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The Relationship between Physical Activity and Quality of Life: A State of Art Review

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Abstract

Failure to comply with general recommendations for physical activity has a major impact on quality of life. Rehabilitation Nursing Specialists are subject to clients' vulnerabilities, emotional and physical burden, and can be more easily influenced by frustrations and desires in the face of their health condition.

This article aimed to describe the relationships between the level of physical activity and quality of life between age groups and professionals, given that, to our knowledge, there are no studies that explore the relationship between these variables in this group of professionals.

A literature review was carried out through a bibliographic search in the electronic databases EBSCO HOST, PubMed, and SciELO, which contemplated the relationship between the variables under study, in articles in the period research, between April 1 and July 26, 2019. 16 articles were included in the qualitative analysis.

In the analyzed studies, the physically active were associated with higher levels of quality of life.

Keywords: *Physical Activity; Quality of Life; Health; Professional Stress*

Introduction

Failure to comply with general recommendations for physical activity is currently one of the main concerns of bodies with responsibility for public health. There is an extensive body of knowledge that proves the numerous health consequences related to physical inactivity, including the increased prevalence of non-communicable diseases, the most studied being cardiovascular diseases, diabetes, cancer, and their factors. risk (World Health Organization [WHO], 2020).

Although the negative effects of a lack of physical activity on people's health are known, to the best of our knowledge, there are no studies that address the association between physical activity and the quality of life of Nurses Specializing in Rehabilitation Nursing. In this sense, the questions of this work arise, namely: (1) Are there studies that address the level of physical activity and quality of life in Nurses Specializing in Rehabilitation Nursing? (2) Are the levels of quality of life in professionals and age groups with higher levels of physical activity higher, compared to those with lower levels of physical activity?

In order to answer these questions, this article aims to identify the relationship between physical activity and quality of life. The National Occupational Health Program, Extension 2018-2020 (Direção-Geral da Saúde, 2018), establishes five strategic objectives: (1) promote health surveillance of workers; (2) promote the organization and quality of Occupational Health Services; (3) reinforce the performance of Occupational Health professionals; (4) boost health promotion in the workplace; and (5) strengthen knowledge management in Occupational Health. The latter is articulated with the National Health Plan, Extension 2020 (Directorate-General for Health2015), which, in the strategic axis regarding healthy policies, has foreseen the action of the Health and Occupational Safety Services in the promotion and protection of health and disease prevention.

To the best of our knowledge, there are no studies that have addressed the associations between levels of physical activity and the perception of quality of life, particularly in the group of Specialist Nurses in Rehabilitation Nursing. These professionals, in addition to the skills of general care nurses, have additional skills inherent to their area of specialty, which aim to improve the function, promote independence and maximum satisfaction of people, and preservation of their self-esteem. These skills mean that, due to their vast knowledge, these nurses play key roles in the process of training people with disabilities, activity limitations and/or participation restrictions for reintegration and exercise of citizenship. On the other hand, the rehabilitation process is often demanding, both from a physical and mental point of view, so the assessment of quality of life in groups of chronic patients and their families can be relevant, as well as in professionals who develop this work.

Physical Activity

Physical activity is defined as any bodily movement produced by the contraction of skeletal muscles that involves energy expenditure above the basal level, and includes all activities of daily living, such as those carried out at work, sport, domestic tasks or leisure (Caspersen et al., 1985).

There are numerous concepts associated with physical activity, from aerobic and anaerobic activities, muscle strengthening activities, bone strengthening, balance training, flexibility training and yoga, tai chi and chi kung. These activities produce different effects on different systems. Aerobic physical activity includes forms of activity that are intense and performed long enough to maintain or improve an individual's cardiorespiratory fitness. Activities such as walking, basketball, football or dancing usually require large muscle groups. It is a type of activity that uses only the metabolic pathway using oxygen, and can be continued for more than a few minutes. On the other hand, we have anaerobic physical activity, which, on the contrary, corresponds to high-intensity activities that exceed the capacity of the cardiovascular system to supply oxygen to muscle cells through recurrent oxygen consumption pathways. This activity can be maintained for just two to three minutes, examples being weight lifting and short distance running (U.S. Department of Health and Human Services [USDHHS], 2018).

