

Development and preliminary validation of a questionnaire for assessing fitness centers

Michael E. Santos^{abcdef1}.

¹Faculty, Central Luzon State University, Science City of Munoz, Nueva Ecija, 3119, Philippines

Received: 30 January 2024; Revised: 20 February 2024; Accepted: 15 April 2024;
Available online: 30 April 2024.

Abstract

This manuscript comprehensively examines the development and preliminary validation of a questionnaire designed to assess fitness centers. The study aims to address existing gaps in the literature by providing a standardized tool for evaluating the quality of fitness facilities. The study aims to design, validate, and present a preliminary assessment instrument tailored specifically for fitness centers, encompassing various aspects such as program offerings, facility conditions, and staff competencies. The research methods involved the identification of key indicators affecting fitness center services, followed by the generation and validation of questionnaire items through a rigorous statistical analysis. The research subjects consisted of 119 fitness enthusiasts from Angeles City, Philippines, who actively participated in the validation process. The instruments used in data processing included Likert-style rating scales and statistical methods such as Point Biserial Correlation and t-tests. The analysis of data utilized in data processing led to the retention of 59 questionnaire items, demonstrating significant correlation coefficients. The study's results highlight the reliability and validity of the developed questionnaire as a valuable tool for assessing fitness centers, providing insights into client needs and areas for improvement. In conclusion, the preliminary validation of the questionnaire serves as a crucial step towards enhancing the quality and standards of fitness center services, benefiting both managers and regulatory authorities in ensuring the provision of safe and effective fitness facilities.

Keywords: Fitness center, quality assessment, validation.

How to Cite: Santos, M. (2024). Development and preliminary validation of a questionnaire for assessing fitness centers . Jurnal SPORTIF : Jurnal Penelitian Pembelajaran, 10(1), 157-170. https://doi.org/10.29407/js_unpgri.v10i1.22124

Authors contribution: a – Preparing concepts; b – Formulating methods; c – Conducting research; d – Processing results; e – Interpretation and conclusions; f - Editing the final version

INTRODUCTION

Physical inactivity is a global health concern, contributing to various adverse health conditions such as coronary heart disease, type 2 diabetes, and certain cancers, ultimately shortening life expectancy (Belvederi Murri et al., 2020). In response, fitness centers have become crucial in promoting physical activity and overall well-being (Woodruff et al., 2021).

However, fitness enthusiasts have raised concerns regarding the quality of fitness centers, including equipment standards, instructional quality, and facility conditions.

The background of the study underscores the significance of physical fitness in mitigating health risks associated with sedentary lifestyles (Bull et al., 2020; Katzmarzyk et al., 2020; Nieste et al., 2021). Fitness centers play a pivotal role in fostering physical activity by offering diverse programs to improve overall health (Yuksel et al., 2020). Nevertheless, there needs to be more literature on a standardized assessment tool specifically tailored to evaluate the quality of fitness centers comprehensively.

The research variables encompassed in this study include objectives, policy, physical environment, facilities, programs, hours of operation, fees, equipment, and personnel qualifications. These variables were identified through a meticulous literature review, drawing on the works of Knetsch and Davis (2019), who emphasized the importance of assessment tools in evaluating recreation facilities.

In a time represented by growing public health concerns and the rise of sedentary lifestyles, the importance of adopting standardized tests to evaluate fitness facility quality cannot be stressed (Liu et al., 2022). Fitness centers are essential in promoting physical exercise and overall well-being, as physical inactivity has been related to various negative health effects, including chronic diseases and a shorter life expectancy (Bantham et al., 2021). However, the lack of a globally agreed tool for measuring the quality of these facilities is a considerable hurdle to assuring their efficacy and safety. Standardized assessments designed specifically for fitness centers are urgently required to provide managers with actionable insights into areas for improvement, facilitate informed decision-making by regulatory authorities, and, ultimately, improve the provision of safe, accessible, and high-quality exercise facilities.

The current study resolves significant research deficiencies in the current body of literature concerning the evaluation of fitness centers.

