
Baseline Assessment of Health-Related Quality of Life among Industrial Workers in Oyo State, Nigeria: Implications for Occupational Health Interventions

Oni A. A.

Environmental Health Officer Tutors Course, University College Hospital, Ibadan.

kemioni445@gmail.com

Arulogun O.

Health Promotion and Education, University of Ibadan, Ibadan

oyedunniarulogun@gmail.com

Balogun F.

Community Health Department, Lead City University, Ibadan

Akinsolu F.

Aduroja P.

Public Health Department, Lead City University, Ibadan

Adeniran I. A.

Health Information Management Department, Lead City University, Ibadan

ayobami.adenira@lcu.edu.ng

ABSTRACT

This research investigates the effects of occupational health interventions on the health-related quality of life (HRQoL) of industrial workers in Oyo State, Nigeria. The research is grounded in the exploration of occupational health and safety culture, organizational commitment, and workers' awareness of occupational hazards, with a focus on the relevance of safety communication and training. A mixed-method was used, incorporating quantitative and qualitative data from a sample of industrial workers divided into intervention and control groups. The results include that participation in these health interventions significantly enhances workers' HRQoL by reducing exposure to occupational hazards and improving health outcomes. Consequently, targeted occupational health interventions can lead to substantial improvements in the physical, mental, and social aspects of workers' lives, thereby contributing to overall productivity and well-being.

Keywords: *Baseline assessment, quality of life, industrial workers, occupational health interventions.*

INTRODUCTION

In Nigeria, occupational accident is a common factor due to health damage from poor working environment and condition, production processes, especially in an organisation that places a lesser priority on health and safety (Ogundare et al., 2020). A study conducted on occupational hazards among cement factory workers reported 3,183 injuries within a 10-year period with a fatality rate of 2.2% (Afube et al., 2019). Ebeloku et al. (2018) also reveal that occupational accidents negatively impact workers' health and performance. The importance of occupational health has now been recognized as an important concept influencing the quality of life of individuals (Taylor et al., 2017). Different components have been identified in defining occupational health. These include the maintenance and promotion of workers' health, improvement of the working environment, and development of industrial health and safety culture (ILO, 2019). In other terms, occupational health deals with all aspects of health and safety in the workplace with a strong focus on primary prevention of occupational hazards, and overall improvement in organisational productivity and workers' health-related quality of life.

Generally, industrial workers are usually subjected to tedious activities that may include frequent lifting, carrying, pushing, and pulling of heavy objects. In addition to tedious tasks, industrial workers are also usually exposed to irritant inhalants, vehicle exhaust, unfavourable atmospheric conditions such as air and noise pollution, and psychological stress (Garrido *et al.*, 2015). These multiple work demands and hazards result in a higher incidence of health problems and injuries that impact the workers' overall quality of life.

A study conducted on the quality of life of workers exposed to noise in a Textile industry shows that the workers are at greater risk of hearing loss, and consequently results in a lower quality of life, particularly in the dimension of physical health, mental health, social and emotional health and general health (Sumardiyono et al., 2019). Another study on the level of wellness among industrial workers has also reported a significant reduction in overall wellness of industrial workers with greater burden among the aged and those with longer working hours (Lee et al., 2019). In contrast, a study on quality of life and the associated factors among younger industrial workers revealed a better quality of life among this population (Andrade et al., 2021). Similarly, a descriptive study on the predictors of HRQoL revealed that industrial workers had good physical health, while employees had lower scores in the environmental domain (Malakeh et al., 2017).

Kin et al. (2019) revealed a moderate quality of life in the physical and mental health dimensions. Occupational stress, musculoskeletal disorders, and other factors affecting the quality of life among construction workers showed that all employees had lower scores in all domains of the quality of life (Chakraborty et al., 2017).