Therefore, physical activity occurs throughout the day for a variety of purposes and in different ways, and all adults should avoid inactivity for long periods, as performing some physical activity is always more beneficial than not doing it at all. none (Santos et al., 2010). Thus, physical activity other than leisure time, such as activities related to transportation, biking to work, are recognized as options for promoting physical activity (USDHHS, 2018).

Increasing physical activity levels is one of the lifestyle changes that brings great benefits to people's health. Regular practice is important for the prevention of non-communicable diseases, and promotes physical and psychological benefits for individuals of different age groups (Pucci et al., 2012; Vagetti et al., 2014). Therefore, practicing physical activity not only contributes to the prevention of chronic diseases, but has also been associated with a better quality of life related to physical and mental health (USDHHS, 2018).

The benefits of regular physical activity, according to Puciato and Rorysiuk (2018), have been well documented, including improving physical fitness, reducing the risk and prevalence of diseases such as muscular atrophy, sarcopenia, osteoporosis, type II diabetes, obesity, high blood pressure, coronary heart disease, and some types of cancer. In addition to these diseases, studies have found positive effects of physical activity on mental health, such as relieving stress levels, self-esteem, improving sleep, and even reducing levels of anxiety and depression.

According to Ding et al. (2016) physical activity contributes to reducing the risk of developing pathologies, 4% for coronary diseases, 4.5% for cerebrovascular diseases, 4.9% for type II diabetes, 7.1% breast cancer, 7.0 % rectal cancer, and 6.4% general mortality.

In turn, Sluik et al. (2012) states that physical activity of moderate to vigorous intensity is highly recommended to prevent type II diabetes, some types of cancer, and to improve quality of life. Similarly,

Jun et al. (2019) mentions that physical activity with the intensity already mentioned is recommended to prevent cardiovascular diseases. Life expectancy can increase with regular physical activity, that is, 20-25 minutes per day of moderate physical activity (Arem, et al., 2015), and physical activity has a dose-response relationship with all causes of mortality and cardiovascular diseases (Haskell et al., 2007; Makar & Siabrenko, 2018). Additionally, physical activity helps combat depression (Blake et al., 2009), anxiety disorders, and other mood disorders (Ho et al., 2020). This throughout the life cycle is also fundamental, acting preventively in the prevention of neurodegenerative diseases, particularly Alzheimer's (Li et al., 2016).

Quality of Life

Quality of life, according to Santos et al. (2009), and Vilar and Salgadinho (2009), is a term that is difficult to operationalize as it is made up of multiple variables that make up its meaning. It is multidimensional, as it includes objective components, such as the satisfaction of basic needs and functionality, and subjective components, such as well-being, happiness, love, pleasure and personal fulfillment.

Due to its dimension and subjectivity, it is a dynamic concept, which changes over time and situations experienced, representing above all the individual perception regarding their position in life, taking into account cultural factors, particularities of the biological and social environment (Santos et al., 2009).

According to the World Health Organization Quality of Life (WHOQoL, 1995), the concept of quality of life has recognized two components, being an objective or social one that includes economic, political and environmental factors (general health, functional and socioeconomic level) and another subjective or psychological one that reflects personal judgment, self-esteem, life satisfaction and well-being.

According to the Ottawa Charter (WHO, 1986), quality of life should be considered an indicator for promoting the health and well-being of populations. In this line of thought, nurses in general, and rehabilitation nurses in particular, are dedicated to providing well-being to people in vulnerable situations, so they must also be the target of an assessment of their quality of life.

Methodology

Focusing on Specialist Nurses in Rehabilitation Nursing, a literature review was carried out through an analysis of articles published in journals indexed in the electronic databases, EBSCO HOST, PubMed, and SciELO, which considered the relationship between the level of activity physical activity and quality of life, in articles published in the research period between April 1 and July 26, 2019. The descriptors used in the research were: Physical activity, Quality of life, SF- 36, Habitual Physical Activity Questionnaire, Health, Adults, Elderly, Sedentary, Physiological Health, and Professional Stress.

Considering the limited evidence on the variables under analysis in Specialist Nurses in Rehabilitation Nursing, all studies that reported on the relationship between the level of physical activity and quality of life, in different age and professional groups, were included. A qualitative analysis of the research results was carried out.

