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Psychological and Physiological Responses Across Six Weeks of HIIT and MICT in Previously Inactive, Young Adults

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ABSTRACT

International Journal of Exercise Science 16(5): 756-769, 2023. High-intensity interval training (HIIT) is suggested as a public health strategy to increase engagement in, and adherence to, physical activity. However, debate exists regarding the efficacy in inactive individuals. PURPOSE: To determine the physiological and psychological responses to three weeks of supervised and three weeks of unsupervised HIIT or moderate-intensity continuous training (MICT) in previously inactive adults. METHODS: Young adults (n = 20; 21.4 ± 2.2 years; 13 females) were randomized to six weeks of HIIT or MICT. Pre- and post-testing included anthropometric measures, an incremental exercise test, and body composition. Psychological outcomes (i.e., perceived competence, self-efficacy, and enjoyment) were assessed at the end of the first, ninth, and eighteenth training sessions. Differences in physiological outcomes were analyzed using repeated measures factorial ANCOVAs. Differences in psychological outcomes were analyzed using repeated measures factorial ANOVAs. RESULTS: Maximal oxygen consumption (Δ 2.8 ml·kg^{-1}·min^{-1}; p = .03) and peak power output (Δ 20.2 W; p = .01) improved over time with no group differences (p > .05). No changes occurred in body composition or self-efficacy (p ≥ .27). Perceived competence increased with supervised training (p = .01) with no further increases during unsupervised training. There was no difference in enjoyment across supervised training (p = .07), but enjoyment decreased during unsupervised training (p = .003). CONCLUSIONS: Cardiorespiratory fitness improved comparably for HIIT and MICT but with a shorter time commitment for HIIT. Perceived competence increased across supervised training suggesting it may be important to provide support at the beginning of an exercise intervention.

KEY WORDS: Exercise enjoyment, intermittent exercise, perceptual responses, VO_{2max}

INTRODUCTION

Engaging in regular moderate-to-vigorous physical activity has been associated with numerous health benefits including a reduced risk of cardiovascular disease (32), obesity (15), certain cancers (23), and all-cause mortality (26). Current physical activity guidelines for health suggest engaging in at least 150 minutes of moderate physical activity, 75 minutes of vigorous physical activity, or a combination of the two, each week (34). However, nearly half of all adults in the United States do not currently meet physical activity guidelines (34) and physical activity levels have been shown to decrease throughout young adulthood (1). Physical inactivity across the lifespan may have negative health consequences, such as increased incidence of chronic disease (8) and higher medical costs (36). Improving physical activity engagement in young adults may help improve wellness across the lifespan and prevent the development of chronic diseases later in life (31).

There are numerous factors that play a role in physical activity participation including demographic, psychological, social, and environmental factors (4). A psychological factor that has been suggested to negatively impact physical activity participation is perceived barriers to exercise (41). Specifically, a perceived lack of time is one of the most commonly cited barriers to exercise among U.S. adults (41). Therefore, it may be beneficial for public health strategies aiming to promote physical activity to target this barrier using time-efficient exercise modes, such as high-intensity interval training (HIIT). HIIT, defined as repeated bouts of vigorous intensity exercise separated by brief periods of rest (44), has demonstrated equal improvements in cardiorespiratory fitness and cardiometabolic health markers in substantially less time when compared to traditional moderate-intensity continuous training (MICT) (11, 20). Additionally, the intermittent nature of HIIT allows individuals to work at higher intensities than would be sustainable during MICT (20). Achieving higher intensities, even for brief durations, may promote additional adaptations to exercise than those achieved at lower intensities (11, 16, 20).

Despite the positive attributes of HIIT, there is concern that engagement in HIIT in previously inactive individuals may be low due to the challenging nature of this exercise mode (5, 12). Perceived exertion during HIIT has been shown to be higher than MICT in healthy adults (10, 40). However, this increase in intensity is compensated by a shorter overall exercise duration for HIIT. Despite higher perceived exertion, enjoyment of a single HIIT session has been shown to be equal or greater than that of MICT (17, 21, 40), which may support adoption of this training modality. However, the findings regarding enjoyment of HIIT across a training intervention are equivocal (13, 42) indicating the need for further research in this area.

