# Exploring the Socio-Demographic Predictors of Withholding Effort among Healthcare Workers in South-Western Nigeria: A Tuberculosis Outbreak Scenario

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#### Abstract

The survival of people during any communicable disease outbreak hangs on the withholding effort decision of healthcare workers (HCWs). This study examines the socio-demographic (age, sex, marital status, category of healthcare work, employment status, and years of experience) factors influencing HCW's propensity to withhold effort during communicable disease outbreaks. A quantitative, cross-sectional survey was conducted among 477 HCWs from state specialist hospitals in Ondo State, South-western Nigeria. The findings revealed no significant difference in effort withholding between younger and older healthcare workers groups [t (474) = .18, p>.05]. In addition, socio-demographic factors [sex (t = -1.03, p > .05), marital status (t = -0.28, p > .05), category of healthcare work (t = -0.39, p > .05), employment status (t = -0.49, p > .05), and years of experience (t = 0.12, p > .05)] or jointly [F (6,470) = 0.00; R<sup>2</sup> = .09; p>.05] did not independently nor jointly [F (5,470) = 0.34, R<sup>2</sup> = .00, p>.05] predict withholding of effort. The study recommends that the focus during preparedness should not be on the socio-demographic characteristics of HCWs. The study highlights the need for further research to explore factors, such as the availability of personal protective equipment (PPE), financial incentives, and organizational support, which may more strongly influence HCWs' behaviour in such situations.

Keywords: Socio-demographic, withholding effort, communicable disease, healthcare workers, disease outbreak.

# Introduction

Withholding effort is an organizational behaviour that can negatively affect various workplace outcomes. However, when it occurs among healthcare workers (HCWs), especially during communicable disease outbreaks, the consequences can be severe. Kidwell and Bennet (1993) defined withholding effort "as the probability that employees will put in less than their best effort on work-related duties" (Kidwell et al., 2007, p. 529). For HCWs, withholding or exerting effort during an outbreak presents a complex dilemma despite their ethical obligations and duty of care (McConnell, 2020). Personal factors, such as fear of infection and the potential risk of transmitting diseases to loved ones, alongside structural barriers like inadequate personal protective equipment (PPE), often outweigh professional ethics.

Like employees in any other field, HCWs will prioritize their safety when necessary. The assumption that they will always show up for work, no matter the circumstances, was challenged during the COVID-19 pandemic when some HCWs hesitated to report to duty (Zewudie et al., 2021; Adebimpe et al., 2021). Naturally, the risks they face in routine practice differ significantly from those encountered during an outbreak, where exposure to infection is heightened. Beyond the physical risks, the immense workload and psychological strain of working through a health crisis can also contribute to reluctance to exert effort (Antunes, 2024). These realities highlight the urgent need to prepare for future outbreaks and create more supportive work environments for HCWs, in alignment with the Sustainable Development Goals 3, which seeks to ensure healthy lives and promote well-being for all, and SDG 8, which emphasizes the importance of decent work and economic growth (United Nations, 2015).

The Nigeria Centre for Disease Control and Prevention (NCDC) reports that Nigeria is currently managing multiple epidemics, including Lassa fever, diphtheria, and measles, while also grappling with a significant brain drain in the health sector due to healthcare worker (HCW) migration (NCDC, 2025; Idajili et al., 2020). Ondo State, known for its annual Lassa fever outbreaks, continues to record rising suspected cases and high mortality rates (Isere et al., 2021). Additionally, the state bears a heavy burden of endemic and

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Neglected Tropical Diseases (NTDs) such as schistosomiasis, lymphatic filariasis, onchocerciasis, and soiltransmitted helminths, with over one million suspected cases (Lawani, 2024). Given the overwhelming demands on HCWs to attend to those affected by these diseases, it is reasonable to assume that in the face of another outbreak, HCWs may choose to withhold effort.