A cross-sectional study conducted among municipal waste collection workers in Germany revealed the presence of an impaired HRQoL, with 68.3% of the workers reporting impairment in one or more dimensions (Garrido *et al.*, 2015). A similar study in Brazil revealed that the majority of the former workers had a very poor quality of life (Teixeira *et al.*, 2015). A descriptive correlational study on the predictors of health-related quality of life among construction workers revealed that workers had good physical health with a poor working environment (Malak, 2017). Poor environmental health is linked to the fact that most industrial workers in the construction sector are exposed to a high-risk, potentially unsafe, and unhealthy occupational environment (Taghavi *et al.*, 2014). Migrant construction workers have poor physical, social, and psychological domains, while workers enjoy a good quality of life in the environmental domain (Zabeer *et al.*, 2019). Another investigation among Indian construction industries on occupational stress and quality of life reported that, in addition to the incidence of musculoskeletal pain, the workers also displayed poor quality of life in all dimensions of quality of life (Chakraborty *et al.*, 2017).

Other similar studies in the construction industry have also reported good physical health with a compromised environmental domain (Teles *et al.*, 2014). Lower health-related quality of life has also been reported among rural-to-urban migrant industrial workers, i.e, individuals who migrated from rural areas and had worked in urban areas for more than 3 months had lower scores in all domains of HRQOL compared to those in rural settings (Lu *et al.*, 2015).

In Egypt, a study on the occupational hazards and quality of life among fertilizer factory workers in Assuit City revealed that 5.5% and 41.4% of the workers had good and poor quality of life, respectively (Aly *et al.*, 2017). The health-related quality of life was found to be below the Turkish Community Standard (Terzi *et al.*, 2020). Another health-related quality of life study among construction workers in Kuniamithur Village, in Coimbatore district, also showed that only 28% of the employees had a good quality of life, while 26% and 46% displayed moderate and low quality of life, respectively (Tesla *et al.*, 2018). In Nigeria, a cross-sectional study on socio-demographic and workplace determinants of quality of life among quarry workers showed that the majority (74.1%) of employees have poor quality of life, particularly in social and psychological domains (Stanley *et al.*, 2020).

In addition, studies have also investigated other specific forms of health-related quality of life. For instance, pulmonary and respiratory functions related to quality of life are poor among the construction workers (Chittaluni *et al.*, 2021). Another study on pulmonary functions and HRQoL among Silica-exposed workers in chemical industries showed that exposed workers had lower values of pulmonary function indices and lower health-related quality of life (Mohammadi *et al.*, 2017). Oral health-related quality of life has also been investigated. A cross-sectional study on the oral health status and oral health-related quality of life among steel factory workers of Visakhapatnam reported poor quality of life

among the production line workers and those in administrative sections, although those in the production line displayed a significantly lower quality of life than the administrative workers (Janapareddy et al., 2020).

The industrial sector in Oyo State, Southwest Nigeria, remains a significant driver of economic activity, employing thousands of workers in various manufacturing and production lines. However, amid the economic contributions of this sector lies a critical and often overlooked issue: the health-related quality of life (HRQoL) of its workforce. Industrial workers are frequently exposed to occupational hazards, such as noise, chemicals, poor ventilation, repetitive tasks, and long working hours; all of which detrimentally affect their physical, psychological, and social well-being. Despite growing concerns about workplace health and safety, there is a paucity of empirical data assessing the baseline HRQoL among industrial workers in the region. Without such foundational evidence, health promotion programs, workplace wellness initiatives, and occupational health interventions risk being misdirected, ineffective, or unsustainable. Moreover, existing occupational health policies may not adequately reflect the lived realities and specific needs of workers in various industrial sub-sectors. This gap in baseline data limits the ability of policymakers, public health authorities, and industrial managers to design and implement targeted interventions that can improve workers' quality of life and productivity. Therefore, there is an urgent need for a comprehensive baseline assessment of HRQoL among industrial workers in Oyo State. Such an assessment would provide the evidence base necessary for informed occupational health planning and interventions, as well as for monitoring progress over time.

Hypotheses

1. There will be no significant influence of occupational health interventions on the incidence of occupational injuries among the industrial workers.
2. There will be no significant influence of occupational health interventions on the health-related quality of life of the industrial workers

METHOD

The study assesses the effectiveness of various occupational health and safety interventions, such as training, ergonomic programs, and behavioural health initiatives, on workers' well-being and quality of life. It specifically focuses on occupational health and safety culture, organizational commitment, and worker awareness of hazards, emphasizing the importance of safety communication and training. Using a mixed-methods approach, the research collects quantitative and qualitative data from industrial workers assigned to intervention and control groups.

