Journal of Clinical and Translational Research
Peer review process file 06.202003.001

Physical activity and quality of life predictors among university students with polio in India: A cross-sectional study

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Handeling editor:
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Review timeline:

Received: Februari 1, 2020
Editorial decision: March 10, 2020
Revision received: March 15, 2020
Editorial decision: April 15, 2020
Revision received: May 2, 2020
Editorial decision: June 8, 2020
Revision received: June 18, 2020
Editorial decision: July 27, 2020
Published online: August 29, 2020

1st editorial decision
10-Mar-2020

Ref.: Ms. No. JCTRes-D-20-00007
Physical activity and quality of life among university students with polio in India – A cross section study
Journal of Clinical and Translational Research

Dear Mr Ganesh,

Reviewers have now commented on your paper. You will see that they are advising that you revise your manuscript. If you are prepared to undertake the work required, I would be pleased to reconsider my decision.

For your guidance, reviewers' comments are appended below.

If you decide to revise the work, please submit a list of changes or a rebuttal against each point which is being raised when you submit the revised manuscript.Also, please ensure that the track changes function is switched on when implementing the revisions. This enables the reviewers to rapidly verify all changes made.

Your revision is due by Apr 09, 2020.

To submit a revision, go to https://www.editorialmanager.com/jctres/ and log in as an Author. You will see a menu item call Submission Needing Revision. You will find your submission record there.

Yours sincerely

Michal Heger
Editor-in-Chief
Journal of Clinical and Translational Research

Reviewers' comments:

Reviewer #1: The introduction and rationale for the study are well presented.
The inclusion exclusion criteria are quite specific and the rationale should be explained. Most of the inclusion criteria are in fact exclusion (should not meet the diagnosis of PPS, 'absence of mental health problems', no use of medications...) 164 potential participant who met these criteria were identified. How many were excluded and why?

Why exclude people whose assessment differed to their government disability certificate? How often did this happen?

pg 10 line 16 spelling error - fatigue

The correlations presented are extremely weak and although a p-value of <0.05 was found the clinical significance is questionable. For example the scatterplots show a huge range of QOL scores for any given PASIPD score.

This selected group of Polio survivors who were university students are likely to have had many advantages (social, physical, psychological) compared to their Polio Survivor peers who were not in university education and so the bias in the sample must be considered and the whether the study is representative of Polio survivors in that age category questioned.

Conclusion - the opening statement requires review. There are many studies that demonstrate reduced activity levels among Polio survivors.

Reviewer #2: "In a country like India, where even the majority of the normal healthy population do not meet the global World Health Organization recommended intensities of physical activities (Ganesh et al., 2017)" this statement is a high degree of generalisation from data from Odisha. The study has been started with aim to find the "identify the relationship between physical activity, fatigue, pain and all four dimensions of QoL (World Health organization Quality of Life Measure Abbreviated version WHOQOL -BREF))" but ended testing the relationship with education, gender, age, site of weakness, mobility aids used. These results are deviations from mentioned objectives. How clinical depression was excluded in the study?. Justification of taking the students as a sample is not sufficient. It looks like students are taken as they become convenient sample to study, instead of community dwelling polio. Age group specified as 18 to 32. Is there any reason for this age range? or it is the age range presented while sampling? Whether sample size was calculated? how?. "The location of paralysis was checked with the sites mentioned in the disability

certificate provided by the Government of India and was recorded. Where there was a discrepancy between the paralysis sites mentioned and the locations identified, the participants were excluded" this line needs to be justified. If the author wants to use the other data and analysis related to variables site/ gender/ mobility aids etc. then details of statistics must include how the dummy variables have been presented for analysis must be specified. How correlation was plotted between variables needs clarity? How the nominal variables are numbered? Educational categories are those who completed that education or pursuing that education? No distribution has been given. Final remark: The title and objective has to be changed for the content or content has to be changed for the title and objective. Statistics need details.

Author's response

Dear Editor,

Thanks for the review. We would like to sincerely thank the reviewers for their time reviewing our work. We have revised the manuscript and have commented on the criticism from the reviewers on a point to point basis. Their in-depth comments, suggestions, and corrections have greatly improved the manuscript. We will be happy to work on any further changes as the manuscript may require. We look forward to your response. Yours sincerely,

Authors

Reviewer: 1

Comments to the Author

1. The introduction and rationale for the study are well presented.

   Response:

   Thank you.

