


Research Article

Active Leisure Time Predicts Happiness among Iranian Adults: A Study Comparing Adults with Physically Active versus Inactive Lifestyle

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Physical activity (PA) has been shown to have positive effects on mental well-being. However, previous research has mostly concentrated on the negative effects of inactivity on mental well-being and examined the use of PA as a preventive or therapeutic treatment for mental disorders, rather than a proactive method of enhancing mental well-being. Therefore, there is a need to consider the connection between PA and enhanced mental well-being, such as happiness. The current study sought to examine the levels of happiness among active and inactive adults. The study's participants were Iranian adults between 18 and 60 years. Data were gathered using a modified version of the 29-item Oxford 2002 Happiness Questionnaire and a researcher-developed leisure and PA questionnaire. $N = 541$ individuals completed the online survey, including $n = 373$ (68.9%) women and $n = 168$ (31.1%) men. More than half of Iranians (55.1%) reported low or moderate levels of happiness, and that those who engaged in active leisure pursuits reported significantly higher levels of happiness than those who were inactive during leisure time. The results of this cross-sectional study suggest that engaging in PA during leisure time predicts happiness. Encouraging Iranian adults to be more physically active during leisure time could increase happiness levels and thus contribute to the sustainable happiness and well-being of society.

1. Introduction

Although there are many ways to define happiness, it is generally agreed that it consists of pleasant mental or emotional (affective) sensations of satisfaction and fulfillment [1, 2]. For this study, we are defining happiness as a subjective state of mind characterized by enjoyment and contentment and a self-assessment of overall subjective well-being [3–5].

There is a growing body of literature highlighting the health benefits of happiness. A 15-year follow-up study, for example, found that higher levels of happiness are associated with lower mortality [6]. Other research suggested that mental and physical well-being also play a role in enhancing happiness [7, 8]. Additionally, Lyubomirsky et al. [9] found that happiness was associated with a range of positive outcomes such as greater career success, better quality marriages and relationships, and better physical and mental well-being.

Though several literature reviews have noted a beneficial relationship between PA and mental well-being [10], PA is not commonly studied as a contributing factor to happiness. Indeed, the field of positive psychology emphasizes various other factors as the keys to happiness, including practicing gratitude [11], helping others [12], and cultivating positive emotions, relationships, engagement, and finding meaning and accomplishment [13]. Thus, more analysis is needed to understand the extent to which PA may contribute to sustainable happiness.

PA behavior is influenced by both individual characteristics and the social environment. Whether an individual is physically active depends on demographic characteristics such as gender, age, and ethnic background and on socio-economic characteristics such as education and income levels. It also depends on at least three other factors, the latter two of which are external to the individual: (a) attitudes, preferences, motivations, and skills related to the motor behavior; (b) opportunities or constraints that make the behavior easier or more difficult to perform; and (c) incentives or disincentives that encourage or discourage the desired behavior relative to competing activities [14, 15].

Several countries are prioritizing happiness to enhance public health. The World Health Organization [16] reported that the UK, France, and Canada are considering national happiness indices to complement existing measures of development like Gross Domestic Product (GDP) and are emulating Bhutan in doing so. This approach departs from using economic growth as the exclusive barometer of national well-being and has sparked discussion about how to promote happiness [17].

Recent research indicates that Iran is one of the least happy countries, ranking 110 out of 146 countries measured, and well below the world average from 2019 to 2020 [18]. Iran's happiness score also decreased from 2019 to 2020 [19]. Still, in recent years, working hours in Iran have decreased due to the rapid advancement of science, technology, and industrial development, thereby facilitating more leisure time, which should arguably contribute to greater happiness.

Leisure is an important part of a balanced lifestyle and is often described as essential for welfare [20]. Leisure satisfaction can also predict both life satisfaction and health [21]. Prior research demonstrated a positive relationship between perceived freedom in leisure and happiness and mental well-being [22]. Additionally, routine activities and attitudes about leisure can have a significant positive effect on overall happiness [23], and increased happiness is considered a significant predictor of overall health in addition to being one of the most fundamental goals in life [24].