Although numerous studies ([Lau et al., 2021](#); [Toselli et al., 2022](#); [Wingo et al., 2020](#)) have examined the significance of recreation facility assessments and the effect of physical activity on health, a standardized and validated questionnaire designed to evaluate the quality of fitness centers in a comprehensive manner is conspicuously absent. Standardized assessments specifically designed to evaluate the quality of fitness centers offer several significant contributions to the fitness industry and public health initiatives. Firstly, they provide a systematic and objective means of evaluating fitness center services, facilities, and programs. By establishing clear criteria and metrics, these assessments enable managers to identify areas of strength and areas needing improvement, thereby fostering continuous quality enhancement. Additionally, standardized assessments enhance transparency and accountability within the fitness industry, ensuring consumers can make informed decisions when selecting a fitness center ([Ash et al., 2021](#)). With such a tool, research attempting to comprehend the multifarious factors influencing the efficacy of fitness centers, including program offerings, facility conditions, and staff competencies, has been improved.

By designing and conducting preliminary questionnaire validation, this research endeavors to address this deficiency and provide regulatory authorities and fitness center managers with a valuable tool; thus, it contributes to improving fitness center services and establishing industry standards. The methodology of this study involved a systematic approach to identify key indicators affecting fitness center services. These indicators encompassed various aspects such as objectives, policy, physical environment, facilities, programs, hours of operation, fees, equipment, and personnel qualifications ([León-Quismondo et al., 2020](#)). Through a meticulous examination of these factors, the study aimed to gain comprehensive insights into fitness centers' overall quality and effectiveness. This methodological approach ensured a thorough evaluation of critical components influencing fitness center operations and

service delivery, laying the foundation for the development of a robust assessment tool explicitly tailored to assess fitness center quality.

Given the existing research gaps, this study aims to design, validate, and present a preliminary assessment tool that fitness center managers can utilize to enhance services and by local authorities in evaluating fitness center license applications. In the absence of an official regulatory board for fitness centers in the Philippines, particularly in Angeles City, such a tool is essential for ensuring the quality and safety of fitness facilities.

METHOD

The methodology involved the identification of key indicators affecting fitness center services, including objectives, policy, physical environment, facilities, programs, hours of operation, fees, equipment, and personnel qualifications. A total of 119 items were initially generated, with a Likert-style rating employed for item assessment.

Twenty-one qualified respondents, who were members of fitness clubs in Angeles City, Philippines, actively participated in the validation process. The subjects of this study were members of fitness clubs in Angeles City, Philippines, and totaled 119 individuals. These fitness club members were selected as respondents due to their firsthand experience and insights into the operations and services offered by fitness centers. As active participants in fitness activities, they were considered knowledgeable stakeholders whose perspectives were essential for validating the questionnaire designed to assess fitness center quality. Respondents filled out the questionnaires by providing their ratings and feedback using a Likert-style rating scale. This scale typically ranges from 1 to 5, allowing respondents to indicate their level of agreement or satisfaction with each questionnaire item. Additionally, respondents may have been given the opportunity to provide qualitative comments or suggestions to enrich the data collected further during the validation process.

These fitness club members were selected as respondents due to their firsthand experience and insights into the operations and services offered by fitness centers. As active participants in fitness activities, they were considered knowledgeable stakeholders whose perspectives were essential for validating the questionnaire designed to assess fitness center quality. Respondents filled out the questionnaires by providing their ratings and feedback using a Likert-style rating scale. This scale typically ranges from 1 to 5, allowing respondents to indicate their level of agreement or satisfaction with each questionnaire item. Additionally, respondents may have been given the opportunity to provide qualitative comments or suggestions to further enrich the data collected during the validation process.

Statistical methods, including (1) Point Biserial Correlation and (2) t-tests, were conducted to select items for the second draft of the questionnaire based on respondent ratings.

$$r_{XY} = r_{pb} \tag{1}$$

$$t = \frac{m - \mu}{s / \sqrt{n}} \tag{2}$$

RESULT

Statistical analysis led to the retention of 59 items for the second draft of the questionnaire. These items, reflecting aspects such as objectives, policy, facilities, programs, and personnel qualifications, demonstrated a total correlation of 2.0 or more. The refined questionnaire provides a valuable tool for fitness center managers to understand client needs and improve services.

