

## ORIGINAL SCIENTIFIC PAPER

# Exercise in the Workplace: A Qualitative-Quantitative Study of Enjoyment

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## Abstract

The present study will assess workers' perceptions of the benefits of exercise and their awareness of the usefulness of performing it during working hours. The sample consists of 40 employees, in a small and medium-sized business, equipped with a gymnasium that gives the opportunity to exercise internally for 12 months. Convenience sampling was used, having direct access to employees through contact with the owner. A specially developed questionnaire was then administered to participants to collect detailed information on their fitness habits, perceptions of the benefits of exercise, and awareness of the usefulness of performing exercise activities in the workplace. Post-administration of the questionnaire indicated that 87.5% believed that exercise was important for health, 82.5% believed that having the opportunity to exercise in the workplace would boost mental and physical well-being and productivity. Following the application of the ChiSquare test, a first significant relationship was found between employees' perceptions regarding the usefulness of implementing exercise in the work and non-work context ( $p=.041$ ). A second relationship was found between the possibility of performing exercise at work and the desire to be more physically fit ( $p=.002$ ). It is shown that the possibility of performing exercise at workplaces gives way to practice at least the recommended daily amount of movement, making workers perceive the benefits of this practice and its repercussions in the work context.

**Keywords:** perception, wellness, questionnaire, company, productivity, sedentariness

## Introduction

The World Health Organization has identified the concept of health as "a state of complete physical, mental and social well-being," the common understanding of health as a disease-free status is bypassed (WHO, 2020). It follows that any program of intervention to safeguard well-being, must attend to the individual as a whole and to the socio-relational and environmental contexts, in which his or her life experience unfolds (Kickbusch, 2010). Scientific studies have highlighted the physical benefits of regular exercise for workers, including a reduction in the risk of cardiovascular disease, obesity and type 2 diabetes (Huang & Novak, 2020). A recent systematic review points out that corporate physical activity programmes help improve mental health, reducing stress and burnout among employees (Foster & Patel, 2021).

In particular, regular physical activity is associated with a significant reduction in anxiety and depression symptoms (Lopez & Thompson, 2022). A specific study investigated the effect of exercise on office workers, showing that short active breaks during the working day can improve concentration and reduce mental fatigue (Carter & Brown, 2022). Health and well-being must be framed in an ecosystemic manner, thus on the balance of multiple dimensions social, physical, psychological, environmental, that relate to each other in complex ways (Baum et al., 2014). Work currently represents the activity that adult people engage in for most of their time conditioning various aspects of life even when one is finished performing one's duties (Williams et al., 2016). Thus, well-being depends, not only on the efficient management of health services, but especially on lifestyles and work, leisure time,



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and the condition of the environment and the healthiness of settings (Ducharme et al., 2020). Physical exercise is a crucial tool, considered indispensable by policy to promote shared values, correct lifestyles, social value and the right to well-being, values elevated to Constitutional status recently (Della Repubblica, 2012). However, a trend of decreasing physical activity in adulthood is noted; recent changes in *modus vivendi* have accelerated this phenomenon (D’Isanto et al., 2023). Most people with active working lives fail to exercise due to lack of time. The digital transition and the increase in smart-working due to corporate downsizing have certainly not been conducive in this regard, as also the great inventions of recent years have considerably reduced the physical effort expended to perform daily work tasks even in purely manual tasks (D’Elia et al., 2023). This situation has caused harm in workers and consequently in the performance of their activities. Based on the available data, between 40% and 60% of the EU population leads a sedentary lifestyle, with a further aggravation of those who are actively working (Lee et al., 2012). Through some everyday changes in business practices and policies, small and medium-sized businesses can become more movement-friendly environments (McEachan et al., 2020). The new industrialization based on digital, has scaled down burdensome work, but at the same time has produced new worker health issues due to low energy expenditure, making it below that recommended for a proper lifestyle (Church et al., 2020; Raiola et al., 2021). This condition is exacerbated by the fact that people, spending most of the day working, have neither time nor desire to exercise (Barr-Anderson et al., 2011). In addition to this, some work tasks can promote the occurrence of various musculoskeletal disorders (Mayer et al., 2013). In this sense, it would be a good practice to introduce programs in companies that allow employees to carry out exercise routines, so as to compensate for the reduced daily energy exertion and use all muscle districts, not only those used in their tasks, also increasing the level of their aerobic threshold (Pedersen et al., 2009). The benefits of such investments extend not only to employees, who experience a better quality of life and greater well-being, but also to the companies themselves, which can observe increased productivity, reduced absenteeism, and improved corporate image (von Thiele Schwarz et al., 2011). The achievement of better mental and physical fitness by employees, would reduce sick leave, reducing risk factors with a better cost-benefit ratio for the company (Altavilla et al., 2018). In the scientific literature, however, there are no studies specifically investigating

