A Review of the Importance of Physical Fitness to Company Performance and Productivity

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Abstract: The purpose of this study is to illustrate and investigate the importance of physical fitness to company performance and productivity, by comparing previous researches on this area. This study focuses on the importance of physical fitness and its effect on employee health, performance and productivity in organizations. The number of health promotion programs in workplace settings has continued to grow. Although employers' rationales vary, health promotion programs may yield economic benefits such as reduced absenteeism, presentism, employee health care costs and employee turnover. The data for the study is collected from various sources namely articles from 1969 to 1999 and 2000 to 2015. The methodology adopted is qualitative and the findings are based on reliable data with respect to the economic impact of worksite physical fitness activity programs. Most, if not all, researches in this field have been performed in developed and high-income countries. This research recommends improvements and further studies on physical fitness on company performance and offers some suggestions for further research.

Keywords: Physical Fitness, Company Performance, Productivity, Employee, Exercise

Introduction

Physical fitness has been gaining considerable attention in industries from both, employers and employees over the last few years. People spend most of their time at the workplace, which is utilized by many to share as well as receive messages of health (Kelly, 2000). Poor employee health means reduced productivity and increased expenses for the employer. This is the main reason why many global organizations are giving serious attention to various health programs or fitness activities (Dursi, 2008). Many organizations have focused on addressing their employees’ health aspects, even before anything happens since prevention is better than cure. Organizations usually get aware of the issues via increased large claims and immediately focus on lowering costs instead of enhancing health and promoting better physical and mental wellbeing for the workers. In addition, they have to manage the costs related to productivity loss from the employees who are absent from work.

Employees who are lean as well as active are seen as more productive than the ones who are inactive and overweight. The scientific proof for the effectiveness of workplace physical fitness activities on productivity is irrefutable. The rationale behind the workplace physical programs implementation is transparent, given the job related gains of physical activity as well fitness and the costs of obesity (Selecky, 2007). The idea of the relationship between productivity and physical fitness of an employee needs no justification. It is evident from the thinking that only a physically fit individual can perform more physically demanding tasks at work and withstand workload pressures and over-time. As such, a person who is physically fit can serve better at work and be productive compared to an unfit person (Sharifzadeh, 2013). Employee health promotion programs have
resulted in reduced absenteeism and job related injuries. Both of these help employers reduce unwanted expenditures related to HRM. Employees who regularly take part in physical fitness programs at work tend to have less involuntary absenteeism. As such, in every possible way, employee physical fitness programs can physically enhance an individual as well as reduce the extra expenditures undertaken by the organization in managing ill health and lower productivity at work (Wattles and Harris, 1997). Employees who have three or more health related risks show a 30% higher rate of absenteeism and a 38% higher rate of health related expenditures at work. The World Health Organization (WHO) defines the condition of being healthy as a state of full mental and physical wellbeing. Considering these aspects, many modern day organizations that are termed as ‘Health Conscious Enterprises’ have started serious initiatives towards the wellbeing of their employees. They carry out physical fitness programs by being in partnership with their employees on health issues and in preventive care. Healthcare initiatives target to optimize the fitness aspects and not just simply to eliminate the risks. This paradigm shift is visible in the orientation of many enterprises as they strive to be a completely health focused enterprise (Gibbs and Cartwright, 2010). These days, lifestyle diseases are rather common. Unhealthy food habits or unhealthy living style makes many people diabetic, develop hypertension, etc. These disorders can at a later stage turn in to serious ailments related to the heart and so on. As a result, the employees will become unproductive. Such employees will incur more costs in terms of health related expenditure at work with increased absenteeism. Employers are considering to such indirect costs, which can be reduced with a proper fitness program at the workplace. This study is important for companies given the economic impact of workplace physical activity and the promotion of health and wellness among employees. In doing so, this study describes the evidence for the importance of physical activity and its influence on health-related and work-related outcomes. This will be done through the analysis of published researches from which the evidences will be used by this study to review and investigate the relationship between physical activity and company performance and productivity.

Purpose of Study

The aim of this study is to examine and review the importance of physical fitness for organizational performance as well as productivity. There are 3 objectives that must be achieved. These include, investigating the concept and criteria used to describe physical fitness and company performance and productivity based on theory and previous research and to determine the factors that relate physical fitness to company performance and productivity based on previous research findings. Moreover, it will include investigating researches from 1969 to 2015, which have been conducted on organizational health performance and recommending policies to promote a healthy work-place.

Research Methodology

The qualitative descriptive research approach is used to perform a review of sixty researches on the importance of physical fitness to company performance and productivity. Data for this study is gathered from journals, reports and articles from 1969 to 2015. Analysis is done on the reviews of sixty researches and their respective findings. The study uses descriptive research to ascertain the importance of physical fitness to company performance and productivity and to investigate the factors related to this area based on previous research findings. A qualitative descriptive design is the appropriate choice for a qualitative study because the participants could reveal a more detailed understanding of their perspectives on the phenomenon of the importance of physical fitness to company performance and productivity. The qualitative descriptive approach is ideal for this research as the identified important factors lay the foundation on the experiences of the participants (McGlone et al., 2008). When conducting a qualitative descriptive study, researchers use descriptive validity that describes the phenomenon directly (Sandelowski, 2010). With reference to the case study, the descriptive design enables the researcher to describe the characteristics of workplace recreation and its impact on the wellbeing and performance of employees (Orodo and Kombo, 2002). The importance of physical fitness is evaluated and described by reviewing researches and the ways in which they affect the employees’ wellbeing and performance. The use of the descriptive design also enables the researcher to give succinct recommendations to researchers and scholars interested in employee wellbeing at the workplace.