Psychological factors, such as self-efficacy and perceived competence, are also associated with engagement in physical activity (9, 27). Task self-efficacy, defined as an individual's confidence in their ability to carry out a task (2), of HIIT and MICT has been shown to be comparable in young adults (35). Perceived competence, or how skilled an individual perceives themselves to be in a specific situation or environment (45), has been hypothesized to play a role in enjoyment of HIIT (13). Additionally, perceived competence has been positively associated with physical activity levels in adults (27), suggesting that it may be an important factor in HIIT participation. However, there are currently no studies to our knowledge that have quantitatively investigated perceived competence in the context of HIIT.

Much of the previous research examining HIIT has been conducted in laboratory settings or has investigated a single training session (3, 17, 21, 40), which may not be generalizable to free-living training. Recent work has begun to investigate HIIT in more 'real-world' settings (25, 38), which is an important step in determining the efficacy of HIIT to improve engagement in physical activity. However, few studies have focused on the transition from supervised to unsupervised

HIIT in physically inactive individuals. The transition to unsupervised training is important to examine as it may be a critical period with regards to maintaining exercise engagement. It is crucial to understand physically inactive individuals' psychological and physiological responses to HIIT, when compared to MICT, to be able to support individuals initiating an exercise program to optimize exercise adoption and adherence. The purpose of this study was to examine psychological responses to three weeks of supervised and three weeks of unsupervised HIIT and MICT, including perceived competence, self-efficacy, and enjoyment. Additionally, this study examined physiological responses, including peak oxygen consumption (VO_{2peak}), peak power output (PPO), and body composition, to a HIIT and MICT intervention in previously inactive, young adults. It was hypothesized that psychological responses to HIIT, i.e., enjoyment, perceived competence, and self-efficacy, would improve to an equal or greater extent than MICT across supervised training with no additional improvements across unsupervised training. Further, we hypothesized that VO_{2peak} and PPO would improve to a greater extent for HIIT when compared to MICT.

METHODS

Participants

Physically inactive, young adults were recruited from the university community to participate in the study. Participants were recruited using flyers posted across campus and word-of-mouth. Participants were included in the study if they were between the ages of 18 and 44 years and engaged in less than 150 minutes of moderate physical activity per week over the last three months. Exclusion criteria included: 1) signs/symptoms or known diagnosis of cardiovascular, metabolic, or renal disease, 2) musculotendinous injury that limited the ability to participate in exercise, and/or 3) pregnancy. Twenty young adults met eligibility criteria, as determined by preparticipation screening, and were invited to participate in the study. All participants provided written informed consent prior to data collection and the study protocol was conducted in accordance with the Declaration of Helsinki and to the ethical standards of the International Journal of Exercise Science (29). This study was approved by Eastern Washington University's Institutional Review Board.

Protocol

Following preparticipation screening, participants were scheduled for their first laboratory visit to complete baseline testing. Anthropometric measures, body composition, and cardiorespiratory fitness were assessed at baseline. Participants were instructed to refrain from engaging in strenuous physical activity and consuming caffeine or alcohol for 12-hours prior to testing. Additionally, participants were asked to refrain from the consumption of large meals for at least three hours prior to their laboratory visit. Following baseline assessments, participants were randomized to either the HIIT or MICT training group using stratified block randomization. Both groups trained on a cycle ergometer three times per week for six weeks. Training during the first three weeks took place in the laboratory under the supervision of an exercise professional. During the latter three weeks participants continued their training in free-living conditions at a fitness facility. All training took place on a stationary cycle ergometer.

HIIT sessions were 25-minutes in duration, including warm-up and cool down. The work to recovery ratio was 10x1:1 at an intensity of 80:20% PPO, respectively. MICT sessions were 45-minutes in overall duration with a work period of 40-minutes at an intensity equal to 40% PPO. The workload for warm-up and cool-down was 50 watts for both protocols. All sessions were completed on a stationary bike. For unsupervised training, exercise intensity was prescribed using heart rate, rating of perceived exertion, and absolute workload in watts to most closely replicate supervised training in free-living conditions. Participants recorded unsupervised training sessions in a training log to determine compliance with the study and exercise protocols. Training intensity remained constant for participants across the six-week intervention. Psychological outcomes were assessed 5-minutes following the completion of the first, ninth, and eighteenth training session (see Figure 1). After the conclusion of the six weeks of training, participants returned to the laboratory to repeat baseline measures at follow-up.

