

## PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (<http://bmjopen.bmj.com/site/about/resources/checklist.pdf>) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

### ARTICLE DETAILS

<b>TITLE (PROVISIONAL)</b>	Baseline risk factor prevalence among 15-17-year-old adolescents – Findings from National Noncommunicable Disease Monitoring Survey (NNMS) of India.
<b>AUTHORS</b>	Mathur, Prashant; Kulothungan, Vaitheeswaran; Leburu, Sravya; Krishnan, Anand; Chaturvedi, Himanshu; Salve, Harshal; Amarchand, Ritvik; Nongkynrih, Baridalyne; Ganeshkumar, Parasuraman; Urs K S, Vinay; Laxmaiah, A; Boruah, Manjit; Kumar, Sanjeev; Patro, Binod; Raghav, Pankaja; Rajkumar, Prabu; Sarma, P; Sharma, Rinku; Tambe, Muralidhar; Arlappa, N; Mahanta, Tulika Goswami; Bhuyan, Pranab; Joshi, Rajnish; Pakhare, Abhijit; Galhotra, Abhiruchi; Kumar, Dewesh; Behera, Binod; Topno, Roshan; Gupta, Manoj; Rustagi, Neeti; Trivedi, Atulkumar; Thankappan, KR; Gupta, Sonia; Garg, Suneela; Shelke, Sangita

### VERSION 1 – REVIEW

<b>REVIEWER</b>	Dean, Elizabeth University of British Columbia, Physical Therapy
<b>REVIEW RETURNED</b>	10-Sep-2020

<b>GENERAL COMMENTS</b>	<p>Noncommunicable risk factor prevalence among 15-17-year-old adolescents – Findings from National Noncommunicable Disease Monitoring Survey (NNMS) of India.</p> <p>Overview This study was designed 'to generate national-level estimates of key NCD indicators for adolescents aged 15-17 years identified in the national NCD monitoring framework'. The investigators used a community-based, national level cross-sectional survey. Multiple research institutes across India participated. A multistage sampling design was used which included adolescents between 15-17 years of age. Key NCD risk factors for the adolescents and school-based information adapted from WHO-STEPwise approach to NCD risk factor surveillance, IDSP-NCD risk factor survey, WHO-Global School Student Health Survey and WHO-Global Adult Tobacco Survey were estimated. 1531 adolescents completed the survey. The prevalence of tobacco in any form daily was 3.1%; 25.2% adolescents showed insufficient levels of physical activity; 6.2% were overweight and 1.8% were obese. Two-thirds reported that they had access to health education on NCD risk factors in their schools/colleges. The investigators reported a high prevalence of NCD related key risk factors among the cohort of interest. They conclude that 'This national level data fills a gap for this age group and helps to assess India's progress towards NCD targets set for 2025 and 2030 comprehensively. It offers national evidence to stakeholders for re-visiting and framing new policies, strategies for prevention and control of NCDs'.</p>
-------------------------	---

The objective of the study is sound and importantly makes use of an existing data set. The data set appears to have used established sampling and measurement tools. The data are described in appropriate detail and the findings are appropriate. Having lived and worked in that geographic region, I found the summary of the initiatives in India for addressing NCDs most interesting and worthy of a commentary-type article, itself.

I classify the study as important. I categorize my comments as relatively minor but attention to them would enhance the work, in my view, with tighter framing and attention to the internal consistency of the manuscript. Although understandable, tightening of the English composition and grammar would enhance the work. A thorough copyediting is advisable.

#### Comments

##### Abstract

Assessment of the cohort's knowledge of and attitudes toward NCD risk factors warrants being parallel throughout. Reference to these variables appear in the results and conclusion, but not in the objective. For internal consistency, this should be parallel. Re the conclusion in the Abstract. The sentence 'The survey showed high prevalence of NCD related key risk factors, knowledge and attitudes towards selected risk factors among 15-17 years.' Is not grammatically correct. The way it is constructed implies that 'The survey showed ....a high prevalence of knowledge and attitudes .... Prevalence in this context is not the right word.

A slant to the work that would enhance its contribution would be to have comparative data for other parts of the world, and to highlight that given the trends in the pediatric population toward western lifestyle preferences, India needs to aggressively address lifestyle practices of this children, but also their families. There is much room for public health initiatives as well. A comparative slant is important as some western countries, e.g., the UK and the US, would be delighted to have the relatively low prevalences of lifestyle practices reported for the cohort that was studied. India and other countries that are somewhat behind in this 'pandemic' trend need to be vigilant and avert the ravages of NCDs in these countries and their socioeconomic burden. These diseases are largely preventable and we need to strive for that. The traditional Indian is actually quite nutritious (beans, lentils, vegetables, healthy spices), but is being eroded with cooking with more fat (ghee), sugar, and refined products, and more animal-sourced foods. The traditional Indian diet more vegetable-based is highly consistent with that recommended in the 2019 LANCET EAT Commission Report.