Still, leisure is a vague term, and not all leisure activities may have the same association with happiness. For example, Talmage et al. [25] found that PA was an important leisure pursuit for valuation of life, and PA during leisure time has been shown to improve mental well-being [26]. However, environmental factors have systematically emerged as determinants of PA in adults. The culture of ethnic minorities and barriers such as lack of affordable facilities, childcare, high crime rates, and fear of personal safety are primary reasons for not engaging in PA in leisure [27]. Thus, while

Iranians might benefit from engaging in more PA, they may be deterred from doing so due to some of these issues.

Further, the elements valued by older people as benefiting them and contributing to their quality of life include health care, relationships, functional autonomy, and staying active. Therefore, physical activity is one of the relevant quality of life components for older people [28]. Still, socio-contextual variables can influence how much older people engage in physical activity, such as gender, educational level, functional capacity, and the practice of leisure activities, with older women and less-educated individuals exhibiting less proactive attitudes towards physical capacity and leisure activities [29]. Likewise, socio-environmental factors related to a higher quality of life are related to more physical activity in older people, such as income, education, and practicing healthy lifestyle [30].

This study aimed to investigate the happiness levels of Iranians and determine which aspects of leisure impact happiness. The following hypotheses were explored: (i) Iranian adults will report low levels of happiness; (ii) more time spent in leisure will predict greater levels of happiness; and (iii) active leisure will predict greater levels of happiness than inactive leisure.

2. Materials and Methods

2.1. Participants. The participants were $N=585$ Iranian adults. Individuals were eligible if they met the following inclusion criteria: (1) no severe bipolarity with psychotic symptoms, no suicidal ideation and intent, no severe sensorimotor injury, (2) age range between 18 and 60 years, and (3) Iranian adults or adults living in Iran. Moreover, exclusion criteria were as follows: (1) having personality disorders and (2) substance use disorders. Of the $N=585$ Iranians who completed the survey, $n=44$ reported being younger than age 18 and were excluded. Thus, a final sample of $N=541$ was used for analysis.

The sample was comprised of $n=373$ women (68.9%) and $n=168$ men (31.1%), with a mean age of 28.8 years. Approximately half the sample ($n=254$; 47%) had an associates or bachelor's degree, $n=209$ (38.6%) had a masters or doctorate degree, and $n=78$ (14.4%) selected "other." Almost two-thirds ($n=340$; 62.8%) were single, while $n=198$ (31.1%) were married, and $n=3$ (0.6%) selected "other." Finally, 17.4% had a government job, 19.4% were self-employed, 16.1% were housekeepers, 32.7% were students, and 14.4% had some other type of occupation.

2.2. Procedure. An online survey was used to recruit participants and collect data. The survey was disseminated over 6 months through various Iranian websites and social media groups, with periodic reminders to boost participation and the sample size. After reviewing and signing an informed consent form, respondents were asked to complete a series of questionnaires including socio-demographic information, type and amount of leisure activity, and happiness. The ethics committee of Tarbiat Modares University (Tehran, Iran) approved the study protocol (IR2021-367992) and its

amendments. The present study was conducted in accordance with the ethical principles laid down in the Declaration of Helsinki and its later amendments. Data were collected via an online survey over a period of 2 weeks in May 2021.

2.3. Measures

2.3.1. Happiness. Happiness was measured using a modified version of the 29-item Oxford 2002 Happiness Questionnaire [31]. The modified version converted reverse items, so that all items were affirmative and used a four-point Likert-type scale ranging from 0 (strongly disagree) to 3 (strongly agree). The modified version of the questionnaire was translated to Farsi using a translation back translation procedure. An aggregate score for happiness was calculated by adding all 29 items together, for the highest total score of 87. Validity of the Farsi modified version questionnaire was confirmed by experts. The internal reliability of the modified Farsi version [32] used in this study was satisfactory ($\alpha = 0.96$).