Qualitative data is being re-used in many modern day studies. Thus, data from qualitative studies are archived (Corti and Thompson, 1998; Hammersley and Gomm, 1997; Corti et al., 1995). In addition, the collection of qualitative data is costly in many cases as well as time consuming. The opportunities to conduct a primary research are limited in many studies. In this modern era, software and computer programs make the collection, archiving and retrieval of data easy. Such secondary data can be easily accessed and utilized optimally for primary researches, which are the main reasons for using secondary data in qualitative studies (Procter, 1993). Secondary data analysis is a method
suggested mainly for student researchers due to the ease and cost effectiveness (Szabo and Strang, 1997). Moreover, the current research is not experienced in secondary research, mostly undertaken by experienced researchers due to the specific difficulties in conducting the secondary analysis (Thorne, 1994). It also has to be noted that the adaptation of the method does not necessarily preclude the chances of gathering primary data (Fig. 1). This may for instance, be needed for obtaining extra data or to pursue the findings arising from the primary analysis in a much controlled manner. There may also be a requirement for consulting the primary researcher or researchers for investigating the conditions of the original data collection and process. In this study, data is collected from secondary sources of information including human health and physical activity journals, conference papers and databases such as Emerald Insight, Science Direct and Sage Publications. Available secondary data may be entirely appropriate and adequate to draw conclusions, answer questions, or solve problems and it is cheaper to collect secondary data than it is to obtain primary data. With no budget and a lack of time, examination of secondary sources can yield a great deal more information than a primary data collection exercise. In other words, the time involved in searching secondary sources is much less than that needed to complete a primary data collection. Secondary sources of information can yield more accurate data than that obtained through primary research.

Analysis and Findings

In order to address the issues and to meet the aims of this study, below are the researches that were developed:

- What are the researches related to physical fitness and performance and productivity of the organization?
- These researches on physical fitness and performance and productivity have been carried out from 1969 to 2015. All the papers were retrieved from Google scholar and web of science. Table 1 demonstrates the authors, years and titles of these researches for further understanding
- What are the factors, which illustrate that physical fitness, promotes higher company performance and productivity?

As stated in the article “the impact of a health promotion program on employee health risks and work productivity”, productivity levels are increased by being part of a firm’s fitness program (Mills et al., 2007). This survey comprised a variable group of 266 and a control group of 1242 respondents. The participants of the variable group were placed in a multi-part health promotion program that expresses a personalized health improvement plan, health risks, literature and lectures, which bring health improvement in- to focus. Based on the findings of the World Health Organization (WHO), the health risk of individuals who have been enrolled in a multi-component health promotion program decreased by 0.45, their work performance increased by 0.79 and their monthly absenteeism decreased by 0.36. These findings indicate that applying a multi-component health promotion for the purpose of increasing the fitness level of participants could make distinct differences in productivity and health risks. As such, a fitness program has a positive effect on work performance and productivity.

![Fig. 1. Schematic illustration of secondary data](image-url)
Table 1. Review of published papers since 1969 to 2015 base on authors, year and title of research