I appreciate the data collected were beyond the control of the investigators but overweight and obesity does not necessarily address poor nutritional choices, by these children or their families. Issues such as this could be mentioned as a limitation to the data collection tools and inform their revision.

As an aside, I have been increasingly reviewing nutrition manuscripts, specifically the issue of processed foods, ultra-processed foods, and hyper-palatable foods. And, the issue of globalization and people moving away from their often more nutritious traditional diets toward the unhealthy western diet (high in fat, sugar, salt, and refined foods, and animal-sourced protein. The

	<p>involvement of the 'edible products' (I do not dignify these products by calling them 'food' which by definition should be nourishing). I recommend mention of this trend be made in the discussion and that based on international trends, Indian children can expect to increase their smoking, increase their consumption of unhealthy food choices, be more overweight, sit more, and exercise less. I will not stress the inclusion of poorer sleep hygiene and increased stress, however these factors are deteriorating in children as well as adults. What could be said is that these additional factors need to be considered for inclusion into the established data collection methods.</p> <p>Having said the above, I urge the investigators to stress more that the data constitute a baseline that needs to be repeated over the years, both in the same children and as new children enter the age range.</p> <p>A recent article in JAMA Pediatrics addresses the issue of children with healthy lifestyle practices, specifically, cardiorespiratory fitness, are more likely to be healthy adults. Hence, the importance of family. When it comes to physical activity, however, some of the challenges in India, do need to be mentioned. Outdoor activity in polluted areas is a deterrent.</p> <p>August 31, 2020  Association of Cardiorespiratory Fitness Levels During Youth With Health Risk Later in Life A Systematic Review and Meta-analysis  Antonio García-Hermoso, PhD<sup>1,2</sup>; Robinson Ramírez-Vélez, PhD<sup>1</sup>; Yesenia García-Alonso, MSc<sup>1</sup>; et al  The knowledge and attitudes pieces need to be double checked throughout the Ms.  Some issues arose for me about the quality of the questions. I appreciate these cannot be changed, but they do constitute limitations of the interpretation of the data, and implications. These observations can be used to inform improvement in the tools, an implication of this work.</p> <p>Question about 'doing physical activity is school/college'. What does this mean exactly?  Question about 'minutes spent in physical activity per day at school'. How was physical activity defined? Activity could be walking/going up and down stairs to different classes or structured physical education, or other.  Question re fresh fruits/fresh juices. These are not equivalent nutritionally. Eating the fruit is superior.  Question re cold or other aerated drink. This suggests cold drinks are aerated. What about a drink of water? These are not distinct.  Question re noticing health promotion materials in their schools/colleges. Perhaps, it was not a question of 'noticing', may be these material just were not there to be noticed.  Questions such the one related to the danger of second hand smoke. There does not appear to be a parallel question about first hand smoke.</p>
--	--

<b>REVIEWER</b>	Zeeb, Hajo Bremen Institute for Prevention Research and Social Medicine
<b>REVIEW RETURNED</b>	21-Jan-2021

<b>GENERAL COMMENTS</b>	This is an interesting report on a nationally representative NCD risk factor survey among adolescents in India. It provides relevant and
-------------------------	--

	<p>up-to-date information, based on self-report, but it fails to report on differences according to socioeconomic status. The reporting is sound, but some attention needs to be paid to language and grammar.</p> <p><b>Abstract:</b></p> <p>A well written abstract. The conclusion also includes knowledge and attitudes, which are not reported on in the results. Please revise either the results section or reformulate the conclusions. The judgement on high prevalence of risk factors is not entirely substantiated when compared to many other countries with much higher values for selected risk factors.</p> <p><b>Strengths and weaknesses:</b> The data on health systems response may be available, but do not figure in this report. Suggest to delete here. The second bullet point partly repeats the first when talking about this being the first nationally representative risk factor survey. There are several other instances where repetitions occur, and probably one bullet point less will do – the last one appears somewhat weak and needs refinement (e.g. what are ethical logistics?). Nevertheless, weaknesses need pointing out.</p> <p><b>Introduction:</b></p> <p>Overall I suggest to clarify which age range the authors are assigning to adolescence, and also more clearly highlight the importance of early adoption of risk behaviours for NCD occurrence also much later in life, not only in early adulthood. Please explain in a few words why adolescence may provide opportunities to prevent and control risk factors- after all it is the time where many people get into first contact with NCD risk factors, or develop overweight/low PA.</p> <p>The further description of available evidence on risk factors in India needs sharpening: what is the nature of these studies, were they reliable and recent?</p> <p>On page 8, the authors are not clear about what is difficult to generalize. Better linkage to the earlier paragraphs is needed. The highlighting of the nodal agency seems less important.</p> <p>The objectives of the survey are clear, the paper reports about the results. Please review the statement on what the paper delivers. Potentially the data on school health education/promotion relate to a secondary objective of the survey.</p> <p><b>Methods</b></p> <p>These are overall well described, but short.</p> <p>It would be useful to state the overall number of Indian states.</p> <p>With respect to the sample size and the processes to reach the required sample, I wonder if considerations regarding the multiple recruitment of individuals from the same households, violating independence, were done beforehand.</p> <p><b>Study tools:</b> how was standardization of measurements for weight/height assured? Please explain, giving details.</p>
--	--