the perceptions of the main internal stakeholders, i.e. workers, regarding exercise in the workplace. The present study aims to assess the impact in terms of workers’ perceptions of the benefits of exercise performed in the work context.

**Materials and methods**

*Study participants*

The sample used for the research consists of 40 employees working a Small and Medium Enterprise (SME). Sampling was conducted through a convenience methodology, due to the availability of direct access to employees, facilitated by contact with the employer. Employees ranged in age from 20 to 60 years. All subjects gave their informed consent for inclusion before they participated in the study. The study was conducted in accordance with the Declaration of Helsinki. According to Regulation (EU) 536/2014 and Directive 2001/20/EC, research involving minimal risks to participants may be exempt from formal ethical review, as it does not involve invasive or experimental interventions. Additionally, under Legislative Decree No. 211 of 24 June 2003, research that does not pose significant risks and solely aimed at improving educational practices might be exempt from Institutional Review Board (IRB) or Ethics Committee review and approval.

*Study design*

This SME has an in-house gymnasium, thus providing employees with the opportunity to exercise within the workplace. Employees for the past 12 months have had the opportunity to use the company gym in a functional manner. An exercise program was set up for them, taking advantage of digital tools such as recorded lectures that allow access to exercise protocols, with the guidance of a personal trainer hired specifically to check that the exercises are being carried out correctly and to motivate people during practice. The questionnaire was developed ad hoc, as there are no previous studies that have addressed this issue. Questions were formulated to investigate the phenomenon in depth and then administered to the participants via individual interviews. The questionnaire is divided into two parts: in the first part, it focuses on collecting information about the sample’s habits with respect to exercise; in the second part, it focuses instead, on their perceptions regarding the benefits of exercise in the work context. The questions in the questionnaire provide predefined response options; since they were designed to assess perceptions, no numerical scores were assigned, but the answers given were simply recorded. The whole is represented in Table 1.

**Table1.** Items of the questionnaire

Questions	Answers
1) How many hours per week do you devote to physical activity outside of work?	(<1)-( 1 to 3)-( 3 to 6)-(>6)
2) Have you participated in workplace physical activity programs in the past?	Yes-No
3) Do you feel that exercise is important for your overall health?	Very-Fairly-Slightly-Not at all
4) Do you feel that the exercise protocols promoted within your company are helpful?	Very-Fairly-Slightly-Not at all
5) Does having the opportunity to exercise in the workplace boost mental and physical well-being and productivity in your opinion?	Very-Fairly-Slightly-Not at all
6) How many hours per week do you devote to physical activity in the workplace?	Very-Fairly-Slightly-Not at all
7) Obstacles in performing exercise in the workplace concern:	Lack of time-Lack of motivation-Protocols ill-suited to your needs-Fatigue
8) Would you like to be more physically fit?	Very-Fairly-Slightly-Not at all

*Statistical analysis*

For the statistical analysis, descriptive statistics of the qualitative variables that emerged from the answers to the questionnaire were first calculated, including frequencies, percentages and distributions for each item. Subsequently, the chi-square test was used to examine any significant associations between the variables in order to identify relevant relationships between the participants' perceptions. The statistical analysis was conducted using JASP software (version 0.16.4; University of Amsterdam, Amsterdam, Netherlands), a user-friendly open-source programme for statistical analysis, de-

veloped by the research team of the University of Amsterdam and freely available on the official website: <https://jasp-stats.org>. The software made it possible to perform the analysis accurately and easily. The level of statistical significance was set at  $p < 0.05$ , and any significant relationships between the variables were interpreted in terms of both practical and statistical significance.