2.3.2. Leisure. To assess time spent in leisure and the type of activity, a researcher-developed Physical Activity Leisure Questionnaire was used. Participants indicated the number of days per week they engaged in leisure time and the length of time spent during these days. Additionally, they were asked about the type of activities. Levels of PA were rated on a scale of vigorous and moderate. Activities that require a lot of physical effort, make you breathe quickly, perspire heavily, and leave you feeling exhausted were considered vigorous PA. Contrarily, moderate PA was characterized as activities that require minimal physical effort, make you feel a little exhausted, and allow you to breathe normally.

2.4. Statistical Analysis. Data analysis was performed with IBM SPSS v26.0. A multiple regression was used to identify significant predictors of happiness. This was followed by an independent *t*-test examining the difference in happiness levels between participants who were active and inactive during leisure time. The outcome variable of happiness was normal, with skewness and kurtosis scores within the ± 2 acceptable range, and no outliers. Statistical significance was set a priori at $p < 0.05$.

3. Results

Regarding the first hypothesis, the mean score for the aggregate happiness measure was 44.30, which was slightly higher than half of the highest possible score (i.e., 87). Though no normative data for this modified happiness questionnaire exist, $M = 44.30$ ($SD = 0.72$) does seem quite low, and the frequency counts in Table 1 indicate that more than half (55.1%) of respondents rated their happiness average or below average.

The second hypothesis was related to which leisure variables might predict happiness. A multiple regression was performed using the predictor variables of leisure activity

TABLE 1: Frequency counts for happiness.

Score	Number	Percentage
(Very low) 0–21	33	6.1
(Average) 22–44	265	49.0
(High) 45–67	191	35.3
(Very high) 68–87	52	9.6

(e.g., sports, art, traveling, and so on), type of leisure (active/inactive), and time spent engaging in leisure (days and hours). Table 2 shows the regression model summary for happiness. Regarding the overall multiple regression to predict happiness, when leisure variables were used as predictors, about 6% of the variance in happiness could be predicted. The effect size for R^2 or adjusted R^2 was medium.

The ANOVA output indicated that the overall regression was statistically significant, $F_{(10,530)} = 3.22$ and $p < 0.001$, suggesting that leisure factors significantly predict variance in happiness. However, the coefficients output for happiness indicated that only the type of leisure activity (i.e., active versus inactive) was significantly predictive of happiness when other variables were controlled, $t_{(530)} = 4.64$ and $p < 0.001$. The slope coefficient to predict happiness from type of activity was 6.92, meaning that predicted happiness for people engaging in active leisure was 6.92 points higher than for those engaging in inactive leisure.

However, the results of the regression model suggested that active leisure would predict greater levels of happiness than inactive leisure. An independent *t*-test confirmed this finding: $t_{(345,23)} = -4.43$ and $p < 0.001$. The mean happiness score of those who were active during leisure was $M = 48.72$ ($SD = 17.75$) versus $M = 41.92$ ($SD = 15.64$) for those who were inactive.

To verify if happiness might be influenced by socio-demographic factors in addition to type of leisure, a second regression model was performed with type of leisure, gender, age, marital status, education, and occupation included as predictor variables. The model results were similar and significant with $R = 0.24$, $R^2 = 0.06$, adjusted $R^2 = 0.03$, and $F_{(13,527)} = 2.37$ and $p = 0.004$. Additionally, only the type of leisure was a significant coefficient: $t_{(527)} = 4.84$ and $p < 0.001$, with the coefficient slope to predict happiness from type of activity at 7.30.

4. Discussion

This study aimed to evaluate the happiness of Iranians and determine if time spent in leisure and type of leisure predicted levels of happiness. The results supported two of the three hypotheses and were consistent with global happiness reports [18]. The self-reported happiness of study participants was relatively low, with more than half rating themselves as average or below average on the happiness scale. Interestingly, time spent engaged in leisure was not predictive of happiness. Rather, it was the type of leisure that was significantly predictive. Namely, that people who engage in active leisure had a higher happiness mean score than those who engage in inactive leisure. These findings provide initial evidence that Iranians could benefit from engaging in more active leisure pursuits.

TABLE 2: Regression model summary for happiness.