	<p>Study data: was information on health promotion and materials etc. collected individually or at school/college level. Please specify.</p> <p>How many questions were in the final survey tool, what was the average interview time?</p> <p>Ethics: what were the individual consent procedures for the adolescent age group. The statement on referral is somewhat surprising – was there no concern that this approach might reduce validity of responses?</p> <p>Statistical analysis:</p> <p>Data import: was this done daily, immediately after interviews or at which interval?</p> <p>How did the authors deal with missing data (if any?)</p> <p>Results:</p> <p>It is not clear what “locked household” means. The number of 176 is an estimate based on the 2011 census, or from survey-specific assessment.</p> <p>The question on being taught at school about harms – was there a specific time period to be considered (last 12 months; ever)? Please specify.</p> <p>The tables are well organized and clear, the definitions given are according to international standards. However, text and tables report very much the same, so the text could be shortened in some passages.</p> <p>There are numerous interesting findings, including the fact that many adolescents appeared informed for example about passive smoking. With respect to PA, the self-reporting is an issue, as the correlation to objectively measured PA is not high.</p> <p>The survey results on health education and promotion materials are somewhat less informative, as there is little information on type and extent of information given, time period to which the information refers etc. This is a topic that might be taken out of this report.</p> <p>One of the major questions I have would be the influence of socioeconomic status, a major determinant of health and of exposure to risk factors. There seem to be no data on this topic.</p> <p>Discussion:</p> <p>The end of the second para needs reconsideration (and hence this survey...)</p> <p>The substantial differences between GATS-2 and this report are surprising, even given different age groups. The explanations given are not really clear, why would these be responsible for a 4-fold difference? To clarify, would it be possible to look at GATS-2 for finer age strata?</p> <p>For readers not familiar with Indian school platforms, this part of the discussion is hard to follow and needs revision.</p> <p>A shortcoming of the discussion is the lack of comparison with international data on the topic. This would help to put the findings</p>
--	--

	<p>into perspective.</p> <p>A section on strengths and limitations needs to be added. The lack of information according to SES must be mentioned here.</p> <p>Figure 1 has little information value and could be discarded.</p>
--	---

**VERSION 1 – AUTHOR RESPONSE**

<b>Reviewer 1: Dr. Elizabeth Dean, University of British Columbia</b>		
<p>The objective of the study is sound and importantly makes use of an existing data set. The data set appears to be have used established sampling and measurement tools. The data are described in appropriate detail and the findings are appropriate. Having lived and worked in that geographic region, I found the summary of the initiatives in India for addressing NCDs most interesting and worthy of a commentary-type article, itself.</p>	<p>Thank you for appreciating the relevance.</p>	-
<p>I classify the study as important. I categorize my comments as relatively minor but attention to them would enhance the work, in my view, with tighter framing and attention to the internal consistency of the manuscript. Although understandable, tightening of the English composition and grammar would enhance the work. A thorough copyediting is advisable.</p>	<p>We have attempted to address them.</p>	-
<p><b>Abstract</b>  Assessment of the cohort’s knowledge of and attitudes toward NCD risk factors warrants being parallel throughout. Reference to these variables appear in the results and conclusion, but not in the objective. For internal consistency, this should be parallel.</p>	<p>Thank you for the comment. We brought revisions where suggested.</p>	Page 3 and line no. 65-66

