

PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	Exploring Subjective Responses in High-Intensity Multimodal Training: An Online Cross-Sectional Survey
AUTHORS	Sharp, Tijana; Grandou, Clementine; Coutts, Aaron J.; Wallace, Lee

VERSION 1 – REVIEW

REVIEWER	Ahmad, Ahmad Mahdi Cairo University Faculty of Physical Therapy, Department of Physical Therapy for Cardiovascular and Respiratory Disorders
REVIEW RETURNED	17-Apr-2023

GENERAL COMMENTS	<p>-The manuscript is well-written. I have only some comments that may be of help.</p> <p>-In the title, I suggest reducing the tone of certainty in the title by using the verb "could". I also suggest focusing on the outcome assessed in the study, which is the enjoyment perceived during HIMT. In addition, I suggest not using an abbreviation in the title. Further, the study design should be mentioned in the title. Accordingly, the title is suggested to be: " Why could High-Intensity Multimodal Training be enjoyable? An Online Cross-sectional Survey".</p> <p>-In the abstract (lines 21-24), I suggest not using 'were associated' in the conclusion.</p> <p>-In line 24, the authors state that "This is the first global survey to examine subjective responses in all styles of HIMT". The authors did not report or compare the enjoyment responses experienced during different styles of HIMT. I think these could be addressed as limitations.</p> <p>-In the results: Lines 180-183, the authors state that "Respondents who had been participating in HIMT for > 18 months recorded a higher mean score (113.8 ± 11.8) than those who had participated for shorter durations". It is unclear whether this "higher mean score" showed a statistically significant difference because the authors only used descriptive statistics.</p> <p>-The authors also stated that 'Current participants who participated more regularly (7 days/ week) demonstrated higher PACES scores compared to those who participated less frequently' without reporting the statistical significance of this difference.</p> <p>-I suggest using inferential statistics in the study.</p> <p>-Line 196, "(1) other" refers to what? If it refers to other reasons, give it no. (3) and write it at the end.</p> <p>-Line 296, a minor typo. Write "the ability of" instead of "the ability to".</p>
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REVIEWER	Franssen, Ruud F.W. VieCuri Medical Center Location Venray
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REVIEW RETURNED	02-May-2023
GENERAL COMMENTS	<p>In general the manuscript is interesting and clearly written. Especially the discussion could be more focused, include more discussion and could be more concise (less vague).</p> <p>Introduction, Clearly written and working towards the aim of the study. If I may have one suggestion. I would have linked to read the “why is this research important” earlier in the introduction. This is now explained in the last sentence of the introduction (line 75)</p> <p>Methods Although, the selection of participants was elaborate, I do have some concerns about bias that was introduced by the method of selection (convenience sample).</p> <p>Results From the survey instrument provided in Supplementary Table S2 it is not clear to me how you could conclude that participants are drop outs. Can the authors explain how this was done? With regard to the concern about selection bias as motioned in the comment about the methods. I’m mainly interested in the participant who did not complete the survey. Is anything known about this group. Is there enough information about this group to compare it with the participants. (i.e., is there an equal proportion of current HIMT participants and drop-outs?)</p> <p>Discussion Line 209, Despite this..... It is not clear to me what the authors mean by this. Why do they use despite this? In addition, please specify “a number of participants”. Line 227 “However, as 228 respondents did not report session durations, this association cannot be confirmed” ◊ this is quite a flaw of the current study, isn’t it? As this is a major part of the reason why the study was executed in the first place. Why was this not part of the survey?</p> <p>Line 239. “Future research should attempt to examine subjective responses to HIMT performed in a group compared to individually” Can the authors give a bit more direction based their own data?</p> <p>Line 279 to 306, please limit the number of study limitation to the most important (2 maximal 3) limitations, clarify how these impacted the data and what was done to minimize their impact.</p> <p>Line 310, I’m sure if this statement is in line with the results. Sure this might be true for current participants, which seems obvious from the beginning. Line 329, “this contrast.....” This would be an interesting observation for the discussion wich is, if I’am not mistaking missing now?. Can the authors elaborate on these contrasting findings in their discussion</p> <p>Line 332 – 333, are these reasons any different to other exercise interventions? Please discuss. Line 335, please clarify how.</p> <p>In general the discussion is somewhat long and largely a repetition</p>

	<p>of the results. Perhaps the authors could focus on discussing the most important results?</p> <p>Abstract: Clear and concise. To me the abstract appears more balanced with regard to the results of participants and dropouts compared to the rest of the manuscript.</p>
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REVIEWER	Patt, Nadine Kliniken Valens
REVIEW RETURNED	03-May-2023

