

Initiatives for Improving Physical Well-Being for Construction Workers in Zimbabwe

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Abstract

The hazardous working conditions associated with the construction industry have led to increased poor health and work disability among construction workers. Although workplace physical health promotion programs for construction workers are present in developed countries, developing countries still need to identify applicable programs. Therefore, this study sought to uncover initiatives to improve the physical well-being of construction workers in Zimbabwe. Quantitative data were collected from project/site managers and skilled workers through Google Forms and interviewer-administered questionnaires, respectively. Statistical analysis was conducted using the relative importance index and the T-test. The findings indicate that exercise programs, health risk assessments, nutrition education, weight loss programs, and Safety, Health, and Environment (SHE) workshops are critical for improving the physical well-being of skilled construction workers in Zimbabwe. There is consensus between both respondent groups on the initiatives required. The study recommends that employers and other stakeholders invest in proactive and preventative measures for physical well-being and health promotion that include exercise equipment and nutritionists to assist with meal planning. Additionally, workers should be encouraged to participate in workshops on Safety, Health, and Environment promotion programs offered by internal or external organisations. The main limitation of the study was the inclusion of only five residential and commercial construction sites for the skilled workers. Including civil construction sites could yield more insights. Identifying physical well-being initiatives is important for improving the health and safety of construction workers. This paper is valuable for enhancing human-centred occupational health and safety policies within the construction industry.

Keywords: Construction, construction skilled workers, initiatives, physical well-being, Zimbabwe

1. Introduction

Across various sectors, the construction industry is regarded as having the highest rates of work-related illnesses (Lingard & Turner, 2015). Adams (2019) argued that workplace conditions can affect employees physically, mentally, or emotionally and enhance or harm their well-being. Lette et al. (2018) reported that work-related injuries and illnesses constituted 41.4% in Ethiopia, and Yang et al. (2020) recorded an average injury rate of 2.21 per 100 workers in the state of Oregon, the United States of America, indicating workers' well-being challenges within the construction industries of both developing and developed countries. Samanta and Gochhayat (2022) attributed 80-95% of accidents to poor well-being. Construction workers are at the lowest on the socio-economic power gradient among blue-collar workers. They are associated with poor health, increased rates of disability, chronic disease, and mortality (Du Plessis et al., 2013), with at least 70% suffering from mental health issues (Powell et al., 2018). Moreover, the tough nature of the construction industry poses significant health risks to construction workers (Liang & Shi, 2022). Loudoun and Townsend (2017) pointed out that poor health among construction workers is often due to the predominance of musculoskeletal conditions, such as

fall injuries, fractures, back injuries, or arthritis, as well as respiratory issues. The construction industry is a male-dominated sector (Hanna et al., 2020). Because men rarely seek medical attention for health issues, they are associated with poor health (Stergiou-Kita et al., 2016). Moreso, construction is an occupation highly related to elevated stress levels, which impact workers' psychological and physical well-being (Fenton et al., 2014). Due to the poor health associated with the construction industry, working lives are significantly shortened (Ajslev et al., 2013). For example, poor nutrition among construction workers has been linked to chronic diseases that later affect the performance of workers and result in injuries and accidents (Okoro et al., 2019).

The construction industry is facing serious problems regarding the management of occupational health, safety, and wellness issues. The cost of claims related to occupational injuries, including construction-related claims, in Zimbabwe translates to 0.05% of the Gross Domestic Product (Magada, 2024). Chipato et al. (2019) established that the existence of a negative health and safety culture significantly affects the construction industry. The problem is intensified by poor conditions of machines and equipment, lack of attention to ergonomic factors, poor hygiene

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conditions, a severe lack of functional occupational safety and health management policy, insufficient personal protective equipment, lack of training programs, and pollution (Chazireni & Chagonda, 2018). The failure to facilitate employees' well-being programs has led to challenges such as depression, stress, musculoskeletal disorders, drug abuse, high blood pressure, and respiratory diseases, among others (Ganster & Rosen, 2013; Fenton et al., 2014; Quick et al., 2014; Carmichael et al., 2016; Salvagioni et al., 2017).