Table 1. Items to be retained on the second draft of the questionnaire in assessing fitness centers based on computed t-statistics

No.	Items	low/high
1	Fitness Center improves the weight, figure, and fitness realistic.	4.19
2	Fitness Center enhances clients' metabolic fitness.	4.41
3	Fitness Center reduces clients' health care costs.	6.21
4	Fitness Center aims to reduce mental tension and alleviate depression	3.62
5	Fitness Center develops strength and muscular endurance.	3.62
6	Fitness Center provides activities that reduce the effects of acquired aging.	4.21
7	Fitness Center aims to decrease the chance of adult onset diabetes.	3.73
8	Fitness Center conducts proper health status screening of clients.	4.49
9	Fitness Center provides a copy of the contract policy.	3.89
10	The Fitness Center adheres to the ID system to secure the facility.	4.19
11	The Fitness Center requires clients to wear proper attire.	6.18
12	The Fitness Center prohibits food and drinks inside the gym.	3.41
13	Fitness Center gives client ample time to pay their dues.	6.21
14	Fitness Center requires clients to wear gym belts when lifting heavy loads.	5.71
15	Fitness Center observes Anti-Sexual harassment law.	4.55
16	The Fitness Center is accessible.	6.33
17	The Fitness Center has an overall aesthetic interior and exterior design.	5.74
18	The Fitness Center has sufficient area for stretching and warm-ups.	5.33
19	Fitness Center provides cardiovascular training facilities.	6.81
20	Fitness Center provides well appointed and secured lockers for clients.	2.56
21	Fitness Center provides CR and shower rooms for male and female clients.	3.69
22	The Fitness Center provides sufficient dressing rooms for males and females.	4.01
23	The Fitness Center has a sauna bath, steam rooms, and a jacuzzi.	3.48
24	The Fitness Center puts up an energy lounge that serves healthy snacks.	2.56
25	The Fitness Center has fire extinguishers and an exit.	3.25
26	The Fitness Center has enough parking space for its clients.	4.35
27	The fitness program offers vigorous aerobic activities 3 or more days a week.	6.33
28	Fitness program offers muscle toning for male and female clients.	5.78
29	Fitness program offers muscle building for skinny clients.	6.89
30	Fitness program offers strength training for athletes.	2.89
31	Offers fitness program for pregnant clients.	5.54
32	Offers fitness program for clients 14 years old below.	5.92
33	Offers fitness program for client ages 40-60 male and female	2.51
34	Offers proper nutrition and diet programs to clients.	4.38
35	Offers evaluation program to monitor clients' fitness status.	3.61
36	Offers one-on-one personal training for clients participating in pageants.	4.01
37	Offers exercise program for improving cardiovascular fitness.	2.96

38 Offers sports and recreational activities.	3.31
39 Offers meditational exercises for clients who are physically disable.	3.21
40 Operates 7 days a week from 6 am-10 pm and Sunday from 8 am-5 pm.	4.24
41 The Fitness Center conducts remedial sessions on holidays.	3.61
42 Fitness Center offers well-justified gym fees for their services and facilities.	6.89
43 Fitness Center offers free trial workouts for projected future clients.	5.54
44 Fitness Center honors student and senior citizen discounts.	5.71
45 Fitness Center has complete set of gym equipment.	3.48
46 Fitness Center has plate loaded machines for convenient weight adjustment.	4.41
47 The Fitness Center has gadgets for checking clients; weight, height, and fat.	5.54
48 The Fitness Center has enough cardiovascular equipment and apparatuses.	5.71
49 Fitness Center staff serves as role models of health and fitness.	5.54
50 Fitness Center staff uses various instructional strategies in their programs.	6.89
51 The Fitness Center staff implements fitness programs for all ages and conditions.	4.41
52 The staff shows professional commitment to competing in fitness competitions.	3.48
53 Staff provides a variety of fitness programs depending on clients' needs.	4.41
54 Staff understands and carries out emergency procedures.	6.89
55 Fitness Center makes an effort to improve weak areas of their gym.	5.56
56 Fitness Center staff accomplish their specific goals.	3.48
57 The Fitness Center's manager/owner relates well with clients.	3.08
58 Fitness Center's manager/owner relates well with their staff.	5.71
59 The Fitness Center's manager provides training to their new staff.	5.54