GENERAL COMMENTS	<p>1. The objective is clearly defined. But no hypothesis stated, this should be added. From the introduction, the reason to execute this study is not clear. Why is this important? Enjoyment for HIIT already investigated and conflicting. Is this study specifically designed to examine enjoyment in HIMT participants? But enjoyment has already been examined in various styles of HIMT. The introduction should be more strict towards the primary objective of the study.</p> <p>2. Abstract could be structure better (see comments in file).</p> <p>4. HIMT: How is HIMT defined? Any aerobic and/or resistance training performed at high intensity? what is high intensity? this could be a bias from self-report of the participants, because intensity was not objectively measured. how can you be sure that these participants really participated in high-intensity exercise modalities? Process of survey improvement: not described in detail. From who did you receive feedback? what has exactly changed in the improved version?</p> <p>Recruitment process not clearly described. How were participants recruited? How did you find participants? In which countries did you recruit? how did you decide which HIMT companies to contact? Did all participants from all countries complete the survey in English? Participants: why enjoyment was measured only in current HIMT participants? I think it would also be important to know enjoyment levels in previous participants because probably they have also enjoyed HIMT, but other factors may have caused people to stop performing HIMT (for example Covid-19 restrictions).</p> <p>Sample size calculation: what is a plateau of trends in data? How can you define that? Why sample size calculation was not done according to previous literature?</p> <p>How were missing data handled? Have you had missing data? Why was the study not pre-registered?</p> <p>8. I can't assess, as I am not an expert in the field of HIMT.</p> <p>11. The discussion and conclusion section have to be elaborated again and have to be more strictly focused on the objectives and results (see comments in the PDF file).</p> <p>12. Limitations discussed adequately, but an important limitation would also be the subjective assessment of participation in HIMT as the intensity was not measured and HIMT not precisely defined in the recruitment flyer. And also the HIMT style and intensity was not controlled for. For me, a question is how the intensity was controlled for and if there are difference between different HIMT styles. (see also comments in the file)</p> <p>General comments: See my comments in the PDF File in the "Attach Files" section (bmjopen-2023-073659_Proof_hi_NP_reviewed.pdf). Use terms consistently (global survey vs. international survey, previous HIMT participants vs. drop outs, subjective responses vs.</p>
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	enjoyment, etc.)
	Acknowledgment: Isa Slotboom for helping to complete the review.

VERSION 1 – AUTHOR RESPONSE

Reviewer 1 General Comments:

	Reviewers comments	Response to comments
R1.1	The manuscript is well-written. I have only some comments that may be of help.	The authors thank the reviewer for their feedback. Adjustments have been made based on their comments below.
R1.2	<p>TITLE</p> <p>In the title, I suggest reducing the tone of certainty in the title by using the verb "could". I also suggest focusing on the outcome assessed in the study, which is the enjoyment perceived during HIMT. In addition, I suggest not using an abbreviation in the title. Further, the study design should be mentioned in the title. Accordingly, the title is suggested to be: " Why could High-Intensity Multimodal Training be enjoyable? An Online Cross-sectional Survey".</p>	<p>Thank you for this feedback.</p> <p>The authors appreciate your suggestion and has adapted this slightly.</p> <p>"Exploring Subjective Responses in High-Intensity Multimodal Training: An Online Cross-Sectional Survey"</p>
R1.3	<p>ABSTRACT</p> <p>In the abstract (lines 21-24), I suggest not using 'were associated' in the conclusion.</p>	"were associated" has been changed to "may be related to".
R1.4	In line 24, the authors state that "This is the first global survey to examine subjective responses in all styles of HIMT". The authors did not report or compare the enjoyment responses experienced during different styles of HIMT. I think these could be addressed as limitations.	<p>Thank you, this has been included as a limitation.</p> <p>"Furthermore, this study did not compare enjoyment responses experienced across different styles of HIMT. Additionally, This limits the generalisability of the findings to individuals participating in various styles of HIMT."</p>

R1.5	<p>RESULTS</p> <p>In the results: Lines 180-183, the authors state that "Respondents who had been participating in HIMT for > 18 months recorded a higher mean score (113.8 ± 11.8) than those who had participated for shorter durations".</p> <p>It is unclear whether this "higher mean score" showed a statistically significant difference because the authors only used descriptive statistics.</p>	<p>Clarification has been included accordingly.</p> <p>"These findings are statistically not significant, given the descriptive statistics used to analyse the data."</p>
R1.6	<p>RESULTS</p> <p>The authors also stated that 'Current participants who participated more regularly (7 days/ week) demonstrated higher PACES scores compared to those who participated less frequently' without reporting the statistical significance of this difference.</p>	<p>Clarification has been included accordingly.</p> <p>"These findings are statistically not significant, given the descriptive statistics used to analyse the data."</p>
R1.7	<p>RESULTS</p> <p>I suggest using inferential statistics in the study.</p>	<p>Thank you for this suggestion. A one-way ANOVA was used to identify differences in training frequency or duration for enjoyment. Please see below.</p> <p>"A one-way ANOVA was used to identify any differences in training frequency or duration for enjoyment. A Scheffe post hoc analysis was used to identify any significant differences between-group differences. SPSS, v22 was used for statistical analysis with statistical significance set at $P \leq 0.05$."</p> <p>Please also see the results section and Table 2.</p>
R1.8	<p>RESULTS</p> <p>Line 196, "(1) other" refers to what? If it refers to other reasons, give it no. (3) and write it at the end.</p>	<p>"(1) Other" refers to other reasons. It is listed as (1) as it was the most frequently reported reason for reduced motivation to continue. If it were to be numbered (3), this would misrepresent the results.</p> <p>"other reasons" has been included in the text to clarify this.</p>
R1.9	<p>DISCUSSION</p> <p>Line 296, a minor typo. Write "the ability of" instead of "the ability to".</p>	<p>Thank you "to" has been changed to "of".</p>

