

**CARDIO-FIT U Program: Cardiovascular fitness improvement
for university employees**

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ABSTRACT

This study aimed to assess the impact of the Cardio-Fit U Program (Cardiovascular Fitness Improvement for University Employees) on employees' cardiovascular health, focusing on resting heart rate, systolic and diastolic blood pressure, and participants' experiences. A quasi-experimental mixed-method design was utilized, with a pre-post-test approach involving 15 university employees. The results revealed significant improvements in cardiovascular health, including a decrease in resting heart rate from 80.5 bpm to 77.7 bpm (mean difference of 2.80 bpm), systolic blood pressure from 118 mmHg to 111 mmHg (mean difference of 7.13 mmHg), and diastolic blood pressure from 75.8 mmHg to 73.7 mmHg (mean difference of 2.07 mmHg). The study concluded that the program effectively improved cardiovascular health by reducing heart rate and blood pressure, with moderate to large effect sizes. Employees reported increased energy levels and motivation, indicating the program's positive impact. The findings suggested that workplace wellness programs could significantly improve employees' physical well-being.

Keywords: Cardio-Fit U Program, cardiovascular health, workplace wellness, blood pressure, resting heart rate.

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INTRODUCTION

Cardiovascular fitness refers to the ability of the heart, lungs, and circulatory system to efficiently supply oxygen and nutrients to the body during sustained physical activity. It is considered an important component of overall health because it helps improve heart function, regulate blood pressure, increase endurance, reduce fatigue, and lower the risk of cardiovascular diseases such as hypertension, stroke, and heart disease. Cardiovascular diseases remain a leading cause of death globally, with risks increasing due to sedentary behavior, prolonged sitting, and office-centric work environments (World Health Organization, 2025). In modern workplaces, particularly in academic institutions and office settings, employees often spend long hours sitting while performing computer-based and administrative tasks, which may negatively affect cardiovascular health over time. Globally, insufficient physical activity affects approximately one in four adults, and despite targeted health

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messaging, this trend has stagnated or worsened in recent years (WHO, 2024). Technological advancements, hybrid work arrangements, and rising job demands in academic institutions further normalize prolonged sitting and minimal movement.

Health authorities recommend that adults engage in at least 150 minutes of moderate-intensity aerobic physical activity per week to achieve substantial cardiovascular health benefits (WHO, 2024). Regular participation in physical activity not only improves cardiovascular endurance but also enhances energy levels, physical functioning, stress management, and overall well-being, which are especially important for employees who spend extended periods performing sedentary work. However, actual adoption of recommended physical activity remains low due to demanding employment schedules and administrative responsibilities that limit opportunities for exercise and movement during working hours. Although awareness of cardiovascular disease risks may exist, sedentary behaviors persist because of workplace norms, convenience, workload demands, and reliance on digital technologies, which prevent the development of consistent exercise habits and healthier lifestyle routines.

Recent research highlights cardiovascular fitness concerns among occupational groups. Kang et al. (2025) found that faculty members from Manila higher education institutions experienced significant declines in physical activity during the pandemic period, with many failing to meet recommended activity levels. Layag and Ofrin (2024) reported low cardiorespiratory endurance and high sedentary behavior among healthcare workers and teachers, respectively, identifying occupational groups at elevated risk for cardiovascular conditions.

Despite growing evidence supporting workplace physical activity interventions, several research gaps remain. Many workplace wellness initiatives are short-term or optional and lack structured, sustained cardio-based program designs capable of producing measurable improvements in cardiovascular fitness (Gulanes et al., 2026). These limitations reduce long-term participation and program effectiveness. Another gap involves behavioral determinants influencing exercise adherence. While self-efficacy has been identified as a strong predictor of physical activity participation, not all workplace interventions are grounded in behavior-change theories that support sustained engagement (Grimaud et al., 2025).

To address these identified gaps, the Cardio-Fit U Program was developed as a structured cardio-based fitness intervention tailored to enhance the cardiovascular fitness of National University employees. The program is designed to provide a sustained, theory-driven workplace fitness initiative that promotes regular engagement in moderate-intensity aerobic exercise.

Statement of the problem

This study aimed to develop, implement, and evaluate the Cardio-Fit U Program (Cardiovascular Fitness Improvement for University Employees) in improving the cardiovascular health of sedentary non-teaching employees of National University.

Specifically, it sought to answer the following questions:

1. What is the resting heart rate and blood pressure (systolic and diastolic) of employees before their participation in the Cardio-Fit U Program?
2. What is the resting heart rate and blood pressure (systolic and diastolic) of employees after their participation in the Cardio-Fit U Program?
3. Is there a significant difference between the pretest and posttest measurements of employees' resting heart rate and blood pressure (systolic and diastolic) before and after participation in the Cardio-Fit U Program?