| No | Authors | Year | Titles |
|----|---------|------|--------|
| 1  | DeNelsky and McKee | 1969 | Prediction of job performance from assessment reports |
| 2  | Der-Karabetian and Gehlharb | 1986 | Effect of Physical Fitness Program in the Workplace |
| 3  | Frew and Brunning | 1988 | The effect of employees’ participation in an exercise program on increasing job satisfaction and productivity |
| 4  | Ganster and Schaubrook | 1991 | Work stress and employee health |
| 5  | Shephard | 1992 | Benefits of worksite fitness programmes |
| 6  | Lapinacci et al. | 1993 | Age and physical activity effects on reaction time and digit symbol substitution performance in cognitively active adults |
| 7  | Kerr and Vos | 1993 | Employee fitness programmes, absenteeism and general wellbeing. In Work and Stress |
| 8  | Gomel et al. | 1993 | Worksite cardiovascular risk reduction. Randomised trial of health risk assessment, risk factor education, behavioral counselling and incentive strategies |
| 9  | Biddle | 1995 | Exercise and psychosocial health |
| 10 | Calfins et al. | 1996 | Promotion of physical activity and healthy diet through individual counselling at the workplace |
| 11 | Falkenberg | 1987 | Employee fitness programs: Their impact on the employee and the organization |
| 12 | Sallis et al. | 1997 | Assessment of Physical Activity |
| 13 | Veitch et al. | 1999 | Physical activity promotion for male factory workers |
| 14 | Shephard | 1999 | Do worksite exercise and health program |
| 15 | Midha and Sullivan | 1999 | Conflicting rationales for promoting health in the workplace. |
| 16 | Neck and Cooper | 2000 | The fit executive: Exercise and diet guidelines for enhancing performance. |
| 17 | Jacobson and Aldana | 2001 | Relationship between frequency of aerobic activity and illness-related absenteeism in a large employee sample |
| 18 | Trost | 2002 | Correlates of adults’ participation in physical activity |
| 19 | Kahn et al. | 2002 | The effectiveness of interventions to increase physical activity |
| 20 | Wattles and Harris | 1997 | The relationship between fitness levels and employee’s perceived productivity job satisfaction and absenteeism. |
| 21 | Pronk et al. | 2004 | The association between work performance and physical activity, cardiorespiratory fitness and obesity. |
| 22 | Marshall | 2004 | The effectiveness of workplace physical activity interventions from 1997 |
| 23 | Katzmazj and Janssen | 2004 | Estimated the direct and the indirect economic costs of physical inactivity and obesity Canad |
| 24 | Burton et al. | 2005 | The association of health status, worksite fitness center participation and two measures of productivity. |
| 25 | Van den Heuvel et al. | 2005 | Effect of sporting activity on absenteeism in a working population. |
| 26 | Ackland et al. | 2005 | Workplace Health and Physical Activity Program |
| 27 | Bates | 2006 | Recreational Program and Its Association with Job Satisfaction |
| 28 | Prope et al. | 2003 | Dose response relation between physical activity and sick leave |
| 29 | Engbers et al. | 2005 | Workplace environmental intervention to promote physical activity and a healthy diet |
| 30 | Mills et al. | 2007 | The impact of a health promotion program on Employee Health Risks and Work Productivity |
| 31 | Hioib et al. | 2007 | Effectiveness and economic impact of worksite interventions to promote physical activity and healthy diet |
| 32 | Graywacx et al. | 2007 | The Effects of Workplace Flexibility on Health Behaviors: A Cross-Sectional and Longitudinal Analysis |
| 33 | Lacoue et al. | 2007 | Association between employee leisure-time physical activity and subsidized gym memberships |
| 34 | Donaghy | 2007 | Exercise can seriously improve your mental health: Fact or Fiction? |
| 35 | Beale et al. | 2012 | Workplace physical activity interventions |
| 36 | Lovelace et al. | 2007 | Workplace physical activity interventions: The role of self-leadership, shared leadership, physical fitness and flow in managing demands and increasing job control |
| 37 | Dugdill et al. | 2008 | Workplace physical activity interventions |
| 38 | Parks and Steelman | 2008 | Organisational Wellness Programmes |
| 39 | Cooper et al. | 2008 | Obesity reduction and its possible consequences |
| 40 | Kumar et al. | 2009 | Operational impact of employee wellness programs a business case study |
| 41 | Bingham | 2009 | Finding Our Bodies, Physical Activity for Mental Health |
| 42 | Conn et al. | 2009 | Meta-Analysis of Workplace Physical Activity Interventions |
| 43 | Burke et al. | 2010 | Group goal setting in a physical activity context |
| 44 | Erickson et al. | 2011 | Exercise training increases size of hippocampus and improves memory |
| 45 | Bennie et al. | 2011 | Associations between social ecological factors and self-reported short physical activity breaks during work hours among desk-based employees |
| 46 | Greene | 2011 | Employee wellness proves its worth |
| 47 | Tamers et al. | 2011 | The association between worksite social support, diet, physical activity and body mass index |
| 48 | Crespo et al. | 2011 | Workplace Physical Activity Policies and Environments in Relation to Employee Physical activity |
| 49 | Barr-Anderson et al. | 2011 | Integration of Short Bouts of Physical Activity into Organizational |
| 50 | Mokaya and Gitari | 2012 | Effects of Workplace Recreation on Employee Performance |
| 51 | Bernaards et al. | 2012 | Occupational and Environmental Medicine |
| 52 | Arvidson et al. | 2013 | The level of leisure time physical activity associated with work ability-a cross sectional and prospective study of health care workers |
| 53 | Sliter and Yuan | 2015 | Workout at Work: Laboratory Test of Psychological and Performance Outcomes of Active Workstations |
| 54 | Pasricha et al. | 2014 | Iron Supplementation Benefits PhysicalPerformance in Women of Reproductive Age: A Systematic Review and Meta-Analysis |
| 55 | Thompson | 2015 | Worldwide surveyof fitness trendsofr |
| 56 | Lechner | 2015 | Sports, exercise and labor market outcomesIncreasing participation in sports and exercise can boost productivity and earnings |
| 57 | Tomaskova et al. | 2015 | Health status and physical fitnessof mines rescue brigadesmen |
| 58 | Rehman et al. | 2015 | Impact of km practices on firms' performance: A mediating roleof business process capability |
| 59 | Pelletier et al. | 2004 | The relationship between health risks and work productivity |
| 60 | Ayabar et al. | 2015 | Regression Model to Estimate Standard Time throughEnergy Consumption of Workers in Manual Assembly Linesunder Moderate Workload |
| 61 | Buckley et al. | 2015 | The sedentary oce: An expert statement on the growing case for changetowards better health and productivity |
Pronk et al. (2004) examined the relationship between performance at work and physical activity together with two other elements recognized being related to physical fitness activities including obesity and cardio respiratory. Four variables including absenteeism, quality and quantity of performance at work and final performance were used to define work performance. The result of the 683 data collected from workers showed that physical activity had a positive effect on the quality and the overall performance at work. Moreover, a higher level of cardio respiratory fitness had a positive effect on the quantity of work performance and reduced applied effort to perform the work. Obesity was also found to be related to higher absenteeism (Pronk et al., 2004). As such, cardio respiratory fitness and physical activity are related to presentism while obesity has a relationship with absenteeism. The relation between fitness physical activity and absenteeism was confirmed by a study by Jacobson and Aldana (2001). The aim of their study was to compare the frequency of self-reported exercise with illness-related absenteeism. The results revealed a significant relation between weekly exercise days and annual absenteeism with lower exercise rates being associated with higher rates of annual absenteeism. The association was specifically significant between no exercise at all (0 days per week) and 1 day per week of exercise compared to a higher exercise frequency rate (Jacobson and Aldana, 2001). Moreover, it appeared that non-exercisers were more likely to be absent for more than 7 days when compared to those exercising at least once per week. In a research conducted in Netherlands, data regarding absenteeism due to sickness over four years was gathered from 1228 employees of 21 Dutch firms. They also utilized data from two large Dutch cross-sectional data bases. The study investigated the relationship between sick leave and physical activity (Proper et al., 2003) find out whether physical activity affected sickness absenteeism. The results of their study showed that moderate intensity physical activities are neither related to duration of sick leave nor its frequency (Proper et al., 2003).