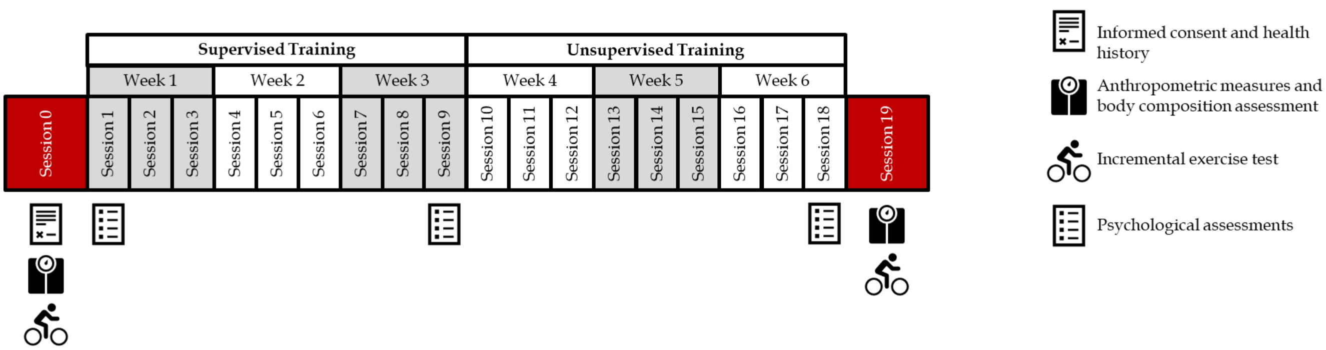

Figure 1. Schematic of the 2 (condition) x 3 (time) mixed-groups study design for all participants.

Perceived Competence: The satisfaction of basic psychological needs was assessed using the Psychological Need Satisfaction in Exercise Scale (45). The 6-item competence subscale was used to assess perceived competence. Participants were asked to consider how they felt during the exercise and rate the extent to which each statement was true for them on a 6-point Likert scale. Items included statements such as “I am satisfied with my performance when I exercise” and “I think I am pretty good at exercising”. Responses were averaged to obtain an overall score. Scores ranged from 1 to 6, with higher scores indicating a greater perceived competence. Previous research has demonstrated good internal consistency of this instrument (α = .91) (45).

Self-efficacy: Participants’ confidence in their ability to complete HIIT or MICT was assessed using a 5-item self-efficacy scale adapted from Jung and colleagues (17). For each item, participants were asked “How confident are you that you can perform (1-5, depending on the question) bout(s) of exercise a week for the next four weeks that is just like the one you performed today?”. Items were rated on a scale from 0% to 100% in 10% increments. Responses of the five items were averaged to provide a single task self-efficacy score for use in analysis. This scale has demonstrated good internal consistency (α = .95) in previous research relating to HIIT and MICT (17).

Exercise Enjoyment: Participants rated their post-exercise enjoyment of the exercise bout 5-minutes following HIIT or MICT using the 18-item Physical Activity Enjoyment Scale. Each item is rated on a 7-point Likert Scale with two opposing verbal markers anchoring each end of the scale (19). For example, items are anchored with opposing markers such as "I enjoy it – I hate it" or "I find it energizing – I find it tiring". Higher scores indicated higher levels of enjoyment with possible scores ranging from 18 to 126. Previous research has demonstrated good internal consistency of this scale (α = .96) (19).

Anthropometric Measures: Height was measured to the nearest 0.1 cm using a stadiometer (SECA, Hamburg, Germany) and weight was measured to the nearest 0.1 kg using a scale (Continental Scale Cop., Bridgeview, IL). Body fat percentage, fat mass, and fat free mass were estimated using air displacement plethysmography (COSMED USA Inc, Concord, CA). Standard procedures were utilized in the collection of all anthropometric and body composition data.

Cardiorespiratory Fitness: VO_{2peak} and PPO were determined during a continuous incremental exercise test on an electronically braked cycle ergometer (Lode Corvival, The Netherlands). Expired gases were measured using breath-by-breath analysis with a metabolic cart (TrueOne 2400, ParvoMedics, Sandy, UT). Heart rate was continuously monitored throughout the duration of the test (Polar Electro, Lake Success, NY). Resting data were collected with the participant seated on the cycle ergometer prior to the 3-minute warm-up. The warm-up involved cycling at a workload of 50 watts at a cadence of at least 50 revolutions per minute. The workload increased 1-watt every 3-seconds after the warm-up for the remainder of the test. The participant continued cycling until they reached volitional exhaustion, or they could no longer maintain a cadence of 50 revolutions per minute. Verbal encouragement was provided throughout the duration of the test. VO_{2peak} was defined as the highest 15-second moving average oxygen consumption obtained during exercise (37). PPO was defined as the highest workload achieved during exercise in watts.

