PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	Cohort Profile: Stress, development and mental health -study, the follow-up study of Finnish TAM cohort from adolescence to midlife
AUTHORS	Berg, Noora; Kiviruusu, Olli; Grundström, Jenna; Huurre, Taina; Marttunen, Mauri

VERSION 1 – REVIEW

REVIEWER	Velthorst, Eva Icahn School of Medicine at Mount Sinai, Psychiatry
REVIEW RETURNED	26-Jan-2021

GENERAL COMMENTS	This manuscript describes a very comprehensive and unique cohort with a wealth of opportunities to study healthy and unhealthy life trajectories. Please find some comments below, which mainly focus on the need for clarification/ elaboration: General comments: 1. As one of the main limitations of the study, the authors mention the long follow-up gaps. Could the authors explain why they then decided to maintain the 10-year gaps, and not planned their new follow- up earlier than 2029? 2. The authors mainly described previous findings, but it would also be nice to read more about any future research goals. Which exciting new study questions can be addressed at the current age of the participants? In line with this, the authors mention that they would like to include more detailed measures; are they planning to include biological measures in the future? (e.g. DNA collection). Abstract: Please clarify that this is a cohort profile study. This is not immediately clear. Second paragraph: It would help to explain what the %s refer to. In addition, the percentages are missing in the last sentence here. Introduction: The study jumps right in, and may need a bit more introduction. For example, in line 25, it is unclear what “the study” refers to. The authors may also want to consider placing their follow-up study in perspective. For example, have comparable follow-up-studies been carried out in Finland (or other countries) before? How is this study novel/ how could the study design contribute to what is already known about adverse or resilient life trajectories? Cohort description:

	Is there any data on whether the target population in Tampere is representative for the rest of the Finnish population (e.g. in terms of SEP, education etc.)? Follow-up information The authors mention that the response rates were good. It would be helpful to see some reference here to back up this statement, and to see how response rates compare to other cohort studies. Page 6, Line 39-41: “Important predictors of non-response were gender and school performance at age 16”. Could the authors please explain whether female or male, and whether higher or lower school performance was associated with attrition? Measurements: A reference to the ICD is missing. Will the ICD also be used to confirm (mental) health diagnoses in the study sample? If not, how was chronic illness established? (e.g. by asking about physician assigned diagnoses?). It may be useful to describe this in a bit more detail in the text. Table 2. Please write out and provide references to the R-BDI, GHQ-12, K10, and AUDIT in the footnote. Findings to date: Page 10, line 30: What does “health selection in men” refer to? Data availability statement: The statement “Data are available upon request” contradicts previous statements that data are not freely available. I may have misunderstood, but it would be good to clarify.

REVIEWER	Lee, Jungmin National Youth Policy Institute
REVIEW RETURNED	05-Feb-2021

GENERAL COMMENTS	The goal of this study is to show a cohort profile as a longitudinal study. Using the descriptive method shows remarkable findings for physical and mental health, health behavior, social-economic status, psychosocial resources, social relationships, and so on. It is a significant study to identify life trajectory (getting older from adolescence to mid-aged) by socioeconomic position, parental divorce, chronic diseases, psychosomatic symptoms, psychosocial resources, and substance abuse. However, my enthusiasm for this paper was dampened by some substantial methodological concerns and unprofessional academic writing. Therefore, I have some major and minor feedback that I hope will improve the manuscript. 1. The research questions are unclear and seem not to be connected by providing findings. Moreover, the authors enumerate their findings but describing those findings did not focus on making a connection by the individual’s development (or getting older) even though the study is a longitudinal study. For example, on page 10, the authors declare that they examine the role of SEF, parental divorce, chronic diseases, psychosomatic symptoms, psychosocial resources, and alcohol use and of course, I could see the relationship among these variables in the following

	sections, but that seems not to organize well so that readers follow the main findings and their meaning. I want to suggest the authors focus on reorganizing the findings of what SEP, Psychosocial resources showed kinds of differences, and so on by individual development (getting older). 2. What kinds of statistical methods did the authors use to address the research question? To make a strength of the study, the authors had better identify or provide what evidence was used rather than just citation of the previous paper. 3. Language usage. The authors used “better self-esteem” “better school achievement” on page 11, but I would suggest rethinking the expression to exclude their value. I am grateful to have a chance to review this manuscript. I hope the authors find this feedback helpful in future drafts.