According to Shephard (1999), fitness promotes job performance. Commercial real estate stock brokers who participated in an aerobics training program (walking and/or running three times a week, for 12 weeks) earned greater sales commissions during and after the training program than brokers who did not participate. Workers from a hospital equipment firm who participated in a similar aerobics training program (walking, running, swimming and bicycling four times a week, for 24 weeks), enjoyed greater productivity and job satisfaction than workers who did not participate in the fitness program. The result showed that participating in fitness programs creates greater sales and productivity and it causes job satisfaction among the workers. Among the variety of studies conducted by Bennie et al. (2011), a large cross-sectional study (n = 801) identified work environment as a key setting to promote breaks in sitting and found that employees meeting the daily physical activity recommendations reported taking more short breaks than those who did not meet the recommendations. The finding showed that employees who have daily physical activity, take less short breaks in comparison with those who did not do any physical activity. As a result, physical activity promotes breaks in sitting. In another study conducted by Grzywacz et al. (2007), cross-sectional and longitudinal health risk appraisal data were obtained from employees of a multinational company (n = 3193) and it was found that physical activity frequency was positively related to perceived flexibility of work hours in the cross-sectional analysis. The result showed that physical activity and work flexibility may contribute to positive lifestyle behaviors and may play an important role in effective workplace health promotion initiatives.

What are the studies from 1969 to 2015 on physical activity and company performance and productivity?

Table 2 shows how many studies have been carried out on physical activity and company performance and productivity from 1969 to 2015 and denotes the purpose, findings and criteria for these studies for understanding and comparing the findings.

Table 2. The studies of purposes, findings and criteria for published papers since 1969 to 2015.

| No. | Author | Year | Title | Purpose | Findings | Criteria |
|-----|--------|------|-------|---------|----------|----------|
| 1. | Mills et al. | 2007 | The impact of a health promotion program on Employee Health Risks and Work Productivity | The significance of physical fitness towards productivity and performance of the firm | findings indicate that applying a multi-component health promotion for the purpose of increasing the fitness level of participants would make distinct differences in productivity and health risks. As such, fitness program has positive effect on work performance and productivity. | significance of physical fitness productivity performance |

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2. Burton et al. 2005  The association of health status, worksite fitness center participation and two measures of productivity. Comparing individuals who officially registered and who did not register in a fitness center of the firm on the productivity in the workplace Those employees who enrolled in the fitness center of the company had higher productivity compared to those who did not participate in the fitness program of the company. Comparison between employees who registered/do not register in a fitness center of the firm productivity.

3. Frew and Brunnin 1988  The effect of employees’ participation in an exercise program on increasing job satisfaction and productivity. The effect of aerobic program for the sales of brokers who took part in or throughout of this program. The research on study showed that aerobic program has positive effect and increase sales in between brokers who took part in this program. Aerobic program performance (increase sales).

4. DeNelsky and McKee 1969  Use of a modified Q-sort technique to expand predictor and criterion variance. Attempted to predict individual’s job performance on the basis of an evaluation which involved fitness. The Sample of 32 government employees showed that 71% of employees have had high level in their job performance and 60% were below standard level because of participate in fitness. Participate in fitness performance (high level in job performance).

5. Van den Heuvel et al. 2005  Effect of sporting activity on absenteeism in a working population. The impact of physical activities on absenteeism for the period of four years on 1228 workers of 21 Dutch firms. Those employees who enrolled in the fitness center of the company had higher productivity compared to those who did not participate in the fitness program of the company. Comparison between employees who registered/do not register in a fitness center of the firm productivity. Physical activity performance (absenteeism).

6. Pronk et al. 2004  The association between work performance and physical activity, cardiorespiratory fitness and obesity. The relationship among performance at work and physical activity and recognized to be related with physical fitness activities including obesity and cardio respiratory. The result of 683 data collected from workers showed that physical activity had positive effect on the quality of performance at work and higher level of cardio respiratory fitness had positive effect on quantity of work performance. Physical activity performance (positive effect on quality and quantity of work).