Reviewer 2 General Comments:

	Reviewers comments	Response to comments
R2.0	In general the manuscript is interesting and clearly written. Especially the discussion could be more focused, include more discussion and could be more concise (less vague).	The authors thank the reviewer for their feedback.
R2.1	ABSTRACT Clear and concise. To me the abstract appears more balanced with regard to the results of participants and dropouts compared to the rest of the manuscript.	Thank you for this feedback.
R2.2	INTRODUCTION Clearly written and working towards the aim of the study. If I may have one suggestion. I would have liked to read the “why is this research important” earlier in the introduction. This is now explained in the last sentence of the introduction (line 75)	Thank you for this feedback, the introduction has been altered accordingly to identify the importance of the research earlier.
R2.3	METHODS Although, the selection of participants was elaborate, I do have some concerns about bias that was introduced by the method of selection (convenience sample)	This bias is acknowledged in the limitations section of the discussion. “Furthermore, respondents were recruited from a convenience sample, restricted to current and previous HIMT participants. Therefore, the findings cannot be generalised to individuals who have not participated”
R2.4	RESULTS From the survey instrument provided in Supplementary Table S2 it is not clear to me how you could conclude that participants are drop outs. Can the authors explain how this was done?	Participants were only eligible to participate in this survey if they were current or previous HIMT participants (i.e., drop outs). It was therefore assumed that if participants were not current HIMT participants, they were drop outs. The question: “Do you regularly participate in HIMT? (at least 2 days per week)*” was used to determine this. Following this, branching logic was used to

		<p>direct the respondents to the questions specific to drop out.</p> <p>A statement clarifying this has been included:</p> <p>"Drop outs were determined by the number of participants who responded "no" to the question "Do you regularly participate in HIMT? (at least 2 days per week)*." (Line 203).</p>
R2.5	<p>RESULTS</p> <p>With regard to the concern about selection bias as motioned in the comment about the methods. I'm mainly interested in the participant who did not complete the survey. Is anything known about this group. Is there enough information about this group to compare it with the participants. (i.e., is there an equal proportion of current HIMT participants and drop-outs?)</p>	<p>The non-respondents who did not complete the survey (n=292) were agreed to not provide enough valuable information to be included in the analysis. The progress of each of these non- respondents was extremely varied and therefore, difficult to draw meaning from. Therefore, they were excluded.</p>
R2.6	<p>DISCUSSION</p> <p>Line 209, Despite this..... It is not clear to me what the authors mean by this. Why do they use despite this? In addition, please specify "a number of participants".</p>	<p>"Despite this", refers to a contrasting finding.</p> <p>The specific number of participants has been clarified.</p> <p>"(n=131, n=55 respectively)".</p>
R2.7	<p>DISCUSSION</p> <p>Line 227 "However, as respondents did not report session durations, this association cannot be confirmed" ♦ this is quite a flaw of the current study, isn't it? As this is a major part of the reason why the study was executed in the first place. Why was this not part of the survey?</p>	<p>Session duration is a training prescriptive consideration that is highly variable in HIMT. For example sessions may be as short as 10 minutes and last for up to 90 minutes. Duration is likely to vary daily for HIMT participants and therefore may be difficult to accurately report on for participants.</p> <p>It was beyond the scope of this survey to also examine this variable. Indeed future research should examine this to better understand if there are any associations with exercise duration and enjoyment in HIMT.</p>
R2.8	<p>DISCUSSION</p> <p>Line 239. "Future research should attempt to examine subjective responses to HIMT performed in a group compared to individually" Can the authors give a bit more direction based their own data?</p>	<p>Thank you, this has been clarified in the text. Please see below.</p> <p>"Future research should attempt to examine subjective responses to HIMT performed as an individual compared to in a group setting (e.g., with shared attire or language)".</p>

R2.9	DISCUSSION Line 279 to 306, please limit the number of study limitation to the most important (2 maximal 3) limitations, clarify how these impacted the data and what was done to minimize their impact.	There is difficulty in reducing the limitations discussed, as various reviewers have suggested more in depth discussion of certain limitations of the paper.
R2.10	DISCUSSION Line 310, I'm sure if this statement is in line with the results. Sure this might be true for current participants, which seems obvious from the beginning.	Thank you, this has been clarified in the text based on this comment and another reviewer's comment. Please see below. While this may be obvious, the factors that may underlie this association were unknown and valid to explore in HIMT. Additionally, previous conflicting findings suggesting high-intensity exercise to be enjoyable vs. painful or unpleasurable indicate this must be explored in the future more closely in HIMT (Jung M, 2013; Kilpatrick et al., 2014; Bartlett et al. 2011). "The findings of this study suggest demonstrate that HIMT is an enjoyable training method among current HIMT participants. This may suggest that HIMT can promote long-term physical activity behaviours based on the association of enjoyment with exercise adherence in other forms of exercise."
R2.11	DISCUSSION Line 329, "this contrast...." This would be an interesting observation for the discussion which is, if I'm not mistaking missing now?. Can the authors elaborate on these contrasting findings in their discussion	Thank you, this is a key observation to discuss. The discussion has been amended accordingly see below text. "However, these findings contrast with previous studies that demonstrate high-intensity exercise is associated with feelings of pain and displeasure in select populations. Therefore, these conflicting observations limit the current understanding of the association between exercise intensity and enjoyment in HIMT."
R2.12	DISCUSSION Line 332 – 333, are these reasons any different to other exercise interventions? Please discuss.	These reasons are no different to other forms of exercise, this has been clarified in the text. Please see below. "In contrast, reasons for reduced motivation to adhere among drop outs reflected commonly reported barriers to other forms of physical activity (i.e., time, low motivation)."