2. The inclusion exclusion criteria are quite specific and the rationale should be explained. Most of the inclusion criteria are in fact exclusion (should not meet the diagnosis of PPS, 'absence of mental health problems', no use of medications...) 164 potential participant who met these criteria were identified. How many were excluded and why?

   Response:

The rationale for study criteria are presented in the participants section and the details about excluded participants are presented in results section.

3. Why exclude people whose assessment differed to their government disability certificate? How often did this happen?

Response:

The reason for exclusion is presented under variables documented section. Though the permanent disability certificate when issued to a person above the age of 18 years carries a lifelong validity in India, new impairments and progressive wasting and weakness often develop as a consequence of prolonged stresses on skeletal deformity and previously weakened muscles due to distorted mechanics (Wilson H, Kidd D, Howard RS, Williams AJ. Calf hypertrophy following paralytic poliomyelitis Postgrad Med J 2000;76: 179-81). We assumed that no new weakness has developed in a participant when the extent of weakness as evaluated from the assessment did not vary from disability certificate. Three students were identified to have new weakness (less than grade 3) in the trunk muscles were documented as having bilateral lower limb poliomyelitis in their disability certificates.

4. pg 10 line 16 spelling error – fatigue **Response:**

Our apologies. We have corrected the error.

5. The correlations presented are extremely weak and although a p-value of <0.05 was found the clinical significance is questionable. For example the scatterplots show a huge range of QOL scores for any given PASIPD score.

Response:

We agree with the reviewer that the correlation between physical activity and the physical health domain of QoL was weak. And, the results showed no association between levels of physical activity and psychological well-being, social relationships and environment domains of QoL. QoL is considered to be subjective in nature and varies depending upon how one perceives their own QoL. Previous works have shown that the type of QoL measures to be determined by the research question which is to be addressed.

Regular physical activity is considered an important lifestyle behavior; Physical activity, self-reported health and QoL are important components of peoples' lives and are inter-related. Based on this background we aimed to determine the physical activity, and QoL of University students affected with polio during the periods of relative stability after paralysis (and before the onset of PPS) and identify the relationship between physical activity, and all four dimensions of QoL. The clinical significance, we believe, that the study adds to the scientific literature is that physical activity levels are reduced in persons with polio, even during periods of stability and level of physical activity alone could not explain the lower QOL enjoyed by this population. Further studies need to evaluate the QoL using a multi-dimensional structure especially those which differentiate between objective and subjective life quality estimations in addition to the generally accepted standard measures in determining how one perceives their own quality of life.

6. This selected group of Polio survivors who were university students are likely to have had many advantages (social, physical, psychological) compared to their Polio Survivor peers who were not in university education and so the bias in the sample must be considered and the whether the study is representative of Polio survivors in that age category questioned.

Response:

We thank the reviewer for this important observation.
We have included this as a study limitation.

7. Conclusion - the opening statement requires review. There are many studies that demonstrate reduced activity levels among Polio survivors.

   Response:

   The opening statement has been modified.

Reviewer #2:

1. "In a country like India, where even the majority of the normal healthy population do not meet the global World Health Organization recommended intensities of physical activities (Ganesh et al., 2017)" this statement is a high degree of generalisation from data from Odisha.

   Response:

   We agree with the reviewer. We have added new references to substantiate the point that Indians engage in reduced physical activities.

2. The study has been started with aim to find the "identify the relationship between physical activity, fatigue, pain and all four dimensions of QoL (World Health organization Quality of Life Measure Abbreviated version WHOQOL -BREF))" but ended testing the relationship with education, gender, age, site of weakness, mobility aids used. These results are deviations from mentioned objectives.

Response:

We agree with the reviewer that evaluating the levels of physical activity and QoL
(and identifying the relationship between these 2 variables) in polio survivors without PPS are the primary objectives of the study. Along with the primary objectives we wanted to infer if any causal relationships/ predictions could be made between the variables studied (demographic/clinical data, physical activity levels and QOL). However, keeping the comment of reviewer in mind we have improved the discussion section.