RESULTS AND DISCUSSION

Table 1: Participants' Distribution by Socio-demographics (Control Group, n = 106)

Variables		Frequency	Percentage
Age	20-25Years	38	36
	26-31Years	30	28
	32-36Years	10	10
	37Years and above	28	26
	Total	106	100
Sex	Male	73	69
	Female	33	31
	Total	106	100
Marital Status	Single	64	60
	Married	40	38
	Divorced/Separated	2	2
	Total	106	100
Ethnicity	Yoruba	76	71
	Igbo	24	23
	Hausa	6	6
	Total	106	100
Religion	Christianity	78	74
	Islam	26	24
	Traditional	1	1
	Atheist	1	1
	Total	106	100

Table 1 presents the demographic characteristics of the study participants, including age, sex, marital status, ethnicity, and religion. The majority of respondents (36%) were aged between 20 and 25 years, followed by those aged 26–31 years (28%), indicating that most participants were young adults. Male participants constituted 69% of the sample, while females accounted for 31%, suggesting a male-dominated workforce. Regarding marital status, 60% of the participants were single, 38% were married, and 2% were divorced or separated. Ethnic distribution revealed that Yoruba made up the largest group (71%), followed by Igbo (23%) and Hausa (6%). In terms of religion, the majority of respondents were Christians (74%), followed by Muslims (24%), with Traditional and Atheist adherents making up 1% each. This demographic profile shows a youthful, predominantly male, Yoruba-Christian population, which may influence the perspectives shared in the study.

Table 2: Health-Related Quality of Life among the Control Group

S/N	Items	AL	MD	M	C	Mean	Std Dev
1	How would you rate your quality of life?	27 (26%)	46 (43%)	22 (21%)	11 (10%)	2.16	0.93
2	How satisfied are you with your health?	22 (21%)	48 (45%)	17 (16%)	19 (18%)	2.31	1.00
3	To what extent do you feel that physical pain prevents you from doing what you need to do?	19 (18%)	53 (50%)	18 (17%)	16 (15%)	2.29	0.94
4	How much do you need any medical treatment to function in your daily life?	28 (26%)	44 (42%)	22 (21%)	12 (11%)	2.17	0.95
5	How much do you enjoy life?	14 (13%)	47 (45%)	34 (32%)	11 (10%)	2.40	0.85
6	To what extent do you feel your life to be meaningful?	29 (27%)	38 (36%)	23 (22%)	16 (15%)	2.25	1.02
7	How often do you have negative feelings such as blue mood, despair, anxiety, depression?	37 (35%)	40 (38%)	15 (14%)	14 (13%)	2.06	1.01
8	How well are you able to concentrate?	12 (11%)	38 (36%)	37 (35%)	19 (18%)	2.59	0.91
9	How safe do you feel in your daily life?	10 (9%)	58 (55%)	38 (36%)	0 (0%)	2.26	0.62
10	How healthy is your physical environment?	16 (15%)	31 (29%)	44 (42%)	15 (14%)	2.55	0.91
11	Do you have enough energy for everyday life?	6 (5%)	53 (50%)	22 (21%)	25 (24%)	2.62	0.91
12	Are you able to accept your bodily appearance?	9 (9%)	51 (48%)	34 (32%)	12 (11%)	2.46	0.81
13	Have you enough money to meet your needs?	25 (24%)	61 (58%)	16 (15%)	4 (3%)	1.99	0.74
14	How available to you is the information that you need in your day-to-day life?	11 (10%)	58 (55%)	25 (24%)	12 (11%)	2.36	0.81
15	To what extent do you have the opportunity for leisure activities?	31 (29%)	45 (43%)	24 (23%)	6 (5%)	2.05	0.87
16	How well are you able to get around?	17 (16%)	55 (52%)	24 (23%)	10 (9%)	2.25	0.84
17	How satisfied are you with your sleep?	20 (19%)	45 (42%)	20 (19%)	21 (20%)	2.40	1.01
18	How satisfied are you with your ability to perform your daily living activities?	13 (12%)	54 (52%)	29 (27%)	10 (9%)	2.34	0.81
19	How satisfied are you with your capacity for work?	14 (13%)	54 (51%)	20 (19%)	18 (17%)	2.40	0.92
20	How satisfied are you with yourself?	18 (17%)	53 (50%)	14 (13%)	21 (20%)	2.36	0.99
21	How satisfied are you with your personal relationships?	14 (13%)	57 (54%)	30 (28%)	5 (5%)	2.25	0.74

