

Differences Quality of Life According to Weekly Running Frequency among Members of the Fakerunners Bandung Community: A Cross-Sectional Study

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Abstract. This study aims to determine whether members of the Fakerunners Bandung running community who exercise at high frequency (≥ 3 times/week) have significantly better quality of life compared to those who exercise at low frequency (1–2 times/week). This research employed an comparative cross-sectional study, in which the independent variable (exercise frequency) was not manipulated but had naturally occurred prior to data collection .The population consisted of 846 active members registered in the community WhatsApp group. Purposive sampling was employed, yielding 60 respondents who met the inclusion criteria, divided equally into two groups: low frequency (1-2x/week, n=30) and high frequency (≥ 3 x/week, n=30). The Indonesian version of the WHOQOL-BREF tool was used to assess quality of life. Shapiro-Wilk was used to evaluate normality, and Independent Sample T-tests were performed for group comparisons (all domains exhibited normal distribution). Findings indicated that the high-frequency group consistently achieved elevated average scores in all areas. Notable differences were observed in the psychological domain ($p=0.013$) and environmental domain ($p=0.001$), whereas the physical ($p=0.053$) and social relationship ($p=0.182$) domains failed to attain statistical significance. To sum up, exercising more frequently (≥ 3 x/week) is linked to improved overall quality of life, especially in the psychological and environmental aspects.

Keywords: exercise frequency; quality of life; WHOQOL-BREF; running community; aerobic exercise



INTRODUCTION

Quality of life is a complex idea that denotes how a person sees their position in life, considering the cultural background and value system they inhabit, along with their connection to their aspirations, expectations, standards, and worries (WHO, 1997). The World Health Organization defines quality of life through four primary domains: physical health, psychological well-being, social relationships, and the surrounding environment, which can be assessed using the World Health Organization Quality of Life-Brief (WHOQOL-BREF) tool. The WHOQOL-BREF was chosen due to its generic nature and non-disease-specific focus, making it appropriate for assessing quality of life in healthy and active groups like running community participants (WHO, 1997). The four areas of this tool including physical, psychological, social relationships, and environment, directly represent life aspects affected by involvement in community sports. Additionally, this tool has been validated within the Indonesian demographic (Fauziah, 2012; Agnes et al., 2022) and assesses subjective views on quality of life during the two weeks prior to answering the questionnaire; therefore, the resulting data encapsulates the summation of respondents' experiences related to their exercise habits. Quality of life has become a key indicator in assessing the impact of lifestyle on individual well-being, with regular physical activity being one factor that has consistently been shown to contribute positively to improved quality of life across various populations (da Cunha et al., 2025).

Running is an aerobic physical activity that has been shown to provide comprehensive benefits to quality of life (Hernández-Flórez et al., 2025). Physiologically, regular running improves cardiorespiratory capacity, strengthens the musculoskeletal system, and optimizes the body's metabolism. From a psychological perspective, running stimulates the release of endorphins, serotonin, and norepinephrine, which contribute to mood regulation, stress reduction, and enhanced psychological resilience (Liu et al., 2024). People who adhere to the WHO's physical activity guidelines demonstrate an improved quality of life compared to those who engage in less activity (Li et al., 2026). The ideal level of physical activity is defined by the FITT principle (Frequency, Intensity, Time, Type) (Stavrinou et al., 2025). Frequency, as a component, indicates training density, which specifies the number of times a person experiences physical stimulation each week (Rizqillah et al., 2025). The WHO advises adults to engage in a minimum of 150 minutes of aerobic exercise weekly (WHO, 2020).Based on field data, a single

training session with the Bandung Fakerunners Community lasts 50-60 minutes at a pace of 8-10 minutes per kilometer; thus, members who train ≥ 3 times per week accumulate 150-180 minutes per week and meet the WHO recommendation, whereas members who train 1-2 times per week only reach 50-120 minutes and do not yet meet it.

Running has experienced rapid growth in Indonesia. Data from Garmin Connect shows that there were more than 80,000 active runners in Indonesia in May 2024, more than double the number from the previous year, which stood at just 35,000 runners (Tempo, 2024). Participation in running communities in Indonesia surged to 83% in 2024, far exceeding the global average of 59% (Ayu et al., 2023).

Fakerunners Bandung holds regular training sessions four times a week, with intensity and duration that develop naturally; however, member participation varies from 1-2 times to ≥ 3 times per week. Previous research on running communities in Indonesia has been limited to descriptive analyses and has not yet examined differences in quality of life based on training participation frequency in a comparative manner (Ayu et al., 2023). International studies have shown that training frequency is associated with vitality in recreational runners (Varela-Sanz et al., 2024), but no such study has been conducted in the context of Indonesian running communities using the WHOQOL-BREF. This study aims to identify significant differences in quality of life between members who train ≥ 3 times per week and those who train 1-2 times per week, as measured by the WHOQOL-BREF instrument.