Model summary ^b				
Model	R	R square	Adjusted R square	Std. error of the estimate
1	0.239 ^a	0.057	0.039	16.37

^aPredictors: (constant), spending leisure: other; leisure time hours: 1 to 2; type leisure; leisure time week: over 5 days; spending leisure: family; leisure time week: 4 to 5 days; spending leisure: art; leisure time week: 3 to 4 days; spending leisure: sports; leisure time hours: 5 to 6. ^bDependent variable: happiness. *Note.* Spending leisure = travel, leisure time hours = 3-4, and leisure time week = 1-2 were excluded from the model.

These results are supported by prior studies showing a significant difference in happiness levels between exercising one day per week and not at all [33]. Even 45 minutes of PA per week could significantly increase the chances of being happy [34]. A similar pattern was observed in the relationship between PA and other aspects of mental well-being, such as depression and anxiety [35].

This was a cross-sectional study and claims of causation are not possible. Indeed, the relationship between happiness and physical exercise may be reciprocal. On the one hand, physical exercise can lead to happiness because exercise improves the flow of monoamines (such as noradrenaline, dopamine, and serotonin) throughout the brain [36] and boosts endorphin production [37]. These physiological reactions are known to lessen anxiety and depressed symptoms while enhancing well-being [38]. On the other hand, cognitive and affective processes, as described in self-determination theory [39], and affective models of behavior change, meaning that happiness can lead to PA.

However, despite the benefits of being regularly active, about one-third (31.1%) of people do not engage in any PA program [40, 41]. A review of past studies indicates that there is no single solution to promoting PA because perceived barriers vary in population subgroups [42]. Therefore, future research should examine why Iranians choose to engage in active leisure and what motivates them to do so regularly. Similarly, it would be helpful to understand the specific barriers to PA in Iranian culture. Such knowledge would provide valuable guidance for encouraging more active leisure and sustainable happiness for Iranian adults.

Our result, in line with Haase et al. [43], showed that many adult's levels of leisure-time PA fell short of the guidelines. For the selection of adults to get involved in the promotion of health through physical exercises or those who do not practice this type of activities, researchers and practitioners must examine the motivational factors that may distinguish between those who are active and those who are not. In a review of various well-known theories of exercise behavior, the need for theoretically grounded research on the motivational mechanisms underlying the start and maintenance of PA is emphasized. There are various practical justifications for differentiating between autonomous and regulating restrictions in exercise participation from a larger health promotion perspective. Research from the past has shown that more autonomous regulations are positively correlated with positive motivational outcomes

(such as behavioral persistence, task involvement, improved psychological well-being, and quality of life) and negatively correlated with more controlling regulations [44].

4.1. Strengths and Limitations. The present study has several strengths. First, that the study considers how PA and leisure activities affect happiness. Previous research has not given much thought to how PA affects happiness. Instead, most studies have concentrated on the psychological aspects of happiness. Therefore, it was important to examine other aspects of this phenomenon such as PA and active leisure and expand the existing knowledge in this field. Second, the study investigated two types of leisure among Iranians (active and inactive), and their relationship with happiness has been examined. Third, the study examined the role of PA and its connection to happiness in the context of Iranian culture. Thus, the results may be used as a point of reference for countries with similar cultures. Fourth, results were derived from a sizable sample, and various levels of recreational PA were used to determine participants' happiness levels.

However, there are limitations that need to be considered. Data were collected using an online method. Consequently, people without access to the Internet could not participate. Additionally, using only one method (self-reported surveys) to collect data limited our understanding of the connection between PA and happiness. A recommendation for future research is to employ other methods (e.g., interview, observation, laboratory design, and so on) to enhance knowledge in this area. Moreover, future research could address the issue of why Iranians prefer certain physical activities in their free time and their motivations for engaging in such activities. Finally, future research could develop a typology of Iranian's leisure physical activities to better inform potential policies designed to promote physical activity.

In general, theoretical implications for other researchers or academics are that the time spent in leisure can be considered a determining factor in happiness. Therefore, researchers and academics should pay attention to the ways in which specific types of leisure activities can promote happiness. From a practical perspective, the study results suggest that Iranians could benefit from raised awareness through the media and mass information tools that engaging in active leisure is connected to greater happiness. Moreover, public policy officials should consider promoting and developing active leisure facilities for Iranians, to help increase the level of happiness in the Iranian society.