R2.13	DISCUSSION Line 335, please clarify how.	Please see amended statement below to clarify this. This may assist in better understanding the features of HIMT may contribute to the growing popularity of the training mode and guide tailored service delivery in the community for increased exercise adherence.
R2.14	DISCUSSION In general the discussion is somewhat long and largely a repetition of the results. Perhaps the authors could focus on discussing the most important results?	Thank you for this feedback. Based on additional comments from yourself and other reviews the discussion has indeed been clarified and altered to reduce the repetitiveness of the results. The authors feel that the key findings and practical applications are emphasised accordingly.

Reviewer 3 General Comments:

	Reviewers comments	Response to comments
RG3.1	<p>The objective is clearly defined. But no hypothesis stated, this should be added. From the introduction, the reason to execute this study is not clear. Why is this important? Enjoyment for HIIT already investigated and conflicting.</p> <p>Is this study specifically designed to examine enjoyment in HIMT participants? But enjoyment has already been examined in various styles of HIMT. The introduction should be more strict towards the primary objective of the study.</p>	The authors thank the review for their feedback.

RG3.2	<p>ABSTRACT</p> <p>Abstract could be structure better (see comments in file).</p>	<p>Please see responses to comments R3.2-6.</p>
RG3.3	<p>HIMT: How is HIMT defined? Any aerobic and/or resistance training performed at high intensity? what is high intensity? this could be a bias from self-report of the participants, because intensity was not objectively measured. how can you be sure that these participants really participated in high-intensity exercise modalities?</p>	<p>HIMT is previously defined by the authors.</p> <p>This is indeed a risk of bias, that is acknowledged in the limitations section.</p> <p>Please see response to comments R3.8, 32, 34.</p>
RG3.4	<p>METHODS</p> <p>Process of survey improvement: not described in detail. From who did you receive feedback? what has exactly changed in the improved version?</p>	<p>Thank you, this has been clarified in the text. See below.</p> <p>“Feedback from researchers with experience in survey-based research was used to improve the content, readability and quality of the survey (e.g., question syntax).”</p>
RG3.5	<p>METHODS</p> <p>Recruitment process not clearly described. How were participants recruited? How did you find participants? In which countries did you recruit? how did you decide which HIMT companies to contact? Did all participants from all countries complete the survey in English?</p>	<p>Please see response to comment R3.14.</p>
RG3.6	<p>METHODS</p> <p>Participants: why enjoyment was measured only in current HIMT participants? I think it would also be important to know enjoyment levels in previous participants because probably they have also enjoyed HIMT, but other factors may have caused people to stop performing HIMT (for example Covid-19 restrictions).</p>	<p>This was considered, however it was determined that the risk of recall bias would be too great.</p> <p>If respondents were considered HIMT drop out, they were asked if they ceased participation due to COVID-19 (please see Table S2).</p>

RG3.7	<p>METHODS</p> <p>Sample size calculation: what is a plateau of trends in data? How can you define that? Why sample size calculation was not done according to previous literature?</p>	<p>As this was an exploratory study there was no pre-determined sample size to be calculated based on a known population size (i.e., global HIMT participants) or other previous methods of sample size determination (Bartlett et al. 2001).</p> <p>However, the sample size achieved was based on similar previous research (Grandou et al. 2021; Fisher et al. 2017).</p> <p>Finally, a plateau in trends is described as a period of stability in the course of data changes. The data was tracked periodically during data collection to assess for this. Once it was determined by the authors that trends were no longer changing as responses increased, data collection ceased.</p>
RG3.8	<p>METHODS</p> <p>How were missing data handled? Have you had missing data?</p>	<p>Please see response to comment R3.24.</p>
RG3.9	<p>METHODS</p> <p>Why was the study not pre-registered?</p>	<p>This study was not pre-registered. It was part of an Honours research project. However, no methods were changed from study inception. Additionally, all reporting methods follow the CHERRIES.</p>
RG3.10	<p>I can't assess, as I am not an expert in the field of HIMT.</p>	<p>n/a</p>
RG3.11	<p>DISCUSSION</p> <p>The discussion and conclusion section have to be elaborated again and have to be more strictly focused on the objectives and results (see comments in the PDF file).</p>	<p>Thank you for this feedback.</p> <p>Based on additional comments from yourself and other reviews the discussion has indeed been clarified and altered to emphasise the studies objectives. The authors feel that the key findings and practical applications are emphasised accordingly.</p>
RG3.12	<p>DISCUSSION</p> <p>Limitations discussed adequately, but an important limitation would also be the subjective assessment of participation in HIMT as the intensity was not measured and HIMT not precisely defined in the recruitment flyer. And also the HIMT style and intensity was not controlled for. For me, a question is how the intensity was controlled for and if there are difference between different HIMT styles. (see also comments in the file)</p>	<p>Thank you, please see responses to comments R3.34.</p>