METHOD

This study employs a quantitative method with cross-sectional comparative design was employed to assess two groups at one moment without altering the independent variable (Setia, 2016). The independent variables are (X1) low exercise frequency and (X2) high exercise frequency, and the dependent variable is (Y) quality of life. The study's population included all active participants of the Bandung Fakerunners Community who were part of the community's WhatsApp group, amounting to 846 individuals when the questionnaire was sent out. Purposive Sampling was used. The survey was sent out online through the WhatsApp group to all 846 members, and 75 individuals completed the survey.

Out of the 75 participants who answered, a choice was made following inclusion and exclusion standards. The selection criteria included: (1) being an active member of

the Bandung Fakerunners Community, (2) aged 18 years or older, (3) membership duration of at least 3 months, and (4) agreeing to sign the informed consent form and thoroughly complete the questionnaire. Exclusion criteria comprised: (1) lack of active participation in training sessions over the last two weeks according to attendance records, (2) an unfinished questionnaire, and (3) anomalous response patterns (straight-lining). According to this selection procedure, 15 participants were removed due to a mix of the aforementioned exclusion criteria, leaving a final sample of 60 respondents who satisfied all requirements. The sample size for both groups satisfied the minimum suggested standard for comparative studies, which is 30 participants per group (Fraenkel et al., 2012).

The categorization of respondents was not established by the researchers but occurred organically according to the frequency of training attendance self-reported by the respondents in the survey. Following the selection procedure, the sample naturally divided into Group 1 with infrequent exercise (1–2 times/week, n=30) and Group 2 with frequent exercise (≥ 3 times/week, n=30) without any intervention or allocation by the researcher.

Respondents were naturally grouped based on their answers to the self-reported exercise frequency question, resulting in Group 1 with low exercise frequency (1-2 times per week, n=30) and Group 2 with high exercise frequency (≥ 3 times per week, n=30). This division is based on (WHO 2020) recommendations, according to which Group 2 has met the minimum physical activity requirement of 150 minutes per week, while Group 1 has not. Both groups were homogeneous based on the FITT components other than frequency, namely intensity (pace of 8-10 minutes/km), duration (50-60 minutes), and type of exercise (running), as seen in the Strava data of community members.

Quality of life was assessed with the Indonesian version of the WHOQOL-BREF, which includes 26 Likert-scale items rated from 1 to 5. These items cover four domains: physical (7 items), psychological (6 items), social relationships (3 items), and environment (8 items). Items 3, 4, and 26 were reverse-scored. Each domain score was then converted to a 0-100 scale using the official WHO conversion table. This instrument has been shown to be valid ($r = 0.390-0.798$) and reliable (Cronbach's $\alpha = 0.941$) in the Indonesian population.

Data analysis was carried out using SPSS, involving editing, coding, data entry, and cleaning. Normality was tested with the Shapiro-Wilk test. Because all domains showed normal distribution ($p > 0.05$), comparisons were conducted using an independent samples t-test at a significance level of $\alpha = 0.05$.

RESULT

Table 1. Respondent Characteristic

Characteristic	n (%)
Gender	
Male	27 (45%)
Female	33 (55%)
Age (years), Mean $\pm$ SD	33,07 $\pm$ 7,164
Exercise Frequency	
Low (1–2x/week)	30 (50%)
High ($\geq$ 3x/week)	30 (50%)
Q1 – Overall Quality Of Life	
Fair	13 (21,7%)
Good	39 (65,0%)
Very Good	8 (13,3%)
Q2 – Health Satisfaction	
Fair	8 (13,3%)
Satisfactory	44 (73,3%)
Very Satisfactory	8 (13,3%)

Table 2. Normality Test Shapiro-Wilk

Domain	Kel. 1 (p)	Kel. 2 (p)
Physical	0,228	0,627
Psychological	0,159	0,523
Social Relationships	0,190	0,476
Environment	0,374	0,891

Table 3. Total Quality of Life Scores Based on Exercise Frequency (Independent Samples t-Test)

Groups	Mean $\pm$ SD	<i>p-value</i>	Remarks
Low	48,27 $\pm$ 8,183	$p < 0,001$	Significant
High	59,64 $\pm$ 8,382		

Table 4. Comparison of Quality of Life Scores Across Groups (Independent Samples t-Test)

Domain	Kel. 1 Mean±SD	Kel. 2 Mean±SD	<i>p-value</i>	Remarks
Physical	46,90±18,04	56,07±17,97	0,053	TS
Psychological	47,30±17,89	60,07±20,51	0,013*	S
Social Relationships	55,23±18,58	61,63±18,15	0,182	TS
Environment	43,63±18,80	60,80±19,72	0,001**	S