4. What are the employees' experiences, perceived benefits, and challenges encountered during their participation in the Cardio-Fit U Program?
5. How may the assessment results of the program, in terms of accuracy of health information, organization of exercise sessions, usability, effectiveness, and overall performance, be used to enhance the Cardio-Fit U Program?

METHODOLOGY

The study employed a quasi-experimental mixed-method project design to evaluate the effectiveness of the Cardio-Fit U Program in improving the cardiovascular health of sedentary university employees. The quantitative component utilized a one-group pretest-posttest design, where the resting heart rate and blood pressure of fifteen purposively selected non-teaching personnel from National University were measured before and after the six-week intervention program. The participants were specifically selected from non-teaching personnel assigned to student enrollment and administrative responsibilities because their occupational tasks primarily involved prolonged sitting, computer-based work, repetitive desk tasks, and limited physical movement throughout working hours, which made them more vulnerable to sedentary-related cardiovascular risks. Their work environment provided an appropriate setting for assessing the effectiveness of a workplace-based cardiovascular fitness intervention intended to address the health effects associated with prolonged inactivity and sedentary workplace behavior.

Inclusion criteria required participants to be non-teaching employees of National University aged 21 to 45 years old, self-reported as having a sedentary lifestyle, classified as physically inactive or insufficiently active, medically fit to participate in moderate-intensity aerobic exercise based on the Physical Activity Readiness Questionnaire (PAR-Q), and willing to complete the six-week intervention together with all required pretest and posttest assessments. Participants were also required to regularly attend the scheduled exercise sessions conducted within the university premises to ensure consistency of program participation throughout the intervention period. Employees diagnosed with cardiovascular disease, musculoskeletal disorders, uncontrolled hypertension, respiratory conditions, or other medical conditions that contraindicated moderate-intensity physical activity were excluded from participation to ensure participant safety and maintain the accuracy of the intervention outcomes. Employees who were already regularly participating in structured exercise programs or engaging in high levels of physical activity prior to the intervention were also excluded to maintain the focus of the study on sedentary individuals. This design was considered appropriate because the study aimed to determine whether significant physiological changes occurred following participation in the fitness program while maintaining the natural workplace setting of the participants. Guided by Social Cognitive Theory (SCT), the study recognized that employees' health behaviors may change through the interaction of personal motivation, self-efficacy, behavioral practice, and environmental support, making the structured workplace-based intervention suitable for promoting cardiovascular fitness improvement among sedentary employees.

The intervention phase involved the implementation of the Cardio-Fit U Program, which consisted of structured moderate-intensity aerobic exercise sessions conducted twice a week for 30 to 45 minutes within the university premises. The program was specifically designed to provide accessible and manageable cardiovascular exercise opportunities for employees whose daily work routines were largely sedentary and physically inactive. Throughout the intervention, employees were encouraged to actively participate in the exercise

sessions while receiving support, motivation, and guidance from peers and instructors, which reflected the SCT concepts of observational learning, behavioral reinforcement, and self-efficacy. The structured workplace environment allowed participants to observe coworkers engaging in physical activity, receive encouragement, and gradually build confidence in performing aerobic exercises regularly and safely. Each exercise session included warm-up activities, continuous aerobic movement routines, and cool-down exercises to ensure participant safety, gradual cardiovascular adaptation, and sustained engagement throughout the intervention period. The study aligned with the research questions by first identifying the baseline cardiovascular condition of employees, then determining their cardiovascular condition after participation in the program, and finally examining whether significant differences existed between the pretest and posttest measurements. The workplace setting further encouraged accessibility and convenience, which may have increased participation despite employees' demanding administrative workloads and time constraints.