5. Conclusions

More than half of the Iranians reported low to moderate levels of happiness, which suggests that there is much room for improvement, particularly as various countries begin using happiness as a national measure of well-being [45]. The study identified that engaging in active leisure significantly predicted higher happiness levels. Therefore, health officials in Iran could consider encouraging more active

leisure for Iranians, regardless of their socio-demographic status, to help bolster happiness levels. The findings of this research could help health professionals and policy makers to make Iranian society happier. They could create a framework for allowing more Iranians to participate in active leisure pursuits, thus contributing to the sustainable happiness and well-being of society.

Data Availability

The data presented in this study are available on request from the corresponding author. The data are not publicly available due to privacy and ethical restrictions.

Ethical Approval

This study was approved by the ethics committee of the Department of Sports Science, Tarbiat Modares University (IR2021-367992).

Conflicts of Interest

The authors declare that there are no conflicts of interest.

Authors' Contributions

R.N.S.H. and S.K. conceptualized the study. F.M. proposed the methodology. Z.M.V. provided software. A.J.B., Y.Y., and E.N. validated the study. R.N.S.H. performed formal analysis. F.M., S.K., and Z.M.V. investigated the study; E.N. performed data curation; E.N., G.B., and G.G prepared the original draft; G.G., G.B., F.F., and S.C. reviewed and edited the manuscript; G.G., G.B., F.F., and S.C. visualized the study; S.C. and G.G. supervised the study; G.B. was responsible for project administration. All authors read and approved the final manuscript. Stefania Cataldi and Gianpiero Greco have contributed equally to this work.