VERSION 1 – AUTHOR RESPONSE

Reviewer: 1
Dr. Eva Velthorst, Icahn School of Medicine at Mount Sinai Comments to the Author:
This manuscript describes a very comprehensive and unique cohort with a wealth of opportunities to study healthy and unhealthy life trajectories. Please find some comments below, which mainly focus on the need for clarification/ elaboration:

General comments:

1. As one of the main limitations of the study, the authors mention the long follow-up gaps. Could the authors explain why they then decided to maintain the 10-year gaps, and not planned their new follow- up earlier than 2029?
RESPONSE: This is a valid question, which will need more elaboration from us in the future. It is true that a 10 year gap is a long period between the follow-ups, and ideally we would conduct the study within shorter intervals, every five years for example. However, the tight financial and personnel resources set us some limits. Nevertheless, we need to consider the possibility of conducting the coming follow-up waves with shorter time intervals. We changed the wording in the text accordingly suggesting that the next follow-up will be in 2029 at the latest. Thank you for this insightful comment.

2. The authors mainly described previous findings, but it would also be nice to read more about any future research goals. Which exciting new study questions can be addressed at the current age of the participants? In line with this, the authors mention that they would like to include more detailed measures; are they planning to include biological measures in the future? (e.g. DNA collection).
RESPONSE: Thank you for this interesting suggestion. We have now added information on our ongoing and planned research. Regarding the more detailed measures, we were referring to childhood circumstances namely time before age 14 and we have considered linking the survey data with register data (e.g. household income of the childhood family, child health clinic data) from that time. It would also be possible to expand our research questions to include biological measures in adulthood (including DNA) and earlier we had some preliminary ideas on this. However, as we currently we have no specific plans on collecting biological data, we have omitted these plans from the cohort profile. This is also very much a question of resources.

Current and future research areas include e.g. longitudinal associations between mental health (e.g. depressive symptoms, self-esteem) and 1) substance use (alcohol and tobacco), 2) family transitions (e.g. parenthood, relationship status) and 3) retirement.

Abstract:
Please clarify that this is a cohort profile study. This is not immediately clear.
Second paragraph: It would help to explain what the %s refer to. In addition, the percentages are missing in the last sentence here.
RESPONSE: As suggested we have now clarified the nature of this paper in the abstract and also elucidated information on percentages and added missing information.

Participants: In 1981 (N=2242, 98.0% of the target population), 1982 (N=2191, 95.6%) and 1983 (N=2194, 96.7%) during school classes surveys were conducted to all Finnish-speaking pupils (mostly born 1967) in the Tampere region in Finland. Participants of a the school study at age 16 in 1983 (N=2194) comprised the base population for the longitudinal data and were followed up using postal questionnaires in the years 1989, 1999, 2009 and 2019 at ages 22 (N=1656, 75.5% of the age 16 participants), 32 (N=1471, 67.0%), 42 (N=1334, 60.8%), and 52 (N=1160, 52.9%).

Introduction:
The study jumps right in, and may need a bit more introduction. For example, in line 25, it is unclear what “the study” refers to.
The authors may also want to consider placing their follow-up study in perspective. For example, have comparable follow-up- studies been carried out in Finland (or other countries) before? How is this study novel/ how could the study design contribute to what is already known about adverse or resilient life trajectories?
RESPONSE: We thank the reviewer for this comment and have now broadened the Introduction as suggested.

The Stress, development and mental health (TAM) –cohort was set up to investigate how people experiencing stress and difficulties, could be supported in their development and how to prevent problems in health and well-being [1].

Some other Nordic longitudinal cohort studies with similar or longer follow-up time have been conducted [3-5], but in these studies the starting point has not been mental health perspective. TAM cohort study is particularly focused on mental health (broadly defined) and on the role of risk and protective factors in the development of mental health during the life course, and the data is based on a whole age cohort of one region.

Cohort description:
Is there any data on whether the target population in Tampere is representative for the rest of the Finnish population (e.g. in terms of SEP, education etc.)?
RESPONSE: This is an important question and we have now described this in more detail.

Educational level among Tampere residents resembled levels in other cities in Finland[7].(in the 1980s)

During the follow-ups the participants represented well the whole age cohort in Finland, e.g. in terms of marital status[11]. Compared to Finnish population in general the cohort was more educated, but in comparison to population living in cities the educational level was similar[7].