In addition to the quantitative component, the study incorporated a qualitative component to explore employees' experiences, perceived benefits, and challenges encountered throughout their participation in the Cardio-Fit U Program. Semi-structured interviews were conducted with selected participants after the intervention period to gather detailed insights regarding their motivation, exercise experiences, workplace support, perceived health improvements, and barriers to participation. The integration of qualitative and quantitative methods allowed the study to provide a more comprehensive evaluation of the program's effectiveness by examining not only physiological changes in cardiovascular health but also employees' behavioral experiences and perceptions related to workplace physical activity participation. Guided by the principles of Social Cognitive Theory, the qualitative component further examined how social support, environmental reinforcement, and increased self-efficacy influenced employees' willingness to participate in regular exercise and sustain healthier lifestyle behaviors. Through the combination of physiological assessments and participant experiences, the mixed-method design provided a broader understanding of how workplace-based cardiovascular fitness interventions may contribute to improved cardiovascular health, enhanced motivation, and the promotion of healthier workplace cultures among sedentary university employees. For the qualitative component, the study utilized a qualitative descriptive approach to explore employees' experiences, perceived benefits, and challenges after participating in the Cardio-Fit U Program. Open-ended responses and participant narratives were analyzed through thematic analysis to identify common experiences related to cardiovascular health awareness, exercise confidence, workplace support, motivation, and participation barriers. Employees described improvements in energy, stamina, and physical activity engagement, while others emphasized the importance of coworker encouragement, flexible scheduling, and supportive workplace conditions in sustaining their participation in the program. By integrating quantitative cardiovascular measurements with qualitative employee experiences, the mixed-method design provided a more comprehensive understanding of how the Cardio-Fit U Program influenced both the physiological outcomes and behavioral experiences of sedentary university employees.

The Cardio-Fit U Program was developed as a structured workplace wellness intervention intended to improve the cardiovascular health of sedentary non-teaching employees at National University. The development of the program was guided by recent evidence showing that regular moderate-intensity aerobic exercise may reduce cardiovascular risk factors such as elevated resting heart rate and blood pressure among adults with sedentary lifestyles. Anchored on Social Cognitive Theory (SCT), the program emphasized the importance of self-efficacy, behavioral reinforcement, observational learning, and environmental support in promoting long-term participation in physical activity. Through this approach, the program was designed not only to improve physiological cardiovascular

indicators but also to strengthen employees' confidence, motivation, and engagement in maintaining healthier lifestyle behaviors within the workplace environment. The structure of the Cardio-Fit U Program was aligned with the objectives and research questions of the study, particularly in determining employees' cardiovascular condition before and after participation in the intervention and examining whether significant improvements occurred following program implementation. The program consisted of a six-week supervised moderate-intensity aerobic Zumba exercise intervention conducted twice per week, with each session lasting approximately 30 to 45 minutes within the university premises. The workplace-based setup was intentionally selected to make participation more accessible and convenient for employees whose responsibilities primarily involved sedentary administrative and enrollment-related tasks. Each exercise session included warm-up exercises, continuous aerobic activity, and cool-down routines to ensure participant safety, gradual physical adaptation, and consistent cardiovascular engagement throughout the intervention period. The six-week duration and twice-weekly schedule were considered appropriate for balancing program effectiveness, employee safety, and the practical demands of the university work environment.

The implementation of the program followed a systematic three-phase process consisting of pre-intervention, intervention, and post-intervention stages. During the pre-intervention phase, participants completed orientation procedures, informed consent, and baseline assessments of resting heart rate and blood pressure to establish their initial cardiovascular health condition prior to participation in the program. The intervention phase involved the actual conduct of supervised aerobic exercise sessions, where employees were encouraged to actively participate, observe peers, receive support from instructors and coworkers, and gradually develop confidence in performing physical activities consistently. Guided by SCT principles, the supportive workplace environment played an important role in reinforcing positive exercise behaviors and encouraging continued participation despite workload demands and sedentary routines. Following the completion of the intervention, posttest measurements of resting heart rate and blood pressure were conducted together with qualitative interviews that explored employees' experiences, perceived benefits, and challenges encountered throughout the program. Through this process, the study was able to comprehensively evaluate both the physiological and behavioral outcomes of the Cardio-Fit U Program as a workplace cardiovascular fitness intervention for university employees.

Prior to the implementation of the Cardio-Fit U Program, the participants attended an orientation session where the objectives of the study, intervention procedures, safety protocols, and expected participation requirements were explained. In alignment with the conceptual framework and the first research question, baseline assessments of resting heart rate and blood pressure were conducted among the fifteen purposively selected non-teaching employees of National University to determine their initial cardiovascular condition before participation in the fitness program. Participants also completed the Physical Activity Readiness Questionnaire (PAR-Q) to identify possible medical risks associated with moderate-intensity physical activity, while informed consent was secured prior to their involvement in the study. Guided by Social Cognitive Theory (SCT), the orientation and baseline phase aimed to increase employees' awareness of their cardiovascular health and strengthen their readiness to engage in regular physical activity through proper support, encouragement, and guided participation.