Results and Discussion

In the context of the research carried out, 16 studies were identified as relevant and included in this analysis. Table 1 briefly presents the reviewed articles that allude to the topic under study, including aspects such as authors, year of publication, country of completion, type of study, sample number, sex and age, instruments used to evaluate the variables, and the main results.

From the analysis of the studies described in table 1, six are from the active adult population, eight on the elderly, one on pregnant women, one on health students, and two on nurses (already included in the active population). In the active population, the professions studied were teachers, nurses, nursing technicians, physiotherapists and doctors. It should be noted that no studies were identified that only address nurses. The studies identified that report to nurses include other professionals, such as the articles by Netto et al. (2012) and Krzepota et al. (2018).

In studies by Puciato et al. (2018), Freire et al. (2015), Neto et al. (2013), Xiao et al. (2019), Shibata et al. (2007) and Van den Berg et al. (2008), referring to the active adult population, the results indicate that those who practice physical activity have better quality of life scores, compared to those who do not practice, with a positive correlation between these two variables. Only Freire et al. (2015) and Van den Berg et al. (2008) indicate that there is a neutral association. In the study by Freire et al. (2015), it is suggested that there is a better quality of life in those who practice physical activity, as they have shorter working hours and more free time to perform physical activity. In turn, in study 13 (Table 1), by Van den Berg et al. (2008), only a positive correlation was found between physical activity and quality of life in adults who practiced vigorous physical activity, with no association found for those who met the recommendations for moderate physical activity.

In the elderly, Barbosa et al. (2015), Silva et al. (2012); Mummery et al. (2004), Acree et al. (2006), Yasunaga et al. (2006), Toscano and Oliveira (2009), Silva et al. (2010) and Lawton et al. (2009) indicate that those who practice physical activity had a better quality of life.

In pregnant women, Krzepota et al. (2018), concluded that there is a positive correlation, in the group of women in the second trimester of pregnancy, between the level of physical activity and quality of life. The researchers suggest developing prenatal exercise and promoting physical activity programs during pregnancy.

In the study by Netto et al. (2012), referring to the population of students in the health area, the results were similar to the majority of other studies, namely, students with higher levels of physical activity had higher levels of quality of life.

Finally, studies by Freire et al. (2015) and Neto et al. (2013), carried out with professionals working in intensive care units, the results indicated that nurses present an association between the level of physical activity and quality of life. However, in this first case, the results may be related to the fact that this group of professionals have shorter working hours and more free time than the others.

After the literature review and qualitative analysis of the results of the studies listed in table 1, it appears that the literature is consistent, identifying physical activity as a factor that contributes to the physical and psychological well-being of adults and elderly people, which interferes in various domains of quality of life. If the association between physical activity and quality of life is consistently verified in the various studies analyzed, the mechanisms inherent to this process are briefly addressed, suggesting the need for additional research to answer this question, particularly in a paradigm of methods mixed.

Physical activity contributes to the reduction and prevention of various diseases, such as physical and mental, the relief of stress, anxiety and depression, self-esteem and improved sleep (Puciato & Rorysiuk, 2018), and in this way it may be contributing to improve people's quality of life, as well as to reduce temporary limitations on their professional activity.

Nurses Specialist in Rehabilitation Nursing, being one of the professionals equipped with knowledge and technique, is linked to the process of training and rehabilitation of people with actions at the neurological, cardiorespiratory and orthotraumatological levels. For this reason, they deal with the suffering and frustration of their clients and their families, which is why they are also subject to stress. According to Xiao, Wang, Zhang and Ren (2019), burnout and physical and psychological illnesses can occur at work. In this sense, the Nurses' quality of life can be reflected in their performance, and consequently in the quality of services provided (Ferreira & Anes, 2016).

Thus, the results of this article, by analyzing existing scientific evidence on the starting questions, confirm that there is a positive association between a higher level of physical activity and increased quality of life. Likewise, there appear to be no studies to support the association between these variables in the population of Specialist Nurses in Rehabilitation Nursing, and more specifically in the Autonomous Region of Madeira. This study contributes, however, to an expansion of knowledge on this topic, making its transfer and applicability to this specific group of professionals possible. This information could be of added value to employers, providing a basis for the development of strategies to promote physical activity and health, which could result in improvements in the provision of health care to the population.