*p<0,05 (Significant); **p<0,001 (Highly Significant); S=Significant; TS=Not Significant

DISCUSSION

The results of the study show that the majority of respondents rated their quality of life as good (Q1: 65%) and were satisfied with their health (Q2: 73.3%). These findings indicate that, in general, members of the Fakerunners Bandung community have a positive perception of their quality of life, which aligns with scientific evidence that individuals who are physically active within a community tend to have better subjective well-being compared to those who are inactive (Naofal et al., 2024). Running communities serve not only as a venue for physical activity but also as a social space that strengthens members' motivation, consistency in exercise, and positive perceptions of their health (Ayu et al., 2023).

Overall, the group with high exercise frequency (≥ 3 times/week) had higher mean scores across all quality-of-life domains compared to the low-frequency group (1-2 times/week), although not all differences were statistically significant. These results align with the WHO (2020), which indicates that people who achieve the suggested 150 minutes of aerobic exercise weekly usually experience an improved quality of life. (Casajús et al., 2024) support this by demonstrating that more frequent physical activity is consistently linked to improved physical and mental health. In a longitudinal study, (Denkinger et al., 2021) discovered that individuals who consistently engaged in high-frequency physical activity enjoyed a superior quality of life than those who had a low frequency.

Based on the FITT principle, differences in quality of life between the groups can be explained by the frequency component as the variable distinguishing the two groups. (Nurhadi & Prihatanta, 2025) emphasize that frequency is the primary component of

FITT and a key factor in the success of an exercise program. In this study, all FITT components other than frequency were homogeneous based on Strava data of community members. Differences in quality of life could be assessed more specifically in terms of differences in exercise participation frequency. (Rizqillah et al., 2025) added that exercise programs with frequencies that meet recommendations result in more optimal improvements in fitness and well-being.

Significant differences in the psychological domain ($p=0.013$) indicate that members who exercise ≥ 3 times per week experience a more consistent neurobiological response—specifically, the release of endorphins, serotonin, and norepinephrine—resulting in a greater cumulative effect on mood regulation, self-esteem, and psychological resilience (Liu et al., 2024). The environmental domain also showed the most significant difference ($p=0.001$) with the largest mean difference (17.17 points), as members who exercised more frequently interacted more often with public spaces and sports facilities, thereby forming a more positive perception of their environment (Furjes-Crawshaw et al., 2025). Meanwhile, the physical domain ($p=0.053$) nearly reached statistical significance, likely because exercise intensity was homogeneous within the low-to-moderate category, meaning physiological adaptations between groups were not yet sufficiently different (Shams et al., 2021). The social relationships domain ($p=0.182$) was not significant because the quality of social relationships is not solely determined by the frequency of physical attendance members remain connected through the community's social media as well as the limited sensitivity of this domain, which consists of only 3 items (WHO, 1997).

CONCLUSION

This research indicates that participants from the Bandung Fakerunners Community who trained frequently (≥ 3 times/week) experienced a superior quality of life in all areas of the WHOQOL-BREF compared to those with lower training frequency (1-2 times/week). Significant differences were observed in the psychological ($p=0.013$) and environmental ($p=0.001$) areas, whereas the physical ($p=0.053$) and social relationships ($p=0.182$) areas did not display significant differences. Exercise participation frequency that meets the WHO recommendation of 150 minutes per week was shown to have a greater impact on the perceptual and internal dimensions of quality of life. Community leaders are advised to design programs that encourage members to participate at least

three times per week. Future research is recommended to use a larger sample size, objectively measure exercise intensity (heart rate/ VO_2max), and consider a longitudinal design to establish stronger causal relationships.