The intervention phase involved the implementation of the six-week Cardio-Fit U Program through supervised moderate-intensity aerobic Zumba exercise sessions conducted twice weekly within the university premises. This phase aligned with the second research question by focusing on employees' cardiovascular condition after participation in the program while also reflecting the SCT principles of self-efficacy, observational learning, and behavioral

reinforcement. Throughout the intervention, participants were encouraged to observe peers, follow instructor demonstrations, and gradually develop confidence in performing aerobic exercises consistently within a supportive workplace environment. Each session consisted of warm-up exercises, continuous aerobic movement, and cool-down activities to promote safety, sustained participation, and gradual cardiovascular adaptation among the employees. Following the completion of the intervention, posttest measurements of resting heart rate and blood pressure were conducted using the same standardized procedures observed during the baseline assessment. This phase directly addressed the third research question by determining whether differences existed between the pretest and posttest cardiovascular indicators of the participants after involvement in the fitness program. To address the fourth research question, semi-structured interviews were conducted to gather employees' experiences, perceived benefits, and challenges encountered during participation in the Cardio-Fit U Program. Consistent with the flow of the conceptual framework, the procedure demonstrated how baseline assessment, structured intervention, supportive environmental conditions, and post-intervention evaluation collectively contributed to the development of the enhanced Cardio-Fit U Program as a workplace cardiovascular wellness initiative for university employees.

The project utilized descriptive and inferential statistical procedures to analyze the quantitative data gathered from the participants before and after the implementation of the Cardio-Fit U Program. In alignment with the first and second research questions, descriptive statistics such as mean and standard deviation were used to summarize and describe the resting heart rate and blood pressure levels of employees during the pretest and posttest phases. The mean was used to determine the average cardiovascular measurements of the participants, while the standard deviation was utilized to identify the variability and consistency of the gathered data. These statistical measures provided a clearer understanding of the employees' cardiovascular condition before participation in the fitness program and after completing the six-week intervention. To address the third research question, a paired-samples t-test was employed to determine whether significant differences existed between the pretest and posttest measurements of resting heart rate and blood pressure among the participants. This statistical test was considered appropriate because it compared two related sets of measurements obtained from the same group of employees before and after participation in the intervention program. The use of the paired t-test allowed the study to determine whether the observed physiological changes were statistically significant following the implementation of the Cardio-Fit U Program. For the qualitative component related to the fourth research question, thematic coding was utilized to analyze the participants' responses regarding their experiences, perceived benefits, and challenges encountered during the program. The qualitative responses gathered from the semi-structured interviews were carefully reviewed, coded, grouped into categories, and organized into broader themes that reflected common patterns in employees' participation and experiences throughout the intervention process.

The evaluation procedure was conducted during the post-intervention phase to determine the quality, usability, and effectiveness of the Cardio-Fit U Program based on the participants' feedback after completing the six-week fitness intervention. This process aligned with the fourth research question of the study, which explored employees' experiences, perceived benefits, and challenges encountered throughout their participation in the program. Guided by the principles of Social Cognitive Theory (SCT), the evaluation also examined how the supportive workplace environment, behavioral reinforcement, and increased self-efficacy influenced employees' engagement and overall perceptions of the intervention. Participant feedback was considered important because it provided meaningful insights regarding the acceptability, practicality, and sustainability of the workplace-based cardiovascular fitness program. To gather evaluation data, the participants completed a structured program evaluation questionnaire designed to assess different aspects of the Cardio-Fit U Program. The

questionnaire evaluated participants' perceptions regarding the accuracy of health information, organization of exercise sessions, usability of the program, effectiveness of the activities, and overall program performance within the workplace setting. A rating scale was utilized to allow participants to express their level of agreement with each statement, while open-ended questions were included to encourage employees to share additional experiences, suggestions, and recommendations for program improvement. Prior to answering the questionnaire, participants were given clear instructions to ensure that their responses accurately reflected their experiences and observations throughout the intervention period. Completed evaluation forms were then collected and reviewed to ensure completeness and consistency of the gathered data.

The evaluation findings were used to identify the strengths, limitations, and possible improvements needed for the enhancement of the Cardio-Fit U Program. Quantitative responses were summarized to determine overall participant satisfaction and perceived program effectiveness, while qualitative comments were reviewed and categorized according to common experiences, recommendations, and concerns raised by the employees. The evaluation procedure further supported the flow of the conceptual framework by examining how the interaction of structured exercise activities, workplace support, behavioral motivation, and employee participation contributed to the overall outcomes of the intervention. Employees' feedback regarding scheduling, exercise difficulty, workplace support, and program organization provided valuable insights into factors that influenced sustained participation and cardiovascular health engagement. The results of the evaluation were intended to guide future modifications, strengthen implementation strategies, and support the possible expansion of the Cardio-Fit U Program as a sustainable workplace wellness initiative within the university setting.

