ORIGINAL ARTICLE

Effect of psychological skills intervention on exercise adherence among university staffers in Nigeria

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ABSTRACT

This study examined the effect of psychological skills interventions (PSIs) (goal setting, positive self-talk and a combined intervention) on exercise adherence among university staffers in South-west, Nigeria. This study employed the post-test-control group experimental design. 107 participants were recruited and randomly assigned to four different groups: goal setting (n = 26), positive self-talk (n = 26), combined goal setting and positive self-talk (n = 27), and control (n = 28), age ranged between 23 and 64 years. All groups engaged in a 13-week structured exercise programme, but only the experimental groups received psychological skills training. Exercise programme prescriptions of the American College of Sports Medicine and Adapted Educational talk on PSIs were used. The participants completed Goal Orientation in Exercise Measure (GOEM), Self-Talk Use Questionnaire (STUQ) and Combined Goal Setting/Positive Self-Talk Questionnaire (CGSPSQ), and attendance logbooks were completed by the participants. The data were analysed using T-test, Analysis of Variance (ANOVA) and Scheffe Post-hoc test. The study indicated significant differences in exercise adherence between each experimental group and the control group ($p < .05$). The combined PSI demonstrated the highest exercise adherence rate (67.33%), followed by goal setting (60.26%) and positive self-talk (52.56%), while the control group recorded the lowest (37.09%). PSI positively influenced exercise adherence, with combined goal setting and positive self-talk indicating most effective. The study emphasized the importance of integrating PSI into workplace health and wellness programmes to enhance long-term physical activity participation. Recommendations are made.

Keywords: Exercise adherence, Goal setting, Psychological skills intervention, Positive self-talk, University staffers.

Cite this article as:
Adekoya, A. F., Osiesi, M. P., Ipinmoroti, O. A., Aribamikan, C. G., Oguntuase, S., B., Ogunbamowo, W. B., & Ayenigbara, E. T. (2026). Effect of psychological skills intervention on exercise adherence among university staffers in Nigeria. *Journal of Human Sport and Exercise, 21*(3), 1168-1180. https://doi.org/10.55860/f230pw58

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Submitted for publication April 01, 2026.
Accepted for publication May 04, 2026.
Published June 18, 2026.
Journal of Human Sport and Exercise. ISSN 1988-5202.

doi: https://doi.org/10.55860/f230pw58

INTRODUCTION

Physical inactivity remains one of the global public health concerns of the 21st century, as it contributes heavily to the burden of non-communicable diseases (NCDs) such as cardiovascular disease, type 2 diabetes and cancer (Gao et al., 2025). The benefits of regular physical exercise are well-documented (Cabo et al., 2025; Caparrós Pons et al., 2023; Oguntuase et al., 2021). Despite several pieces of evidences, there exists a strong persistent gap between knowledge of these benefits and continuous participation in physical exercise, a situation referred to as "*intention-behaviour gap*" (Rhodes & de Bruijn, 2013). This gap is prevalent especially among adult working populations, who often associate primary barriers to regular participation in exercise to lack of time, work-related fatigue, demotivation and lack of space to exercise (Souza et al., 2022; Odunaiya et al., 2021; Jaiyeoba & Oguntuase, 2019).

These challenges alongside rising rates of NCDs is common in most societies around the world without the exemption of middle and lower income countries like Nigeria (Olamide et al., 2023; Oguntuase et al., 2021). The Nigerian working adult populations, including university staffers face unique diverse sociocultural and infrastructural challenges, which involve demanding workloads, economic stressors, limited access to recreational facilities and lack of essential equipment (Odunaiya et al., 2021). Consequently, exercise adherence - defined as the degree at which an individual's behaviour meets with agreed recommendations for exercise programme in terms of frequency, duration and intensity (Rivera-Torres, Fahey & Rivera, 2019), remains critically low. Bridging the intention-behaviour gap in this specific population requires innovative, evidence-based and cost-effective strategies.

Two fundamental psychological skills that have received substantial empirical support are goal setting and positive self-talk. These mental resources can substantially help participants to engage in regular participation of physical activity and enhance sustained participation. Goal setting is a mental tool that specifies what an individual aims to accomplish, and it can immensely enhance performance (Mellalieu et al., 2006). Goal-setting should be specific, measurable, challenging, attainable, exciting, and time-bound. Effective goal setting has been shown to increase physical activity participation, enhance self-efficacy and sense of accomplishment, and presents a framework for self-monitoring (Swann et al., 2023; Howlett et al., 2019; Meade et al., 2019). Positive self-talk involves verbalization directed toward oneself (Hall et al., 2014). It is the use of optimistic, instructional, or motivational self-statements to override negative ones (e.g., "*I am too tired*") that often lead to exercise avoidance (Hardy et al., 2009). Research indicates that self-talk is a trainable skill that can be developed and applied to achieve desired goals (Hall et al., 2014). As a self-regulation skill, self-talk can be used to change one's thoughts, behaviours, increase competence and emotional responses, making it particularly relevant for examining exercise-related challenging behaviours (Puddister et al., 2021; Conley, 2019; Ives, 2011; Hardy et al., 2009).