3. How clinical depression was excluded in the study?

Response:

As described under the methods section, the participants were included for the study on the recommendation of a general physician and a clinical psychologist. All potential participants were referred to clinical psychologist who completed a formal
Psychological Assessment to evaluate depression by clinical interviews and
observation, psychophysiological measurements, self-report questionnaires and structured interviews as deemed necessary by the clinical psychologist.

4. Justification of taking the students as a sample is not sufficient. It looks like students are taken as they become convenient sample to study, instead of community dwelling polio.

Response:

We agree with the author that the justification was not adequate. We have modified the manuscript to provide reasons why students with polio were included. As suggested by the other reviewer too (that this sampling might lead to bias), we have mentioned this as a limitation.

5. Age group specified as 18 to 32. Is there any reason for this age range? or it is the age range presented while sampling? Whether sample size was calculated? how?.

Response:

According to the World health organization poliomyelitis mainly affects children under 5 years of age. We wanted to evaluate the physical activity in students affected with polio during the periods of stable neuromuscular function. It is believed that Polio survivors develop post-polio syndrome 30–40 years after contracting paralytic poliomyelitis (Alexander L, Watkins M, Alexander J (2005–2006). "Yellow Book, Chapter 4, Poliomyelitis". CDC.). We had therefore kept the age group between 18-32 to include only those participants whose functioning is stable and do not suffer from any symptoms that may be attributed to primary "postpolio syndrome" or
"progressive postpolio muscular atrophy."

There is an estimated 10 to 20 million polio survivors.The prevalence of the postpolio syndrome was arrived at 28.5% of all paralytic cases (Ramlow J, Alexander M, LaPorte R, Kaufmann C, Kuller L. Epidemiology of the post-polio syndrome. Am J Epidemiol. 1992 Oct 1;136(7):769-86). A sample size of 98 was generated using
Raosoft sample size calculator (Raosoft. An Online Sample Size Calculator; 2008.
Available: [http://www.raosoft.com/samplesize.html) in which the population size was kept as 2850000, power as 80%, response distribution as 50%, while confidence interval and margin of error was set at 90% and 5% respectively.

6. "The location of paralysis was checked with the sites mentioned in the disability certificate provided by the Government of India and was

recorded. Where there was a discrepancy between the paralysis sites mentioned and the locations identified, the participants were excluded" this line needs to be justified.

Response:

Please refer to question no:3 response to reviewer 1.

7. If the author wants to use the other data and analysis related to variables site/ gender/ mobility aids etc. then details of statistics must include how the dummy variables have been presented for analysis must be specified. How correlation was plotted between variables needs clarity? How the nominal variables are numbered? Educational categories are those who completed that education or pursuing that education? No distribution has been given.

Response:

As per the suggestion of reviewer, we have added details to the statistics performed. Education variables refer to those who are currently pursuing them. The same has been mentioned in the last sentence of ist paragraph (under results).

8. Final remark: The title and objective has to be changed for the content or content has to be changed for the title and objective. Statistics need details.

Response:

We have modified the title and objective as per the suggestion of reviewer

Regards.

2nd editorial response
15-Apr-2020

Ref.: Ms. No. JCTRes-D-20-00007R1
Physical activity and quality of life predictors among university students with polio in India – A cross section study
Journal of Clinical and Translational Research

Dear Mr Ganesh,

Reviewers have now commented on your paper. You will see that they are advising that you revise your manuscript. If you are prepared to undertake the work required, I would be pleased to reconsider my decision.

For your guidance, reviewers' comments are appended below. Please pay particular attention to reviewer 2, who addresses an important point. Proper justification(s) for conducting the experiments and analyses are currently lacking from the manuscript. Please pay particular attention to that when preparing your revision and rebuttal so that it becomes clear why certain steps were undertaken to arrive at the end results.

If you decide to revise the work, please submit a list of changes or a rebuttal against each point which is being raised when you submit the revised manuscript.Also, please ensure that the track changes function is switched on when implementing the revisions. This enables the reviewers to rapidly verify all changes made.

Your revision is due by May 15, 2020.

To submit a revision, go to https://www.editorialmanager.com/jctres/ and log in as an Author. You will see a menu item call Submission Needing Revision. You will find your submission record there.