Ref/Authors / Year/ Country	Type of study, Design	n	Sex, Age	Instruments	Main results
(1) Puciato, D., Rozpara, M, & Borysiuk, Z. (2018) Polónia.	Quantitative, Transversal	4460	M* e F** 18- 64.	International Physical Activity Questionnaire Short Form (IPAQ-SF). World Health Organization Quality of Life (WHOQOL-BREF)	The results of the study revealed positive correlations between quality of life and physical condition and activity levels in people of working age. The number of respondents, divided into groups according to their levels of physical activity, differed significantly (p*** <0.001) between men and women. Statistically significant differences were observed between the average QoL indices in men from groups with different levels of PA (H = 18.9, p*** <0.001).

(2) Freire, C.; Dias, R.; Schwinge, P.; França, E.; Andrade, F.; Costa, E, & Junior, M. (2015) Brasil	Quantity, Transversal.	59	M* e F** 28 - 33 Anos	Questionário internacional de atividade física (IPAQ). Medical Outcomes Study 36 (SF-36).	50.85% of 59 professionals were considered active, with nursing technicians considered the most active (60.6%). The quality of life of active professionals was higher when compared to inactive professionals, with statistical differences for the domains of limitation due to physical aspects, social aspects and mental health. There was no statistical difference between the professions in the requirements relating to the eight domains studied in the SF-36 questionnaire. Individuals considered active had shorter working hours (p*** = 0.04) and higher scores in all domains of the SF-36, with a statistical difference in the domains of limitation due to physical aspects (p***= 0.01), social aspect (p***= 0.03) and mental health (p***= 0.02), when compared to inactive people.
(3) Neto, A.; Araújo, R.; Pitangui, A.; Menezes, L.; França, E.; Costa, E.; Andrade, F, & Junior, M. (2013). Brasil.	Quantity, transversal.	340	M* e F** 30 - 36	International Physical Activity Questionnaire. Medical Outcomes Study 36 (SF-36).	Professionals classified as active had higher quality of life scores in the functional capacity, vitality and mental health domains. The results on the level of physical activity of the evaluated professionals revealed that doctors and nurses were the professionals with the lowest proportion of active subjects, even presenting values lower than the national average. Individuals considered active had higher scores in the functional capacity (p***= 0.01), vitality (p***= 0.01) and mental health (p = 0.01) domains, when compared to inactive individuals. Quality of life scores differed between health professionals classified as active and inactive, with better levels of quality of life being observed in physically active individuals.
(4) Netto, R.; Silva, C, Costa, D. & Raposo, D. (2012). Brasil	Quantity, Transversal..	352	M* e F** Média de idade de 21,6	IPAQ (International Questionnaire Physical Activity). WHOQOL-bref.	The majority of the sample was classified as active, with women showing the highest levels of physical activity. These, performed with greater frequency and intensity, were related to better scores in quality of life in the physical and psychological domains. However, only among students did the increase in body weight result in a decrease in general quality of life scores and in the psychological aspect domain. Female (6.2%) and male (3.6%) students rated their quality of life as bad and very bad. Of the students, 11.4% reported that they were dissatisfied with their health, and 6.4% of male students also reported this.