7. Jacobson and Aldana 2001  Relationship between frequency of aerobic activity and illness related absenteeism in a large employee sample. Compare the frequency of self-reported exercise with illness-related absenteeism. The results revealed a significant relation between weekly exercise days and annual absenteeism with lower exercise rates being associated with higher rates of annual absenteeism duration. Significant relation between weekly exercise performance (absenteeism).

8. Proper et al. 2003  Dose response relation between physical activity and sick leave. Investigated the relationship between sick leave and physical activity. The findings of their study showed that moderate intensity physical activities is neither related to duration of sick leave nor the frequency of it. Physical activity performance (sick leave).

9. Hlobil et al 2007  Effectiveness and economic impact of worksite interventions to promote physical activity and healthy diet. Physical exercises, used based on operant conditioning behavioral principles. The most significant results of the cost effectiveness analysis were the health care uses’ costs throughout the first follow-up year and the cost of productivity loss throughout the second together with the third follow-up year. Physical exercises productivity.

10. Neck and Cooper 2000  The fit executive: Exercise and diet guidelines for enhancing performance. There is a relationship between work productivity and individual’s fitness. The result of this study was fitness has positive effect on higher productivity. Fitness productivity.

11. Lupinacci et al. 1993  Age and physical activity effects on reaction time and digit symbol substitution performance in cognitively active adults. The relationship between fitness and mental performance, especially for individuals within the age ranges of many executives. The findings showed that physical activity has significant influence on mental performance. Information processing in active people is faster than inactive people. Physical activity performance.

12. Shephard 1999  Do worksite exercise and health program? Fitness promotes job performance. The result showed that fitness program make greater sales and productivity and it makes job satisfaction in workers. Fitness program productivity.

13. Bennie et al. 2011  Associations between social ecological factors and short physical activity breaks during work hours among desk-based employees. Physical activity promote breaks sitting. The finding showed that employees who have daily physical activity, they take less short breaks in comparison with those who did not do. Physical activity performance (promote breaks sitting).

14. Grzywacz et al. 2007  The effects of workplace flexibility on health behaviors: A cross-Sectional and longitudinal analysis. Investigate physical activity frequency was positively related to perceived flexibility of work hours. The result showed that, physical activity and work flexibility may play an important role in effective workplace health promotion initiatives. Physical activity performance.

15. Beale et al. 2012  Workplace physical activity interventions. The economic impact of workplace interventions which aim to increase employees' physical activity levels. Research reporting the physical activity has economic benefit in workplace. Physical activity productivity.