Yours sincerely

Michal Heger
Editor-in-Chief
Journal of Clinical and Translational Research

Reviewers' comments:

Reviewer #1: Abstract:
Graphical Abstract - why is pain related to environmental factors? There was a weak correlation identified but you need to discuss why and whether this makes sense or is meaningful.- is it justified having this included in the graphical abstract?
Characteristics is spelled incorrectly and is ambiguous as a construct under 'social /Relationship' a/a.
Line 19 - remove capital P in Physical

Introduction:
Line 10 add 'the'….contagious, the majority….
Line 35 suggest: …… are 'most' at risk of developing PPS.

Line 38 - there seems to be 2 unrelated points in one sentence here 1. People with disabilities and 2 students. Suggest splitting the sentence to make the points more clearly.
Line 55 remove 's' ages
I think that you more clearly need to make the point that because there was endemic Polio in India until 2012 that there is a large population of young Polio survivors who may develop PPS in the years ahead and require health system input. Also India's young Polio survivors can provide new and valuable information on their health pre PPS
9which is lacking in many other countries. These thoughts are almost there in the paragraph at the end of page 5 but somehow not made very clearly. These points also provide some justification for studying students.

Materials and Methods
Again the inclusion criteria contain several that should be exclusion……
Bias in exclusion of people with pain - may have been relevant to question? Needs to be acknowledged
Results
Reading all of the correlations as text is difficult - not necessary to repeat in text if already in a table (2a).
Figure 1 A-D Y axes are labelled D1 D2 D3 D4 - what does this mean? Can you label A-D as in caption please.

Discussion
Overall the discussion has improved but it still needs work to improve clarity and to discuss the main points of the results clearly. It is very long.
Pg 16 lines 11-17 - I'm not convinced that you showed that these variables can 'predict' theses domains - at best weak associations were found.
Pg 16 Line 10 - 'lower QoL' referenced norms for comparison need to be included in this paragraph to support this statement.
Negative associations of activity, education and QoL (physical) in the first line of discussion - Implies that as activity goes up QoL goes down, as education goes up QoL goes down? This discussion of this is key to understanding the results and again should be earlier in the discussion ….. currently activity 5 paragraphs in. Perhaps the activity prescribed is not 'exercise' as such but rather basic getting around and daily chores which lead to pain, fatigue etc.
page 20 - 2nd paragraph - implies that education was positively correlated - which is correct positive or negative (-0.296 in results p g 11 but +0.296 in table2a!!). The conflicting results and indeed interpretation are concerning.
The 2 key points identified in the first line of the discussion should be the points discussed first in more detail, with other items such as the definition of PPS and the profile of the population studied coming later.
Can you clarify that by 'sites affected' you mean the number of sites?
Can you clarify which gender was associated with better QoL (sig inverse correlation table 2a)….although in discussion you state that gender was not significant.
Can you compare the PASIPD scores with other Polio studies that have used it, as well as comparison to those with other conditions?

Reviewer #2: Author has mentioned that there is a need to evaluate the role of modifiable

factors that may impact QoL in polio affected population. Moreover, authors have said co-existing orthopedic and neurological impairments, the existing prolonged physical stresses also will influence the physical activity, fatigue, and QoL. The following statement "Measuring these data in persons with polio before the onset of PPS would provide a baseline figure for comparing these values with those suffering from PPS" is not clear with respect to which data has to be measured. At the end authors have expressed their intent to identify the relationship between demographic/ clinical data, physical activity, fatigue, pain and all four dimensions of QoL. The need for this research intent is not clear from the introduction given.
In results section authors have reported association between QoL and age, sex, education, site affected, assistive devices, pain, fatigue and physical activity. Among these variables, clarity is needed how correlation was done between categorical variable like education, site affected, assistive devices and the QoL. It may not be appropriate to use a number designated to the category to correlate. Moreover, the correlation between assistive devices may not reveal any clinical useful findings. The same comment is applicable for site affected, and education. The need for correlation reported in table 2b is not clear and could not be related to the objective of the study. While presenting multiple regression, providing Beta value will give strength of association (Table 3).
The conclusion was not related to the research question.