RESULTS AND DISCUSSION

This section presents the results derived from the data gathered from fifteen purposively selected non-teaching employees of National University who participated in the Cardio-Fit U Program. A quasi-experimental mixed-method project design employing a one-group pretest-posttest approach was utilized, with resting heart rate and blood pressure measured before and after the six-week intervention, complemented by semi-structured interviews analyzed through thematic coding. Descriptive statistics such as mean and standard deviation were used to summarize the cardiovascular indicators, while a paired-samples t-test was employed to determine whether significant differences existed between pretest and posttest measurements, all tested in relation to the program's stated objectives. The discussion that follows is grounded entirely in the data gathered and is interpreted in direct relation to the objectives of the study concerning employees' baseline and post-intervention cardiovascular condition, the significance of observed differences, and employees' experiences, perceived benefits, and challenges throughout their participation in the program.

Prior to participation in the fitness program, employees' resting heart rate and blood pressure revealed a baseline cardiovascular profile marked by generally acceptable but notably variable values. The average resting heart rate was 80.5 bpm, with values ranging from 70 to 98 bpm. While the median of 76 bpm suggests that many employees were within the normal range, the elevated maximum indicates that a portion of the group exhibited higher cardiovascular strain, and the variability, reflected in a standard deviation of 9.62, further reflects differences in baseline fitness levels among participants. For systolic blood pressure, the mean was 118 mmHg, which falls within the normal range; however, the wide spread of

values, ranging from 95 to 151 mmHg, highlights that some employees were already in the hypertensive category, and the relatively high standard deviation of 16.1 underscores the heterogeneity of cardiovascular health within the group. Diastolic blood pressure showed a mean of 75.8 mmHg, with values ranging from 62 to 88 mmHg, and although the average and median values fall within normal limits, the upper range approaches the threshold for hypertension, suggesting potential risk among certain individuals. Taken together, these descriptive statistics reveal that while most employees demonstrated resting heart rates and blood pressures within acceptable ranges, there was notable variability, with a subset of employees presenting elevated values that indicated possible cardiovascular risks. These baseline findings are crucial as they establish the initial health profile of the participants and provide a benchmark against which the effectiveness of the fitness program can be measured, suggesting that the program had the potential to improve cardiovascular health, particularly for those with elevated resting heart rates and blood pressure levels.

These baseline findings align with Social Cognitive Theory (SCT), which emphasizes the role of self-efficacy and observational learning in health behavior change. According to Liu et al. (2025), SCT-based interventions are effective in improving cardiovascular health by enhancing individuals' confidence in their ability to manage their health and reinforcing positive health behaviors through social support, and the variability in resting heart rates and blood pressures among employees at baseline suggests that those with higher cardiovascular risks may benefit most from targeted interventions, as SCT highlights the importance of addressing individual differences and providing ongoing reinforcement to achieve sustained health improvements. Related studies support the idea that certain occupational environments, particularly those involving irregular schedules and sedentary behavior, can contribute to cardiovascular risks. Cui and Zhu (2025) highlighted how physically demanding jobs, such as those of seafarers, often masked underlying cardiovascular issues like elevated blood pressure and electrocardiographic abnormalities, which aligns with the findings in the current study, where variability in cardiovascular health was observed at baseline, suggesting that employees may experience hidden cardiovascular strain despite appearing healthy. Similarly, Palmieri et al. (2025) found that sedentary administrative workers in the military had higher cardiovascular risks than their physically active counterparts, indicating that long periods of sitting and stress can negatively impact cardiovascular health, and both studies emphasize the importance of proactive health monitoring and tailored wellness programs to mitigate these risks, reflecting the relevance of SCT in encouraging preventive health behaviors in occupational settings. The key results of this baseline assessment reveal that, while many employees have cardiovascular health within normal ranges, there exists notable variability, with some showing early signs of hypertension or cardiovascular strain. This finding fills the gap highlighted by Laurito et al. (2025), who found that hypertensive adults often delayed preventive actions due to competing priorities and lack of motivation, and the current study suggests that the absence of regular cardiovascular screening and workplace wellness initiatives may similarly contribute to the silent accumulation of risks among employees, reinforcing the need for proactive health monitoring and workplace wellness programs to address this issue early.