Statistical Analysis

Prior to analysis, data were screened for outliers and normality using box plots and the Shapiro-Wilks test, respectively. Differences in psychological outcomes were analyzed using a 2 (group) x 3 (time: pre-, mid-, and post-intervention) repeated measures factorial ANOVA. Differences in physiological outcomes were analyzed using a 2 (group) x 2 (time: pre- and post-intervention) repeated measures factorial ANCOVA with sex as a covariate. Bonferroni post hoc tests were utilized, when necessary, to determine where differences occurred. All data were analyzed in SPSS v25.0 (IBM Corporation, Armonk, NY) with an alpha level set at .05.

RESULTS

Participants had an average age and body mass of 21.4 ± 2.2 years and 69.5 ± 16.2 kg, respectively. The majority of participants were female (65%; *n* = 13). All 20 young adults self-reported they were physically inactive at baseline. However, 75% of all participants reported they had participated in HIIT at least once prior to enrollment in the study. Compliance to HIIT and MICT was good with participants completing 99% and 98% of the training sessions, respectively (p = .36). There were no known adverse events during HIIT or MICT across the six weeks of training.

Perceived competence significantly improved overall from session one (4.7 ± 0.2) to session nine (5.4 ± 0.1; p = .01; η_p^2 = .35; see Figure 2) with no further improvement at session eighteen (5.2 ± 0.2; p = .18). No significant group (p = .67; η_p^2 = .01) or interaction effects (p = .46; η_p^2 = .04) were observed.

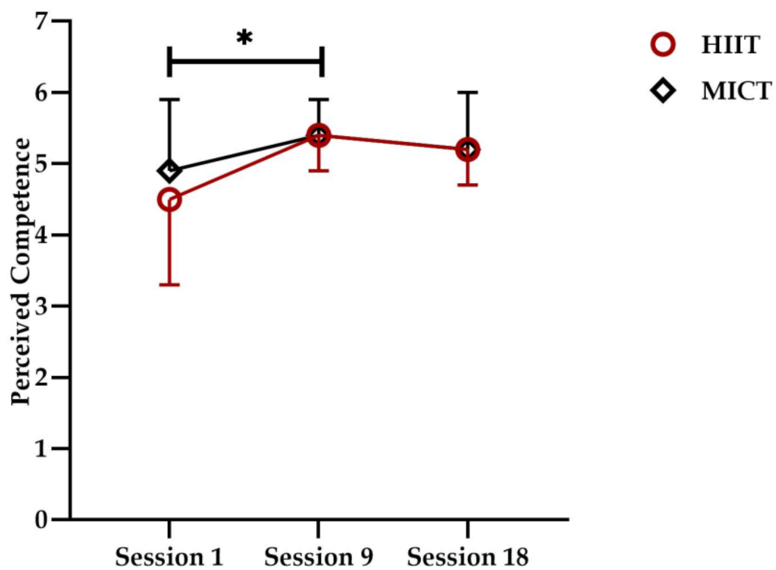

Figure 2. Differences in perceived competence over the intervention (i.e., sessions 1, 9, and 18) and between conditions (i.e., HIIT in red and MICT in black). *Significant difference between Session 1 and Session 9, p = .01. HIIT = high-intensity interval training; MICT = moderate-intensity continuous training.

Enjoyment did not significantly change across supervised training (i.e., session one to session nine; p = .07). During unsupervised training enjoyment decreased significantly (p = .003; η_p^2 = .24). At session nine, the average enjoyment for participants in the HIIT group was 98.9 ± 12.8 and 103.0 ± 18.0 for participants in the MICT group. Average enjoyment decreased at session eighteen to 96.8 ± 10.8 and 91.5 ± 20.7 in the HIIT and MICT groups, respectively. No differences in enjoyment were observed between session one (HIIT: 92.2 ± 16.0; MICT: 98.9 ± 16.3) and session eighteen ($p \geq .99$). There were no differences between groups (p = .79; $\eta_p^2 < .01$). However, there was a significant interaction between time and training group (p = .02; η_p^2 = .20).