<p>Re the conclusion in the Abstract. The sentence 'The survey showed high prevalence of NCD related key risk factors, knowledge and attitudes towards selected risk factors among 15-17 years.' Is not grammatically correct. The way it is constructed implies that 'The survey showed ....a high prevalence of knowledge and attitudes .... Prevalence in this context is not the right word.</p>	<p>Thank you. We have revised this section.</p>	<p>Page 3 and line no. 86-91</p>
<p>A slant to the work that would enhance its contribution would be to have comparative data for other parts of the world, and to highlight that given the trends in the pediatric population toward western lifestyle preferences, India needs to aggressively address lifestyle practices of this children, but also their families. There is much room for public health initiatives as well. A comparative slant is important as some western countries, e.g., the UK and the US, would be delighted to have the relatively low prevalences of lifestyle practices reported for the cohort that was studied. India and other countries that are somewhat behind in this 'pandemic' trend need to be vigilant and avert the ravages of NCDs in these countries and their socioeconomic burden. These diseases are largely preventable and we need to strive for that. The traditional Indian is actually quite nutritious (beans, lentils, vegetables, healthy spices), but is being eroded with cooking with more fat (gee), sugar, and refined products, and more animal-sourced foods. The traditional Indian diet more vegetable-based is highly</p>	<p>Thank you for the comment. We agree and have strengthened the discussion addressing these.</p>	<p>Page 13 and line no. 281-289</p>

<p>consistent with that recommended in the 2019 LANCET EAT Commission Report.</p>		
<p>I appreciate the data collected were beyond the control of the investigators but overweight and obesity does not necessarily address poor nutritional choices, by these children or their families. Issues such as this could be mentioned as a limitation to the data collection tools and inform their revision.</p>	<p>We have included a section on strengths and limitations. We have measured the height and weight of the participants to arrive at BMI and used WHO growth chart to categorize them into overweight and obesity as per WHO. Reference: Growth reference 5-19 years. World Health Organization. <a href="https://www.who.int/growthref/who2007_bmi_for_age/en/">https://www.who.int/growthref/who2007_bmi_for_age/en/</a></p>	<p>Page 15 and line no. 345-359</p>
<p>As an aside, I have been increasingly reviewing nutrition manuscripts, specifically the issue of processed foods, ultra-processed foods, and hyper-palatable foods. And, the issue of globalization and people moving away from their often more nutritious traditional diets toward the unhealthy western diet (high in fat, sugar, salt, and refined foods, and animal-sourced protein. The involvement of the 'edible products' (I do not dignify these products by calling them 'food' which by definition should be nourishing). I recommend mention of this trend be made in the discussion and that based on international trends, Indian children can expect to increase their smoking, increase their consumption of unhealthy food choices, be more overweight, sit more, and exercise less. I will not stress the inclusion of poorer sleep hygiene and increased stress, however these factors are deteriorating in children as well as adults.</p> <p>What could be said is that</p>	<p>We agree to the relevance of nutrition transition picking up rapidly across the world including India. We have revised our discussion to build on this comment.</p> <p>Included in end of discussion.</p>	<p>Page 14 and line no. 319-325</p> <p>Page 14 and line no. 356-359</p>



these additional factors need to be considered for inclusion into the established data collection methods.		
A recent article in JAMA Pediatrics addresses the issue of children with healthy lifestyle practices, specifically, cardiorespiratory fitness, are more likely to be healthy adults. Hence, the importance of family. When it comes to physical activity, however, some of the challenges in India, do need to be mentioned. Outdoor activity in polluted areas is a deterrent.	Thank you for sharing the reference. We have attempted to revise our discussion.	Page 15 and line no. 334-339
The knowledge and attitudes pieces need to be double checked throughout the Ms. Some issues arose for me about the quality of the questions. I appreciate these cannot be changed, but they do constitute limitations of the interpretation of the data, and implications. These observations can be used to inform improvement in the tools, an implication of this work.	Thank you for your comment. We included this section to study availability of health education and promotion materials in schools/colleges, extent and impact of health promotion on adolescents. Also, kind of food being made available in school/college canteens. Since adolescents spend their maximum time in a day in school/ colleges there is a need to study their choices being made that can guide policy and programmes.	-
Question about 'doing physical activity is school/college'. What does this mean exactly?	This included collection of information on number of days and duration / time in minutes spent in doing any physical activity while at school/college. Either during assembly; games / Physical Training / free period; lunch break; before/after school timings or special coaching.  Answers to these were collected only after capturing that any physical activity during above mentioned occasions were done continuously for at least 10 minutes.	-
Question about 'minutes spent in physical activity per day at school'. How was physical activity defined? Activity could be walking/going up and down stairs to different classes or structured physical education, or other.		
Question re fresh fruits/fresh juices. These are not equivalent nutritionally. Eating the fruit is superior.	We agree that eating fruit is much superior. However, this component only includes to study what proportion of adolescents at least one in a week consumed either fresh fruit or fresh fruit juice.	-
Question re cold or other aerated drink. This suggests cold drinks are aerated. What about a drink of water? These are not distinct.	Thank you. We agree to your comment. These questions have scope to be re-visited. In this survey we are referring to soft drinks commercially available or those available as powder form that can be freshly prepared at home. All of these are high in sugar content. The survey teams were trained to capture information accordingly.	-