RG3.13	See my comments in the PDF File in the "Attach Files" section (bmjopen-2023-073659_Proof_hi_NP_reviewed.pdf).	Thank you for your feedback.
RG3.14	Use terms consistently (global survey vs. international survey, previous HIMT participants vs. drop outs, subjective responses vs. enjoyment, etc.)	Thank you, this has been amended throughout the manuscript.

Reviewer 3 In-text Comments:

	Line no.	Reviewers comments	Response to comments
R3.1	3	Write out HIMT in the first mention	<p>Thank you, the title has been amended.</p> <p>Why could High-Intensity Multimodal Training be enjoyable? An Online Cross-sectional Survey.</p>
R3.2	6	Which population → add current HIMT participants	<p>This has been amended.</p> <p>Objectives: The purpose of this study was to investigate exercise enjoyment in High-Intensity Multimodal Training (HIMT) in current and previous HIMT participants and identify factors associated with HIMT that mediate exercise enjoyment and motivation.</p>

R3.3	7	Why in brackets? I would leave out the brackets	Brackets have been removed. “A 124-item web-based global survey was distributed to a cross-sectional voluntary convenience sample from August to the end of September 2021.”
R3.4	7	Isn't it a global survey?	The term global is now used consistently throughout the text.
R3.5	9	This should be in the results section. Participants are the current HIMT participants	This has been amended. Participants: Current and previous HIMT participants.
R3.6	11	I would add the measurement instrument (PACES)	This has been amended. Current participants demonstrated high enjoyment (Physical Activity Enjoyment Scale).
R3.7	24	Why global survey?	The term global is now used consistently throughout the text.
R3.8	47	How is high-intensity defined?	The definition of HIMT has been recently defined by the authors. Within this definition, there is clarification of the definition of “high intensity”. Please see the below clarification made in text. “High-Intensity Multimodal Training (HIMT) has been recently defined as any high or vigorous intensity exercise style that emphasises whole body movements combining aerobic, resistance and/or bodyweight training in a single session (e.g., circuit HIIT, High-Intensity Functional Training (HIFT), bodyweight HIIT, resistance HIIT) [7]. High or vigorous intensity is previously defined by the American College of Sports Medicine (ACSM) [1].”
R3.9	57	What is new here? Enjoyment is known to be associated with adherence.	Yes this is correct, enjoyment is known to be associated with adherence in other forms of physical activity. However, this has not been examined in depth in HIMT. Moreover, conflicting findings relating to the association of high-intensity exercise and enjoyment (discussed following line 57) indicate that this area requires further research. Please see the below change in the text. “While the mechanisms underpinning

			exercise behaviour are complex, the subjective response to exercise, (in particular exercise enjoyment) has been suggested to be associated with long term exercise behaviours (i.e., adherence) by supporting intrinsic motivation in various forms of physical activity [4-5]. However, this is yet to be closely examined in HIMT.”
R3.10	59	Use enjoyment or subjective response consistently instead of using both alternating or define it more clearly.	<p>Enjoyment is a sub-component of the subjective response to exercise.</p> <p>Exercise enjoyment can be measured individually, however the study investigates the subjective response to exercise as it also asks respondents about their motivation to continue to participate in HIMT.</p> <p>Please see the below clarification.</p> <p>“While the mechanisms underpinning exercise behaviour are complex, the subjective response to exercise, (in particular exercise enjoyment) has been suggested to be associated with adherence by supporting intrinsic motivation [4-5].”</p>
R3.11	71	The objective is clearly defined. But no hypothesis stated, this should be added. For me, the reason to execute this study is not clear from the introduction part. Why is this important? Enjoyment for HIIT already investigated and conflicting. Is this study specifically designed to examine enjoyment in HIMT participants? But enjoyment has already been examined in various styles of HIMT. The introduction should be more strict towards the primary objective of the study.	<p>Thank you for this feedback. Given that this was an exploratory study, the authors agree that it was not appropriate to include a hypothesis. However, the objective is made clear in the abstract and introduction.</p> <p>The authors feel that the conflicting findings regarding the association of high-intensity exercise and enjoyment, warrant further exploration of enjoyment in HIMT, in order to better understand the concept (Jung M, 2003; Kilpatrick et al., 2014; Bartlett et al. 2011). While it may be obvious or plausible that HIMT would be enjoyable for current participants, this study also had the objective of identifying factors that may be associated with exercise enjoyment or motivation. This has not yet been explored in HIMT.</p> <p>The introduction has been altered to clarify these items.</p>
R3.12	75	use enjoyment or subjective responses consistently across the manuscript	Please see response to comment R3.10