Studies have shown significant effectiveness of PSIs when implemented independently (Meade et al., 2019; Hardy et al., 2009). Combining PSIs like goal setting and positive self-talk can yield synergistic result by concurrently addressing multiple factors affecting exercise adherence. Specifically, goal setting functions as a structural behavioural roadmap, while positive self-talk functions as a spontaneous motivational resource required for facilitating persistence in the face of challenges (Jones & Mattie, 2024; Papaioannou et al., 2004). This combined approach agrees with Multi-Process Action Control (M-PAC) framework (Rhodes, 2017), which accentuates three layers of connected progressive processes (reflective, regulatory, reflexive). This denotes that behaviour change toward exercise adherence is a progressive process that emerges from intention formation to sustained efforts and habit maintenance which is driven by the dynamic interaction of reflective, regulatory and reflexive processes.

Goal setting and self-talk establishes the structured planning for action and strengthened by automated drive, which effectively bridges intention-behaviour gap, thereby enhancing long-term consistency required for adherence (Rebar & Rhodes, 2020). The university remains a strategic and ideal setting for the implementation of health-promotion interventions. As institutions committed to the generation and dissemination of knowledge, universities have a keen interest in safeguarding and promoting the well-being of staff, whose health directly has significant impacts on innovation, productivity and institutional reputation (Proper & van Oostrom, 2019). Workplace wellness programmes that integrate psychological skill-building transcend the common provision of physical facilities (e.g., gymnasiums) to address the underlying psychological determinants of exercise adherence.

Psychological skills interventions (PSIs) have been recognized as catalyst that equips individuals with cognitive tools to self-regulate their behaviour, manage internal barriers and sustain motivation over time (Lange-Smith et al., 2023; Tod et al., 2011; Zhang et al., 2025). Though a handful of PSIs have been employed for enhancement of sport skills and performance such as goal setting, positive self-talk, concentration, imagery, mindfulness among others (Weinberg & Gould, 2024; Oguntuase & Sun, 2022; Adegbesan, 2009); it has not been sufficiently utilized among Nigerian exercisers for exercise adherence especially in areas of fitness and wellness.

Against this backdrop, this present study examined the effect of psychological skills interventions (PSIs) (goal setting, positive self-talk and a combined intervention) on exercise adherence among staff of a university in South-west, Nigeria. Accordingly, this study hypothesizes that: (i) there would be a significant difference in exercise adherence between goal setting and control group. (ii) There would be a significant difference in exercise adherence between positive self-talk and control group (iii) there would be a significant difference in exercise adherence between combined psychological skills of goal setting and positive self-talk and control group.

METHODS

Participants

This study employed randomised post-test control group experimental design. The participants were one hundred and seven (n = 107) university staff [Academic, n = 52 (48.6%); Non-Academic, n = 51.4%], male (n = 48) 45%, female (n = 59, 55%). The participants were assigned into four groups (Group 1 (Goal setting), n = 26; Group 2 (Positive Self-talk), n = 26; Group 3 (Combined Goal setting and Positive self-talk), n = 27; Group 4 (Control), n = 28). The first three groups served as experimental which received PSIs intervention of goal setting, positive self-talk and combined goal setting and positive self-talk respectively, while the fourth group served as control, which received no intervention. All the four groups participated in the same exercise programmes for a period of thirteen (13) weeks. All the participants were active staff members of a university in South-west, Nigeria. They were cooperated and fully participated in the course of the programme voluntarily.

Measures

Goal Orientation in Exercise Measure (GOEM)

Goal Orientation in Exercise Measure developed by Petherick and Markland (2008) was used to assess the participants' goal orientation in exercise contexts. GOEM contains 10 items scale with two subscales dimension: Task Orientation and Ego Orientation. Each subscale has 5 items. For instance, Task Orientation items include "*I feel successful in exercise when I learn a new skill*", and "*I feel successful in exercise when I try my hardest*". Ego Orientation items include "*I feel successful in exercise when others don't do as well as*

me" and "*I feel successful in exercise when I am the best*". GOEM is rated on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Higher scores on task orientation indicate stronger motivation driven by personal improvement, mastery and effort. Similarly, higher scores on ego orientation indicates stronger primary motivation driven by social comparison and demonstrating superior norm-based ability. The Cronbach's alpha coefficient was measured as .82 in this present study.

Self-Talk Use Questionnaire (STUQ)

The Self-Talk Use Questionnaire which was developed by Hardy et al. (2005) was used to assess the frequency at which participants used different types of positive self-talk during exercise. STUQ is a 21-item questionnaire with four subscales which include cognitive mastery (6 items, e.g., "*How often do you use self-talk to improve your concentration?*"), cognitive efficiency (5 items, e.g., "*How often do you use self-talk to psych yourself up after something bad happens?*"), emotion control (5 items, e.g., "*How often do you use self-talk to increase your effort?*") and motivation (5 items, e.g., "*How often do you use self-talk to motivate yourself to work hard?*"). STUQ is rated on a 5-point Likert scale based on frequency of 1 = Never to 5 = Very Often. A high rating on STUQ indicates a greater reported frequency of using self-talk. The internal consistency reliability of STUQ in this present study was .79.