<p>Question re noticing health promotion materials in their schools/colleges. Perhaps, it was not a question of 'noticing', may be these materials just were not there to be noticed.</p>	<p>Thank you and we agree to the comment. The was to study availability of health education and promotion materials in schools/colleges, extent and impact of health promotion on adolescents.</p>	<p>-</p>
<p>Questions such the one related to the danger of second-hand smoke. There does not appear to be a parallel question about first hand smoke.</p>	<p>Thank you for the comment. We have no question in this regard, but we look forward to re-visiting them.</p>	<p>-</p>
<p><b>Reviewer 2: Dr. Hajo Zeeb, Bremen Institute for Prevention Research and Social Medicine</b></p>		
<p>This is an interesting report on a nationally representative NCD risk factor survey among adolescents in India. It provides relevant and up-to-date information, based on self-report, but it fails to report on differences according to socioeconomic status. The reporting is sound, but some attention needs to be paid to language and grammar.</p>	<p>Thank you for appreciating the study relevance.</p> <p>We have attempted to address them.</p>	<p>-</p>
<p><b>Abstract:</b> A well written abstract.</p> <p>The conclusion also includes knowledge and attitudes, which are not reported on in the results. Please revise either the results section or reformulate the conclusions. The judgement on high prevalence of risk factors is not entirely substantiated when compared to many other countries with much higher values for selected risk factors.</p>	<p>Thank you for the appreciation.</p> <p>Revised the abstract. We agree that the prevalence of risk factors in India when compared to other countries is much lower, however there is threat and scope to tackle these among adolescents early. We have revised this section to substantiate.</p>	<p>Page 3 and line no. 63-91</p>
<p><b>Strengths and weaknesses:</b> The data on health systems response may be available, but do not figure in this report. Suggest to delete here. The second bullet point partly repeats the first when talking about this being the first nationally representative risk factor survey. There</p>	<p>Thank you for the comment. We have revised this section.</p>	<p>Page 4 and line no. 94 (summary box)</p>

<p>are several other instances where repetitions occur, and probably one bullet point less will do – the last one appears somewhat weak and needs refinement (e.g. what are ethical logistics?). Nevertheless, weaknesses need pointing out.</p>		
<p><b>Introduction:</b> Overall I suggest to clarify which age range the authors are assigning to adolescence, and also more clearly highlight the importance of early adoption of risk behaviours for NCD occurrence also much later in life, not only in early adulthood. Please explain in a few words why adolescence may provide opportunities to prevent and control risk factors- after all it is the time where many people get into first contact with NCD risk factors, or develop overweight/low PA.</p>	<p>Thank you for the comment. We have revised this section.</p>	<p>Page 4 and line no. 98</p>
<p>The further description of available evidence on risk factors in India needs sharpening: what is the nature of these studies, were they reliable and recent?</p>	<p>We have attempted to revise this section and the references used are from national surveys conducted over different periods of time with different study objectives that provide information for selected risk factors.</p>	<p>Page 4 and 5; Line no. 107-121</p>
<p>On page 8, the authors are not clear about what is difficult to generalize. Better linkage to the earlier paragraphs is needed. The highlighting of the nodal agency seems less important.</p>	<p>Thank you for your comment. We have revised it.</p>	<p>Page 4 and line no. 107-110.</p>
<p><b>The objectives</b> of the survey are clear, the paper reports about the results. Please review the statement on what the paper delivers. Potentially the data on school health education/promotion relate to a secondary objective of the survey.</p>	<p>The school-based information was an additional component to the adolescent study tools. It was not the secondary objective of the survey. Our secondary survey objective was to create central and regional pool of resources to support such conduct similar surveys at sub-national level.</p> <p>We have revised the statement what the paper delivers.</p>	<p>Page 5 and line 136-139</p>