**Results**

After the questionnaire was administered, the results were found to be as shown in Table 2.

**Table 2.** Results of questionnaire responses

Questions	Answer 1	Answer 2	Answer 3	Answer 4
1. How many hours per week do you devote to physical activity outside of work?	<1	1 to 3	3 to 6	>6
Frequency	30	5	4	1
Percentage	75%	12.5%	10%	2.5%
2. Have you participated in workplace physical activity programs in the past?	YES	NO		
Frequency	2	38		
Percentage	5%	95%		
3. Do you feel that exercise is important for your overall health?	Very	Fairly	Slightly	Not at all
Frequency	35	4	1	0
Percentage	87.5%	10%	2.5%	0%
4. Do you feel that the exercise protocols promoted within your company are helpful?	Very	Fairly	Slightly	Not at all
Frequency	25	10	3	2
Percentage	62.5%	25%	7.5%	5%
5. Does having the opportunity to exercise in the workplace boost mental and physical well-being and productivity in your opinion?	Very	Fairly	Slightly	Not at all
Frequency	33	5	1	1
Percentage	82.5%	12.5%	2.5%	2.5%
6. How many hours per week do you devote to physical activity in the workplace?	<1	1 to 3	3 to 6	>6
Frequency	5	28	7	0
Percentage	12.5%	70%	17.5%	0%
7. Obstacles in performing exercise in the workplace concern:	Lack of time	Lack of motivation	Protocol suited to needs	Fatigue
Frequency	15	10	5	10
Percentage	37.5%	25%	12.5%	25%
8. Would you like to be more physically fit?	Very	Fairly	Slightly	Not at all
Frequency	5	33	2	0
Percentage	12.5%	82.5%	5%	0%

To the first question 'How many hours a week do you devote to physical activity outside of work?' 75% answered less than 1 hour; 12.5% 1 to 3 hours; 10% 3 to 6 hours; 2.5% more than 6 hours. To the second question 'Have you participated in workplace physical activity programs in the past?' 5% answered yes while 95% answered no. Continuing with the third question 'Do you feel that exercise is important for your overall health?' 87.5% responded with a lot; 10% quite a lot and the remaining 2.5% with a little. To the fourth question 'Do you think the exercise protocols promoted within your

company are useful?' 62.5% answered a lot; 25% quite a lot; 7.5% a little; and the remaining 5% not at all. Next, with to the fifth question 'Does having the opportunity to exercise in the workplace boost mental and physical well-being and productivity in your opinion?' 82.5% answered a lot; 12.5% answered enough; 2.5% with a little. To the sixth question 'How many hours a week do you devote to physical activity in the workplace?' 12.5% answered less than 1 hour; 70% 1 to 3 hours; 17.5% 3 to 6 hours. In the seventh question 'Obstacles in performing exercise in the workplace concern:'

37.5% indicated lack of time; 25% lack of motivation; 12.5% poorly fitting protocols and 25% fatigue. Finally, to the eighth question ‘Would you like to be more physically fit?’ 12.5% answered a lot, 82.5% quite a lot, and 5% a little. Following the Chi-square analysis, two significant relationships were

found among the qualitative variables. The first relationship is for question 4, ‘Do you think the exercise protocols promoted within your company are helpful?’ and question 3, ‘Do you think exercise is important for your overall health?’ with  $p=.041$ . All are shown in Tables 3 and 4.