After participating in the fitness program, employees demonstrated measurable improvements in cardiovascular indicators. The mean resting heart rate decreased to 77.7 bpm, compared to the pre-program average of 80.5 bpm, suggesting enhanced cardiovascular efficiency, and the lower standard deviation of 6.96 indicates reduced variability, meaning employees' heart rates became more consistent and closer to the healthy range. Systolic blood pressure showed a notable reduction, with the mean dropping to 111 mmHg from 118 mmHg before the program; the maximum value also decreased from 151 mmHg to 125 mmHg, indicating that fewer employees remained in the hypertensive range, while the smaller standard deviation of 10.1 reflects less variation, suggesting more uniform improvements across

participants. Diastolic blood pressure also improved slightly, with the mean decreasing to 73.7 mmHg from 75.8 mmHg, and the maximum value fell from 88 mmHg to 82 mmHg, moving further away from the hypertension threshold, while the reduced variability, reflected in a standard deviation of 6.09, again highlights greater consistency among employees' blood pressure levels. The post program results reveal a modest but meaningful improvement in employees' cardiovascular health, as resting heart rate and both systolic and diastolic blood pressures decreased, with narrower ranges and lower variability, suggesting that the fitness program was effective in promoting cardiovascular benefits, particularly by reducing elevated blood pressure values and stabilizing heart rate patterns.

The improvement in cardiovascular indicators after participation in the fitness program can be understood through the lens of Social Cognitive Theory, particularly the concepts of self-efficacy and outcome expectations. As Liu et al. (2025) highlighted, interventions based on SCT enhance individuals' beliefs in their ability to manage their health, which in turn fosters positive health behaviors such as increased physical activity and better cardiovascular management, and the reduction in resting heart rate and blood pressure observed in this study aligns with SCT's assertion that reinforcing positive behaviors, through both individual efforts and external social support, can lead to lasting health improvements. The decreased variability in these health indicators further suggests that the program not only improved cardiovascular health but also helped participants maintain consistent, healthier habits, thereby enhancing their self-regulation and reinforcing long-term health changes. The findings of Shawa and Hwang (2026) support the importance of consistent support in maintaining cardiovascular health improvements, particularly for individuals with hypertension, as their study emphasized that ongoing guidance was crucial for participants to sustain health gains from exercise interventions, aligning with the observed improvements in cardiovascular indicators in this study. Similarly, Campos-Garzón and Valle-Muñoz (2025) demonstrated that small, sustainable lifestyle changes, like active commuting, could significantly reduce blood pressure and improve overall cardiovascular fitness, suggesting that even moderate efforts integrated into daily routines can have substantial health benefits, and these studies underline the importance of both sustained support and accessible interventions, as demonstrated by the effectiveness of the Cardio-Fit U Program in promoting consistent cardiovascular improvements. The key results from this phase reveal that employees experienced meaningful improvements in cardiovascular health, with reductions in resting heart rate and blood pressure, especially among those with elevated baseline values. These findings align with Díaz-Benito et al. (2025), whose research demonstrated that a comprehensive wellness program combining physical activity and behavioral support led to reduced diastolic blood pressure and enhanced cardiovascular fitness among employees. The present study fills a similar gap by emphasizing the importance of combining physical exercise with consistent support, reinforcing the idea that a holistic approach, including both physical activity and behavioral motivation, is essential to sustaining long-term health improvements and enhancing workplace productivity. Díaz-Benito et al. (2025) also highlighted how the engaging nature of wellness programs, like gamified activities, boosted participation and motivation, reinforcing the necessity of integrating engaging elements into workplace wellness initiatives to ensure broader employee engagement and success.

The paired samples t-test results revealed significant differences in employees' resting heart rate and blood pressure before and after participating in the fitness program. For resting heart rate, the computed t-value of 3.07 with a p-value of 0.008 indicates a statistically significant reduction after the intervention, which is below the 0.05 level of significance, leading to the rejection of the null hypothesis. The mean difference of 2.80 bpm suggests that

employees experienced improved cardiovascular efficiency following program participation, and the effect size, with Cohen's d equal to 0.79, indicates a moderate practical effect of the fitness program on resting heart rate. In terms of systolic blood pressure, the findings showed a statistically significant decrease, with a t -value of 3.66 and a p -value of 0.003, which is below the 0.05 level of significance, leading to the rejection of the null hypothesis. The mean difference of 7.13 mmHg reflects a notable improvement in cardiovascular condition among employees, and the effect size, with d equal to 0.94, indicates a large effect, suggesting that the fitness program had a substantial impact on reducing systolic blood pressure levels. Similarly, diastolic blood pressure demonstrated a statistically significant improvement after the intervention, as evidenced by a t -value of 2.98 and a p -value of 0.010, which is below the 0.05 level of significance, leading to the rejection of the null hypothesis. The mean difference of 2.07 mmHg indicates a reduction in resting blood pressure levels among participants, and the computed effect size, with d equal to 0.77, reflects a moderate effect of the program on diastolic blood pressure. These results confirm that the fitness program significantly improved employees' cardiovascular health indicators, as the reductions in resting heart rate, systolic blood pressure, and diastolic blood pressure suggest that regular participation in the fitness program contributed positively to employees' physical well-being and cardiovascular functioning.