22	How satisfied are you with your sex life?	21 (20%)	61 (58%)	19 (18%)	5 (4%)	2.08	0.75
23	How satisfied are you with the support you get from your friends?	23 (22%)	49 (46%)	23 (22%)	11 (10%)	2.21	0.90
24	How satisfied are you with the conditions of your living place?	18 (17%)	48 (45%)	25 (24%)	15 (14%)	2.35	0.93
25	How satisfied are you with your access to health services?	25 (24%)	55 (52%)	20 (19%)	6 (5%)	2.07	0.81
26	How satisfied are you with your transport?	24 (23%)	41 (39%)	25 (24%)	16 (14%)	2.31	0.90
Weighted Mean						2.29	0.88

Note that: AL = A little, MD = Moderately, M = Mostly, C = Completely

Table 2 provides an assessment of the health-related quality of life (HRQoL) among the control group. To interpret the data, response options were grouped into two categories: “little” (a little/moderately) and “complete” (mostly/completely), with an average benchmark score of 2.5. The overall weighted mean was 2.29, indicating a generally poor quality of life among participants. The findings show that the majority of respondents reported low satisfaction with key dimensions of HRQoL. Specifically, 69% rated their overall quality of life as “little,” and 66% felt the same about their health satisfaction. Physical pain and the need for medical treatment also affected a large portion of respondents (68%). Emotional well-being was also poor; 73% reported experiencing negative feelings such as depression or anxiety to some extent, and 53% struggled with concentration.

Over 60% felt unsafe in their environment and lacked satisfaction in areas like sleep (61%), energy (56%), and work capacity (64%). In terms of financial and social well-being, 82% had insufficient money to meet their needs, and 72% lacked leisure opportunities. Access to daily information (65%), healthcare services (76%), and transportation (62%) was also notably inadequate. Social relationships were also weak; 67% were dissatisfied with personal relationships and self-perception, 78% were unsatisfied with their sexual life, and 68% received limited support from friends. In summary, most participants in the control group experienced suboptimal health-related quality of life. They faced economic hardship, poor physical and emotional well-being, limited access to essential services, and strained personal relationships.

Table 3: Health-Related Quality of Life among the Intervention Group

S/N	Items	AL	MD	M	C	Mean	Std Dev
1	How would you rate your quality of life?	78 (74%)	2 (2%)	19 (18%)	7 (6%)	1.58	1.00
2	How satisfied are you with your health?	84 (79%)	2 (2%)	15 (14%)	5 (5%)	1.44	0.91