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References

- [1] F. Sabatini, "The relationship between happiness and health: evidence from Italy," *Social Science & Medicine*, vol. 114, pp. 178–187, 2014.
- [2] J. A. Piqueras, W. Kuhne, P. Vera-Villarroel, A. van Straten, and P. Cuijpers, "Happiness and health behaviours in Chilean college students: a cross-sectional survey," *BMC Public Health*, vol. 11, no. 1, p. 443, 2011.
- [3] B. S. Caunt, J. Franklin, N. E. Brodaty, and H. J. J. O. H. S. Brodaty, "Exploring the causes of subjective well-being: a content analysis of peoples' recipes for long-term happiness," *Journal of Happiness Studies*, vol. 14, no. 2, pp. 475–499, 2013.
- [4] R. Biswas-Diener, T. B. Kashdan, and L. A. J. T. J. O. P. P. King, "Two traditions of happiness research, not two distinct types of happiness," *The Journal of Positive Psychology*, vol. 4, no. 3, pp. 208–211, 2009.
- [5] V. L. Giannopoulos and D. A. J. T. J. O. P. P. Vella-Brodrick, "Effects of positive interventions and orientations to happiness on subjective well-being," *The Journal of Positive Psychology*, vol. 6, no. 2, pp. 95–105, 2011.
- [6] T. A. Koopmans, J. M. Geleijnse, F. G. Zitman, and E. J. Giltay, "Effects of happiness on all-cause mortality during 15 years of follow-up: the Arnhem Elderly Study," *Journal of Happiness Studies*, vol. 11, no. 1, pp. 113–124, 2010.
- [7] M. Argyle and M. Martin, "The psychological causes of happiness," *Subjective well-being: An interdisciplinary perspective*, vol. 10, pp. 77–100, 1991.
- [8] M. Argyle, *The Psychology of Happiness*, Routledge publisher, England, UK, 2013.
- [9] S. Lyubomirsky, L. King, and E. Diener, "The benefits of frequent positive affect: does happiness lead to success?" *Psychological Bulletin*, vol. 131, no. 6, pp. 803–855, 2005.
- [10] Z. Zhang and W. Chen, "A systematic review of the relationship between physical activity and happiness," *Journal of Happiness Studies*, vol. 20, no. 4, pp. 1305–1322, 2019.
- [11] R. A. Emmons, "Personal goals, life meaning, and virtue: wellsprings of a positive life," in *Flourishing: Positive Psychology and the Life Well-Lived*, pp. 105–128, American Psychological Association, Washington, DC, US, 2003.
- [12] M. Binder and A. Freytag, "Volunteering, subjective well-being and public policy," *Journal of Economic Psychology*, vol. 34, pp. 97–119, 2013.
- [13] R. Kobau, M. E. Seligman, C. Peterson et al., "Mental health promotion in public health: perspectives and strategies from positive psychology," *American Journal of Public Health*, vol. 101, no. 8, pp. e1–e9, 2011.
- [14] S. Handy, "Does the built environment influence physical activity? Examining the evidence. Critical assessment of the literature of the relationships among transportation, land use and," *Proceedings of the Physical Activity: Transportation Research Board Special Report*, vol. 282, 2005.
- [15] D. González-Cutre, R. Ferriz, V. J. Beltrán-Carrillo et al., "Promotion of autonomy for participation in physical activity: a study based on the trans-contextual model of motivation," *Educational Psychology*, vol. 34, no. 3, pp. 367–384, 2014.
- [16] W. H. Organization, *Consideration of the Evidence on Childhood Obesity for the Commission on Ending Childhood Obesity: Report of the Ad Hoc Working Group on Science and Evidence for Ending Childhood Obesity*, World Health Organization, Geneva, Switzerland, 2016.
- [17] R. Di Tella and R. MacCulloch, *Happiness Adaptation to Income beyond "Basic Needs"*, National Bureau of Economic Research, Cambridge, Massachusetts, 2008.
- [18] J. D. Sachs, R. Layard, and J. F. Helliwell, *World Happiness Report 2018*, ideas.repec.org, Calcutta, 2018.
- [19] J. E. De Neve and C. J. W. H. R. Krekel, "Cities and happiness: a global ranking and analysis," *JSTOR*, vol. 14, 2020.
- [20] C. W. Wiese, L. Kuykendall, and L. Tay, "Get active? A meta-analysis of leisure-time physical activity and subjective well-being," *The Journal of Positive Psychology*, vol. 13, no. 1, pp. 57–66, 2018.
- [21] G. Chick, Y.-C. Hsu, C.-K. Yeh, C.-M. Hsieh, S. Y. Bae, and S. Iarmolenko, "Cultural consonance in leisure, leisure satisfaction, life satisfaction, and self-rated health in urban taiwan," *Leisure Sciences*, vol. 38, no. 5, pp. 402–423, 2016.
- [22] I. J. I. J. O. P. Yalcin, "The role of freedom perceived in leisure on happiness and mental WellBeing," *International Journal of Psychology and Educational Studies*, vol. 7, no. 4, pp. 172–179, 2020.
- [23] A. W. Bailey, H.-K. Kang, and C. J. J. O. I. R. Schmidt, "Leisure routine and positive attitudes: age-graded comparisons of the path to happiness," *Journal of Leisure Research*, vol. 48, no. 3, pp. 189–209, 2016.