The significant reductions in resting heart rate and blood pressure align with Social Cognitive Theory, which emphasizes the role of self-efficacy in motivating individuals to engage in health-promoting behaviors. As Liu et al. (2025) noted, SCT-based interventions increase individuals' confidence in managing their health, and this likely contributed to the improvements observed in participants' cardiovascular health after the program. The findings from Shiu et al. (2026) and Magno et al. (2025) support the positive impact of regular fitness programs on cardiovascular health, reinforcing the importance of such interventions in workplace settings. Shiu et al. (2026) emphasized that consistent reductions in blood pressure and heart rate were observed in work environments, like universities, where sedentary behavior is prevalent, suggesting that fitness programs could significantly improve employee cardiovascular outcomes, while Magno et al. (2025) highlighted how fitness programs empowered participants by giving them control over their health, further supporting the role of workplace wellness initiatives in reducing cardiovascular risks and promoting overall well-being. The key results from this phase, including significant reductions in resting heart rate and both systolic and diastolic blood pressure, align with Virtanen et al. (2025), who found that multicomponent interventions combining physical activity and behavioral support can effectively improve cardiovascular health. The findings, such as the moderate to large effect sizes for systolic blood pressure and resting heart rate, show that even modest improvements in individual health indicators can have meaningful impacts when applied to larger groups, and this study fills the gap by demonstrating that a well-structured fitness program, even with relatively small improvements in individual health metrics, can lead to substantial benefits in workplace health, reflecting the broader public health gains that Virtanen et al. (2025) suggested.

Beyond the physiological outcomes, the results reveal that employees' experiences with the Cardio-Fit U Program were largely positive, with participants noting improvements in their overall well-being. Participant 1 shared that their initial hesitancy was overcome as the sessions progressed, stating that they started to enjoy the program, felt more energetic, and noticed small improvements in stamina. Similarly, Participant 4 expressed satisfaction with the program, sharing that it gave them a chance to be more active despite a busy schedule, and appreciated the sense of accomplishment after each session. Participant 7 also reported a positive experience, remarking that they were less tired when performing daily tasks, which made them realize the benefits of regular physical activity. These findings highlight that, although some

participants were initially hesitant, they ultimately experienced the physical and emotional benefits of the program, and the themes of increased energy and accomplishment were consistent across feedback, reinforcing the program's success in improving participants' daily functioning and motivation. This aligns with the notion that workplace wellness programs can effectively enhance employee engagement and health, encouraging continued participation.

The positive experiences reported by employees in the Cardio-Fit U Program reflect the core elements of Social Cognitive Theory, particularly in terms of building self-efficacy and reinforcing positive health behaviors. As Liu et al. (2025) emphasized, interventions based on SCT help individuals feel more capable of managing their health, and the improvements in energy and daily functioning observed in this study highlight the effectiveness of such interventions in fostering long-term motivation and healthier habits. These findings are supported by Negussie et al. (2025), who highlighted that social encouragement and organizational support are crucial in motivating employees to adopt healthier behaviors. In this study, employees who participated in the Cardio-Fit U Program were more likely to stay engaged due to the positive reinforcement they received from their colleagues and supervisors. However, as Negussie et al. (2025) noted, barriers such as prolonged sitting and heavy workloads can hinder regular participation, which was reflected in some participants' initial hesitance, and their research suggests that successful wellness programs must consider both individual motivation and the broader organizational culture to maximize employee engagement and ensure long-term success in physical activity interventions. The key results of this qualitative phase indicate that regular participation in the Cardio-Fit U Program led to notable improvements in cardiovascular health, especially in reducing resting heart rate and blood pressure. This is consistent with the findings of De Clerck et al. (2022), who noted that workplace wellness programs are more effective when employees receive support from colleagues and management. In this study, the support from supervisors and the program's integration into the work routine helped employees overcome initial barriers such as workload pressures and time constraints, filling a gap identified by De Clerck et al. (2022), and their recommendation for flexible schedules and organizational support aligns with the observed success of the program, as it highlights the importance of a structured, supportive environment for encouraging sustained engagement in wellness activities.

