2. Revised

Editor's decision after revisions: Accepted.

Editor in Chief's decision: Accepted.