R3.13	82	Use global or international survey consistently	<p>"International" has been changed to "global".</p> <p>"An open global cross-sectional survey was used to examine subjective responses in current and previous HIMT participants."</p>
R3.14	94	How were they recruited? In which countries? Recruitment process not clearly described	<p>The recruitment process was described in line 99. This has been moved forward in the text.</p> <p>"A voluntary convenience sample of current and previous HIMT participants were recruited. Respondents were recruited through various digital means (i.e., social media, email) from August through to September 2021. Respondents from all global countries with access to the online survey were eligible. All respondents were required to complete the survey in English. It was agreed that an appropriate sample size would be reflected by data saturation (i.e., plateau of trends in the data)."</p>
R3.15	98	<p>How is HIMT defined? Any aerobic and/or resistance training performed at high intensity? what is high intensity?</p> <p>this could be a bias from self-report of the participants, because intensity was not objectively measured. how can you be sure that these participants really participated in high-intensity exercise modalities?</p>	<p>A definition of HIMT was provided to participants on the subject information sheet (link of the participant recruitment flyer). This included a definition of "high-intensity" (see below).</p> <p>HIMT is defined as exercise that emphasizes whole-body movements combining aerobic resistance and/or body-weight training throughout a single session completed at high or vigorous intensity. High or vigorous exercise intensity is defined by the American College of Sports Medicine as activity that sustains:</p> <ul style="list-style-type: none"> • >77% heart rate maximum (HR_{max}) OR 80-90% HR_{max} during work periods and 40-50% HR_{max} during active or passive rest periods; • Rating of perceived exertion >14 out of 20; • >70% 1 repetition maximum (1RM); • or an inability to speak more than a few words <p>You are correct, this can contribute to self-report bias. This has been acknowledged as a limitation in the discussion section.</p>
R3.16	99	I would use previous HIMT participants or drop outs consistently	<p>This has been amended.</p> <p>"into current (i.e., ≥ 2 sessions/ week for ≥ 6 months) or previous HIMT participants (i.e., ceased participation)."</p>

R3.17	101	What is a plateau of trends? why sample size calculation was not done according to previous literature?	<p>A plateau of trends is observed in the data, when no new trends emerge as the responses increase.</p> <p>Please see responses to comment (RG3.7)</p>
R3.18	110	What is convenience sample piloting?	<p>Convenience sample piloting refers to pilot testing the survey, within the researcher's networks (i.e., a convenient sample). See clarification below.</p> <p>"Content validity and reduced response bias were ensured through convenience sample piloting with both current HIMT participants and drop outs within the researchers' networks".</p>
R3.19	111	Feedback from who? The process of improvement not clear (what has changed?)	<p>This has been amended.</p> <p>"Content validity and reduced response bias were ensured through convenience sample piloting with both current HIMT participants and drop outs within the researchers' networks."</p>
R3.20	118	Shouldn't this be a range of 18-126?	<p>This has been amended.</p> <p>"The 18-item PACES is scored between 18-126, whereby higher scores indicate greater levels of enjoyment."</p>
R3.21	124	but I think it would also be important to know enjoyment levels in previous participants because probably they have also enjoyed HIMT but other factors may have caused people to stop performing HIMT (for example Covid-19 restrictions).	<p>This was considered however, it was determined that the risk of recall bias would be too great.</p>
R3.22	130	Recruitment process not exactly clear. in which countries participants were recruited? how did you decide which HIMT companies to contact?	<p>Please see response to comment R3.14</p>
R3.23	134	This sentence is not exactly clear to me	<p>This sentence has been clarified.</p> <p>"This reduced the likelihood that the sample would overrepresent individuals who demonstrate strong opinions on the subject or were drawn to participate based on those opinions."</p>
R3.24	141	How were missing data handled?	<p>Responses with missing data were considered as incomplete responses. Therefore, they were excluded from analysis. Please see amended statement below.</p> <p>"Missing data checks were conducted to confirm data integrity and incomplete responses were excluded from analysis".</p>

R3.25	143	Other confounders?	Other confounders such as exercise session duration or participation in other activities may be present in the data. However, this was not controlled for. Please see the limitations section where this is acknowledged.
R3.26	159	Why was study not pre-registered?	This study was not pre-registered. It was part of an Honours research project. However, no methods were changed from study inception. Additionally, all reporting methods follow the CHERRIES.
R3.27	165	Why were these excluded? Aren't these HIMT dropouts?	The period of 6 months was chosen as a time to reflect a longer period of commitment to HIMT whereby individuals have participated long enough to experience possible health benefits. (Biddle & Mutrie 2008; Larson et al. 2018). Therefore, a drop out is an individual who ceased participation following 6 months of HIMT participation.
R3.28	191	Delete "for"?	This has been amended. "The top 3 reasons for respondents feeling motivated to continue participation were the same as the reasons for enjoyment (Figure 2)."
R3.29	195	Ese either "HIMT drop outs" or "previous HIMT participants" instead of using them alternating	This has been amended. "Among previous HIMT participants (n = 10) the top 3 reasons for reduced motivation to continue HIMT included: (1) <i>other reasons</i> , (2) <i>work commitments</i> and (3) <i>I started another type of sport, exercise or training</i> (Table S3)."
R3.30	205	The objective is to examine enjoyment levels. This could be stated more clearly here instead of using the term subjective response.	Please see the below clarification. "This is the first global survey to examine subjective responses (e.g., exercise enjoyment) in various styles of HIMT and identify factors that may underlie exercise enjoyment and motivation in HIMT."
R3.31	242	Use consistently the term enjoyment/subjective response instead of mixing up enjoyment and subjective response.	Please see response to comment R3.30
R3.32	249	But high-intensity is actually defined by the ACSM, therefore it is not a self-selected work intensity but should be objectively measured with for example wearable fitness tracker	Yes, this is correct and is part of the operational definition of HIMT. However, there is a disconnect between prescribed exercise intensity and elicited exercise intensity in the literature. Future studies need to more robustly monitor exercise intensity (e.g. HR) to ensure that a high level of intensity is being sustained. But given that high-intensity is a threshold measurement,