REFERENCES

- Agnes, F., Budi, M. S., & Antono, S. (2022). Factors affecting the quality of life elderly in the work area of the Gayamsari Health Center Semarang City. *Jurnal Kesehatan Komunitas*, 8(September), 381–389.
- Algamdi, M. M., & Al Amer, H. S. (2024). Relationship between physical activity levels, quality of life, and sociodemographic attributes among adults in Tabuk, Saudi Arabia. *Sustainability*, 16(18). <https://doi.org/10.3390/su16188243>
- Ayu, J. C., Fairus, I. P., & Harpiana, R. (2023). Gambaran aktivitas olahraga lari komunitas Indorunners Makassar. *Window of Public Health Journal*, 6(5).
- Casajús, J. A., dkk. (2024). Is frequency of practice of different types of physical activity associated with health at different ages? *European Journal of Investigation in Health, Psychology and Education*, 14(1), 256–271. <https://pmc.ncbi.nlm.nih.gov/articles/PMC10814358/>
- da Cunha, R. A., de Lira, C. A. B., Vancini, R. L., Weiss, K., Knechtle, B., & Andrade, M. S. (2025). Striking the balance: exploring the influence of exercise quantity and intensity on quality-of-life outcomes. *Clinics*, 80, 100782. <https://doi.org/10.1016/j.clinsp.2025.100782>
- Denkinger, M. D., dkk. (2021). Longitudinal association between physical activity and health-related quality of life among community-dwelling older adults. *PMC*. <https://pmc.ncbi.nlm.nih.gov/articles/PMC8485559/>
- Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2012). *How to design and evaluate research in education* (8th ed.). McGraw-Hill.
- Furjes-Crawshaw, J., Heke, I., Jowett, T., & Rehrer, N. J. (2025). The physical activity environment, nature-relatedness and wellbeing. *International Journal of Environmental Research and Public Health*, 22(2). <https://doi.org/10.3390/ijerph22020299>
- Gonnord, T., Clarys, D., Boucard, G., & Esnard, C. (2023). Positive impact of social relationships fostered by physical and/or cognitive group activity on older people's quality of life. *Frontiers in Psychology*, 14. <https://doi.org/10.3389/fpsyg.2023.1166072>
- Hernández-Flórez, N., dkk. (2025). Running and its impact on quality of life and mental health through mindfulness. *QVADRATA*, 7(14), 93–105. <https://doi.org/10.54167/qvadrata.v7i14.2052>
- Kouli, E., Bebetos, E., Michalopoulou, M., & Filippou, F. (2026). Effects of a structured physical activity program on quality of life in older adults. *Healthcare*, 14(5). <https://doi.org/10.3390/healthcare14050685>
- Li, Q., Wang, K., & Chen, Z. (2026). Physical exercise and health-related quality of life in mid- to late-adulthood. *Frontiers in Psychology*, 17. <https://doi.org/10.3389/fpsyg.2026.1719139>

- Liu, R., Menhas, R., & Saqib, Z. A. (2024). Does physical activity influence health behavior, mental health, and psychological resilience under the moderating role of quality of life? *Frontiers in Psychology*, 15. <https://doi.org/10.3389/fpsyg.2024.1349880>
- Naofal, R. A., dkk. (2024). Peran olahraga lari untuk meningkatkan kesehatan fisik dan kualitas hidup terhadap mahasiswa Fakultas Ilmu Keolahragaan di Universitas Negeri Semarang. *Jurnal Angka*, 1(2), 415–426.
- Nurhadi, F. I., & Prihatanta, H. (2025). Tingkat pengetahuan dan implementasi komponen latihan penurunan berat badan pada remaja overweight. *Jurnal Pedagogi Olahraga dan Kesehatan*, 6(1), 20–26.
- Rizqillah, Z. A., Saputra, S. T., & Sundoro, S. (2025). Desain program latihan berbasis prinsip FITT guna meningkatkan kebugaran fisik personel ARFF. *Jurnal Bidang Ilmu Kesehatan*, 15(3), 287–292. <https://doi.org/10.52643/jbik.v15i3.6595>
- Setia, M. S. (2016). Methodology series module 3: Cross-sectional studies. *Indian Journal of Dermatology*, 61(3), 261–264. <https://pmc.ncbi.nlm.nih.gov/articles/PMC4885177/>
- Shams, A., dkk. (2021). Effect of aerobic-based exercise on psychological well-being and quality of life among older people. *Frontiers in Public Health*, 9. <https://doi.org/10.3389/fpubh.2021.764044>
- Stavrinou, P. S., Astorino, T. A., Giannaki, C. D., Aphas, G., & Bogdanis, G. C. (2025). Customizing intense interval exercise training prescription using the FITT principle. *Frontiers in Physiology*, 16. <https://doi.org/10.3389/fphys.2025.1553846>
- Tempo. (2024). Popularitas olahraga lari di Indonesia meningkat berdasarkan data Garmin. <https://www.tempo.co/data/data/popularitas-olahraga-lari-di-indonesia-meningkat-berdasarkan-data-garmin-991192>
- Varela-Sanz, A., Mecías-Calvo, M., Borrajo, E., & Muñoz-Pérez, I. (2024). Relationship between training frequency and training session duration on vitality in recreational runners. *Journal of Functional Morphology and Kinesiology*, 9(4). <https://doi.org/10.3390/jfmk9040209>
- World Health Organization. (1997). WHOQOL: Measuring quality of life (WHO/MSA/MNH/PSF/97.4). Geneva: WHO. <https://iris.who.int/handle/10665/63482>
- World Health Organization. (2020). WHO guidelines on physical activity and sedentary behaviour. Geneva: WHO. <https://www.ncbi.nlm.nih.gov/books/NBK566046/>