Author's response

Dear Editor,
Thanks for the review. We would like to sincerely thank the reviewers for their time reviewing our work. We have revised the manuscript and have commented on the criticism from the reviewers on a point to point basis. Their in-depth comments, suggestions, and corrections have greatly improved the manuscript. We will be happy to work on any further changes as the manuscript may require. We look forward to your response. Yours sincerely,

Authors

Reviewer #1:
Comments
Abstract:
Graphical Abstract - why is pain related to environmental factors? There was a weak correlation identified but you need to discuss why and whether this makes sense or is meaningful.- is it justified having this included in the graphical abstract?
Characteristics is spelled incorrectly and is ambiguous as a construct under 'social /Relationship' a/a.
Line 19 - remove capital P in Physical

Response:
I apologize if the graphical abstract has sent a different meaning. The graphical abstract didn't mean to imply pain was related to environment. The domains in the circle refer to the 4 domains of the WHOQOL scale. Those variables in the squares were the factors studied to identify relationships between demographic/clinical data, physical activity levels and QOL. I understand there is some confusion regarding the graphical abstract submitted. I have submitted a modified abstract.
Comments
Introduction:

Line 10 add 'the'….contagious, the majority… **Response:**
Added. Thanks.

Comments
Line 35 suggest: …… are 'most' at risk of developing PPS.
Response:
Added. Thanks.

Comments
Line 38 - there seems to be 2 unrelated points in one sentence here 1. People with disabilities and 2 students. Suggest splitting the sentence to make the points more clearly.
Response: Thanks for the suggestion. The sentence has been rewritten accordingly.

Comments
Line 55 remove 's' ages

Response:
Deleted. Thanks
Comments
I think that you more clearly need to make the point that because there was endemic Polio in India until 2012 that there is a large population of young Polio survivors who may develop PPS in the years ahead and require health system input. Also India's young Polio survivors can provide new and valuable information on their health pre PPS
9which is lacking in many other countries. These thoughts are almost there in the paragraph at the end of page 5 but somehow not made very clearly. These points also provide some justification for studying students.

Response:
We have modified the paragraph as per the suggestion of the reviewer.
Comments
Materials and Methods
Again the inclusion criteria contain several that should be exclusion…… **Response:**
We have remodified the text.
Comments
Bias in exclusion of people with pain - may have been relevant to question? Needs to be acknowledged **Response:**
We have collected the participants' experience of pain as one of the variable. We didn't particularly recruit persons with pre-existing complaint of pain as presence of pain is one of the features to be classified as PPS (as per the March of Dimes criteria). This we hypothesized would pollute the sample recruited.

Comments
Results
Reading all of the correlations as text is difficult - not necessary to repeat in text if already in a table (2a). **Response:**
As suggested the results has been rewritten
Comments
Figure 1 A-D Y axes are labelled D1 D2 D3 D4 - what does this mean? Can you label A-D as in caption please.
Response:

The captions are labelled as per the suggestions of reviewer

Discussion
Comments
Overall the discussion has improved but it still needs work to improve clarity and to discuss the main points of the results clearly. It is very long.
Response:
We agree with the reviewer. We have removed the results of correlation between various variables studied (table 2b) and have trimmed the discussion.

Comments
Pg 16 lines 11-17 - I'm not convinced that you showed that these variables can 'predict' theses domains - at best weak associations were found.
Response:
Please refer to the table 3. These statements were made on the results of beta values that represent how much the QoL domains increases when the predictor is increased 1 unit and the other predictors are held constant.
Comments
Pg 16 Line 10 - 'lower QoL' referenced norms for comparison need to be included in this paragraph to support this statement.
Response:
This data was originally highlighted in page no 18, sentences 21-32. As per the suggestion of reviewer these points were moved to page no 16.
Comments
Negative associations of activity, education and QoL (physical) in the first line of discussion - Implies that as activity goes up QoL goes down, as education goes up QoL goes down? This discussion of this is key to understanding the results and again should be earlier in the discussion ….. currently activity 5 paragraphs in.
Response:
We have modified the discussion as per the suggestion of reviewer.
Comments
Perhaps the activity prescribed is not 'exercise' as such but rather basic getting around and daily chores which lead to pain, fatigue etc. **Response:**
We understand the concerns raised by the reviewer and have removed the sentence on exercise prescription.