Notwithstanding these shortcomings, inadequate research on physical wellness initiatives exists in developing countries like Zimbabwe. Therefore,

2.2. Initiatives for physical well-being improvement

The workers in the construction industry are affected by poor mental and physical health (Kalarachchi et al., 2022). To improve the physical well-being of construction workers, Lingard and Turner (2017) developed a qualitative causal loop diagram that shows a relationship of factors operating at and between individual, family, workplace, and industry levels as affecting the adoption of healthy behaviour. This highlights the importance of these factors for future health promotion interventions. Table 1 presents initiatives for physical well-being improvement from previous studies.

Table 1: Initiatives for physical well-being improvement from previous studies

Initiatives	Sources
Exercise programs	Lingard and Turner (2015), Ganu et al. (2017), Loudon and Townsend (2017)
Health Risk Assessments	Mattke et al. (2015), Lawami et al. (2023)
Mental health policies	Viester et al. (2014), Campbell and Gunning (2020), Greiner et al. (2022), Kalarachchi et al. (2022), Lawami et al. (2023)
Nutrition Education (Diet)	Viester et al. (2014), Lingard and Turner (2015), Maes et al. (2015), Anger et al. (2018), Chung, et al. (2019)
Safety, Health, and Environment (SHE) workshops (Team cohesion and training)	Lingard and Turner (2015), Maes et al. (2015), Loudon and Townsend (2017), Lawami et al. (2023)
Weight loss programmes	Viester et al. (2014), Lingard and Turner (2015), Anger et al. (2018)

initiatives aimed at improving the physical health and well-being of Zimbabwean construction workers were sought. Addressing the employee wellness challenges will enhance employees' physical and mental well-being, and the industry will enjoy improved productivity. The following sections will consider the theoretical foundation of the study and review physical health and well-being initiatives from previous studies. The methodology is expanded, and the results are presented and discussed. Finally, conclusions and recommendations are derived from the results.

2. Literature Review

The study's theoretical framework and physical well-being initiatives are reviewed in this section.

2.1. Theoretical framework

This study is based on the motivational theory by Henry Maslow, where physiological, safety and self-actualisation needs are emphasised (Leonard & Trusty, 2015). These needs relate to the physical well-being initiatives for skilled construction workers. Moyo et al. (2022) reported that activating health and well-being initiatives substantially advances the profitability and satisfaction of both the employer and skilled construction workers, respectively.

Due to the highly demanding and stressful work environment in the construction sector, characterised by long working hours and high rates of safety incidents, employers should be encouraged to get involved in workplace health promotion programs (WHPPs) by creating a healthy work environment (Loudoun & Townsend, 2017). The hazardous working conditions associated with the construction industry have led to poor health and work disability among construction workers. This has resulted in the popularity of workplace health campaign plans within the construction industry (Maes et al., 2015). According to Lingard and Turner (2015), healthy eating, smoking cessation, and physical exercise are priority areas for intervention to achieve the physical well-being of construction workers. Therefore, several health campaign measures addressing these issues were implemented in Australia, including healthy eating and cooking workshops, an abstinence from smoking program, a "healthy options" menu in the canteen, and on-site yoga and stretching sessions, resulting in improvements in physical well-being.

The exercise programs have multiple positive effects, which are not only of a physical nature but are also psychological (Ganu et al., 2017). Moreover, the workers suggested the need to offer a work setting that encourages healthy habits for these health promotion

interventions to be effective (Lingard & Turner, 2017). However, these may not necessarily be implementable in a developing country due to differences in construction health and well-being structural policies. The continuous rise in chronic diseases amongst construction workers suggests the need for lifestyle behavioural changes. This is because unhealthy lifestyle behaviours affect productivity, safety, and interpersonal relations among workers (Loudoun & Townsend, 2017). In agreement, Lingard and Turner (2015) highlight that lifestyle factors are critical in shaping the health outcomes of construction workers; hence, the introduction of numerous individual behaviour change programs. Sorensen et al. (2011) observed significant benefits from individual information campaigns encouraging the consumption of fruit and vegetables amongst US construction labourers. Chung et al. (2019) also observed a substantial change in the intake of fruit and vegetables after implementing nutrition education for construction site workers. Therefore, this may be a viable solution in developing countries, as fruits and vegetables are readily available and can be provided to site workers at a minimum cost to the employer.