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3	To what extent do you feel that physical pain prevents you from doing what you need to do?	26 (25%)	62 (59%)	13 (12%)	5 (4%)	1.97	0.75
4	How much do you need any medical treatment to function in your daily life?	36 (34%)	46 (43%)	20 (19%)	4 (4%)	1.92	0.83
5	How much do you enjoy life?	34 (32%)	6 (5%)	62 (59%)	4 (4%)	2.34	0.98
6	To what extent do you feel your life to be meaningful?	77 (72%)	3 (3%)	23 (22%)	3 (3%)	1.55	0.93
7	How often do you have negative feelings such as blue mood, despair, anxiety, depression?	44 (41%)	24 (23%)	27 (26%)	11 (10%)	2.05	1.05
8	How well are you able to concentrate?	42 (40%)	3 (3%)	49 (46%)	12 (11%)	2.29	1.11
9	How safe do you feel in your daily life?	60 (57%)	4 (4%)	37 (35%)	5 (4%)	1.88	1.05
10	How healthy is your physical environment?	43 (41%)	2 (2%)	56 (53%)	5 (4%)	2.22	1.04
11	Do you have enough energy for everyday life?	20 (19%)	42 (40%)	33 (31%)	11 (10%)	2.33	0.90
12	Are you able to accept your bodily appearance?	25 (24%)	32 (30%)	45 (43%)	4 (3%)	2.26	0.87
13	Have you enough money to meet your needs?	25 (24%)	48 (45%)	27 (26%)	6 (5%)	2.13	0.84
14	How available to you is the information that you need in your day-to-day life?	20 (19%)	46 (43%)	31 (29%)	9 (9%)	2.27	0.87
15	To what extent do you have the opportunity for leisure activities?	28 (26%)	55 (52%)	17 (16%)	6 (6%)	2.01	0.81
16	How well are you able to get around?	17 (16%)	56 (53%)	19 (18%)	14 (13%)	2.28	0.89
17	How satisfied are you with your sleep?	53 (51%)	30 (28%)	13 (12%)	10 (9%)	1.81	0.99
18	How satisfied are you with your ability to perform your daily living activities?	58 (55%)	25 (24%)	20 (19%)	3 (2%)	1.70	0.88
19	How satisfied are you with your capacity for work?	56 (53%)	5 (5%)	30 (28%)	15 (14%)	2.04	1.18
20	How satisfied are you with yourself?	64 (60%)	6 (6%)	24 (23%)	12 (11%)	1.85	1.13
21	How satisfied are you with your personal relationships?	55 (52%)	7 (7%)	28 (26%)	16 (15%)	2.05	1.18
22	How satisfied are you with your sex life?	67 (63%)	3 (3%)	28 (26%)	8 (8%)	1.78	1.08
23	How satisfied are you with the support you get from your friends?	47 (44%)	14 (13%)	40 (38%)	5 (5%)	2.03	1.01
24	How satisfied are you with the conditions of your living place?	56 (53%)	18 (17%)	27 (26%)	5 (4%)	1.82	0.97

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25	How satisfied are you with your access to health services?	57 (54%)	24 (23%)	22 (21%)	3 (2%)	1.73	0.89
26	How satisfied are you with your transport?	53 (50%)	17 (16%)	19 (18%)	17 (16%)	2.00	1.16
Weighted Mean						1.97	0.97

Note that: AL = A little, MD = Moderately, M = Mostly, C = Completely

Table 3 assesses the health-related quality of life (HRQoL) among the intervention group. Response categories were collapsed into “little” and “complete,” with a calculated response average of 2.5. The weighted mean score of 1.97, which falls below this threshold, indicates a generally poor quality of life among participants. A majority (76%) of respondents reported low overall quality of life. And 81% expressed low satisfaction with their health. The majority reported physical discomfort; 84% indicated that pain slightly interfered with their activities, while 77% required medical treatment. Furthermore, 63% reported complete enjoyment of life, 75% stated their lives had little meaning. Emotional and psychological well-being showed mixed results. Although 64% reported some negative feelings, 36% experienced them severely. In contrast, 57% could concentrate completely.

Feelings of safety and environmental conditions were moderate, with 61% feeling unsafe and 43% indicating a poor physical environment. Economic hardship was evident: 69% lacked money for daily needs, 62% had limited access to life-related information, and 78% had leisure. Access to services was similarly poor; 75% were dissatisfied with sleep, 79% struggled with daily activities, 77% had poor access to healthcare, and 66% lacked adequate transportation. Social and personal satisfaction also trended low. Most participants were dissatisfied with their work capacity (58%), bodily appearance (54%), personal relationships (59%), sexual life (66%), and the support they received from friends (57%). Additionally, 70% were unsatisfied with their living conditions. In summary, the findings reveal that HRQoL among the intervention group was generally poor, with most participants reporting inadequate access to health, social, economic, and environmental resources, as reflected in the low mean score of 1.97.

Table 4: Correlation between Occupational Health Interventions and Incidence of Occupational Injuries among the Industrial Workers

Variables	No	(r)	P	Remark
Occupational Health Interventions	212	0.529	0.000	Significant
Incidence of Occupational Injuries among the Industrial Workers	212			

Significant at $p < 0.05$. $n = 212$

Table 4 presents the Pearson product-moment correlation result of the relationship between occupational health interventions and the incidence of occupational injuries among industrial workers. The table revealed a significant positive relationship between the two variables ($r = 0.529$, $p = 0.000$). Therefore, the null hypothesis that there will be no

significant influence of occupational health interventions on the incidence of occupational injuries among industrial workers was rejected. The result implies a significant influence of occupational health interventions on the incidence of occupational injuries among the selected industrial workers in the coverage area.