Combined Goal Setting/Positive Self-Talk Questionnaire (CGSPSQ)

Self-report Combined Goal Setting/Positive Self-Talk Questionnaire (CGSPSQ) was specifically developed to assess combined goal setting and positive self-talk of university staff in response to structured exercise programme. It consists of 7 items (e.g., "*writing down my exercise goals and writing positive statement against my self-doubt increase my commitment*", "*the use of positive statement reminds me of my goals whenever I get discouraged making me to concentrate better*"). CGSPSQ is rated on a 5-point Likert scale ranging from 1 = Never to 5 = Always. Cronbach alpha reliability value of CGSPSQ was found to be .76.

Interventions

Goal setting protocols

Goal setting guidelines "*SMART*" by Cox (2002) and goal setting acronym "*SMARTS*" by Weinberg and Gould (2011) were adopted for this study. The acronym "*SMARTER*" was coined out to give educational talk on goal setting to the participants in the goal setting group 1. The outline of SMARTER guideline includes;

"*S*" - Setting specific goals: to attend an exercise programme 3 times in a week for 3 months. It is important to note that participation will bring about a whole lot of fun and enjoyment and positively impact on their well-being.

"***M*"-** Measurable: Having personal exercise logbook to record progress using dates and the number of days per week. This sort of recording system will help to sustain progress towards achieving attendance goals.

"*A*" - Action-oriented: Action-oriented goal is not one that is thought about and then forgotten. Pursue your spark by using fitted fitness outfit. Wear the clothes and shoes. Make a mental shift on how good you look in a fitted fitness colourful outfits. Think about "playing out" and not "work out" and natural exhilaration that comes from meeting and making friends. Take a step today and stop procrastination. Journey of one thousand miles starts with a step. The best time to start exercise is when one is young while the second best time is now. Take a step to complete the first one month programme and subsequent months will be easier.

"*R*"- Reward Self: For the first month.

"*T*" - Time Frame: Set out to exercise for an hour, between 7am and 8am for at least 12 times in a month and at least, 36 times in 3 months.

"*E*" - Evaluation: At the end of the first month, exercisers should evaluate the number of times they attended the programme. That is, whether they have achieved the 12x target of attendance they set for themselves or not. Adherence needs to be achieved first before all other intending motives can be attained. Trainers should give feedback of attendance record to exercisers individually at the end of each month.

"*R*" - Reinforcement: Do not relent on the gains and strive to maintain or achieve more. If you have not achieved anything, adjust your personal programme, carry along your significant other and seek for more support from him or her.

Positive self-talk protocols

Positive self-talk guideline and principles of Cox (2002), Hardy and Hall (2005) were modified by the research team. The outlines of the modified positive self-talk guideline include;

1. A plain paper and a pen were given to every participant and were told to think about the meaning of the phrase "*self-talk*".
2. They were asked to think of a time when they made a huge mistake such as not keeping timing for important meeting (s), or when they ceased participation in an exercise programme and give examples in situations.
3. Exercisers were asked to remember what they said to themselves in that situation.
4. They were asked to write it down briefly.
5. Exercisers were instructed to get a partner and read out what they wrote loud to their partner, similar to the way they would say it to themselves.
6. It was explained to the exercisers that they would probably never say the things that they say to themselves when they make mistakes or cease participation to another person. Why do they treat themselves this way? Emphasis was put on the fact that negative self-talk is detrimental to their participation, performances and is unproductive.
7. The exercisers were asked to rephrase their original self-talk into a more positive manner and let them read it out to their partner for some feedback.
8. The exercisers were asked to create a long term positive self-talk and commit it to training logs. The participants were helped to monitor their own self-talk in changing their self-talk behaviours. Examples were given thus:

Table 1. Positive self-talk protocols.

Negative self-talk	**Positive self-talk**
"My condition remains the same even if I exercise".	*"I see myself a fitter person as I exercise"*
"I doubt if I can stick to this exercise programme".	*"Just hang in there a little longer".*
"My condition remains the same even if I exercise"	*"I see myself a fitter person as I exercise".*
"I doubt if I can stick to this exercise programme".	*"Just hang in there a little longer"*
"Don't let me start what I can't finish"	*"It's time for a change or if I don't effect a change, there won't be a change"*
"I have never been timing conscious" or "African-time is in my blood."	*"I am a responsible and time conscious exerciser (person)."*
"Let me rest today, I'll go next tomorrow".	*"Just take one day at a time and make exercise fun."*

Note: Do this at home and internalize before going for the exercise.