Comment
page 20 - 2nd paragraph - implies that education was positively correlated - which is correct positive or negative (-0.296 in results p g 11 but +0.296 in table2a!!). The conflicting results and indeed interpretation are concerning.
Response: we apologize for this error and thank the reviewer for pointing this. The results showed a weak and positive association between education and physical health domain of QoL (r=0.296). The minus symbol in the main text was an error.
Comment
The 2 key points identified in the first line of the discussion should be the points discussed first in more detail, with other items such as the definition of PPS and the profile of the population studied coming later.
Response:
We have modified the discussion as per the instruction.
Comment

Can you clarify that by 'sites affected' you mean the number of sites?
Response:
Ys. We apologize if this has caused any confusion. This has been modified accordingly.
Comment

Can you clarify which gender was associated with better QoL (sig inverse correlation table 2a)….although in discussion you state that gender was not significant.

Response:
Female gender was able to predict lower QoL. We have modified the discussion.
Comment
Can you compare the PASIPD scores with other Polio studies that have used it, as well as comparison to those with other conditions? **Response:**
We have included this data to the discussion. However, as majority of the works have been conducted in stroke patients, we have restricted this to persons affected with locomotor disabilities.

Reviewer #2:
Comments:
Author has mentioned that there is a need to evaluate the role of modifiable factors that may impact QoL in polio affected population. Moreover, authors have said co-existing orthopedic and neurological impairments, the existing prolonged physical stresses also will influence the physical activity, fatigue, and QoL.
The following statement "Measuring these data in persons with polio before the onset of PPS would provide a baseline figure for comparing these values with those suffering from PPS" is not clear with respect to which data has to be measured.
Response:
We have modified the introduction section to better reflect the concerns of the reviewer.
Comments:
At the end authors have expressed their intent to identify the relationship between demographic/ clinical data, physical activity, fatigue, pain and all four dimensions of QoL. The need for this research intent is not clear from the introduction given. **Response:**
The QoL is a complex, subjective and multidimensional concept that encompasses physical and psychological health along with social well-being features. QoL is influenced by various intrinsic and extrinsic factors, which may be managed by predicting its determinants. Some of the QoL determinants in various disease populations include anxiety and depression, fatigue, self-efficacy, sociodemographic factors, clinical charecteristics and physical activity. The same has been added in introduction section.
Comments
In results section authors have reported association between QoL and age, sex, education, site affected, assistive devices, pain, fatigue and physical activity. Among these variables, clarity is needed how correlation was done between categorical variable like education, site affected, assistive devices and the QoL. It may not be appropriate to use a number designated to the category to correlate.
Response:
Categorical variables classify observations into groups. These variables are usually classified in to different levels (example: gender of individuals is a categorical variable that can take two levels as males/ females), designation of university faculty in 3 levels as Professor/ associate professor/ assistant professor and so on). As regression analysis requires numerical

variables, supplementary steps are required to make the results interpretable when the study requires a categorical variable to be included in a regression model. The most common coding method is the dummy coding which classifies categorical variable into a series of dichotomous variables (variables that can have a value of zero or one only). We have ensured that coding of various categorical variables in ascending values of numerical variables is avoided as this could have led to comparing each level of the categorical variable to the next lowest or the higher level resulting in incorrect statistical outcomes.

We therefore had used the more accepted procedure by recoding the categorical variables into a set of binary variables (0/1) using dummy coding. Dummy coding compares each level of a variable to the omitted (reference) level by comparing the mean of the dependent variable for each level of the categorical variable to the mean of the dependent variable at for the reference group, and such makes more sense with a nominal variable (https://psychstat3.missouristate.edu/Documents/MultiBook3/Mlt07.htm).