Table 5: Correlation between Occupational Health Interventions and Health-Related Quality of Life of the Industrial Workers

Variables	No	(r)	P	Remark
Occupational Health Interventions	212	0.311	0.000	Significant
Health-Related Quality of Life of The Industrial Workers	212			

Significant at $p < 0.05$. $n = 212$

Table 5 presents the Pearson product-moment correlation result of the relationship between occupational health interventions and the health-related quality of life of industrial workers. The table revealed a moderately significant relationship between the two variables ($r = 0.311$, $p = 0.000$). Therefore, the null hypothesis two, which stated that there is no significant influence of occupational health interventions on the health-related quality of life of industrial workers, was rejected. The result implies a significant influence of occupational health interventions on the health-related quality of life of industrial workers in the coverage area.

Discussion of findings

The study revealed that health-related quality of life among the intervention and control groups was poor before the intervention was administered, as the majority of respondents did not have access to all the basic necessities of life in terms of health-related quality of life. The result establishes the discoveries and assertions of authors and researchers. Sumardiyono et al. (2019) in a study conducted on the quality of life of workers exposed to noise in a Textile industry show that the workers are at greater risk of hearing loss and consequently result in a lower quality of life, particularly in the dimensions of physical health, mental health, social and emotional health, and general health. Garrido *et al.* (2015) asserted that industrial workers are also usually exposed to irritant inhalants, vehicle exhaust, unfavourable atmospheric conditions such as air and noise pollution, and psychological stress.

The Pearson-moment correlation found a significant influence of occupational health interventions on the incidence of occupational injuries among the selected industrial workers in the coverage area. There is a significant influence of occupational health interventions on the health-related quality of life of industrial workers in the coverage area. In tandem with this study is an Algerian study on the assessment of safety in petrochemical industries, which reported a positive relationship between safety training and employee

safety behaviours (Boughaba, Hassane, and Roukia, 2014). Also, Mearns & Yule (2009) suggested safety training through seminars, workshops etc. as one of the ways to improve employees' safety performance (Mearns, and Yule, 2009), hence, to improve health and ensure employees safety, effective and continuous safety training especially in the areas of stress management, the use of safety tools and maintenance of safety environment is required (Mearns and Yule, 2009). The perceived benefits of not being exposed to occupational health hazards and maintaining health may lead respondents to use PPE while working. However, the knowledge or awareness of the availability of PPE and hazard exposure may provide the cue to action that complies with safety rules and standards of factory workers.

Summary of Findings

1. The health-related quality of life among the control group was poor, as the majority of respondents did not have access to all the highlighted necessities of life in the items used to measure health-related quality of life.
2. Likewise, the health-related quality of life among the intervention group was poor before the intervention was administered, as the majority of respondents did not have access to all the highlighted necessities of life in the items used to measure health-related quality of life.
3. There is a significant influence of occupational health interventions on the incidence of occupational injuries among industrial workers in the coverage area.
4. There is a significant influence of occupational health interventions and the health-related quality of life of the industrial workers in the coverage area.

CONCLUSION

It can be reiterated that every occupation and industry has some hazards and health risks that employees must contend with. But the more important issue is whether they are aware of or are not aware of the hazards associated with their respective job functions. The findings of this research necessitate further stimulation of critical awareness of the impacts of occupational hazards on quality of life. Therefore, the research suggests that when safety units in every industry continue to organise monthly workshops aimed at cultivating a heightened sense of vigilance regarding potential occupational hazards, this will enhance the desirable quality of life among industrial workers, not only in Southwest Nigeria but the entire country.



RECOMMENDATIONS

1. Quality, weather-sensitive, and durable PPE should always be provided to employees free of charge by management, and when some of them become worn out, they should be replaced immediately.
2. The health and safety units of companies should organise seminars once a month for factory employees on occupational hazards and control measures, like the use of protective equipment.
3. The companies should organise free, compulsory, and periodic medical check-ups for all factory employees to detect and treat some undisclosed work-related sicknesses and diseases early.
4. Medical personnel working for the companies and the management are hereby advised to employ psychiatrists and psychologists to help manage some inherent issues of mental and social disorders arising from exposure to ergonomic hazards.

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