The combined psychological intervention of goal setting and positive self-talk

This followed the principles of Cox (2002) in the teaching of confidence and positive self- talk; as well as the principles outlined by Weinberg and Gould (2011) in the teaching of goal setting and positive self-talk to

athletes. After modifying these combined skills of goal setting and positive self-talk, an acronym "*REGUSTE*" was coined. That is:

"***R***" Remember; "*E*" Exercise; "*Goals*" "*U*" Using "*S*" Self "*T*" Talk "*E*" Encourage

"*R*" Remember: Have focus; be dedicated; be passionate. You can't do what you have always done and not expect to get what you have always got. If you want a different outcome a good physique make different decisions; change from sedentary lifestyle.

"*E*" Exercise that is planned and purposive yields fruitful and desired results.

"*G*" Goals set should be specific realistic, attainable and measurable e.g. setting specific goals: to attend an exercise programme 3 times in a week for 3 months. It is important to note that participation will bring about a whole lot of fun and enjoyment and impact positively on participant's well-being.

Realistic: Setting out between 6.30am and 6.35am and exercising between 7am and 8am on Tuesday, Thursdays and Saturdays weekly for a month and subsequently for 2 and 3 months is achievable.

Attainable: Goals should be set on short term. It should be programmed from the first week to first month and to 3 months. That is if you must climb a six storey building in a situation where the elevator malfunctions you can start by telling yourself that I can get to the first floor, and take a minute rest, till I reach my goal. Set a goal to attend 3 times programme in the first week; then plan for the second week; third week and continue till you reach your goal(s).

Measurable: Have a personal exercise logbook to record dates and the numbers of days per week as charted under goal setting skill.

*"**U" "S" "T"*** **Using Self Talk**: Identify some negative thoughts and draw a chart as contained in the changing of negative self-talk to positive self-talk, and as brief as possible.

"*E*" The exercisers were taught to encourage themselves through reward as contained in reward and reinforcement under goal setting.

Procedure

Ethical clearance was obtained from the first author's higher institution of learning (FUOYE/FED/KHE-HUK/301-2025-06/IRE). Both academic and non-academic staff of the sampled university participated in the study. Upon securing informed consent from the participants, they were randomly assigned into four groups of three experimental and one control. The education phase of the psychological skills teaching took place on specified dates with the three experimental groups differently. Educational talk was given to each experimental group for a period of 120 minutes. Exercise programme prescriptions of the American College of Sports Medicine (ACSM 2007) was utilized and monitored for a period of thirteen weeks to both experimental and control group. The exercise programme included walking, jogging, stretching and minor games.

The participants in both experimental and control groups were told about the varied exercise programme, and to attend the exercise programme actively three times in a week (Tuesdays, Thursdays and Saturdays) between 7.00am and 8.00am. Four different locations in a university campus were used for the exercise programmes of each group. The psychological skills training designed for each experimental group was reviewed for 10 – 15 minutes once a week from the 2nd week of the exercise programme to the 7th week. Tuesday was for goal setting group; Thursday was for positive self-talk group and Saturday was for the combined goal setting and positive self-talk groups. Post-test was conducted for the participants after the 13-weeks of exercise programmes. Eight (8) research assistants were employed to provide compliance and feedback on attendance of the participants.

Data analysis

Descriptive statistics of mean, range, frequency counts and percentages were employed to analyse the demographic characteristics of the participants, while the main analyses were conducted through inferential statistics of t-test, Analysis of Variance (ANOVA) and Scheffe post-hoc analysis. Analyses were done using SPSS statistical software version 26.0.

RESULTS

Table 2. T-test analysis on the difference between goal setting and control groups.

	Mean	N	SD	Std Error Mean	Df	T- test	Sig.
Goal setting	22.5385	26	8.59875	1.68635			
Control	20.1923	28	29.06134	5.69940	27	3.863	.001

*Note. *p < .05.*

Results on Table 2 show that there was a statistically significant difference in exercise adherence between goal setting and the control group. Goal setting intervention group demonstrated higher scores (mean = 22.54, t-value = 3.863, $p < .05$) than the control group. Thus, goal-setting intervention had a positive effect on exercise adherence of university staff.

Table 3. T-test analysis on the difference between positive self-talk and control groups.

	Mean	N	SD	Std Error Mean	Df	T- test	Sig.
Positive self-talk	20.5000	26	5.84637	1.14657			
Control	20.1923	28	29.06134	5.69940	27	3.335	.003

*Note. *p < .05.*

Results on Table 3 indicate that there was a statistically significant difference in exercise adherence between the positive self-talk and the control groups. Positive self-talk intervention group demonstrated higher scores (mean = 20.50, t-value = 3.335, $p < .05$) than those of the control group. Positive self-talk positively influenced exercise adherence among the sampled staff.

Table 4. T-test analysis on the difference between combined goal setting and positive self-talk and control groups.

	Mean	N	SD	Std Error Mean	Df	T- test	Sig.
Goal setting /Positive self-talk	29.2593	27	6.83088	1.31460			
Control	20.1923	28	20.50841	5.48645	27	9.523	.000

*Note. *p < .05.*

Results on Table 4 showed that there was a highly significant difference between the combined intervention (goal setting and positive self-talk) and the control groups. Combined intervention group demonstrated higher scores (mean = 29.26, t-value = 9.523, $p < .05$) than the control group. The combined intervention had the strongest effect on exercise adherence of the staffers.