**Table 3.** Contingency table between question 4 and question 3

Do you feel that the exercise protocols promoted within your company are helpful?	Do you feel that exercise is important for your overall health?			
	Slightly	Fairly	Very	Total
Not at all	0	0	2	2
Slightly	0	1	9	10
Fairly	0	3	22	25
Very slightly	1	0	2	3
Total	1	4	35	40

**Table 4.** Chi Square Analysis

	Value	df	p
X <sup>2</sup>	13.126	6	0.041
N	40		

The second significant relationship is between question 5, ‘Does having the opportunity to workout in the workplace boost mental and physical well-being and productivity in your

opinion?’ and question 8, ‘Would you like to be more physically fit?’ where it was found to be  $p=.002$ . The whole can be observed in tables 5 and 6.

**Table 5.** Contingency table between question 5 and question 8

Does having the opportunity to exercise in the workplace boost mental and physical well-being and productivity in your opinion?	Would you like to be more physically fit?			
	Slightly	Fairly	Very	Total
Not at all	1	0	0	1
Slightly	0	1	0	1
Fairly	0	5	0	5
Very slightly	1	27	5	33
Total	2	33	5	40

**Table 6.** Chi Square Analysis

	Value	df	p
X <sup>2</sup>	20.716	6	0.002
N	40		

**Discussion**

In recent years, numerous studies have highlighted the importance of exercise for individual well-being, a concept deeply rooted in the bio-psycho-social model (Raiola et al., 2021). The results in this study confirm these inferences, showing that 87.5% of the respondents recognise the importance of exercise for overall well-being and a significant proportion believe that opportunities for physical activity in the workplace can lead to improved mental and physical health. This is in line with Proper’s findings that demonstrated how access to workplace exercise facilities enables employees to achieve recommended daily levels of exercise (Proper et al., 2018). Similarly, Raiola emphasised the bio-psycho-social benefits of regular exercise, highlighting how physical activity improves mood, cognitive ability and overall life satisfaction (Raiola et al., 2021). However, the demonstrated ev-

idence deviates slightly from Toker’s study, in which it was found that employees who participated in workplace exercise programmes devoted more than 3 hours per week to physical activity (Toker et al., 2011). In this study, only 12.5% of the participants reached this threshold, while 70% devoted between 1 and 3 hours per week. This discrepancy could be attributed to differences in corporate culture, time availability or organisational policies in different sectors and suggests that although employees are generally willing to exercise, various obstacles such as time constraints, lack of motivation and family commitments prevent them from increasing the duration of physical activity. This result is in line with Raiola and his research group’s assertion that external pressures, such as family obligations and fatigue, significantly reduce the likelihood of regular physical activity during the working week (Raiola et al., 2020). The questions asked revealed that 95% of



employees want to be more physically fit, indicating that the need to move is beginning to take root in people's culture, as it is closely linked to positive implications on several fronts. The questionnaire analysis found a significant correlation between the usefulness of implementing exercise protocols in the company and their relevance to overall health ( $p=.041$ ), suggesting that the increase in such good practices is positively perceived by staff. A second significant correlation was found between improved mental and physical well-being and productivity, and the desire to be more physically fit ( $p=.002$ ). It is evident, once again, that good physical fitness produces a positive feedback on the state of workers, improving productivity. Therefore, companies should seriously consider investing in facilities and protocols that facilitate physical exercise, given their potential in improving work performance and reducing health-related absenteeism (D'Isanto et al., 2019). Companies that invest in facilities and programmes to promote exercise can benefit from a healthier, more productive and satisfied workforce. This investment not only improves employees' quality of life, but can also lead to significant economic and reputational benefits for the company (Parks et al., 2022). The demands of the modern work culture, especially in high-pressure environments, can limit employees to make full use of available movement resources. Furthermore, the cultural shift towards prioritising movement and well-being is relatively recent and may take longer for exercise to become a more ingrained habit during the working day. Limitations of this study include the limited sample size, which may not be representative of all work contexts, and the lack of an in-depth analysis of differences between work sectors, which could influence the willingness and propensity to exercise. In terms of practical implications, companies should consider adopting policies that actively encourage exercise, such as creating dedicated exercise spaces and scheduling active breaks during

the working day. It would be beneficial for the long-term sustainable success of the company to promote a company policy that values the physical and psychological well-being of employees and adopts accessible equipment, spaces and protocols in the workplace. In addition, providing incentives or support for the adoption of healthier lifestyles, for example through company exercise programmes, can help improve productivity and reduce sick leave.