<p><b>Methods:</b> These are overall well described, but short.</p>	<p>Thank you for your appreciation.</p>	<p>-</p>
<p>It would be useful to state the overall number of Indian states. With respect to the sample size and the processes to reach the required sample, I wonder if considerations regarding the multiple recruitment of individuals from the same households, violating independence, were done beforehand.</p>	<p>We have included it and added our report reference for detailed survey methods.</p> <ul style="list-style-type: none"> <li>- The data collection ODK software contained section of basic information of household members, age and gender. It had in-built checks like generation of specific barcode for participant identification to avoid multiple recruitments.</li> <li>- The survey teams included qualified investigators and were well trained in ensuring privacy and confidentiality. Also, we made sure that every team contained equal male and female members.</li> </ul>	<p>Page 6 and line 146 and 149.</p> <p>Page 7-8 and line no. 202-209.</p>
<p><b>Study tools:</b> how was standardization of measurements for weight/height assured? Please explain, giving details.</p>	<p>The same has been included.</p>	<p>Page 7 and line no. 182-187</p>
<p><b>Study data:</b> was information on health promotion and materials etc. collected individually or at school/college level. Please specify.</p>	<p>This was a household community based cross-sectional survey. All interviews and data collection were done at the household.</p>	<p>Page 7 and line no. 192-193</p>
<p>How many questions were in the final survey tool, what was the average interview time?</p>	<p>Total of 99 questions and measurements of height and weight were done. The average interview time was 50 minutes.</p>	
<p><b>Ethics:</b> what were the individual consent procedures for the adolescent age group. The statement on referral is somewhat surprising – was there no concern that this approach might reduce validity of responses?</p>	<p>Included the individual consent procedures for the adolescent age group. Statement on referral: As part of the survey, it was equally important to guide those with identified risk factor to nearby facility for counselling and further management.</p>	<p>Page 7 and line no. 195-200</p>
<p><b>Statistical analysis:</b> Data import: was this done daily, immediately after interviews or at which interval?</p>	<p>The data collected by interviewers were saved, verified by the team leader and research officer on the same day. Once finalized they were imported to the central server after completion of that PSU (after 4-5 days). Additionally, there was a dash board designed specifically to update day-today activities of the team.</p>	<p>-</p>

<p>How did the authors deal with missing data (if any?)</p>	<ul style="list-style-type: none"> <li>- The ODK data collection tool, was a pretested tool that contained in-built quality checks like mandatory fields and skip commands wherever applicable. So, the forms had to be filled with appropriate responses before finalizing the data forms and importing to the central server.</li> <li>- Partially completed data forms have not been included for analysis. This adjustment has been addressed during sample weightage.</li> </ul>	<p>-</p>
<p><b>Results:</b> It is not clear what “locked household” means. The number of 176 is an estimate based on the 2011 census, or from survey-specific assessment.</p>	<p>Locked household means those households that were locked during the time of survey visit and they were considered locked only after a minimum of 4 visits made by team members during the stay in that PSU. The number of 176 adolescents could not be located as the households were locked at the time of survey and this estimate is survey-specific.</p>	<p>Page 8 and line no. 218- 222</p>
<p>The question on being taught at school about harms – was there a specific time period to be considered (last 12 months; ever)? Please specify.</p>	<p>The school/college related information have been obtained from those adolescents who reported going to school regularly in the last 12 months preceding the survey. The same has been mentioned in the methods section - study tools and data collection.</p>	<p>Page 7 and line no. 187- 189.</p>
<p>The tables are well organized and clear, the definitions given are according to international standards. However, text and tables report very much the same, so the text could be shortened in some passages.</p>	<p>Thank you for your appreciation. We have attempted revisions here.</p>	<p>Page 8 – 13</p>
<p>There are numerous interesting findings, including the fact that many adolescents appeared informed for example about passive smoking. With respect to PA, the self-reporting is an issue, as the correlation to objectively measured PA is not high.</p>	<p>Thank you for the comment. Physical activity reporting has always been a challenge and it was so even for our survey. We have validated our survey questionnaires, pretested them, trained the team in capturing the information to the best possible quality. Experts of technical working group, core group, principal and co-principal investigators undertook supervisory visits to validate the data being collected at multiple sites. Data was cleaned at all levels to identify any issues and results were screened by experts.</p>	<p>Page 7 – 8 and line no. 201- 209</p>