Table 5. One way analysis of Variance (ANOVA) of experimental groups one (goal setting), two (positive self-talk) and three (combined goal setting and positive self-talk) as they influence adherence of participation in exercise programme.

	Sum of Squares	Df	Mean Square	F	Sig.
Between groups	3063.936	3	1021.312	20.638	.000
Within groups	5097.111	103	49.187		

Results on Table 5 show that there was a significant overall difference in exercise adherence among the four groups (F = 20.64, $p < .05$). This implies that at least one group differed significantly from the others without performing equally in exercise adherence among these staffers.

Table 6. Post-hoc analysis (Scheffe) to determine the significance of all the differences between all pairs of means in respect of all psychological skills as they influence exercise adherence.

(I) Groups	(J) Groups	Mean difference (I – J)	Std. Error	Significance
1.00	2.00	2.03846	1.95107	.779
	3.00	-6.72080*	1.93292	.009
	4.00	8.07418*	1.91591	.001
2.00	1.00	-2.03846	1.95107	.779
	3.00	-8.75926*	1.93292	.000
	4.00	6.03571*	1.91591	.009
3.00	1.00	6.72080*	1.93292	.009
	2.00	8.75926*	1.93292	.000
	4.00	14.79497*	1.89742	.000
4.00	1.00	-8.07418*	1.91591	.001
	2.00	-6.03571*	1.91591	.023
	3.00	-14.79497*	1.89742	.000

Results on Table 6 revealed Scheffe post-hoc test that identified exactly which groups differed from each other. First, there was no significant difference in goal setting (1) and positive self-talk (2) (Mean difference = 2.03846, $p = .779$). Second, there was significant difference between goal setting group (1) and combined intervention group (3) (Mean difference = 6.72080, $p = .009$). The combined intervention was more effective than goal setting alone. Third, there was significant difference between positive self-talk and combined intervention (Mean difference = 8.75926, $p = .000$). The combined intervention was more effective than positive self-talk alone. Fourth, there was significant difference between each of the three experimental and control groups. Each PSI was effective in exercise adherence compared to the control group.

From the foregoing, all the three PSIs (goal setting, positive self-talk and combined goal setting and positive self-talk) were effective in improving exercise adherence among university staff compared to the control group. The combined goal setting and positive self-talk intervention was the most effective, demonstrating significantly higher exercise adherence than either single intervention of goal setting or positive self-talk. There was no significant difference between goal setting and positive self-talk alone, suggesting they may be similarly effective when used independently.

DISCUSSION

The present study examined the effectiveness of psychological skills interventions (PSIs) - goal setting, positive self-talk and combined goal setting and positive self-talk on exercise adherence among university staffers in Nigeria. The findings provide empirical support for the efficacy of these interventions in promoting sustained physical activity participation. Specifically, all experimental groups demonstrated significantly higher exercise adherence compared to the control group, with the combined goal setting and positive self-talk intervention yielding the most potent effect.

Consistent with previous research, participants exposed to goal setting exhibited significantly greater exercise adherence than those in the control group. The finding aligns with Howlett et al. (2019) study that

posits that goal-setting enhances behavioural demonstration, practice/rehearsal and graded tasks. It was added that action planning and instruction on demonstration and maintenance of behaviour is associated with continuous physical activity participation. Similarly, Meade et al. (2019) review indicate that improved exercise adherence is associated with five behavioural cognitive techniques which include goal setting, instruction of behaviour, demonstration of behaviour, behavioural, practice/rehearsal and social support. Goal setting provides exercisers with clear behavioural targets and temporal benchmarks, translating intention into actionable plans. Within the Multi-Process Action Control (M-PAC) framework (Rhodes, 2017), goal setting operates primarily at the reflective and regulatory levels, supporting deliberate planning and execution of health behaviours. In the present study, the use of the SMARTER protocol provided exercisers with a clear behavioural guidance, which likely contributed to improved attendance and consistency over the 13-week exercise programme.

Furthermore, the present findings showed that the positive self-talk intervention significantly enhanced exercise adherence of university staff compared to the control group. This could be attributed to the positive self-talk training which emphasized restructuring negative self-statements into positive, instructional, or motivational affirmations possibly empowered participants to persist in the face of common barriers such as lack of time or low energy. This is in accordance with Puddister et al. (2021) findings that frequent exercisers utilized self-talk that focus on self-presentational concerns than their counterparts with less frequent exercise. The frequent exercisers reported consistent use of motivational and positive statements. It was added that self-talk provided a mental image of exercisers' behaviour towards exercise via thoughts and attitudes display. Similarly, Conley (2019) found that participants who received structured self-talk training (emphasizing positive, goal-oriented statements) showed improvements in motivation and exercise behaviour compared to control group, emphasizing the efficacy of positive self-talk to enhance commitment and adherence to exercise routines. Ives (2011) indicated that individuals who used positive and motivational self-talk were more likely to engage and maintain regular participation in physical activity compared to those who did not use self-talk.