- [24] H. A. S. Sharifzadeh, T. S. A. Mirmohammad, and S. Adlipour, "A study of factors affecting social happiness in Iran: a meta-analysis of conducted research," *Journal of Iranian social development studies*, vol. 1, 2018.
- [25] C. A. Talmage, D. W. Coon, B. N. Dugger, R. C. Knopf, K. A. O'Connor, and S. A. Schofield, "Social leisure activity, physical activity, and valuation of life: findings from a longevity study," *Activities, Adaptation & Aging*, vol. 44, no. 1, pp. 61–84, 2020.
- [26] J. P. Agans and R. M. Lerner, "I actually have to decide what I'm doing:" how youth maintain active lifestyles in the transition to young adulthood," *Leisure Sciences*, vol. 20, pp. 1–21, 2021.
- [27] V. Seefeldt, R. M. Malina, and M. A. Clark, "Factors affecting levels of physical activity in adults," *Sports Medicine*, vol. 32, no. 3, pp. 143–168, 2002.
- [28] M. A. Parra-Rizo, "Componentes de influencia más valorados en la calidad de vida por las personas mayores de 60 años físicamente activas," *European Journal of Investigation in Health, Psychology and Education*, vol. 7, no. 3, pp. 135–144, 2018.
- [29] M. A. Parra-Rizo, J. Vázquez-Gómez, C. Álvarez et al., "Predictors of the level of physical activity in physically active older people," *Behavioral Sciences*, vol. 12, no. 9, p. 331, 2022.
- [30] R. Zapata-Lamana, F. Poblete-Valderrama, I. Cigarroa, and M. A. Parra-Rizo, "The practice of vigorous physical activity is related to a higher educational level and income in older women," *International Journal of Environmental Research and Public Health*, vol. 18, no. 20, Article ID 10815, 2021.
- [31] P. Hills and M. Argyle, "The Oxford Happiness Questionnaire: a compact scale for the measurement of psychological well-being," *Personality and Individual Differences*, vol. 33, no. 7, pp. 1073–1082, 2002.
- [32] A. A. J. P. R. Bayani, "Test-retest reliability, internal consistency, and construct validity of the Farsi version of the Oxford Happiness Inventory," *Psychological Reports*, vol. 103, no. 5, pp. 139–144, 2008.
- [33] Y. J. Lee and W. L. Hung, "The relationship between exercise participation and well-being of the retired elderly," *Aging & Mental Health*, vol. 15, no. 7, pp. 873–881, 2011.
- [34] M. M. Tse, S. K. Vong, and S. K. Tang, "Motivational interviewing and exercise programme for community-dwelling older persons with chronic pain: a randomised controlled study," *Journal of Clinical Nursing*, vol. 22, no. 13–14, pp. 1843–1856, 2013.
- [35] G. P. Whitfield, E. T. Hyde, and S. A. Carlson, "Participation in leisure-time aerobic physical activity among adults, national health interview survey," *Journal of Physical Activity and Health*, vol. 18, no. S1, pp. S25–s36, 2021.
- [36] T. W. Lin and Y. M. Kuo, "Exercise benefits brain function: the monoamine connection," *Brain Sciences*, vol. 3, no. 4, pp. 39–53, 2013.
- [37] E. Anderson and G. Shivakumar, "Effects of exercise and physical activity on anxiety," *Frontiers in Psychiatry*, vol. 4, p. 27, 2013.
- [38] P. J. Carek, S. E. Laibstain, and S. M. Carek, "Exercise for the treatment of depression and anxiety," *The International Journal of Psychiatry in Medicine*, vol. 41, no. 1, pp. 15–28, 2011.
- [39] R. M. Ryan and E. L. Deci, "Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being," *American Psychologist*, vol. 55, no. 1, pp. 68–78, 2000.
- [40] S. Sperandei, M. C. Vieira, and A. C. Reis, "Adherence to physical activity in an unsupervised setting: explanatory variables for high attrition rates among fitness center members," *Journal of Science and Medicine in Sport*, vol. 19, no. 11, pp. 916–920, 2016.
- [41] J. D. Irwin, "Prevalence of university students' sufficient physical activity: a systematic review," *Perceptual & Motor Skills*, vol. 98, no. 3, pp. 927–943, 2004.
- [42] K. Borodulin, N. Sipilä, O. Rahkonen et al., "Socio-demographic and behavioral variation in barriers to leisure-time physical activity," *Scandinavian Journal of Public Health*, vol. 44, no. 1, pp. 62–69, 2016.
- [43] A. Haase, A. Steptoe, J. F. Sallis, and J. Wardle, "Leisure-time physical activity in university students from 23 countries: associations with health beliefs, risk awareness, and national economic development," *Preventive Medicine*, vol. 39, no. 1, pp. 182–190, 2004.
- [44] M. Reinboth, J. L. Duda, and N. J. M. Ntoumanis, "Dimensions of behavior, need satisfaction, and the psychological and physical welfare of young athletes," *Motivation and Emotion*, vol. 28, no. 3, pp. 297–313, 2004.
- [45] M. Miret, F. F. Caballero, S. Chatterji et al., "Health and happiness: cross-sectional household surveys in Finland, Poland and Spain," *Bulletin of the World Health Organization*, vol. 92, no. 10, pp. 716–725, 2014.