16. Shephard 1992  Benefits of worksite fitness programmes. Look critically at appropriate techniques for the economic analysis of worksite fitness and lifestyle programmes. Programme fitness and lifestyle programme showed that an increase in productivity in the experimental company and reduce absenteeism. Fitness programme productivity performance.
| Author(s) | Year | Title | Summary | Findings |
|----------|------|-------|---------|----------|
| Wannath & Harris | 1997 | The relationship between fitness levels and employee’s perceived productivity, job satisfaction, and absenteeism. | The purpose of this study was to examine the relationship between various components of health-related fitness and employee perceived productivity, job satisfaction, and absenteeism. | Studies showed that fitness has a direct effect on the work performance. |
| Pelletier et al. | 2004 | The relationship between health risk and work productivity | Examined the relationship between changes in various health risks and changes in work productivity. | Calculated that health programs reduce absenteeism, increase presenteeism, and increase productivity. |
| Katzmarzyk & Janssen | 2004 | Estimated the direct and the indirect economic costs of physical inactivity and obesity in Canada. | Investigate indirect costs included the value of economic output lost because of illness, injury-related work disability, or premature death. | The result showed that the physical inactivity has a negative effect on economic (spend money for obesity). |
| Dugdill et al. | 2008 | Workplace physical activity interventions | The effectiveness of workplace physical activity interventions | The result showed that physical activity has a positive effect on employee performance. |
| Calfas et al. | 1996 | Promotion of physical activity and healthy diet through individual counseling at the workplace. | Intensity physical activity through advice from primary care physicians. | The result showed that physical activity has a positive effect on employee performance. |
| Engbers et al. | 2005 | Workplace environmental intervention to promote physical activity and a healthy diet | Evaluate the effect of such an intervention, physical activity and health diet in workplace. | Studies showed that changing environment at short time and more physical activity has a positive effect on work place and employee. |
| Der-Karabetian et al. | 1986 | Effect of Physical Fitness Program in the Workplace | Investigate job satisfaction, body image and sick days for those who exercised and those who did not. | Suggested that every company should focus on employee fitness since it reduces absenteeism and increase the employees productivity. |
| Barr-Anderson et al. | 2011 | Integration of Short bouts of physical activity | Evaluate work performance related to physical activity. | Increase in work performance after increased physical activity. |
| Crespo et al. | 2005 | Worksite physical activity policies and environments in relation to employee physical activity | An association between being physically active and improvements in psychological/cognitive factors. | Suggested that, in general, higher levels of physical fitness can reduce the likelihood. |
| Trost et al. | 2002 | Correlates of adults’ participation in physical activity | Investigate Perceived self-efficacy (one’s belief in their ability to succeed) and consistent associations with physical activity behavior. | Studies show that physical activity in the workplace increased employee self-esteem, goal setting and self-efficacy. |
| Conn et al. | 2009 | Meta-analysis of workplace physical activity interventions | Evaluate workplace physical activity opportunities and job satisfaction. | The result showed that stress was significantly lower and and job satisfaction increase after physical activity. |
| Ackland et al. | 2005 | Workplace health and physical activity program | Investigate workplace health and physical activity programs improved the work environment. | The study showed that physical activity increased job satisfaction, greater commitment of employees and reduced job stress. |
| Donaghy et al. | 2007 | Exercise can seriously improve your mental health: Fact or Fiction? | Evaluate the effect of exercise to protect against depression. | Concluded that exercise not only protects against depression. |
| Searle et al. | 2011 | Patients’ views of physical activity as treatment for depression | Investigate physical activity for treatment depression. | The result showed that physical activity to be an acceptable treatment for depression. |
| Bingham et al. | 2009 | Minding Our Bodies, Physical Activity for Mental Health | A direct relation between physical activity and psychological well-being. | Aerobic exercise leads to a small to moderate decrease in tension, depression, fatigue and confusion. |
| Tamsers et al. | 2011 | The association between worksite social support, diet, physical activity and body mass index | Evaluate association between physical activity and employee psychosocial health. | The studies showed that physical activity has a positive effect on employee health. |
| Kahn et al. | 2002 | The effectiveness of interventions to increase physical activity | Investigate staff participation in workplace health (physical activity). | Increased physical activity levels can increase individual employee self-confidence. |
| Lucove et al. | 2007 | Association between employee leisure-time physical activity and subsidized gym memberships | Association between employee leisure-time physical activity and subsidized gym memberships | Positive effect on employee physical activity and reduce barriers to physical activity such as cost. |
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| 35. Bernaards et al. | 2007 | Occupational and Environmental Medicine | Evaluate physical activity, fitness and affect work productivity and absence | The study showed that the amount of physical activity and fitness did not have an effect on work performance |
| 36. Erickson et al. | 2011 | Exercise training increases size of hippocampus and improves memory | Physical fitness and can reduce the likelihood of developing cognitive impairments in employees | The study showed that physical fitness has positive effect on employee performance |
| 37. Conn et al. | 2009 | Meta-analysis of workplace physical activity interventions | Investigate workplace health promotion programs with health and physical activity | The study showed that Significant positive effects for physical activity, behaviour, fitness, work attendance and job stress. |
| 38. Falkenberg | 1987 | Employee fitness programs | Evaluate the premise that employee fitness programs were attractive to employees | Study showed that physical fitness programmes had a significant positive impact on employee productivity and performance. |
| 39. Kerr and Vos | 1993 | Employee fitness programmes, absenteeism and general wellbeing. In work and stress | Investigate the implementation of fitness programmes to improve employee well-being and reduce absenteeism. | The results of their study showed that physical fitness reduced absenteeism rates and improved the general well-being of employees |
| 40. Bates | 2006 | Companies make great gains with employee wellness programme | Evaluate the positive effect of social and physical recreation programmes on employee health | The study showed that physical programmes reduced health care costs for employers by reducing sick leave, health costs |
| 41. Mokaya and Gitari | 2012 | Effects of workplace recreation on employee performance | Investigate physical fitness programs had an effect on the performance and health of employee | The result showed that the positive effect of physical fitness programmes on the performance, work quality, morale and efficiency of employees in the workplace. |
| 42. Parks and Steelman | 2008 | Organisational Wellness Programmes | Evaluate participation in employee fitness programs in job satisfaction | The result showed that participation in employee fitness programs increased job satisfaction. |
| 43. Midha and Sullivan | 1999 | Conflicting rationales for promoting health in the workplace | Investigate Physical Activity in the Workplace | The result showed that the physical activity on workplace has positive effect. |
| 44. Gormel et al. | 1993 | Randomised trial of health risk assessment, risk factor education, behavioral counselling and incentive strategies | Workplace physical activity promotion | Physical activity in workplace can increase participation |
| 45. Veitch et al. | 1999 | Physical activity promotion for male factory workers | Investigations possibilities of increasing physical activity opportunities for less-skilled working male | The result showed that Physical activity increase opportunities for less-skilled working |
| 46. Sallis et al. | 1997 | Assessment of Physical Activity | Evaluate policy and environmental interventions show for increasing physical activity levels have an impact on all employees | The study showed that increasing physical activity has positive impact on employee. |
| 47. Janet et al. | 2002 | The state of evidence for measures for increasing the employees physical activity | Investigate measures for increasing the employees physical activity | The result showed that increasing physical activity has effectiveness outcomes such as muscle flexibility, body weight as well as general health on employees |
| 48. Marshall | 2004 | The effectiveness of workplace physical activity interventions from 1997 | Investigate the effectiveness of workplace physical activity interventions | The result showed that physical activity has positive effect on outcomes |
| 49. Ganster and Schaubroek | 1991 | Work stress and employee health | Evaluate reduced employee stress and less absenteeism by those who participate frequently in a corporate fitness program | The study showed that participate in fitness program can reduce stress and absenteeism |
| 50. Burke et al. | 2010 | Group goal setting in a physical activity context | Evaluate relationship between physical activity and outcomes | The positive relationship between physical activity and outcomes |
| 51. Biddle | 1995 | Exercise and psychosocial health | Evaluate exercise effects on measures of anxiety, depression, mood and self-esteem | The result showed that exercise has positive effect on functioning and “prosocial” behaviours, such as networking |
| 52. Greene | 2011 | Employee wellness proves it’s worth | Investigate relationship between organization and employee health | The result showed that physical activity prevent of absenteeism and increase turnover |
| 53. Kumar et al. | 2009 | Operational impact of employee wellness programs a business case study | Evaluate organizational wellness programs | Physical activity and wellness program increase productivity |