Notably, the combined intervention of goal setting and positive self-talk demonstrated substantially higher exercise adherence than either strategy alone, indicating a clear synergistic effect. Post-hoc analyses confirmed that the combined PSI was significantly higher than both single intervention groups and control. This finding supports previous research suggesting that integrating multiple psychological skills yields stronger behavioural outcomes than isolated techniques (Papaioannou et al., 2004). From a theoretical perspective, this finding is consistent with the M-PAC model, which posits that sustained physical activity requires the interaction of reflective (intention formation), regulatory (planning and self-monitoring), and reflexive (automatic motivational processes) mechanisms (Rhodes, 2017; Rebar & Rhodes, 2020). In the present study, goal setting facilitated reflective-regulatory control by structuring exercise behaviour, while positive self-talk strengthened reflexive processes by providing immediate motivational reinforcement during moments of fatigue or resistance. Jointly, this combined approach addressed both the planning and persistence components of adherence, effectively bridging the intention–behaviour gap identified in previous literature (Rhodes & de Bruijn, 2013).

The higher influence of the combined intervention on adherence could be attributed to higher attendance rates of the participants in the intervention group compared to their control group counterparts. These findings strengthened the efficacy of multifaceted psychological interventions in workplace wellness programmes, specifically in a Nigerian university population impeded with cumbersome workloads, limited recreational facilities, and economic stressors which constrain physical activity participation (Odunaiya et al., 2021; Jaiyeoba & Oguntuase, 2019).

The lack of significant difference between goal setting and positive self-talk separately suggests that, while both are effective, neither is substantially higher than the other when applied independently. This may imply that different individuals may benefit from different psychological strategies based on personal cognitive preferences or perceived barriers to behavioural change (Tod et al., 2011). However, the combined approach offers a more generalizable potent intervention that concurrently targets both the structural (behavioural planning and regulation) and affective (motivation) dimensions of exercise adherence.

Limitations

There are some limitations in the present study. First, the study relied on self-reported scale and attendance logs, which may have been subjected to social desirability bias. Future studies could incorporate objective measures such as wearable activity trackers. Second, the sample was drawn from a single university in South-west, Nigeria, which may limit generalisability to other regions or occupational groups. Third, the 13-week exercise programme, while sufficient to detect short- to medium-term effects, does not confirm long-term maintenance of exercise behaviour. Longitudinal follow-ups should be considered. Future studies could examine the integration of other psychological skills such as imagery or mindfulness, examine moderating factors such as age or baseline fitness and test digital delivery formats (e.g., mHealth apps) to enhance scalability.

CONCLUSION

This present study provides convincing evidence that psychological skills interventions (PSIs) specifically goal setting, positive self-talk and combined approach are effective in enhancing exercise adherence among Nigerian university staff. All the intervention groups demonstrated higher exercise adherence compared to the control group, with the combined goal setting and positive self-talk intervention yielding the most significant impact. This emphasizes the potential benefits resulting from integrating structured behavioural planning (goal setting) together with motivational self-regulation (positive self-talk) to promote workplace wellness and combat malaise of physical inactivity in resource-limited settings. Organisational health policies should consider integrating structured psychological training into existing employee wellness programmes to promote sustained health behaviour change.

Recommendation

Arising from the findings of this study, it is recommended that psychological Skills Intervention should be adopted by fitness trainers in developing their training programmes so that exercise adherence is enhanced. Psychological Skills Intervention should be adopted by exercisers who desire to solve the nagging problem of drop out in exercise programmes. Psychological Skills Intervention should be adopted by policy makers in the ivory tower in fine tuning policies that relates to recreational activities especially among university staff.

AUTHOR CONTRIBUTIONS

All authors meet the criteria for authorship in accordance with established ethical guidelines. Contributions are specified according to the CRediT (Contributor Roles Taxonomy) as follows:

Conceptualisation: Adekoya, A. F., Osiesi, M. P., Ipinmoroti, O. A., and Oguntuase, S. B. Methodology: Adekoya, A. F., Osiesi, M. P., Ipinmoroti, O. A., and Oguntuase, S. B. Formal analysis: Adekoya, A. F., Osiesi, M. P., Ipinmoroti, O. A., and Oguntuase, S. B. Investigation: Aribamikan, C., Ogunbamowo, W., and Ayenigbara, T. Data curation: Adekoya, A. F., and Osiesi, M. P. Writing – original draft: Adekoya, A. F., and Osiesi, M. P. Writing – review & editing: Adekoya, A. F., Osiesi, M. P., Ipinmoroti, O. A., and Oguntuase, S.

B., Aribamikan, C., Ogunbamowo, W., and Ayenigbara, T. Supervision: Adekoya, A. F., Osiesi, M. P., Ipinmoroti, O. A., and Oguntuase, S. B. All authors have critically reviewed and approved the final version of the manuscript and agree to be accountable for all aspects of the work.