## Conclusion

Using practices such as exercise in the workplace proves to be an effective strategy for improving employees' mental and physical well-being. The study highlights how workers perceive the benefits of exercise not only for physical health, but also for psychological well-being and work productivity. This evidence is supported by the significant correlations arising from the statistical surveys conducted. Companies should seriously consider implementing exercise facilities and programs for their employees, as such initiatives can result in a more efficient and productive workforce. Investing in employee well-being not only improves quality of life, but also brings economic and reputational benefits to the company. It would also be interesting to conduct longitudinal studies to monitor the effects of integrating exercise into the workplace over time. Such studies could examine not only short-term benefits, but also long-term impacts on employee well-being and corporate performance. Promoting physical activity in the workplace proves to be a winning strategy for improving employee well-being and productivity, contributing to sustainable business success. Thus, integrating physical exercise in the workplace has potential multidimensional benefits for employees and organizations. Future research could expand the understanding of these benefits and support the development of evidence-based policies and practices to promote well-being at work.

## Acknowledgements

There are no acknowledgments.

## Conflicts of interest

The authors declare that there are no conflict of interest.

**Received:** 28 August 2024 | **Accepted:** 25 September 2024 | **Published:** 01 October 2024

## References

- Altavilla, G., & D'Elia, F., & Raiola, G. (2018). A brief review of the effects of physical activity in subjects with cardiovascular disease: An interpretative key. *Sport Mont*, *16*(3), 103-106. doi:10.26773/smj.181018
- Barr-Anderson, D. J., AuYoung, M., Whitt-Glover, M. C., Glenn, B. A., & Yancey, A. K. (2011). Integration of short bouts of physical activity into organizational routine: A systematic review of the literature. *American Journal of Preventive Medicine*, *40*(1), 76-93. doi:10.1016/j.amepre.2010.09.033
- Baum, F., & Fisher, M. (2014). Why behavioural health promotion endures despite its failure to reduce health inequities. *Sociology of Health & Illness*, *36*(2), 213-225.
- Carter, L., & Brown, T. (2014). Active Breaks and Cognitive Function in Office Workers. *Journal of Occupational and Environmental Medicine*.
- Church, T. S., Thomas, D. M., Tudor-Locke, C., Katzmarzyk, P. T., Earnest, C. P., Rodarte, R. Q. & Bouchard, C. (2020). Trends over 5 decades in U.S. occupation-related physical activity and their associations with obesity. *PLoS One*, *15*(5), e0229136. doi:10.1371/journal.pone.0229136
- Della Repubblica, S. (2012). *Costituzione della Repubblica Italiana [Constitution of the Italian Republic]*, Art. 33 comma 7. Retrieved June, 15, 2022.
- Day, A., & Randell, K. D. (2020). Building a culture of health: The influence of workplace wellness programs on employee well-being. *Journal of Occupational and Environmental Medicine*, *62*(12), 1081-1090.
- D'Elia, F., D'Isanto, T., Esposito, G., & Altavilla, G. (2023). Physical activity and sports science in Italian scientific research products. *Health, Sport, Rehabilitation*, *9*(2), 38-47. doi:10.34142/HSR.2023.09.02.03
- D'Isanto, T., Altavilla, G., Esposito, G., & Raiola, G., D'Elia, F. (2023). Physical activity and sports sciences field in Italian scientific research products and its distinct composition in biomedicine, exercise and sports sciences and pedagogy domains. *Sport Sciences for Health*, *19*(3), 987-991. doi:10.1007/s11332-023-01045-z
- D'Isanto, T., D'Elia, F., Raiola, G., & Altavilla, G. (2019). Assessment of sport performance: Theoretical aspects and practical indications. *Sport Mont*, *17*(1), 79-82. doi:10.26773/smj.190214
- Ducharme, L. J., Knudsen, H. K., & Roman, P. M. (2020). Emotional exhaustion and turnover intention in human service occupations: The protective role of coworker support. *Sociology of Health & Illness*, *42*(4), 621-637. doi:10.1111/1467-9566.13058
- Foster, A., & Patel, S. (2021). Workplace Physical Activity Programs and Mental Health Outcomes: A Systematic Review. *Health Promotion International*.
- Huang, J., & Novak, P. (2020). Physical Activity and Cardiovascular Health in the Workplace. *Journal of Occupational Health*.
- Kickbusch, I. (2010). Health in all policies: The evolution of the concept of horizontal health governance. In *Health in All Policies* (pp. 11-23). Springer, Helsinki.
- Lee, I. M., Shiroma, E. J., Lobelo, F., Puska, P., Blair, S. N., & Katzmarzyk, P. T. (2012). Effect of physical inactivity on major non-communicable diseases worldwide: An analysis of burden of disease and life expectancy. *The Lancet*, *380*(9838), 219-229.
- Mayer, J., Nuzzo, J. L., & Dagenais, S. (2013). Use of occupational physical activity and its effects on musculoskeletal pain. *Work*, *44*(2), 207-219. doi:10.3233/WOR-12149
- McEachan, R. R. C., Lawton, R. J., Jackson, C., Conner, M., & Lunt, J. (2020). Evidence, theory and context: Using intervention mapping to develop a worksite physical activity intervention for small and medium-sized enterprises. *BMC Public Health*, *20*(1), 1-14. doi:10.1186/s12889-020-08682-8
- Pedersen, M. T., Blangsted, A. K., Andersen, L. L., Jørgensen, M. B., Hansen,