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Table 3. The policy recommendations from researchers and authors study

| Author/researchers     | Years | Recommendation for the importance of physical fitness to company performance and productivity |
|------------------------|-------|---------------------------------------------------------------------------------------------|
| Ackland et al.         | 2005  | Organizations should document a corporate policy that relates specifically to employee health and physical activity and that the support of management will be essential to the success of such a policy. |
| Pronk and Kotke        | 2009  | Policies that encourage or reward active commuting to work or the introduction of complete streets policies that ensure streets are designed and operated to enable safe access for all pedestrians, bicyclists, motorists and transit riders. |
| Phipps et al.          | 2010  | Organizations interested in implementing workplace policies to increase opportunities for physical activity can benefit from understanding what personal, environmental and organizational factors may impact employee interest and willingness to participate in physical activity. |
| Lucove et al.          | 2007  | Introducing a workplace policy to provide employees with subsidized fitness counseling or gym/recreation memberships may be an effective way to increase and support employee physical activity and reduce barriers to physical activity such as cost. |
| Crespo et al.          | 2011  | The more environmental and policy factors present in a workplace, the more total and recreational physical activity was reported by employees both at work and outside of work. |

Results and Discussion

As mentioned above, this study focused on three objectives. Two objectives are discussed and concluded as follows:

To illustrate the effects of physical fitness on company performance and productivity. The importance of physical fitness, physical fitness at work, company’s performance and productivity was discussed in the literature review. According to the findings, five factors demonstrate the effect of physical fitness on company performance and productivity. The factors include job satisfaction and commitment; cognition and memory; self-confidence/self-efficacy; decreased weight/increased physical activity level; and psychosocial well-being and stress. Table 4 shows the results of the findings from the literature review.

There are five factors show the effect of physical fitness on company performance and productivity as discussed in objective one.

Job Satisfaction/Commitment

All of the reviews which have been done systematically demonstrate that the initiatives of health promotion in the workplace attempt to improve fitness and physical activity which might result in more employee commitment and finally improve job satisfaction (Barr-Anderson et al., 2011). Based on the achieved outcomes, implementing both activities of physical fitness and health programs will improve work context in many different ways such as increasing job satisfaction, more employee commitment and less job stress of employees (Ackland et al., 2005).
Table 4. Results of physical activity for performance and productivity that find from literature review

| Physical activity | Performance | Productivity |
|-------------------|-------------|--------------|
|                   | Positive    | Negative     | Higher | Lower |
| Yes               | 57          | 35           | 13     | 1     |
| No                | 3           |              | 2      | 1     |

Cognition and Memory

One of the current cross-sectional researches demonstrates that there is a relationship between being active physically and improvement in both cognitive and psychological factors. Literature review revealed that generally, more physical activity and physical fitness will decrease the chances of cognitive impairments from occurring (Erickson and Kramer, 2009). In addition, short bouts of physical activity practices during work increased accuracy and the speed of data entry (Barr-Anderson et al., 2011). Some studies revealed that even physical activities in moderate levels can minimize cognitive declines and could be used as a method of treatment for reversing the already existing cognitive deficits in older adults as well (Hertzog et al., 2009).

Self-Confidence/Self-Efficacy

The systematic literature review demonstrated that initiatives of physical activities at the workplace can increase self-confidence among employees (Anderson et al., 2009). Besides, other systematic studies showed that participation of employees in health initiatives at the workplace could establish social capital by developing a higher cohesion sense as well as a collective self-efficacy of staffs (Kahn et al., 2002). The concept of social capital includes the processes among people that build norms, networks and trust and facilitates cooperation with mutual benefits (WHO, 1998). Therefore, more physical activity and higher fitness levels can enhance the self-confidence of employees that can finally result in a unified work culture.

Decreased Weight/Increased Physical Activity Level

Based on previously conducted studies, initiatives of health promotion at the workplace attempt to increase nutrition and physical activity, also, it was revealed that fitness could decrease body weight and body fat of employees effectively (van Dongen et al., 2011). In addition, Anderson et al. (2009) showed that because of health promotion programs at the workplace, some modest weight loss has been reported as well with the objective of improving physical activity and nutrition. The other review identified that overall, physical activity could be increased by workplace intervention among all the participants in all the relevant investigations. In such studies, physical activity was evaluated and it was found that there are modest improvements in the level of physical fitness activity (Barr-Anderson et al., 2011).

Psychosocial Well-Being and Stress

Literature review demonstrated that 27% of individuals who have depression have serious issues in both the home and work life and within 3 months, they will lose an average of 4.8 working days and suffer 11.5 reduced productivity days (CDC, 2011). Some studies revealed that physical activity is related to a minimized risk of developing clinical depression (Bingham, 2009). Such conclusions are supported by a review in 2007, which revealed that exercise protects people against depression and it is an adjunctive and effective intervention to treat depression from mild to moderate levels (Donaghy, 2007).