Loudoun and Townsend (2017) opined that productivity decreases after meals on construction sites due to poor food choices. This is due to food choices, lack of fluids, meal skipping, and excessive use of energy drinks that affect performance, attentiveness, and increase site tensions. In addition, it is characterised by mood swings, tiredness, and high irritability, thereby affecting morale and interpersonal relationships amongst construction site workers. Viester et al. (2014) developed a feasible worksite intervention aiming at the prevention and reduction of overweight and musculoskeletal disorders (MSDs) among construction workers. Therefore, health promotion programs within the construction industry are fundamental and can succeed if employers recognise that it is within their short-medium- and long-term interests to have a workforce that is both safe and healthy (Loudoun & Townsend, 2017). According to Nwaogu et al. (2020), the rise in depression, stress disorders, anxiety, and suicidality among construction workers has resulted in numerous studies on the psychological dangers to health (Hsu et al., 2016; Liang et al., 2018; Langdon & Sawang, 2018).

Assessment of occupational safety and health risks on construction sites is done through risk assessment matrices based on experience and knowledge (Al-Anbari et al., 2015). Mattke et al. (2015) also remarked that wellness programs frequently assess employees for health risks through health risk surveys and biometric assessments, which offer intervention for addressing health risks and evident diseases as well as endorsing healthy routines. Lawami et al. (2023) identified that the lack of transparency in reporting the well-being of construction workers, stemming from a lack of

engagement from employers and inadequate genuine leadership commitment to addressing mental health, has resulted in increased cases of poor health of workers. Issues such as lack of job security, long working hours, long commutes to and from work, and complex work activities are among the high-stress factors experienced by construction workers (Laidler, 2019).

To tackle health literacy, strategies such as health first aiders, health and safety executives' "Talking Toolkit" action plan/policy/strategy, modular emotional training for managers, and webinar sessions about mental health and well-being audits can be implemented in construction organisations (Lawami et al., 2023). Mattke et al. (2015) highlight that despite being somewhat costly and difficult to implement at times, wellness programs always yield positive results. Although these strategies can effectively tackle health concerns in construction, some may be difficult to implement in developing countries due to inadequate financial resources.

3. Research Methodology

A quantitative research design method was adopted, like a study by Lawami et al. (2023). A quantitative methodology contributes to the collection of varied insights from a considerable number of respondents to enable the generalisability of results (Leedy & Ormrod, 2016), as was required by the study. Additionally, the aim of identifying initiatives to improve physical well-being varies and is best identified through a broader survey. Skilled workers from construction sites and site managers were targeted because they possess the required knowledge in the study area. Construction companies were drawn from the Construction Industry Federation of Zimbabwe (CIFOZ) 2023 list, specifically those registered under categories A, B, and C, due to the structures in these organisations. The construction sites were purposively sampled in Harare and Bulawayo in 2023. The application of the Taro Yamane formula (Umar & Wachiko, 2021), resulted in a sample size of 88 from the population of 113 construction companies registered in categories A, B, and C. Skilled workers were selected through census sampling to eliminate bias (Saunders et al., 2016) on purposively identified construction sites (2 residential and three commercial). Online and self-administered questionnaires were used for data collection. Google Forms were used to create the online questionnaire to collect data from project/ site managers, and links were distributed through Emails, WhatsApp, and LinkedIn platforms. According to Saunders et al. (2016), online questionnaires have the merit of promoting effortless data collection in real time. Interviewer-administered structured questionnaires collected data from the skilled workers, which allowed the researcher to counter any ambiguity concerns (Leedy & Ormrod, 2016).