The "low/high" values in the table likely refer to the ratings provided by respondents on the Likert-style scale for each questionnaire item. These ratings indicate the perceived level of agreement or satisfaction with each item. The "low" group likely represents respondents who provided lower ratings, while the "high" group represents those who provided higher ratings. These ratings are then used in statistical analyses, such as t-tests, to determine if the two groups have significant differences in responses. This helps identify which items are most strongly associated with positive perceptions of fitness center quality and can inform decisions about which items to retain in the questionnaire for further validation.

The analysis of key indicators at the fitness center revealed several noteworthy findings. Firstly, respondents rated the center's objectives highly, highlighting its focus on improving clients' physical fitness, metabolic health, and overall well-being. Policies such as proper attire

requirements and the prohibition of food and drinks inside the gym were also positively perceived. Regarding the physical environment, respondents emphasized the importance of accessibility, aesthetic appeal, and sufficient space for stretching and warm-ups. Facilities like cardiovascular training equipment and secure lockers received high ratings. Programs offering diverse fitness activities for different demographics, including pregnant clients and seniors, were well-received. Respondents appreciated extended hours of operation and reasonable costs. However, there were areas for improvement noted, particularly in ensuring the availability of complete gym equipment and maintaining staff qualifications and professionalism. Overall, the findings underscore the importance of a holistic approach to fitness center management, encompassing diverse programs, adequate facilities, and qualified personnel to effectively meet clients' varied needs.

DISCUSSION

Table 1 presents the items that will be included in the second version of the questionnaire for evaluating fitness facilities. It also includes their associated calculated t-statistics and low/high ratings. The elements encompass several characteristics, such as the range of fitness programs available, the state of the facilities, the credentials of the workers, and the overall quality of service. The Well-being and Public Health recommendations for a healthy, safe and sustainable housing may provide a useful basis for Designers, Policy Makers (fostering tax incentives for building renewal), Public Health experts and Local Health Agencies, in promoting actions and policies aimed to transform living places in healthier and Salutogenic spaces (D'Alessandro et al., 2020). Such user feedback is quintessentially important, especially if these sports facilities are optimized to enhance their utilitarian performance while remaining profitable and augmenting users' experience. In any developed nation, sports are widely acknowledged as representing a prominent means of retaining the physical and mental health of the population (Dejaco et al., 2017).

Based on the data provided, a number of factors are analyzed in the methodology section, including the purpose of the fitness center, its policies, its physical environment, its facilities, its programs, its operating hours, its expenses, its equipment, and the qualifications of its staff. Although policies refer to the center's rules and regulations, purpose relates to the center's objectives. Facilities include features like saunas and cardio equipment, while the physical environment includes elements like aesthetic appeal and accessibility. Programs reflect the variety of fitness options available, and operation hours show when those options are open. Membership fees are included in the costs, and the gym's equipment is referred to as equipment. Staff credentials evaluate employee competency. These components are examined to determine the overall caliber of the fitness facility. In the social community sector, understanding user perceptions of facilities provided to the public is very important because it affects public asset management strategies, physical and mental health/well-being of facility users, and long-term environmental sustainability for the public (Shin et al., 2018).

During the research, several key findings emerged from the analysis of the questionnaire items assessing fitness center quality. Overall, respondents expressed high satisfaction with the fitness center's objectives, indicating a strong focus on improving physical fitness and overall well-being. Positive perceptions were also noted regarding policies such as proper attire requirements and prohibiting food and drinks inside the gym. The physical environment received favorable ratings, particularly regarding accessibility, aesthetic appeal, and space availability for stretching and warm-ups. Facilities such as cardiovascular training equipment and secure lockers were well-received. Diverse programs catering to different demographics, including pregnant clients and seniors, were appreciated. Extended hours of operation and reasonable costs were also positively noted. However, areas for improvement were identified, particularly in ensuring the availability of complete gym equipment and maintaining staff qualifications and professionalism. Service quality

evaluation, attracting more customers, and retaining existing customers is increasingly important in the fitness industry (Özdemir, 2020). Overall, the findings underscore the importance of a comprehensive approach to fitness center management to meet clients' diverse needs.