<p>The survey results on health education and promotion materials are somewhat less informative, as there is little information on type and extent of information given, time period to which the information refers etc. This is a topic that might be taken out of this report.</p>	<p>Thank you for your comment. We would be retaining this section. We had a total of 9 questions under this section. They were asked to only those who attended school in last 12 months preceding the survey date. The objective to include this section was to study availability of health education and promotion materials in schools/colleges, extent and impact of health promotion among this age group. Also, kind of food being made available in school/college canteens. Since adolescents spend their maximum time in a day in school/ colleges there is a need to study their choices being made that can guide efforts needed to improve knowledge, awareness and practices in this direction. Attempted some revisions in the results.</p>	<p>Page 8-13.</p>
<p>One of the major questions I have would be the influence of socioeconomic status, a major determinant of health and of exposure to risk factors. There seem to be no data on this topic.</p>	<p>Thank you for your comment and we agree with you. We have collected information on socio-economic factors as part of the household questionnaire and we plan to cover them in subsequent papers.</p>	<p>-</p>
<p><b>Discussion:</b> The end of the second para needs reconsideration (and hence this survey...)</p>	<p>Thank you for your comment. We have attempted to revise it.</p>	<p>Page 13 and line no. 289-292</p>
<p>The substantial differences between GATS-2 and this report are surprising, even given different age groups. The explanations given are not really clear, why would these be responsible for a 4-fold difference? To clarify, would it be possible to look at GATS-2 for finer age strata?</p>	<p>Thank you for your comment.</p> <p>We agree that there is a substantial difference between GATS-2 and our survey results on tobacco use. These differences are not limited to age groups, but study design, sampling strategy, coverage, weightage procedures, questionnaires adopted and definitions used. The major differences were GATS-2 India was conducted in the age-group 15+ years involving 34.5% urban and 65.5% rural distribution sample adopting a multi-stage cluster sampling state wise. Whereas, NNMS (our survey) was conducted in the age-group 15-17 and 18-69 years involving equal rural and urban distribution adopting a multi-stage cluster sampling nationally.</p> <p>Realizing the expected differences, we have examined our study results with GATS-2 for 15-17 years. The results were similar. We have included this in our discussion and attempted revisions to bring clarity of this component.</p>	<p>Page 13 and line no. 293-301</p>
<p>For readers not familiar with Indian school platforms, this part of the discussion is hard to follow and needs revision.</p>	<p>We have made revisions in this section.</p>	<p>Page 15 and line no. 339-343.</p>

<p>A shortcoming of the discussion is the lack of comparison with international data on the topic. This would help to put the findings into perspective.</p>	<p>Thank you for the comment. We agree and have discussed this in this revised version.</p>	<p>Page 13 and line no. 280- 288</p>
<p>A section on strengths and limitations needs to be added. The lack of information according to SES must be mentioned here. Figure 1 has little information value and could be discarded.</p>	<p>We have included section on strengths and limitations and revised to include scope for inclusion of more indicators. We agree and have deleted figure 1. As per the revised version figure 2 is now figure 1.</p>	<p>Page 15 and line no. 344- 358.</p>

### VERSION 2 – REVIEW

<b>REVIEWER</b>	Dean, Elizabeth University of British Columbia, Physical Therapy
<b>REVIEW RETURNED</b>	20-Mar-2021

<b>GENERAL COMMENTS</b>	<p>Baseline risk factor prevalence among 15-17-year-old adolescents – Findings from National Noncommunicable Disease Monitoring Survey (NNMS) of India (bmjopen-2020-044066.R1)</p> <p>This body of work is impressive and serves as an important contribution in terms of providing an all-important baseline of lifestyle practices of adolescents in India. Established tools were used, and care and attention were taken in conducting the data collection. The investigators have satisfactorily addressed my comments and queries. These baseline data will prove to be very important. Although the work was quite readable and understandable, the investigators' attention to quirky English grammar and composition in their revision has improved the readability of the work, consistent with the expectations of rigorous scientific writing, particularly for a highly ranked journal.</p> <p>The origin of the data is critical, which has implications for how they are expressed by the investigators. For example, Line 320 states that 'We observed that nearly 50% of adolescents consumed....'. A final run-through of the description of the findings in the manuscript is advised, to further reduce potential ambiguity in the data reporting. I certainly understand the meaning, given the methods were previously described about how the data were collected. However, I can assure you that the investigators did not 'actually observe' this; whereas the objective data they did.</p> <p>This may appear picky, but words are important when describing findings and distinguishing for the reader, those that were measured objectively, were observed, or are those from self-reports or perhaps the family helped to answer some questions. Better to say, 'Half of adolescents reported...'</p> <p>Given the data set was a combination of objective measures and self-reported questionnaire data, this needs to be particularly clear not only in the methods but also about how the data are described. Self-reported questionnaire data are always a bit suspect because</p>
-------------------------	--