Data analysis was conducted using the Statistical Package for Social Sciences (SPSS). The Relative Importance Index (RII) evaluated the significance of physical well-being initiatives with: 'not important' < 0.2; $0.2 < \text{'of little importance'} \leq 0.4$; $0.4 < \text{'somewhat important'} \leq 0.6$; $0.6 < \text{'important'} \leq 0.8$; $0.8 < \text{'very important'} \leq 1$ (Moyo & Chigara, 2023). The reliability of the questionnaire instrument was confirmed by a Cronbach's coefficient alpha of 0.787, which was acceptable as it exceeded 0.7 (Field, 2014). The Shapiro-Wilk (SW) test assessed normality (Razali & Wah, 2011), and a value of 0.072, being > 0.05, confirmed a normal distribution. Furthermore, the t-test assessed whether there was a significant difference between the insights of managers and skilled workers, with $p \leq 0.05$ indicating statistically significant differences. A low-risk ethics clearance was undertaken and approved by the Department of Construction Economics and Management at The National

with five conveniently selected participants was implemented. The views from the pilot test were used to improve the questionnaire. Adequately completed questionnaires (51 managers; 82 skilled workers) represented a response rate of 45.13% and 73.2% from populations of 113 and 112, respectively. The mean response rate of 59.11% is above the expected minimum. Chigara and Moyo (2021) highlighted that an acceptable response rate for a survey questionnaire in the study area is at least 30%.

Table 2 shows that most respondents, 76.7%, were male. All managers held at least a bachelor's degree, while most skilled workers (32.3%) were trade-tested. Most respondents (68.4%) had more than 10 years of experience. Overall, the respondents exhibited characteristics that upheld the validity of the study.

4.2. *Initiatives for improving the physical well-being of construction workers in*

Table 2: Demographic Profile of respondents

Characteristic	Description	Frequency	Percentage (%)
Gender	Male	102	76.7
	Female	31	23.3
Designation	Managers	51	38.3
	Skilled workers	82	61.7
Educational background	Trade test	43	32.3
	National Certificate and Diploma	39	29.3
	Bachelor's degree	36	27.1
	Post Grad	15	11.3
Number of years working in the construction industry	0-5 years	30	22.6
	6-10 years	12	9
	Above 10 years	91	68.4
	Total	133	100

University of Science and Technology before data collection commenced.

4. Findings and Discussion

4.1. Response rate and Profile of respondents

Questionnaires were distributed to all construction companies and all managers. This was after a pilot test

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Table 3 indicates the various initiatives that can be implemented to improve the physical well-being of construction workers with construction skills, rated on a scale of 1 (not important) to 5 (very important).

The results show that respondents consider all the wellness programs listed to be important in enhancing

Table 3: Initiatives for physical well-being for construction workers in Zimbabwe

Initiative	Skilled workers			Project/site managers			T-Test of means results
	RII	Evaluation	Rank	RII	Evaluation	Rank	
Exercise Programs	0.898	Very important	1	0.878	Very important	3	0.058
SHE Workshops	0.874	Important	2	0.908	Very Important	1	0.050
Health Risk Assessments	0.862	Very important	3	0.738	Important	5	0.099
Weight Loss Programs	0.822	Very important	4	0.890	Very important	2	0.070
Nutritional Education	0.748	Important	5	0.794	Important	4	0.052

employees' well-being. The findings support Mattke et al. (2015), who pointed out that although costly and difficult to implement at times, wellness programs are effective in improving the physical well-being of workers. All the programs scored above average; hence, all are considered effective. From the results in Table 3, employees perceived exercise as the most effective wellness program with an RII of 0.898, while management ranked it third with an RII of 0.878. Exercise programs have proven to be effective, supported by several scholars (Lingard & Turner, 2015; Ganu et al., 2017; Loudon & Townsend, 2017). As part of the wellness programs, employees can offer moderate fitness classes that combine yoga, low-impact aerobics, and relaxation methods, potentially attracting first-timers and individuals with special physical needs or limitations (Lingard & Turner, 2015).