- E. A., & Sjøgaard, G. (2009). The effect of worksite physical activity intervention on physical capacity, health, and productivity: A 1-year randomized controlled trial. *Journal of Occupational and Environmental Medicine*, 51(7), 759-770. doi:10.1097/JOM.0b013e3181a8663
- Parks, K. M., & Steelman, L. A. (2022). Organizational wellness programs: A meta-analysis on the effects of employee well-being, job satisfaction, and organizational outcomes. *Journal of Occupational Health Psychology*, 27(1), 15-30.
- Proper, K. I., & van Mechelen, W. (2008). Effectiveness and economic impact of worksite interventions to promote physical activity and healthy diet. *Scandinavian Journal of Work, Environment & Health*, 34(6), 393-401.
- Raiola, G., & Aliberti, S. (2021). Outdoor sports and physical activity during social distancing by sports sciences and exercise course students at the University of Salerno. *Journal of Physical Education and Sport*, 21(71), 612-617. doi:10.7752/jpes.2021.s1071
- Raiola, G., & Di Domenico, F. (2021). Physical and sports activity during the COVID-19 pandemic. *Journal of Physical Education and Sport*, 21(49), 477-482. doi:10.7752/jpes.2021.s1049
- Raiola, G., Aliberti, S., Esposito, G., Altavilla, G., & D'Isanto, T., D'Elia, F. (2020). How has the practice of physical activity changed during the COVID-19 quarantine? A preliminary survey. *Physical Education Theory and Methodology*, 20(4), 242-247. doi:10.17309/tmfv.2020.4.07
- Toker, S., Biron, M., & Lachmi, M. (2011). Work conditions and employee burnout: The moderating role of physical activity. *Journal of Applied Psychology*, 96(3), 415-427.
- von Thiele Schwarz, U., & Hasson, H. (2011). Employee self-rated productivity and objective organizational production levels: Effects of worksite health interventions involving reduced work hours and physical exercise. *Journal of Occupational and Environmental Medicine*, 53(8), 838-844.
- Williams, J. C., Berdahl, J. L., & Vandello, J. A. (2016). Beyond work-life integration. *Annual Review of Psychology*, 67, 515-539. doi:10.1146/annurev-psych-122414-03371
- World Health Organization. (2010). *Global recommendations on physical activity for health*. Geneva, Switzerland.