			participants can self-regulate their intensity above this threshold.
R3.33	272	Limitations stated: Response bias due to small sample of HIMT dropouts	Thank you.
R3.34	278	Another limitation is the subjective assessment of participation in HIMT as the intensity was not measured and HIMT not precisely defined in the recruitment flyer	Yes this is correct, please see the acknowledgement below. “Furthermore, self-determination of eligibility may present selection bias in the sample, whereby the precise style or intensity of HIMT that each respondent participated in was not controlled for. This reflects the variety of existing HIMT styles (e.g., HIFT, bodyweight HIIT, circuit HIIT), poor standardisation in exercise prescription and the lack of an operational term that broadly..”
R3.35	285	Selection bias HIMT style was not controlled for, but also intensity was not controlled for.	Please see response to comment R3.34.
R3.36	299	Problem of generalizability stated.	Thank you.
R3.37	304	Why? sample size calculation was not done and termination defined as trend saturation	It may have reduced the number of participants who felt eligible, if they were unable to participate in HIMT at the time of data collection. See below change in text. “This may have restricted the potential sample size of respondents who considered themselves eligible and increased selection and response bias.”
R3.38	311	I think you cannot conclude that. you should relate to the primary objective, which is exercise enjoyment in current HIMT participants. From your findings you cannot conclude that HIMT is an effective training modality for promoting long-term physical activity behaviours.	Thank you. The authors have acknowledged this and amended the text. “The findings of this study demonstrate that HIMT is an enjoyable training method among current HIMT participants. This may suggest that HIMT can promote long-term physical activity behaviours based on the association of enjoyment with exercise adherence in other forms of exercise.”

R3.39	312	There was no statistical analysis done for the association of exercise enjoyment with adherence. So you cannot conclude that.	Please see response to comment R3.38.
R3.40	337	This study is well described but the purpose is not clear to me, especially the introduction should be more strict towards the primary objective of the study. And also the conclusion in the practical applications part should be more precisely formulated regarding the objective and results.	Thank you this has been acknowledged. Please see response to comment R3.38.
R3.41	489	Are these professionals or just doing exercise as a hobby?	Respondents include anyone who participates. This study did not distinguish between practitioners, athletes or general population.
R3.42	489	This is not N (%)	Table 1 has been amended accordingly.
R3.43	532	Good response rate.	Thank you.

VERSION 2 – REVIEW

REVIEWER	Franssen, Ruud F.W. VieCuri Medical Center Location Venray
REVIEW RETURNED	27-Jun-2023

GENERAL COMMENTS	Just a small additional comment. I would suggest to remove the name of the statistical test from line 204.
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REVIEWER	Patt, Nadine Kliniken Valens
REVIEW RETURNED	11-Jul-2023

GENERAL COMMENTS	<p>The authors have addressed the reviewers' concerns adequately but there are some minor suggestions remaining:</p> <p>Abstract: Line 10: "Among eligible respondents": you could add the number (n=434) - "Among eligible respondents (n=434)". Line 11: "55 were drop outs". Could you clarify that these are the previous HIMT participants? for example: "55 were drop outs (previous HIMT participants)". Or probably replace the term "drop out" with the term "previous HIMT participants"? Use the term consistently to avoid confusion.</p>
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	<p>INTRODUCTION: Aim is now clear. Line 90-94: I think you should use the past tense, because this study has already been conducted: "Therefore, the purpose of this study WAS to examine..."</p> <p>METHODS: line 182/183: I think you forgot an "and": "The average PACES score was calculated for based on frequency AND length of participation". - Make sure that the order is consistent with table 2, where you stated "length and frequency of participation". Line 185: delete "differences" (you used it twice with "between-group differences") Line 199: add that you used SPSS (not only Excel) In general: use either drop outs or previous HIMT participants consistently throughout the paper. Because for me it is confusing. I would prefer previous HIMT participants instead of drop outs, because you also state in the participant description that you investigated current and previous HIMT participants.</p> <p>RESULTS: I would use the term "previous HIMT participants" consistently throughout the paper (also within the tables) instead of "drop outs" (as you did in line 243), I think this makes it more clear for the reader. Supplementary table S1: use term drop out/previous HIMT participants consistently.</p> <p>PRACTICAL APPLICATIONS: See comment above in Results section regarding the term "drop outs". Line 423: I think you forgot a "that": "This may assist in better understanding the features of HIMT THAT may contribute to the growing popularity..." Line 389-390: you mentioned: "The findings of this study demonstrate that HIMT is an enjoyable training method among current HIMT participants". But is there a cut off value for levels of enjoyment for the PACES instrument? Otherwise I think you can say that the results "demonstrate high levels of enjoyment in current HIMT participants", as you did in line 265-266.</p>
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VERSION 2 – AUTHOR RESPONSE