(5) Krzepota, J.; Sadowska, D, & Biernat, E. (2018). Polónia	Quantity Transversal.	346	F** Média de idade de 30.4	Pregnancy Physical Activity Questionnaire-Polish version (PPAQ-PL). World Health Organization Quality of Life Questionnaire-short form (WHOQoL-Bref).	There was a significant correlation in the group of women in the second trimester of pregnancy between quality of life in the physical health domain and the intensity and type of physical activity. Women who rated their quality of life higher in this domain reported greater energy expenditure associated with vigorous activity, as well as with occupational activity and exercise. In third-trimester women, greater exercise coincided with higher ratings of overall quality of life and overall health. In the case of the psychological domain and social relationships, positive correlations occurred when related to vigorous activity. Women who rated their quality of life higher in this domain reported greater energy expenditure associated with vigorous activity (r= 0.159, p***≤ 0.05), as well as with occupational activity (r = 0.166; p** *≤ 0.05) and physical activity (r = 0.187; p***≤ 0.05). In third trimester women, higher energy expenditure related to sport/exercise activity coincided with higher assessments of general quality of life (r = 0.149, p***≤ 0.05) and general health (r = 0.170, p** *<0.05). In the case of the psychological domain (r = 0.161, p***≤ 0.05) and social relationship (r = 0.188; p***≤ 0.05) of quality of life, positive correlations occurred with energy expenditure related to vigorous activity. On the other hand, the high evaluation of the physical health domain coincided with greater energy expenditure related to activity (r = 0.174; p***≤ 0.05)
(6) Barbosa, A.; Teixeira, T.; Orlandi, B.; Oliveira, N, & Concone, M. (2015). Brasil.	Quantity Transversal.	40	M* e F** ≥ 60 Anos	WHOQOL BREF. IPAQ	No differences were found in quality of life or level of physical activity between elderly people living in rural and urban areas. In the group of elderly people from rural areas, a positive, significant correlation was found between the level of physical activity and the physical, psychological and total domains of quality of life. Among regularly active elderly people, those living in rural areas had a higher score in the physical domain of quality of life.
(7) Silva, M.; Goulart, N.; Lanferdini, F, & Dias, M. (2012). Brasil.	Quantity, Transversal.	50	M* e F** Média de idade de 70,24	Questionário Internacional de Atividade Física (IPAQ). Perfil de Saúde de Nottingham (PSN).	The results show that elderly people who practice physical activity have a better quality of life. Elderly people who practice physical activity are even more willing and perform better in carrying out their tasks, which provides greater incentive to seek out more activities, thus making them very active. In relation to the PSN, group 1 presented a reduced quality of life, compared to group 2. As for the IPAQ, only group 1 showed a significant difference (p***=0.00) in relation to group 2. Furthermore, for group 1, 50% of the level of physical activity was associated with quality of life, while group 2 presented 64%.
(8) Xiao, Y.; Wang, H.; Zhang, T, & Ren, X. (2019). República Popular da China.	Quantity, Transversal.	238	M* e F** Média de idade de 51,6	Stress Scale (PSS-10). International Physical Activity IPAQ (IPAQ-SF). Quality of Life Scale-Brief (WHOQOL-100).	Physical activity showed a positive relationship with quality of life, with the results indicating that participants with high levels of regular physical activity reported better levels of quality of life.

(9) Mummery, K.; Schofi eld, G, & Caperchione, C. (2004). Austrália	Quantity, Transversal.	337	M* e F** 55 a 89	AR (Active Australia Questionnaire). SF-12.	The moderately active and active groups had significantly higher quality of life scores in the physical and mental components when compared to the inactive groups. ANOVA results analyzing health status mindset differences between activity classifications revealed no significant effects for activity classification (F(2,312) = 2.28, p***= 0.10) or gender (F (1,312) = 1.52, p***= 0.22) or significant activity by gender interaction (F (2,312) = 1.40, p***= 0.24).
(10) Acree, L.; Longfors, J.; Fjeldstad, A.; Fjeldstad, C.; Schank, B.; Nickel, K.; Montgomery, P, & Gardner, A. (2006). Estados Unidos da América (EUA).	Quantity, Transversal.	112	M* e F** 60 a 89	AR (Johnson Space Center Physical Activity Scale). SF -36.	The group with high levels of physical activity had a higher quality of life score in the vitality (p***< 0.01) and bodily pain (p***< 0.01) domains.
(11) Yasunaga, A.; Togo, F.; Watanabe, E.; Park, H.; Shephard, R., & Aoyagi, Y. (2006). Japão.	Quantity, Transversal.	181	M* e F** 65 a 85	OB (Acelerometria). SF – 36.	The higher the level of physical activity, the higher the general quality of life scores, both for men (p***< 0.01) and women (p***< 0.001). More active women had higher quality of life scores in the physical function (p***< 0.001), social function (p***= 0.004) and bodily pain (p***= 0.002) domains. The most active men had higher scores in the emotional domains (p***= 0.006), vitality (p***< 0.08) and physical function (p***= 0.020).
(12) Shibata, A.; Oka, K.; Nakamura, Y, & Muraoka, I. (2007). Japão.	Quantity, Transversal.	1211	M* e F** 20 a 59.	AR (International Physical Activity Questionnaire). SF -36.	Active individuals had significantly higher quality of life scores in the physical function and vitality domains (p***< 0.001), when compared to inactive and insufficiently active individuals. Inactive individuals had significantly lower quality of life scores for the physical function and vitality domains when compared to insufficiently active individuals (p***< 0.05). The associations were significant when adjusted for age, marital status, education and socioeconomic level (p***< 0.05).
(13) Van den Berg, T.; Alavinia, S.; Bredt, F.; Lindeboom, L.; Elders, L, & Burdorf, A. (2008).Holanda.	Quantity, Transversal.	1141	M* e F** 18- 63.	AR (Stanford Wellness Inventory). SF -12.	Individuals who met the recommendations for vigorous physical activity had a higher quality of life score in the mental and physical components. There was no association between quality of life and compliance with recommendations for moderate physical activity, after adjustments for age, sex, psychosocial work factors, lifestyle, body mass index and oxygen consumption.
(14) Toscano, J.; Oliveira, A. (2009). Brasil.	Quantity, Transversal.	283	F** >60	AR (International Physical Activity Questionnaire-IPAQ). SF -36.	More active elderly women had higher quality of life scores in the domains of physical function, physical role, general health status, bodily pain, social function, emotional role and mental health (p***< 0.001).
(15) Silva, R.; Silva, I.; Silva, R.; Souza, L, & Tomasi, E. (2010). Brasil.	Quantity, Transversal.	863	M* e F** Não identificado idade.	AR (Questionário de Atividades Físicas Habituais). WHOQOL -BREF	Active individuals had significantly higher scores in the physical, psychological and environmental domains (p***< 0.001).