The literature substantiates the importance of these discoveries. Jeon et al., (2021) emphasize the significance of comprehending consumers' expectations in fitness facilities, including program offers and the general ambiance. In addition, King et al. (2019) emphasize the impact of the physical environment on physical activity behavior, underscoring the significance of well-designed facilities. The focus on different fitness regimens is in accordance with research conducted by Marquez et al. (2020), which highlights the beneficial effects of engaging in a range of physical activities on one's overall well-being. The significance of emergency procedures corresponds to D'Alessandro et al.'s (2020) emphasis on safety and upkeep in recreational facilities.

To summarize, the examination of Table 1 highlights the significance of many factors when evaluating fitness facilities. The high validity coefficients and substantial t-statistics support the questionnaire's capacity to measure these elements reliably. The results are consistent with previous research, emphasizing the importance of criteria such as the variety of programs offered, the facilities' condition, and the personnel's competence in determining the quality of fitness centers. Based on the six contextual factor categories for exercising in fitness centers, the facilitators and barriers associated with fitness center use differed between adults with and without physical disabilities. The main focus for Adults with physical disabilities was on barriers due to inaccessibility, whereas for Adults without physical disabilities, it was on facilitators such as motivational factors and benefits of exercising (Nikolajsen et al., 2021).

While the current study aimed to provide valuable insights into assessing fitness center quality, it is essential to acknowledge certain limitations that may have influenced the results. Firstly, the study's reliance on self-reported data from fitness center members may introduce

response biases, such as social desirability bias, where respondents may provide more favorable ratings to align with perceived societal norms. Initial support to use the fitness center facilities given to new members via telephone and e-mail increased the proportion of bookings with a fitness trainer during the first months of the membership (Riseth et al., 2021). Additionally, the study's focus on a specific geographical location, Angeles City, Philippines, may limit the generalizability of the findings to fitness centers in other regions or countries with different cultural, economic, and regulatory contexts. Moreover, the sample size of 119 respondents may be relatively small, potentially impacting the representativeness of the findings and statistical power. Furthermore, using Likert-style rating scales, while common in survey research, may need to be more accurate with respondents' perceptions and nuances regarding fitness center quality. These limitations highlight the need for caution when interpreting the results and emphasize the importance of future research endeavors to address these constraints and provide a more comprehensive understanding of fitness center assessment.

CONCLUSION

The conclusions drawn from this research underscore the pivotal significance and practical relevance of the findings in evaluating fitness center quality. The study's comprehensive assessment, covering various dimensions such as objectives, policies, facilities, programs, and staff qualifications, provides actionable insights for stakeholders in the fitness industry. Based on these findings, practical recommendations emerge, urging fitness center managers to prioritize enhancements in program diversity, uphold facility standards, and ensure staff competency to cater to client needs effectively. Moreover, regulatory bodies are urged to adopt standardized assessment tools to uphold quality standards and promote public health initiatives. By implementing these recommendations, the fitness industry can elevate service delivery standards, fostering healthier communities through accessible and high-quality fitness facilities.