To investigate the importance of physical fitness to company performance and productivity. Based on previous studies, the necessity of physical fitness to productivity and company performance can be investigated based on increased job performance and productivity, return on investment/cost effectiveness, decrease in presentism/absenteeism, sick leave, turnover, compensation of workers and disability.

Productivity and Job Performance

It was concluded that work performance could increase as a result of increased fitness and physical activity after short bouts of physical activity were introduced within the work context. In addition it was revealed that work ability could be improved if we consider some exercise breaks and as a result significant improvements could be observed in both work productivity and cognitive performance. It can be achieved if we introduce physical activity as a daily routine at the workplace (Barr-Anderson et al., 2011). Hutchinson and Wilson (2011) conducted a meta-analysis and they concluded that the workplace could be a suitable setting to initiate modest modifications in fitness and physical activity of employees. Thus, improved health conditions and successful interventions of physical activity might result in improved productivity.
Turnover, Disability, Worker’s Compensation and Sick Leave

Other advantages of improved physical fitness activities of employees are decreased obesity, less compensation cost of workers, sick leave, associated costs and short run disability rates (Ackland et al., 2005). One of the recent studies revealed that initiatives of health promotion at the workplace to improve physical activity might result in more financial advantages for organizations by means of turnover reduction (van Dongen et al., 2011). Moreover, Christie et al. (2010) explained that obesity could predict sick leave in the long term so less obesity by means of more physical activity can minimize sick leave. Pronk and Kottke (2009) stated that vigorous physical activity positively impacts sick leave. Besides Hutchinson and Wilson (2011) mentioned that improved health of employees leads to successful interventions of physical activity and it can finally results in decreased sick leave rates.

Cost Effectiveness/Return on Investment

When we consider costs of sick leave, absenteeism, injuries, disability and health care, it is obvious that physical inactivity as well as it influence on obesity of employees can be a critical driver of costs in the work context (Anderson et al., 2009). One of the mixed-method researches demonstrated that implementing physical activity, workplace health and fitness initiatives has many economic benefits for the organization such as cost improvements to benefit ratio (Ackland et al., 2005). Another research demonstrated that there is $1.59 USD for each single invested dollar in physical activity programs in workplace and cost effectiveness in three separate studies varied from $1.44 to $4.16 USD, for each pound of body weight loss (Anderson et al., 2009).

Absenteeism and Presentism

Presentism concept refers to being present at work regardless of weak health level and thus performing below par (Brown et al., 2011). It is considered a new concept, which tries to quantify how current health conditions of employees can limit their work performance and it has a negative impact on organizational productivity as well (Ackland et al., 2005). One of the current investigations demonstrated that losses for presentism in workplace were from 1.9 to 5.1 times higher than the incurred costs from absenteeism and the fact that related costs to presentism were more than those direct costs of health in many cases because of the decline in productivity (Brown et al., 2011). In addition, positive associations in literature revealed that initiatives of physical activity in workplace could be a valid tool to help minimize both presentism and absenteeism.

Some Intangible Advantages

Comprehensive study of previous investigations demonstrated that implementing physical activity initiatives and workplace health programs could lead to improved outcomes of human resource and in developing a positive corporate image. Such results can enable total performance in the workplace such as improved motivation, more loyalty and enhanced employee morale, better recruitment, good working atmosphere, improved teamwork and communication and finally retention of qualified employees. In general, relevant studies explain that staffs can benefit in different ways by creating opportunities for activities of physical fitness at the workplace (Ackland et al., 2005).

Conclusion

Achieved outcomes from the reviews revealed that physical activity levels could be positively impacted by fitness and productivity programs at the workplace. Moreover, this research review showed that, there is a direct relationship between work productivity and fitness. Some researchers measured improved job satisfaction and productivity through enrollment in exercise program by employees. Brokers of commercial real estate stock who participated in an aerobics program for a total of 12 weeks achieved higher sales levels compared to the non-participating brokers after or during the 12 weeks of aerobic programs. Moreover, Research showed that, employees who participated in physical activity programs have more self-confidence and concentration in their job in comparison to other employees. Workers are under pressure in the workplace and physical activity can reduce stress and depression among them. According to researches, physical activity in the workplace increases employees’ health and efficiency and reduces the cost of treating employees. Introducing a workplace policy to provide employees with subsidized fitness counseling or gym/recreation memberships may be an effective way to increase and support employee physical activity and to reduce barriers to physical activity such as cost.

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Author's Contributions

Maryam Etemadi: Led the study, collected the data and did all the analysis. He also produced the manuscript in its original form and revised it into its final form.

Kamyar Shameli and Norihan Abu Hassan: Participated in research design.

Nurul Bahiyah Binti Ahmad Khairudin and Hirofumi Hara: Reviewed the draft manuscript and provided suggestions to improve it.

Kamyar Shameli and Zuriati Zakaria: Reviewed the draft manuscript. In charge of publication correspondence.

Ethics

This article is original and contains unpublished materials. The corresponding author confirms that all of the other authors have read and approved the manuscript and no ethical issues involved.

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