Taken together, the findings of this study demonstrate that the Cardio-Fit U Program produced measurable and statistically significant improvements in the cardiovascular health of fifteen sedentary non-teaching employees of National University, as evidenced by the reduction in resting heart rate from a mean of 80.5 bpm to 77.7 bpm, systolic blood pressure from a mean of 118 mmHg to 111 mmHg, and diastolic blood pressure from a mean of 75.8 mmHg to 73.7 mmHg, all confirmed through paired samples t-tests yielding t-values of 3.07, 3.66, and 2.98 respectively, with corresponding p-values of 0.008, 0.003, and 0.010, all below the 0.05 level of significance, and effect sizes ranging from moderate, at d equal to 0.79 and 0.77, to large, at d equal to 0.94. These quantitative outcomes were further substantiated by qualitative findings indicating that employees experienced increased energy, improved stamina, and a stronger sense of accomplishment, supported by workplace encouragement and structured guidance consistent with the tenets of Social Cognitive Theory. Collectively, these results directly address the study's objectives by establishing employees' baseline cardiovascular condition, documenting their condition following the intervention, confirming the statistical significance of the observed changes, and capturing the lived experiences, benefits, and challenges associated with program participation. The findings contribute to the growing body of evidence supporting structured, theory-driven workplace wellness interventions as viable strategies for mitigating sedentary-related cardiovascular risks among

university employees, while also underscoring the value of combining physiological measurement with employee narratives to achieve a more holistic understanding of program effectiveness. These results provide the empirical foundation for the recommendations and conclusions to be presented in the succeeding chapter, which will synthesize the implications of these findings for the sustained implementation and potential expansion of the Cardio-Fit U Program within the university setting.

CONCLUSION

Based on the findings of this study, it can be concluded that the Cardio-Fit U Program was effective in improving the cardiovascular health of sedentary non-teaching employees at National University. The baseline assessment revealed that, while most employees presented resting heart rate and blood pressure values within generally acceptable ranges, with a mean resting heart rate of 80.5 bpm, mean systolic blood pressure of 118 mmHg, and mean diastolic blood pressure of 75.8 mmHg, considerable variability existed among participants, as reflected in the standard deviations of 9.62, 16.1, and the wide value ranges observed across indicators. This variability indicated that a subset of employees already exhibited elevated cardiovascular strain prior to the intervention, underscoring the vulnerability of sedentary administrative personnel to cardiovascular risk and establishing the necessity of a structured workplace-based fitness intervention.

Following the six-week implementation of the program, employees demonstrated measurable improvements across all cardiovascular indicators examined. Resting heart rate decreased to a mean of 77.7 bpm, systolic blood pressure decreased to a mean of 111 mmHg, and diastolic blood pressure decreased to a mean of 73.7 mmHg, with reduced standard deviations and narrower value ranges indicating not only improved cardiovascular condition but also greater consistency among participants. These improvements were further confirmed through paired-samples t-test results, which yielded statistically significant reductions in resting heart rate, with a mean difference of 2.80 bpm, t equal to 3.07, and p equal to 0.008, in systolic blood pressure, with a mean difference of 7.13 mmHg, t equal to 3.66, and p equal to 0.003, and in diastolic blood pressure, with a mean difference of 2.07 mmHg, t equal to 2.98, and p equal to 0.010, all below the 0.05 level of significance. The corresponding effect sizes, ranging from moderate at d equal to 0.79 for resting heart rate and d equal to 0.77 for diastolic blood pressure to large at d equal to 0.94 for systolic blood pressure, affirm that the observed changes were not only statistically significant but also practically meaningful.

Beyond the physiological outcomes, the qualitative findings revealed that employees experienced tangible behavioral and emotional benefits from their participation in the program, including increased energy, improved stamina, reduced fatigue in performing daily tasks, and a strengthened sense of accomplishment and motivation. These experiences were sustained largely through the support and encouragement of coworkers and supervisors, which helped employees overcome initial hesitancy and persist despite workload demands and time constraints. Taken together, the physiological and experiential findings affirm the relevance of Social Cognitive Theory in explaining how self-efficacy, observational learning, behavioral reinforcement, and environmental support interact to produce sustained engagement in health-promoting behavior within the workplace setting.

Overall, the study concludes that the Cardio-Fit U Program, as a structured, theory-driven, and workplace-integrated cardiovascular fitness intervention, was effective in reducing resting heart rate and both systolic and diastolic blood pressure among sedentary university employees, while simultaneously fostering increased motivation, energy, and engagement in physical activity. These findings affirm that addressing cardiovascular health among administrative and enrollment-related personnel requires not only physiological intervention

but also consistent organizational support and behaviorally grounded program design. The results provide empirical support for the continued implementation, refinement, and potential expansion of the Cardio-Fit U Program as a sustainable workplace wellness initiative capable of mitigating sedentary-related cardiovascular risks and promoting healthier, more productive university work environments.

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