(16) Lawton, B.; Rose, S.; Elley, C.; Dowell, A.; Fenton, A, & Moyes, S. (2009). Nova Zelândia.	Experimental Controlled and randomized.	1089	F** 40 -74.	AR (International Physical Activity Questionnaire-IPAQ). SF -36.	The scores for the physical function (p***= 0.03) and mental health (p***< 0.05) domains of quality of life increased between 12 and 24 months in the intervention group, but the physical role decreased (p***< 0.01). The intervention group improved in more quality of life domains than the control group.

**M – Male; **F – Female; ***p – Significance Level*

Table 1: *Association between Physical Activity and Quality of Life in the studies included in the literature review.*

Conclusion

As physical activity is central to promoting not only physical but also mental well-being, it was important to consider its association with the quality of life of Nurses Specializing in Rehabilitation Nursing.

This literature review made it possible to verify the consistency of the evidence regarding the role of physical activity in promoting people's health, and its regular practice brings numerous benefits to those who practice it.

No studies were identified that addressed the relationship between the level of physical activity and the quality of life of Nurses in isolation, nor more specifically in Nurses Specializing in Rehabilitation Nursing.

However, analyzing the 16 studies that reported on the relationship between the level of physical activity and quality of life, in different age and professional groups, it was possible to verify that better levels of quality of life in the various age and professional groups are associated to higher levels of physical activity compared to those with lower levels of physical activity.

By analogy with the samples studied, the evidence suggests that Nurses Specializing in Rehabilitation Nursing, when regularly practicing physical activity, will see associated improvements in their health and quality of life. This can be important for them to feel good on a personal level, as well as in the different contexts in which they are inserted, from family, work and organizational contexts. It is also hypothesized that nurses, when feeling well, will be able to have a more positive intervention, responding better to their clients' expectations.

While the association between physical activity and quality of life is consistently verified in the various studies analyzed, the mechanisms inherent to this relationship and the hypotheses formulated above require additional research, which is suggested in a mixed methods paradigm.