There were no significant changes in self-efficacy across the training intervention (p = .07; η_p^2 = .14). However, a nonsignificant increase in self-efficacy scores across supervised training was observed for HIIT (Δ 8.6) and MICT (Δ 5.8). Self-efficacy scores were slightly lower for HIIT compared to MICT overall, although not significant (p = .40; η_p^2 = .04; see Figure 3).

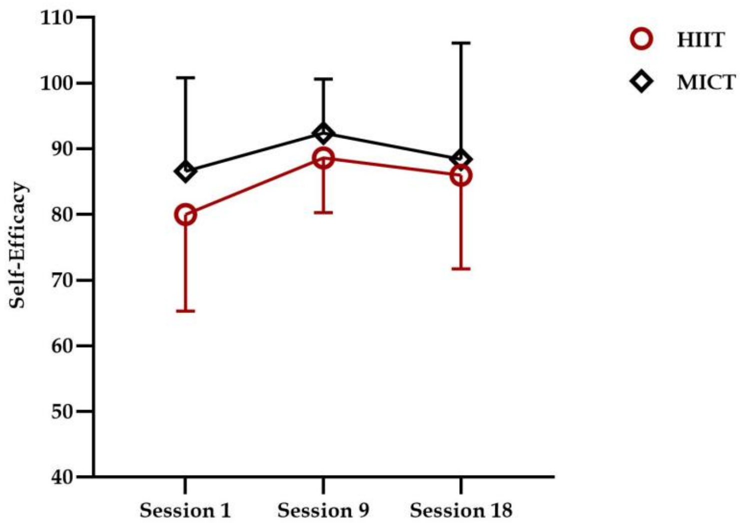

Figure 3. Differences in exercise self-efficacy over the intervention (i.e., sessions 1, 9, and 18) and between conditions (i.e., HIIT in red and MICT in black). HIIT = high-intensity interval training; MICT = moderate-intensity continuous training.

Physiological outcomes across the six weeks of training are depicted in Table 1. VO_{2peak} (Δ 2.8 ml ·kg^{-1} min^{-1}; p = .03; η_p^2 = .24) and PPO (Δ 20.2 watts; p = .01; η_p^2 = .38) significantly improved across six weeks of training for both groups. There were no significant differences between groups (VO_{2peak}: p = .20, η_p^2 = .10; PPO: p = .74, η_p^2 = .01) or interaction effects (VO_{2peak}: p = .38, η_p^2 = .07; PPO: p = .40, η_p^2 = .04).

Body fat percentage (p = .68; η_p^2 = .01), fat mass (p = .44; η_p^2 = .04), and fat free mass (p = .33; η_p^2 = .06) did not significantly change across six weeks of training. No differences between groups (p = .39 - .27; η_p^2 = .01 - .04) or interaction effects (p = .19 - .27; η_p^2 = .03 - .10) were observed for any of the body composition variables.

DISCUSSION

The purpose of this study was to evaluate the psychological and physiological responses to a six-week, partially supervised HIIT intervention, compared to MICT, in previously inactive, young adults. Enjoyment and perceived competence both changed significantly across the training intervention. Perceived competence increased during supervised training (i.e., weeks one to three), while enjoyment declined across unsupervised training (i.e., weeks three to six), for both HIIT and MICT. Enjoyment during unsupervised training declined more for MICT than HIIT suggesting that training type, setting, and/or experience with the training type may influence psychological perceptions of training.

Table 1. Differences in physiological responses to HIIT and MICT over six weeks of training.

Variable		Pre			Post		
Absolute VO_{2peak} (L ·min^{-1})	HIIT	2.48	±	0.16	2.62	±	0.14*
	MICT	2.46	±	0.30	2.67	±	0.29*
Relative VO_{2peak} (mL ·kg^{-1} ·min^{-1})	HIIT	34.46	±	2.38	36.51	±	2.27*
	MICT	36.58	±	2.33	40.12	±	2.60*
Peak power output (watts)	HIIT	211.40	±	13.04	229.50	±	11.82*
	MICT	206.10	±	19.83	228.40	±	20.32*
Relative peak power output (watts ·kg^{-1})	HIIT	2.95	±	0.20	3.13	±	0.21*
	MICT	3.14	±	0.16	3.48	±	0.17*
Time to exhaustion (min)	HIIT	8.13	±	2.06	9.03	±	1.86*
	MICT	7.87	±	3.13	8.97	±	3.20*
Respiratory exchange ratio	HIIT	1.22	±	0.03	1.24	±	0.03
	MICT	1.19	±	0.02	1.21	±	0.01
Peak heart rate (bpm)	HIIT	187	±	2	184	±	4
	MICT	186	±	4	190	±	3
Body fat (%)	HIIT	23.38	±	4.42	22.91	±	4.01
	MICT	21.96	±	2.59	22.56	±	2.44
Fat mass (kg)	HIIT	17.87	±	4.24	17.63	±	4.00
	MICT	14.41	±	2.02	14.87	±	1.94
Fat free mass (kg)	HIIT	55.54	±	3.71	57.79	±	3.43
	MICT	51.20	±	4.64	51.15	±	4.58