	<p>people's recall is often questionable, and that of children perhaps even more suspect. I believe this needs to be mentioned in the summary of 'Strengths and limitations of the study' and in the text. In addition, adolescents are likely to experience social pressure when reporting practices that they believe the interviewer and/or family members, particularly parents (who were likely within earshot) would disapprove of. This is worth a line in the limitations of the Discussion. This may also need to be considered in future questionnaire survey studies in terms of methods that would help maximize validity of question responses and reduce socially desirable responses. This is simply a limitation of questionnaire surveys in general, but always worth being mindful of. Of course, the more objective data the better, whenever possible.</p> <p>Re a couple of typos in the 'Strengths and limitations of this study' box. Line 16, edit to 'group' and in line 19, correct to 'relevant'.</p> <p>Congratulations on this body of work and contribution to the literature. These findings will be important in understanding the 'beginnings' of NCDs through risk factor tracking in children's and adolescent's early years. Given the trends in other countries, these data are envied by high-income countries. Sadly, I predict India will follow their trends. Nonetheless, it is heartening to see committed investigators trying to curb this potential.</p>
--	--

<b>REVIEWER</b>	Zeeb, Hajo Bremen Institute for Prevention Research and Social Medicine
<b>REVIEW RETURNED</b>	01-Apr-2021

<b>GENERAL COMMENTS</b>	<p>The authors have addressed my comments. Grammatical and tyographical errors - including in the summary statement - still need attention. Please also check and correct the following sentence in the abstract: "To estimate key NCD risk factors for adolescents, a separate sample size, study tools, data weightages and analysis was undertaken".</p>
-------------------------	---

## VERSION 2 – AUTHOR RESPONSE

Reviewer 1: Dr. Elizabeth Dean, University of British Columbia

This body of work is impressive and serves as an important contribution in terms of providing an all-important baseline of lifestyle practices of adolescents in India. Established tools were used, and care and attention were taken in conducting the data collection. The investigators have satisfactorily addressed my comments and queries. These baseline data will prove to be very important. Although the work was quite readable and understandable, the investigators' attention to quirky English grammar and composition in their revision has improved the readability of the work, consistent with the expectations of rigorous scientific writing, particularly for a highly ranked journal.

Author reply: Thank you for your appreciation.

The origin of the data is critical, which has implications for how they are expressed by the investigators. For example, Line 320 states that 'We observed that nearly 50% of adolescents consumed...'. A final run-through of the description of the findings in the manuscript is advised, to further reduce potential ambiguity in the data reporting. I certainly understand the meaning, given the methods were previously described about how the data were collected. However, I can assure you



that the investigators did not 'actually observe' this; whereas the objective data they did.

This may appear picky, but words are important when describing findings and distinguishing for the reader, those that were measured objectively, were observed, or are those from self-reports or perhaps the family helped to answer some questions. Better to say, 'Half of adolescents reported...'  
Author reply: We have addressed the matter. Page 14 and line 327

Given the data set was a combination of objective measures and self-reported questionnaire data, this needs to be particularly clear not only in the methods but also about how the data are described. Self-reported questionnaire data are always a bit suspect because people's recall is often questionable, and that of children perhaps even more suspect. I believe this needs to be mentioned in the summary of 'Strengths and limitations of the study' and in the text. In addition, adolescents are likely to experience social pressure when reporting practices that they believe the interviewer and/or family members, particularly parents (who were likely within earshot) would disapprove of. This is worth a line in the limitations of the Discussion. This may also need to be considered in future questionnaire survey studies in terms of methods that would help maximize validity of question responses and reduce socially desirable responses. This is simply a limitation of questionnaire surveys in general, but always worth being mindful of. Of course, the more objective data the better, whenever possible.

Author reply: We have revised as suggested. Discussion - Page 15 and line 361-366; Summary box - Page 4 and line 93.

Re a couple of typos in the 'Strengths and limitations of this study' box. Line 16, edit to 'group' and in line 19, correct to 'relevant'.

Author reply: We have made revisions here. Page 4 and line 93.

Congratulations on this body of work and contribution to the literature. These findings will be important in understanding the 'beginnings' of NCDs through risk factor tracking in children's and adolescent's early years. Given the trends in other countries, these data are envied by high-income countries. Sadly, I predict India will follow their trends. Nonetheless, it is heartening to see committed investigators trying to curb this potential.

Author reply: Thank you for appreciating the relevance.

Reviewer 2: Dr Hajo Zeeb, Bremen Institute for Prevention Research and Social Medicine  
The authors have addressed my comments.

Author reply: Thank you.

Grammatical and typographical errors - including in the summary statement - still need attention.

Author reply: Reviewed and addressed it.

Please also check and correct the following sentence in the abstract: "To estimate key NCD risk factors for adolescents, a separate sample size, study tools, data weightages and analysis was undertaken".

Author reply: We have revised this section. Page 3 and line 72-75.