References

1. Acree, L. S., Longfors, J., Fjeldstad, A. S., Fjeldstad, C., Schank, B., Nickel, K. J., Montgomery, P. S., & Gardner, A. W. (2006). Physical activity is related to quality of life in older adults. Health and Quality of life outcomes, 4(37), 1-6.
2. Barbosa, A., Teixeira, T., Orlandi, B., Oliveira, N., & Concone, M. (2015). Nível de atividade física e qualidade de vida: um estudo comparativo entre idosos dos espaços rural e urbano. Revista Brasileira Geriatria e Gerontologia, 18(4), 743- 754.
3. Blake, H., Mo, P., Malik, S., & Thomas, S. (2009). How effective are physical activity interventions for alleviating depressive symptoms in older people? A systematic review. Clinical Rehabilitation, 23(10), 873-887.
4. Caspersen, C. J., Powell, K. E., & Christenson, G. M. (1985). Physical activity, exercise, and physical fitness: Definitions and distinctions for health-related research. Public Health Reports, 100(2), 126-131. http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1424733&tool=pmcentrez&rendertype=abstract
5. Ding, D., Kenny, L., Tracy, A., Eric, F., Peter, K., Willem, M., & Michael, P. (2016). The economic burden of physical inactivity: a global analysis of major non-communicable diseases. The Lancet, 388(10051), 1311-1324.
6. Ferreira, C., & Anes, E., (2016). Qualidade de vida dos enfermeiros. Millenium, 2(1), 327-336. Retrieved.
7. Freire, C. B., Dias, R. F., Schwingel, P. A., De França, E. E. T., De Andrade, F. M., Costa, E. C., & Correia Junior, M. A. de V. (2015). Qualidade de vida e atividade física em profissionais de terapia intensiva do sub médio São Francisco. Revista Brasileira de Enfermagem REBEn, 68(1), 26-31.

8. Haskell, W., Lee, I., Pate, R., Powell, K., Blair, S., Franklin, B., . . . Bauman, A. (2007). Physical activity and public health: Updated recommendation for adults from the American College of Sports Medicine and the American Heart Association. Medicine & Science in Sports & Exercices, 39(8), 1423-1434. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/17762377.
9. Ho, M. H. (2020). Effects of dietary and physical activity interventions on generic and cancer-specific health-related quality of life, anxiety, and depression in colorectal cancer survivors: a randomized controlled trial. Journal of Cancer Survivorship, 18.
10. Krzepota, J., Sadowska, D., & Biernat, E. (2018). Relationships between physical activity and quality of life in pregnant women in the second and third trimester. International Journal of Environmental research and public health, 15(12), E2745.
11. Lawton, B. A., Rose, S. B., Raina, E. C. R., Dowell, A. C., Fenton, A., & Moyes, S. A. (2009). Exercise on prescription for women aged 40-74 recruited through primary care: two year randomised controlled trial. BMJ, 1-7. https://www.bmj.com/content/bmj/337/bmj.a2509.full.pdf
12. Li, J., Connor, H., Dwyer, N., & Orr, R. (2016). The effect of acute and chronic exercise on cognitive function and academic performance in adolescents: A systematic review. Journal of Science and Medicine in Sport, 20(9), 841-848.
13. Makar,O., & Siabrenko G. (2018). Influence of physical activity on cardiovascular system and prevention of cardiovascular diseades (Review). Georgian Medical News, (285), 69-74.
14. Mummery, K., Schofi eld, G., & Caperchione, C. (2004). Physical activity dose-response effects on mental health status in older adults. Australian and New Zealand Journal of Public Health, 28(2), 188-192.
15. Neto, A., Araújo, R., Pitangui, A., Menezes, L., França, E., Costa, E., Andrade, F., & Junior, M. (2013). Qualidade de vida e nível de atividade física de profissionais de saúde de unidades de terapia intensiva. Revista Brasileira de atividade física e de saúde, 18(6), 711-719.
16. Netto, R., Silva, C., Costa, D. & Raposo, D. (2012). Nível de atividade física e qualidade de vida de estudantes universitários da área de saúde. Revista Brasileira de Ciências da Saúde, 10(34), 47-55. https://seer.uscs.edu.br/index.php/revista_ciencias_saude/article/view/1802
17. Direção-Geral da Saúde. (2015). Plano nacional de saúde revisão e extensão a 2020. http://pns.dgs.pt/files/2015/06/Plano-Nacional-de-Saude-Revisao-e-Extensao-a-2020.pdf.pdf
18. Direção-Geral da Saúde. (2018). Programa nacional de saúde ocupacional extensão 2018-2020. https://www.dgs.pt/saude-ocupacional/documentos-so/pnsoc_extensao-pdf.aspx?fbclid=IwAR1jpqPgRTa_hzDYGvDTjow2qL_nXcuu-BPBM-0XLUGp9uoaaScgfTPHPyM
19. Pucci, G., Fermino, R., & Reis, R. (2012). Associação entre atividade física e qualidade de vida em adultos. Revista de Saúde Pública, 46(1), 166-179.
20. Puciato, D., Rozpara, M., & Borysiuk, Z. (2018). Physical activity as a determinant of quality of life in working-age people in wrocław, Poland. International journal of environmental research and public health, 15(4), 623.
21. Santos, C., Martins, T., Ferreira, T. R. (2009). Saúde e qualidade de vida: Contributos teóricos. In Escola Superior de Enfermagem do Porto (Ed.). Saúde e qualidade de vida: Estado da arte (pp.12-38). Porto: Escola Superior de Enfermagem do Porto.
22. Santos, F., Vale, J., Ferreira, J., Raimundo, A., & Moreira, H. (2010). Livro verde da atividade física. Lisboa: Instituto do Desporto de Portugal. Retrieved from https://www.researchgate.net/publication/282122342_Livro_Verde_da_Atividade_Fisica
23. Shibata, A., Oka, K., Nakamura, Y., & Muraoka, I. (2007). Recommended level of physical activity and health-related quality of life among Japanese adults. BioMed Central, 5(64).
24. Silva, M., Batista, N., Goulart, A., Lanferdini, F., Marcon, M., & Dias, C. (2012). Relação entre os níveis de atividade física e qualidade de vida de idosos sedentários e fisicamente ativos. Revista Brasileira de Geriatria e Gerontologia, 15. https://doi.org/10.1590/S1809-98232012000400004
25. Silva, R. S., Silva, I., Silva, R. A., Souza, L., & Tomasi, E. (2010). Atividade física e qualidade de vida. Ciência & Saúde Coletiva, 15(1), 115-120. Retrieved from http://www.scielo.br/pdf/csc/v15n1/a17v15n1.pdf
26. Sluik, D., Buijsse, B., Muckelbauer, R., Kaaks, R., Teucher, B., Johnsen, N., . . . Nothlings, U. (2012). Physical activity and mortality in individuals whith diabetes mellitus. a prospective study and meta-analysis. Archives of internal medicine, 172(17), 1285-1295. Doi: 10.1001/archinternmed.2012.3130
27. Toscano, J. J. O., & Oliveira, A. C. C. (2009). Qualidade de vida em idosos com distintos níveis de atividade física. Revista Brasileira de Medicina e Esporte, 15(3), 169-173. http://www.scielo.br/pdf/rbme/v15n3/a01v15n3.pdf
28. U.S. Department of Health and Human Services (2018). Physical activity guidelines for americans. Retrieved.