Note. *Significantly different to pre, $p < .05$. bpm = beats per minute; HIIT = high-intensity interval training; MICT = moderate-intensity continuous training; SD = standard deviation; VO_{2peak} = peak oxygen consumption.

These findings support those of Heisz et al. (13) who demonstrated a significant increase in exercise enjoyment across six weeks of supervised HIIT, with no significant changes in enjoyment for MICT. The decrease in enjoyment of MICT in the present study may be attributed to the change in training environment at the midpoint of the training intervention (i.e., supervised to unsupervised training). This suggests that exercise enjoyment may be influenced by training environment in physically inactive, young adults. This is in contrast to findings from Vella et al. (42) who found no significant differences between enjoyment of HIIT and MICT across eight weeks of training. Although Vella et al. (42) utilized a similar study design to the current study, they did not measure enjoyment at the interchange between supervised and unsupervised training making it difficult to compare results. Most of the current research investigating enjoyment of HIIT has been conducted completely (3, 13, 40) or in part in laboratory-based settings (42), which limits the generalizability of the findings to public health. Future research may be beneficial to examine enjoyment of HIIT across differing exercise settings to strengthen our understanding of the effect of exercise setting on enjoyment.

According to the self-determination theory, an individual will be motivated to complete a task if their basic psychological needs of competence, autonomy, and relatedness are met (6). Previous research has suggested that of the three variables, perceived competence may be the most indicative of exercise behavior (39). A novel finding of our study is that perceived competence significantly improved during three weeks of supervised HIIT and MICT. This is the first study, to our knowledge, that has investigated perceived competence of HIIT compared to MICT across an exercise intervention. There were no significant changes in perceived competence across unsupervised training in either group. Yet, the improvements from supervised training were maintained despite the change in training environment at the midpoint of the training intervention. Therefore, it may be beneficial to provide physically inactive individuals with support when beginning a new exercise program to help facilitate improvements in perceived competence. This has important implications regarding physical activity behaviors as perceived competence has been positively associated with physical activity levels (9, 27) and exercise adherence (43).

The mechanism for the observed increase in perceived competence is unknown; however, we hypothesize it may be attributed to several factors. First, participants may have felt more capable after three weeks of training due to increased familiarity with the training modality. Findings from Kinnafick et al. (22), which demonstrated increases in perceptions of competence through learning a new training modality in a 10-week group-based HIIT intervention, support this hypothesis. Additionally, the perceived difficulty of training may have decreased after three weeks due to short-term physiological training adaptations, such as increases in oxidative enzymes (24). However, there was no additional increase in competence during the unsupervised training portion, which would be expected if training adaptations were the primary mechanism. Lastly, the presence of a research investigator to oversee supervised training sessions may have played a role in the initial increase in perceived competence. The investigator was responsible for setting up all training equipment during supervised training; however, this responsibility fell on the participant when they were training independently for the latter three weeks. This additional responsibility and potential social facilitation of the investigator may have influenced participants' perception of their skill regarding the training modalities.

Task self-efficacy scores were relatively stable over the course of the exercise intervention, with a marginal increase noted at the midpoint of the training intervention for both HIIT and MICT. This is supported by previous research indicating no significant differences in self-efficacy between HIIT and MICT (17, 25). Locke et al. (25) observed increases in task self-efficacy over two weeks of supervised HIIT and MICT, which contradicts our findings. However, the observed increase in self-efficacy was not maintained during free-living training (25). This suggests that participants may be more confident in their ability to complete HIIT and MICT in supervised training settings. Self-efficacy is an important consideration with regards to HIIT as it has been associated with enjoyment of exercise (14) and may therefore, indirectly influence exercise adherence.