REFERENCES

- Ash, G. I., Stults-Kolehmainen, M., Busa, M. A., Gaffey, A. E., Angeloudis, K., Muniz-Pardos, B., Gregory, R., Huggins, R. A., Redeker, N. S., Weinzimer, S. A., Grieco, L. A., Lyden, K., Megally, E., Vogiatzis, I., Scher, L., Zhu, X., Baker, J. S., Brandt, C., Businelle, M. S., ... Gerstein, M. B. (2021). Establishing a Global Standard for Wearable Devices in Sport and Exercise Medicine: Perspectives from Academic and Industry Stakeholders. *Sports Medicine (Auckland, N.Z.)*, 51(11), 2237–2250. <https://doi.org/10.1007/s40279-021-01543-5>
- Bantham, A., Taverno Ross, S. E., Sebastião, E., & Hall, G. (2021). Overcoming barriers to physical activity in underserved populations. *Progress in Cardiovascular Diseases*, 64, 64–71. <https://doi.org/10.1016/j.pcad.2020.11.002>
- Belvederi Murri, M., Folesani, F., Zerbinati, L., Nanni, M. G., Ounalli, H., Caruso, R., & Grassi, L. (2020). Physical Activity Promotes Health and Reduces Cardiovascular Mortality in Depressed Populations: A Literature Overview. *International Journal of Environmental Research and Public Health*, 17(15). <https://doi.org/10.3390/ijerph17155545>
- Bull, F. C., Al-Ansari, S. S., Biddle, S., Borodulin, K., Buman, M. P., Cardon, G., Carty, C., Chaput, J. P., Chastin, S., Chou, R., Dempsey, P. C., Dipietro, L., Ekelund, U., Firth, J., Friedenreich, C. M., Garcia, L., Gichu, M., Jago, R., Katzmarzyk, P. T., ... Willumsen, J. F. (2020). World Health Organization 2020 guidelines on physical activity and sedentary behavior. In *British Journal of Sports Medicine* (Vol. 54, Issue 24, pp. 1451–1462). BMJ Publishing Group. <https://doi.org/10.1136/bjsports-2020-102955>
- D'Alessandro, D., Gola, M., Appolloni, L., Dettori, M., Fara, G. M., Rebecchi, A., Settimo, G., & Capolongo, S. (2020). COVID-19 and Living space challenge. Well-being and Public Health recommendations for a healthy, safe, and sustainable housing. *Acta Bio-Medica: Atenei Parmensis*, 91(9-S), 61–75. <https://doi.org/10.23750/abm.v91i9-S.10115>
- Dejaco, M. C., Re Cecconi, F., & Maltese, S. (2017). Key Performance Indicators for Building Condition Assessment. *Journal of Building Engineering*, 9, 17–28. <https://doi.org/https://doi.org/10.1016/j.jobe.2016.11.004>
- Jeon, Y., Kim, D., Han, S., Huang, Y., & Kim, J. (2021). How Does Service Environment Enhance Consumer Loyalty in the Sport Fitness Industry? The Role of Servicescape, Consumption Motivation, Emotional and Flow Experiences. *Sustainability*, 13(11). <https://doi.org/10.3390/su13116414>
- Katzmarzyk, P. T., Ross, R., Blair, S. N., & Després, J.-P. (2020). Should we target increased physical activity or less sedentary behavior in the