As part of the wellness programs, employees can offer moderate fitness classes that combine yoga, low-impact aerobics, and relaxation methods; these may attract first timers and those with special physical needs or limitations (Lingard & Turner, 2015). In addition, investing at least 30 minutes of exercise each day resulted in more than 80% of the employees reporting fewer medical problems and sound mental well-being (Lingard & Turner, 2017). Conducting SHE Workshops with RII of 0.874 and 0.908 for employees and management, respectively, is the highest-ranked initiative by management, while it is the second-ranked initiative by the employees. Hosting seminars and inviting health and wellness experts into the program is one way to get employees actively engaged in the health and wellness discussion, thereby reviving health and wellness efforts (Lawani et al., 2023). It is from these workshops that the employees are taught about the importance of employee safety and that it is everyone's duty, not just the employers'. Once appreciation of each one's roles is increased, there is bound to be a marked improvement in the SHE performance of the companies.

Health risk assessment is the third-ranked initiative suggested by the employees with an RII of 0.862, while for the management, it is the fourth-ranked initiative with an RII of 0.738. The importance of health risk assessment is mainly attributed to the need to identify employees with underlying health conditions that might not be suitable for the physically demanding construction work. In Zimbabwe, workers working in mining areas are assessed for Tuberculosis, to protect those with respiratory challenges from further harm to their health. Also, assessment of mental health is very important, as outlined by Lawami et al. (2023), to ensure the safety of the workforce, as mental challenges may affect the concentration levels of workers, resulting in accidents on site. Weight loss programs are the fourth-ranked initiative by employees with an RII of 0.822, while the management ranked it second with an RII of 0.890. According to Viester et al. (2014),

weight loss programs are very effective as they lead to a reduction of excessive body weight, thus minimising medical leave, increasing productivity, and reducing musculoskeletal symptoms through lowering the burden on the musculoskeletal system. Nutrition education is the fifth-ranked initiative with an RII of 0.748 as ranked by employees and an RII of 0.794 as ranked by management. Promoting nutrition knowledge results in improved dietary behaviours. This can be achieved through encouraging a diet composed of fruit and vegetables, which will lower the risk of diet-related diseases such as obesity, diabetes, and cardiovascular disease (Chung et al., 2019).

The t-tests of all the initiatives were above 0.05, which shows that there were no significant differences between the responses from employees and responses from managers. This highlights that managers understand the physical well-being needs of the workers, enabling them to craft the necessary policies to ensure that these initiatives are implemented. Moreover, the consensus also indicates that both managers and workers acknowledge the health hazards associated with construction work and are aware of what is required to safeguard their physical well-being. Therefore, this shows that all five initiatives discussed are critical to the improvement of the physical well-being of skilled construction workers in Zimbabwe. However, awareness and knowledge do not necessarily equate to adequate implementation. Managers may not implement these initiatives if they are not regulated within the construction industry.

5. Conclusion and Further Research

Due to the increased poor health and work disability among construction workers in Zimbabwe, this study aimed to identify initiatives that can be implemented to improve their physical well-being. Initiatives such as exercise programs, S.H.E. workshops, health risk assessments, weight loss programs, and nutrition education were rated as important by both the employees and management. These programs need to be created in close consultation with the employees and ensure that they are of high quality through employing counsellors and team-building professionals who are accredited by renowned bodies or institutions. Consultation with the employees also helps in improving the chances of broader acceptability. Therefore, there is a need for employers to develop measures or programs that are effective and acceptable to the intended users to circumvent the adverse effects being faced by their employees, who are valuable resources within organisations. This study contributes context-specific initiatives that can be used on construction sites to enhance the physical well-being of workers. This study recommends employers take it upon themselves to invest more in preventative measures, such as investing in exercise equipment, introducing on-site yoga, and hiring nutritionists to

assist with meal plans on-site, rather than reacting when problems have arisen. As is the case, employers tend to save more in implementing preventative measures as compared to the costs incurred when resolving problems. Additionally, workers should be consulted extensively for continuous improvement of the implemented initiatives on SHE issues, and their labour unions must be involved. Employees must be encouraged to participate in workshops on health and well-being. Implementing these initiatives is predicated on evolving the construction organisation's strategic

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