VO_{2peak} and PPO significantly improved across the six weeks of training, with no differences between groups. This supports previous findings that six weeks of structured training improves cardiorespiratory fitness in previously inactive adults, despite training occurring in both laboratory-based and free-living conditions (11, 44). Improvements in VO_{2peak} between 6% and 8% have been demonstrated across six-weeks to 12-months of HIIT in previously inactive adults (7, 10, 13, 18). These findings are in line with the 7% (2.8 $ml \cdot kg^{-1} \cdot min^{-1}$) increase in VO_{2peak} and 9% (20 watts) increase in PPO demonstrated in the present study. These moderate improvements in VO_{2peak} may be clinically meaningful as previous research has found improvements of 3.5 $ml \cdot kg^{-1} \cdot min^{-1}$ are associated with a 20% decrease in cardiovascular-related mortality risk in healthy adults (30). Although there were no group differences in cardiorespiratory fitness, it is important to consider that the HIIT protocol utilized in this study was approximately half the length of the MICT protocol. Thus, comparable improvements in cardiorespiratory fitness were achieved for HIIT and MICT, despite a substantially smaller time commitment for HIIT. This finding provides support for HIIT as a beneficial, time-efficient alternative to traditional MICT.

Unlike cardiorespiratory fitness, no significant differences were observed in body composition for HIIT or MICT. These finding support those of Vella et al. (42) who found no differences in body composition across eight-weeks of HIIT or MICT in overweight or obese adults. Both the present study and Vella et al. (42) had relatively short intervention lengths, six and eight weeks respectively, which may not have been an adequate amount of time to observe changes in body composition. Longer intervention lengths, such as 12-months of HIIT, have demonstrated significant improvements in body composition (18), but these findings are inconsistent (38). It is noteworthy that dietary intake was not monitored in the current study. Previous research has suggested that dietary changes combined with exercise improve body composition more than exercise alone (33). Future research may be beneficial to closely monitor dietary intake while examining body composition longitudinally over a period of HIIT.

The findings from the present study are limited by several factors. Namely, this study lacks a non-exercise control group, which increases the risk of bias through the Hawthorne effect (28). The decision to utilize two exercise groups was informed by our research question to determine the psychological and physiological responses to the two exercise modalities. Furthermore, the study had a relatively small sample size and thus, findings may not be generalizable to the larger population due to the increased risk of a type II error. Additionally, the HIIT and MICT protocols utilized in this study were not matched for energy expenditure or overall time commitment. The shorter duration for the HIIT protocol was chosen to highlight the acknowledged benefit of this training compared to MICT (i.e., overcoming the barrier of perceived lack of time). The training intervention was also short in overall duration, with only six weeks of training, which may not be sufficient time to observe changes in physiological or psychological responses to training. Last, the change of training setting (i.e., supervised to unsupervised) at the mid-point of the intervention may have confounded results and limited the precision of training intensity. However, this delimitation was intended to mirror the process of transitioning from exercising under the supervision of an exercise professional to exercising independently.

Overall, findings from the current study suggest that HIIT is a time-efficient, enjoyable alternative to traditional MICT in previously inactive, young adults. The differences observed in exercise enjoyment across the exercise intervention suggest that enjoyment may be a dynamic psychological construct influenced by factors such as training setting and fitness level. Therefore, it is important to examine psychological responses to training longitudinally and in free-living training conditions to better understand how exercise is perceived, particularly in physically inactive individuals. A novel finding of this study was that perceived competence significantly increased across three weeks of supervised training for both HIIT and MICT. This suggests that it may be important provide individuals with support at the beginning of a new exercise program, as perceived competence has been positively associated with exercise engagement (43). Cardiorespiratory fitness improved across six-weeks of training to a similar extent for HIIT and MICT. Therefore, it may be beneficial to let factors, such as enjoyment and preference, guide the choice in training type. Although recent research, and the current findings, have furthered our understanding of HIIT in previously inactive populations, more research is necessary to recommend HIIT as an efficacious public health strategy to improve physical activity engagement. Future research should aim to understand how best to support individuals in the transition from supervised to unsupervised exercise training to promote continued engagement in physical activity and positive psychological responses to training. Presently, HIIT should be considered a beneficial tool in promoting engagement in physical activity; however, there is no one-size fits all exercise prescription. Individuals should explore different combinations of HIIT and MICT to optimize their exercise enjoyment and adherence.

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