Reviewer 2 Comments:

	Reviewers comments	Response to comments
R2.1	Just a small additional comment. I would suggest to remove the name of the statistical test from line 204.	Thank you, this has been amended.

Reviewer 3 Comments:

	Reviewers comments	Response to comments
R3.1	The authors have addressed the reviewers' concerns adequately but there are some minor suggestions remaining:	The authors thank the reviewer for their feedback. These concerns have been addressed below.
R3.2	ABSTRACT Line 10: "Among eligible respondents": you could add the number (n=434) - "Among eligible respondents (n=434)".	Thank you this has been amended. "The final sample included 469 responses (completion rate: 61.6%). Among eligible respondents (n=434), 379 were current HIMT participants, 55 were previous HIMT participants."

R3.3	<p>ABSTRACT</p> <p>Line 11: "55 were drop outs". Could you clarify that these are the previous HIMT participants? for example: "55 were drop outs (previous HIMT participants)". Or probably replace the term "drop out" with the term "previous HIMT participants"? Use the term consistently to avoid confusion.</p>	<p>Thank you this has been amended.</p> <p>"The final sample included 469 responses (completion rate: 61.6%). Among eligible respondents (n=434), 379 were current HIMT participants, 55 were previous HIMT participants."</p>
R3.4	<p>INTRODUCTION</p> <p>Aim is now clear.</p>	<p>Thank you for this feedback.</p>
R3.5	<p>INTRODUCTION</p> <p>Line 90-94: I think you should use the past tense, because this study has already been conducted: "Therefore, the purpose of this study WAS to examine..."</p>	<p>Thank you this has been amended.</p> <p>Therefore, the purpose of this study was to examine levels of exercise enjoyment in current HIMT participants. This study also identified factors associated with HIMT that may underlie exercise enjoyment and motivation.</p>
R3.6	<p>METHODS</p> <p>line 182/183: I think you forgot an "and": "The average PACES score was calculated for based on frequency AND length of participation". - Make sure that the order is consistent with table 2, where you stated "length and frequency of participation".</p>	<p>Thank you this has been amended.</p> <p>The average PACES score was calculated for based on length and frequency of participation.</p>
R3.7	<p>METHODS</p> <p>Line 185: delete "differences" (you used it twice with "between-group differences")</p>	<p>Thank you this has been amended.</p>
R3.8	<p>METHODS</p> <p>Line 199: add that you used SPSS (not only Excel)</p>	<p>Thank you this has been amended.</p> <p>Data were analysed using Microsoft Excel (version 16.36) and SPSS.</p>
R3.9	<p>METHODS</p> <p>In general: use either drop outs or previous HIMT participants consistently throughout the paper. Because for me it is confusing. I would prefer previous HIMT participants instead of drop outs, because you also state in the participant description that you investigated current and previous HIMT participants.</p>	<p>Thank you.</p> <p>"drop outs" has been changed to "previous HIMT participants" throughout the text.</p>

R3.10	<p>RESULTS</p> <p>I would use the term "previous HIMT participants" consistently throughout the paper (also within the tables) instead of "drop outs" (as you did in line 243), I think this makes it more clear for the reader.</p>	Please above response to comment R3.9.
R3.11	<p>SUPPLEMENTARY MATERIALS</p> <p>Supplementary table S1: use term drop out/previous HIMT participants consistently.</p>	Thank you, the supplementary materials have been updated accordingly.
R3.12	<p>PRACTICAL APPLICATIONS</p> <p>See comment above in Results section regarding the term "drop outs".</p>	Please above response to comment R3.9.
R3.13	<p>PRACTICAL APPLICATIONS</p> <p>Line 423: I think you forgot a "that": "This may assist in better understanding the features of HIMT THAT may contribute to the growing popularity..."</p>	<p>Thank you, this has been amended.</p> <p>This may assist in better understanding the features of HIMT that may contribute to the growing popularity of the training mode and guide tailored service delivery in the community for increased exercise adherence.</p>
R3.14	<p>PRACTICAL APPLICATIONS</p> <p>Line 389-390: you mentioned: "The findings of this study demonstrate that HIMT is an enjoyable training method among current HIMT participants". But is there a cut off value for levels of enjoyment for the PACES instrument? Otherwise I think you can say that the results "demonstrate high levels of enjoyment in current HIMT participants", as you did in line 265-266.</p>	<p>Thank you, this has been amended.</p> <p>The findings of this study demonstrate high levels of enjoyment among current HIMT participants</p>