29. Vagetti, G., Filho,V., Moreira, N., Oliveira, V., Mazzardo, O., & Campos,W. (2014). Association between physical activity and quality of life in the elderly: a systematic review, 2000-2012. Brazilian Journal of Psychiatry, 36(1), 76-88.
30. Van den Berg, T. I. J., Alavinia, S. M., Bredt, F. J., Lindeboom, D., Elders, L. A. M., & Burdorf, A. (2008). The influence of psychosocial factors at work and life style on health and work ability among professional workers. International Achives of Occupatinal and Environmental Health, 81.
31. Vilar, F. J. R. & Salgadinho, I. (2009). Do conceito de qualidade de vida à qualidade de vida como conceito. Enfermagem em Foco, 2(57), 34-36.
32. World Health Organization. (1986). Ottawa charter for health promotion. http://www.euro.who.int/__data/assets/pdf_file/0004/129532/Ottawa_Charter.pdf?ua=1
33. World Health Organization Quality of Life Group. (1995). The World Health Organization Quality of Life Instruments: The WHOQoL-100 and the WHOQoL-BREF. https://www.who.int/mental_health/media/68.pdf.
34. World Health Organization. (2018). Global action plan n physical activity 2018-2030: More active people for a healthier world. Retrieved from https://www.who.int/ncds/prevention/physical-activity/global-action-plan-2018-2030/en/.
35. World Health Organization. (2020). Global strategy on diet, physical activity and health. https://www.who.int/dietphysicalactivity/pa/en/.
36. Xiao, Y., Wang, H., Zhang, T. & Ren, X. (2019). Psychosocial predictors of physical activity and health- related quality of life among Shanghai working aduts. Health and quality of life outcomes, 17(1), 72.
37. Yasunaga, A., Togo, F., Watanabe, E., Park, H., Shephard, R. J., & Aoyagi, Y. (2006). Yearlong physical activity and health-related quality of life in older Japanese adults: the Nakanojo Study. Journal of Agingand Physical Activity, 14(3), 288-301.