FUNDING

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

CONFLICT OF INTEREST

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this manuscript.

AI USE DISCLOSURE

In accordance with current publishing ethics and transparency recommendations, no Generative AI nor AI assisted Technologies was used during the writing process of this manuscript. The authors retain full responsibility for the content of the manuscript and confirm its originality, integrity, and accuracy.

ETHICS DECLARATION

Ethical Approval was obtained from the Research Ethics Committee of the Faculty of Education, Federal University Oye-Ekiti, Nigeria (FUOYE/FED/KHE-HUK/301-2025-06/IRE).

REFERENCES

Abuhay, H.W., Derseh, N.M., Kolbe-Alexander, T.L., Gyawali, P., & Yenit, M.K. (2024). Prevalence of physical inactivity and associated factors among adults in Eastern African countries: a systematic review and meta-analysis protocol. BMJ Open, 14(11):e084073. https://doi.org/10.1136/bmjopen-2024-084073

Adegbesan O. A. (2009). Use of imagery by athletes in Nigeria. Perceptual and Motor Skills, 108 (1), 43-50. https://doi.org/10.2466/pms.108.1.43-50

Cabo, C. A., Tomas-Carus, P., Fernandes, O, Parraca, J A., & Espad, M C. (2025). The role of physical exercise in enhancing Health, quality of life and joy among older adults. Scientific Reports, 15: 42495. https://doi.org/10.1038/s41598-025-26683-w

Caparrós Pons, T., Fernández-Chimeno, M., Moize Arcone, V., Sánchez Fuentes, J.A., Aurin Pardo, E. & Carrion, C. (2023). Effectiveness and adherence to physical activity and physical exercise mhealth interventions: A systematic review. Apunts Educación Física y Deportes, 151, 1-16. https://doi.org/10.5672/apunts.2014-0983.es.(2023/1).151.01

Conley, S L (2019), An assessment of the effectiveness of positive self-talk on engagement with feared stimuli and control related beliefs. Graduate Research Theses & Dissertations. 6941. Retrieved from [Accessed 2026, 08 May]: https://huskiecommons.lib.niu.edu/allgraduate-thesesdissertations/6941

Cox, R. H. (2002). Sport psychology: Concepts and applications (5th ed.). McGraw-Hill.

Gao, X., Zheng, J., Liu, M., Liu, C., Wang, Y., Li, Y., Chen, W., Li, X., & Wang, H. (2025). Healthy lifestyles and risk of major non-communicable chronic diseases and mortality in individuals with metabolic

syndrome. The Journal of nutrition, health and aging, 29 (9), 100654. https://doi.org/10.1016/j.jnha.2025.100654

Hall, C., McKay, C., & Duncan, L. (2014). Psychological interventions in sport, exercise and injury rehabilitation. Kendall Hunt.

Hardy, J., Hall, C. R., & Hardy, L. (2005). Quantifying athlete self-talk. Journal of Sports Sciences, 23(9), 905-917. https://doi.org/10.1080/02640410500130706

Hardy, J., Roberts, R., & Hardy, L. (2009). Awareness and motivation to change negative self-talk. The Sport Psychologist, 23, 435-450. https://doi.org/10.1123/tsp.23.4.435

Howlett, N., Trivedi, D., Troop, N.A., & Chater, A.M. (2019). Are physical activity interventions for healthy inactive adults effective in promoting behaviour change and maintenance, and which behaviour change techniques are effective? A systematic review and meta-analysis. Translational Behavioral Medicine, 9, 147-157. https://doi.org/10.1093/tbm/iby010

Ives, A. (2011). Examination of self-talk and exercise adherence. Temple University Digital Repository. Retrieved from [Accessed 2026, 08 May]: https://scholarshare.temple.edu/server/api/core/bitstreams/32dbd532-96ea-45b4-8a91-38c49b1fada9/content

Jaiyeoba, O. M. & Oguntuase, S.B. (2019). Re-engineering grassroot sports for improved social inclusion and transformational development. Journal of International Council for Health, Physical Education, Recreation, Sport and Dance 5(3), 188-203.

Jones, M.I. & Mattie, P. (2024). Self-talk, Goal Setting, and Visualization. Handbook of Mental Performance. 1-23. https://doi.org/10.4324/9781003378969-6

Lange-Smith, S., Cabot, J., Coffee, P., Gunnel, K.E. & Tod, D. (2023). The efficacy of psychological skills training for enhancing performance in sport: a review of reviews. International Journal of Sport and Exercise Psychology, 22(1):1-18. https://doi.org/10.1080/1612197X.2023.2168725

Meade, L. B., Bearne, L. M., Sweeney, L. H., Alageel, S. H., & Godfrey, E. L. (2019). Behaviour change techniques associated with adherence to prescribed exercise in patients with persistent musculoskeletal pain: Systematic review. Br J Health Psychol, 24(1), 10-30. https://doi.org/10.1111/bjhp.12324

Mellalieu, S., Hanton, S., & O'Brien, M. (2006). The efforts of goal setting on rugby performance. Journal of Applied Behavior Analysis, 39, 257-261. https://doi.org/10.1901/jaba.2006.36-05

Odunaiya, N. A., Agboola, T. A., Okoye, E., & Oguntibeju, O. O. (2021). Barriers and facilitators of health-enhancing physical activity behavior among health professional students in a Nigerian university setting. Highland Medical Research Journal, 21(1), 35-45.