Comment:
Moreover, the correlation between assistive devices may not reveal any clinical useful findings. The same comment is applicable for site affected, and education.
Response:
The objective of the study is to assess the physical activity and quality of life (QOL) in university students affected with poliomyelitis. The decision to include assistive devices and sites affected were based on the results of a previous Norwegian study (Wekre LL, Stanghelle JK, Lobben B, Oyhaugen S 1998 The Norwegian Polio Study 1994: A nation-wide survey of problems in long-standing poliomyelitis. Spinal Cord 36(4):280-4). The sites affected and the type of assistive devices used provide inputs about the amount of assistance / energy expended to carry out the daily chores (physical domain component of the WHOQOL) and can influence the characteristics of physical activity (Warms CA, Whitney JD, Belza B. Measurement and description of physical activity in adult manual wheelchair users. *Disabil Health J*. 2008;1(4):236–244. doi:10.1016/j.dhjo.2008.07.002) performed by the respondents. Previous works have stated that education and rehabilitation programs as a basis for selfadvocacy, person-centered planning, and a valued person-referenced outcome (Anderson, K. L., & Burckhardt, C. S. (1999). Conceptualization and measurement of quality of life as an outcome variable for health care intervention and research. Journal of Advanced Nursing, 29, 298–306)(Schalock, R. L., Brown, I., Brown, R., Cummins, R. A., Felce, D., Matikka, L., Keith, K. D., & Parmenter, T. (2002). Conceptualization, measurement, and application of quality of life for persons with intellectual disabilities: Results of an international panel of experts. Mental Retardation, 40, 457–470) (Schalock, R. L., & Verdugo, M. A. (2002). Handbook on quality of life for human service practitioners. Washington, DC: American Association on Mental Retardation) that has the ability to influence the QoL at the microsystems level.

Comments:
The need for correlation reported in table 2b is not clear and could not be related to the objective of the study.
While presenting multiple regression, providing Beta value will give strength of association (Table 3).
Response:
We have deleted table 2b and have presented beta values instead of odds ratio.
Comments:
The conclusion was not related to the research question.

Response:
We have modified the conclusion as per suggestion.

3rd editorial decision
8-Jun-2020

Ref.: Ms. No. JCTRes-D-20-00007R2
Physical activity and quality of life predictors among university students with polio in India – A cross section study
Journal of Clinical and Translational Research

Dear author(s),

Reviewers have submitted their critical appraisal of your paper. The reviewers' comments are appended below. Based on their comments and evaluation by the editorial board, your work was FOUND SUITABLE FOR PUBLICATION AFTER MINOR REVISION.

If you decide to revise the work, please itemize the reviewers' comments and provide a point-by-point response to every comment. An exemplary rebuttal letter can be found on at http://www.jctres.com/en/author-guidelines/ under "Manuscript preparation." Also, please use the track changes function in the original document so that the reviewers can easily verify your responses.

Your revision is due by Jul 08, 2020.

To submit a revision, go to https://www.editorialmanager.com/jctres/ and log in as an Author. You will see a menu item call Submission Needing Revision. You will find your submission record there.

Yours sincerely,

Michal Heger
Editor-in-Chief
Journal of Clinical and Translational Research

Reviewers' comments:

Editor-in-chief:
Thank you for resubmitting your revision to JCTR and addressing the reviewers' comments.

Please peruse over your manuscript once more very thoroughly and eliminate any grammatical/spelling errors that remain. JCTR cannot publish papers that linguistically do not meet the standards of scientific writing. One example is the inconsistency in the spelling of QoL, which often appears as 'QOL.' Be consistent and accurate in your writing. There are many more examples that the authors should identify and correct. After that, your manuscript can be accepted. Thank you.

Reviewer #1:
I am satisfied that the issues raised have been address in this version.

Author's response

Dear Editor,

We would like to sincerely thank the editor and the reviewers for their time reviewing our work. We have further altered the manuscript based on the comments presented. Their in-depth comments, suggestions, and corrections, have greatly improved the manuscript. We have worked on the grammatical aspect of the manuscript and we hope that all grammatical/spelling errors have been eliminated.
Thanks again for your kind support.

Yours sincerely,
G. Shankar Ganesh

4th editorial decision
27-Jul-2020

Ref.: Ms. No. JCTRes-D-20-00007R3
Physical activity and quality of life predictors among university students with polio in India – A cross-sectional study
Journal of Clinical and Translational Research

Dear authors,

I am pleased to inform you that your manuscript has been accepted for publication in the Journal of Clinical and Translational Research.

You will receive the proofs of your article shortly, which we kindly ask you to thoroughly review for any errors.

Thank you for submitting your work to JCTR.

Kindest regards,

Michal Heger
Editor-in-Chief
Journal of Clinical and Translational Research