- battle against cardiovascular disease risk development?
Atherosclerosis, 311, 107–115.
<https://doi.org/10.1016/j.atherosclerosis.2020.07.010>
- King, A. C., Whitt-Glover, M. C., Marquez, D. X., Buman, M. P., Napolitano, M. A., Jakicic, J., Fulton, J. E., & Tennant, B. L. (2019). Physical Activity Promotion: Highlights from the 2018 Physical Activity Guidelines Advisory Committee Systematic Review. *Medicine and Science in Sports and Exercise*, 51(6), 1340–1353.
<https://doi.org/10.1249/MSS.0000000000001945>
- Knetsch, J., & Davis, R. (2019). *Comparison of Methods for Recreation Evaluation* (pp. 151–166). <https://doi.org/10.4324/9780429025983-15>
- Lau, E., Hou, H. (Cynthia), Lai, J. H. K., Edwards, D., & Chileshe, N. (2021). User-centric analytic approach to evaluate the performance of sports facilities: A study of swimming pools. *Journal of Building Engineering*, 44(June), 102951.
<https://doi.org/10.1016/j.jobbe.2021.102951>
- León-Quismondo, J., García-Unanue, J., & Burillo, P. (2020). Best Practices for Fitness Center Business Sustainability: A Qualitative Vision. *Sustainability*, 12(12). <https://doi.org/10.3390/su12125067>
- Liu, R., Menhas, R., Dai, J., Saqib, Z. A., & Peng, X. (2022). Fitness Apps, Live Streaming Workout Classes, and Virtual Reality Fitness for Physical Activity During the COVID-19 Lockdown: An Empirical Study. *Frontiers in Public Health*, 10, 852311.
<https://doi.org/10.3389/fpubh.2022.852311>
- Marquez, D. X., Aguiñaga, S., Vásquez, P. M., Conroy, D. E., Erickson, K. I., Hillman, C., Stillman, C. M., Ballard, R. M., Sheppard, B. B., Petruzzello, S. J., King, A. C., & Powell, K. E. (2020). A systematic review of physical activity and quality of life and well-being. *Translational Behavioral Medicine*, 10(5), 1098–1109.
<https://doi.org/10.1093/tbm/ibz198>
- Nieste, I., Franssen, W. M. A., Spaas, J., Bruckers, L., Savelberg, H. H. C. M., & Eijnde, B. O. (2021). Lifestyle interventions to reduce sedentary behavior in clinical populations: A systematic review and meta-analysis of different strategies and effects on cardiometabolic health. *Preventive Medicine*, 148, 106593.
<https://doi.org/10.1016/j.ypmed.2021.106593>
- Nikolajsen, H., Sandal, L. F., Juhl, C. B., Troelsen, J., & Juul-Kristensen, B. (2021). Barriers to, and facilitators of, exercising in fitness centers among adults with and without physical disabilities: A scoping review. *International Journal of Environmental Research and Public Health*, 18(14), 1–32. <https://doi.org/10.3390/ijerph18147341>
- Özdemir, Ö. (2020). Evaluation of Fitness Center Service Quality. *European Journal of Physical Education and Sport Science*, 6(6), 46–58. <https://doi.org/10.46827/ejpe.v6i6.3248>

- Riseth, L., Ivar Lund Nilsen, T., Mittet, Ø., & Steinsbekk, A. (2021). The effect of initial support on fitness center use in new fitness center members. A randomized controlled trial. *Preventive Medicine Reports*, 24. <https://doi.org/10.1016/j.pmedr.2021.101605>
- Shin, S., Chiu, W., & Lee, H.-W. (2018). For a better campus sporting experience: Scale development and validation of the collegiate sportscape scale. *Journal of Hospitality, Leisure, Sport & Tourism Education*, 22, 22–30. <https://doi.org/https://doi.org/10.1016/j.jhlste.2017.12.002>
- Toselli, S., Bragonzoni, L., Grigoletto, A., Masini, A., Marini, S., Barone, G., Pinelli, E., Zinno, R., Mauro, M., Pilone, P. L., Arduini, S., Galli, S., Vitiello, M., Vicentini, B., Boldrini, G., Musti, M. A., Pandolfi, P., Liberti, M., Astorino, G., ... Dallolio, L. (2022). Effect of a Park-Based Physical Activity Intervention on Psychological Well-being during COVID-19. *International Journal of Environmental Research and Public Health*, 19(10). <https://doi.org/10.3390/ijerph19106028>
- Wingo, B. C., Yang, D., Davis, D., Padalabalanarayanan, S., Hopson, B., Thirumalai, M., & Rimmer, J. H. (2020). Lessons learned from a blended telephone/e-health platform for caregivers in promoting physical activity and nutrition in children with a mobility disability. *Disability and Health Journal*, 13(1), 100826. <https://doi.org/10.1016/j.dhjo.2019.100826>
- Woodruff, S. J., Coyne, P., & St-Pierre, E. (2021). Stress, physical activity, and screen-related sedentary behavior within the first month of the COVID-19 pandemic. *Applied Psychology. Health and Well-Being*, 13(2), 454–468. <https://doi.org/10.1111/aphw.12261>
- Yuksel, H. S., Şahin, F. N., Maksimovic, N., Drid, P., & Bianco, A. (2020). School-Based Intervention Programs for Preventing Obesity and Promoting Physical Activity and Fitness: A Systematic Review. *International Journal of Environmental Research and Public Health*, 17(1). <https://doi.org/10.3390/ijerph17010347>