Oguntuase, S.B., & Sun, Y. (2022). Effects of mindfulness training and locus of control on self-efficacy of professional football players in Nigeria. Journal of Physical Education and Sport,22(5),Art140, 1112-1119. https://doi.org/10.7752/jpes.2022.05140

Oguntuase, S.B., Sun, Y., Apata, T.C., & Ogunsanya, J.O. (2021). Socio- demographic and psychological determinants of leisure time physical activity among adolescents in Nigeria. European Journal of Physical Education and Sport Science 7(4), 1-20. https://doi.org/10.46827/ejpe.v7i4.3985

Olamide, O., Adebayo, O., Emmanuel, A., Eyitayo, L., Beatrice, O., & Tomisin, M. (2023). Prevalence and risk factors of cardiovascular diseases among the Nigerian population: A new trend among adolescents and youths. IntechOpen. https://doi.org/10.5772/intechopen.108180

Papaioannou, A., Ballon, F., Theodorakis, Y., & Auwelle, Y. (2004). Combined effect of goal setting and self-talk in performance of a soccer-shooting task. Perceptual and Motor Skills, 98, 89-99. https://doi.org/10.2466/pms.98.1.89-99

Petherick, C. & Markland. D. (2008). The development of a goal orientation in exercise measure (GOEM). Measurement in Physical Education and Exercise Science, 12, 55-71. https://doi.org/10.1080/10913670801903902

Proper, K. I., & van Oostrom, S. H. (2019). The effectiveness of workplace health promotion interventions on physical and mental health outcomes - A systematic review of reviews. Scand J Work Environ Health. 45(6):546-559. https://doi.org/10.5271/sjweh.3833

Puddister, S., Hall, C. & Deck, S. (2021). The use of organic exercise self-talk by female adolescents. Hellenic Journal of Psychology, 18, 249 - 270.

Rebar, A., Rhodes R. E. (2020). Progression of motivation models in exercise science: where we have been and where we are heading. in Handbook of Sport Psychology. 4th Edn. eds. Tenenbaum G., Eklund R. C. (New York: John Wiley & Sons Inc.). https://doi.org/10.1002/9781119568124.ch44

Rhodes, R. E. (2017). The evolving understanding of physical activity behavior: A multi-process action control approach. in Advances in Motivation Science. Vol. 4. ed. Elliot A. J. (Cambridge: Elsevier Academic Press;), 171-205. https://doi.org/10.1016/bs.adms.2016.11.001

Rhodes, R. E., & de Bruijn, G. J. (2013). How big is the physical activity intention-behaviour gap? A meta-analysis using the action control framework. British Journal of Health Psychology, 18(2), 296-309. https://doi.org/10.1111/bjhp.12032

Rivera-Torres S., Fahey T.D, & Rivera, M.A. (2019). Adherence to exercise programs in older adults: informative report. Gerontol Geriatr Med. 5, 1-10. https://doi.org/10.1177/2333721418823604

Souza, A.L.K, Santos L.P.D, Rech C.R, Rodriguez-Añez C.R, Alberico C, Borges L.J, Fermino R.C. (2022). Barriers to physical activity among adults in primary healthcare units in the National Health System: A cross-sectional study in Brazil. Sao Paulo Med J. 140(5), 658-667. https://doi.org/10.1590/1516-3180.2021.0757.r1.20122021

Swann, C, Jackman, P. C., Lawrence, A., & Hawkins, R. M., Goddard, S. G, Williamson, O, Schweickle, MJ, Vella, S.A, Rosenbaum, S., Ekkekakis, P. (2023). The (over)use of SMART goals for physical activity promotion: A narrative review and critique. Health Psychol Rev. 17 (2), 211-226. https://doi.org/10.1080/17437199.2021.2023608

Tod, D., Hardy, J., & Oliver, E. J. (2011). Effects of self-talk: a systematic review. Journal of Sport and Exercise Psychology, 33(5), 666-687. https://doi.org/10.1123/jsep.33.5.666

Weinberg, R. S., & Gould, D. (2011). Foundations of Sport and Exercise Psychology (5th ed.). Human Kinetics.

Weinberg, R. S., & Gould, D. (2024). Foundations of Sport and Exercise Psychology (8th ed.). Human Kinetics.

Zhang, W., Wang, D., Wang, M., Wu, J., Jia, T., & Wang, X. (2025). Psychological intervention strategies in college physical education and their impact on students' athletic performance. Front Psychol., 16:1708179. https://doi.org/10.3389/fpsyg.2025.1708179