Follow-up information

The authors mention that the response rates were good. It would be helpful to see some reference here to back up this statement, and to see how response rates compare to other cohort studies.
RESPONSE: We have now rephrased this sentence.

Even though the participation rates have somewhat declined, the response rates are good compared to postal questionnaires in general[8-9].

Page 6, Line 39-41: “Important predictors of non-response were gender and school performance at age 16”. Could the authors please explain whether female or male, and whether higher or lower school performance was associated with attrition?
RESPONSE: Thank you for this important suggestion. We have now explained this issue in more detail.

The results of that analysis showed that the most important predictors of non-response were male gender and poor school performance at age 16 years.

Measurements:
A reference to the ICD is missing.
RESPONSE: We have now added the references.

Will the ICD also be used to confirm (mental) health diagnoses in the study sample? If not, how was chronic illness established? (e.g. by asking about physician assigned diagnoses?). It may be useful to describe this in a bit more detail in the text.
RESPONSE: All measures are self-reported, apart from information on deaths. The respondents reported chronic illness by answering yes/no to a list of most common illnesses (e.g. diabetes, allergy, depression) and reporting other illnesses to an open question. We have now clarified this issue in the text and Table 2.

Table 2. Please write out and provide references to the R-BDI, GHQ-12, K10, and AUDIT in the footnote.
RESPONSE: We have now added this requested information.

Findings to date:
Page 10, line 30: What does “health selection in men” refer to?
RESPONSE: We have now clarified this. Health selection refers to symptoms predicting SEP, i.e. that those with more symptoms (ill health) are “selected” to lower SEP.

Data availability statement:

The statement “Data are available upon request” contradicts previous statements that data are not freely available. I may have misunderstood, but it would be good to clarify.
RESPONSE: Thank you for pointing out this ambiguity in the text, we have now clarified this issue.

Suggestions for scientific collaboration are welcome.

Reviewer: 2
Dr. Jungmin Lee, National Youth Policy Institute Comments to the Author:
The goal of this study is to show a cohort profile as a longitudinal study. Using the descriptive method shows remarkable findings for physical and mental health, health behavior, social-economic status, psychosocial resources, social relationships, and so on. It is a significant study to identify life trajectory (getting older from adolescence to mid-aged) by socioeconomic position, parental divorce,

chronic diseases, psychosomatic symptoms, psychosocial resources, and substance abuse. However, my enthusiasm for this paper was dampened by some substantial methodological concerns and unprofessional academic writing. Therefore, I have some major and minor feedback that I hope will improve the manuscript.

1. The research questions are unclear and seem not to be connected by providing findings. Moreover, the authors enumerate their findings but describing those findings did not focus on making a connection by the individual's development (or getting older) even though the study is a longitudinal study. For example, on page 10, the authors declare that they examine the role of SEF, parental divorce, chronic diseases, psychosomatic symptoms, psychosocial resources, and alcohol use and of course, I could see the relationship among these variables in the following sections, but that seems not to organize well so that readers follow the main findings and their meaning. I want to suggest the authors focus on reorganizing the findings of what SEP, Psychosocial resources showed kinds of differences, and so on by individual development (getting older).
RESPONSE: We thank the reviewer for this important comment. This cohort profile presents research conducted through several years using a holistic perspective. Thus reporting the results solely from the point of view of one specific study question would be quite difficult (and would not do justice to our holistic approach). However, we have now clarified the research questions. In addition, we have reorganized the description of findings and reflected their importance regarding individual development and life course.

2. What kinds of statistical methods did the authors use to address the research question? To make a strength of the study, the authors had better identify or provide what evidence was used rather than just citation of the previous paper.
RESPONSE: We have now explained in more detail the methods used throughout the 'Findings to date' chapter.

3. Language usage. The authors used "better self-esteem" "better school achievement" on page 11, but I would suggest rethinking the expression to exclude their value.
RESPONSE: We have now rephrased the expressions.

Men had a higher self-esteem throughout the follow-up, but the growth rate was faster in women. Good school achievement at age 16 was associated with higher self-esteem and parental divorce among girls and daily smoking among boys were associated with lower self-esteem in adolescence.

I am grateful to have a chance to review this manuscript. I hope the authors find this feedback helpful in future drafts.