Knoke's (1990) motivational perspective provides insight into the varying levels of employee effort within workgroups through three main perspectives: rational choice, normative conformity, and affective bonding. The rational choice perspective posits that employees act as rational agents, weighing the costs and benefits of their efforts and adjusting their exertion based on perceived personal gains. The normative conformity perspective suggests that internalized group norms and informal workplace expectations shape effort levels. These norms, often influenced by unions or workplace culture, define an acceptable level of effort and discourage deviation. Finally, the affective bonding perspective highlights the role of emotional attachment and social identification within a workgroup. Employees who feel a strong sense of belonging and anticipate future work relations with their work group are more likely to commit higher levels of effort to their work (Bennett & Kidwell, 2001).

The rational choice and normative conformity perspectives explain that HCWs regulate their effort based on the value of expected rewards, such as social and organizational support. These rewards may come as incentives, promotions, or stipends for working during a disease outbreak. This decision is further reinforced by compliance with unwritten workplace norms as a matter of reciprocity toward colleagues. However, the perspective most relevant to this paper is affective bonding. Humans naturally develop emotional attachments to their workgroup over time, especially when they share similarities such as course of study, profession, age, or gender. Knoke (1990) argued that a growing sense of unity between employees and their group strengthens their commitment to contributing resources to the organization. Employees who feel a strong sense of belonging tend to invest more effort. However, when driven by rational selfinterest, this same sense of unity can reinforce the decision to withhold effort during a disease outbreak.

While previous studies have explored how demographic factors influence various workplace behaviors, such as turnover (Abubakar et al., 2014; Schlechter et al., 2016; Xu et al., 2024), unwillingness to report to work (Zewudie et al., 2021), and absenteeism (Magobolo & Dube, 2019), few have examined how sociodemographic factors affect the likelihood of withholding effort. Literature suggests that demographic factors significantly shape employee behaviour (Patel & Chauhan, 2024; Adebiyi et al., 2020). For instance, a study of 175 registered nurses in Nigerian public hospitals found that age and gender predicted turnover; compared to female and older nurses, male and younger nurses are more likely to quit (Abubakar et al., 2014). Similarly, Schlechter et al. (2016) found that younger employees in the South African and Namibian insurance sectors had higher intentions to leave their organizations, as they placed less value on stability and benefits than older employees. Other significant demographic factors identified in the study included the number of dependents and years of service.

A cross-sectional study among healthcare workers in Hunan Province, China, found that gender and years of experience predicted work engagement after the COVID-19 pandemic (Wang et al., 2023). The study reported that female HCWs and those with less than five years of experience had lower work engagement than their male counterparts. Similarly, among 1,060 healthcare professionals in China, turnover intention was significantly correlated with age, tenure, administrative roles, and frequency of night shifts (Xu et al., 2024). Older healthcare workers (>50) who had been with their organization longer and held administrative roles showed a lower intention to leave. In contrast, those working more than five night shifts per month were more likely to consider leaving. However, a study on nurse turnover in Gauteng, South Africa, found that age, gender, marital status, and having children or dependents did not significantly influence voluntary turnover (Greyling & Stanz, 2010).

With increasing threats posed by climate change, population growth, and economic crises, the likelihood of another pandemic remains high. It is, therefore, essential to proactively identify HCWs who, based on their demographic characteristics, may be more likely to withhold effort during a communicable disease outbreak. Literature suggests that factors such as age, sex, marital status, job category, and dependents should be considered in future preparedness planning (Zewudie et al., 2021; Cemberci et al., 2022). This

study addresses existing research gaps by examining which socio-demographic factors predict withholding of effort among healthcare workers during a communicable disease outbreak.

# Objectives

The objectives of this study are set in line with the research questions and hypotheses. They include:

- i. Assess whether younger healthcare workers tend to withhold effort less than older healthcare workers during a communicable disease outbreak.
- ii. Examine the independent influence of socio-demographic factors (age, sex, marital status, type of employment, category of worker, and years of experience).
- iii. Examine the joint predictive influence of socio-demographic factors (age, sex, marital status, type of employment, category of worker, and years of experience)



Fig. 1: Conceptual Framework

# Methodology

This study is part of a larger research project and employs a quantitative, cross-sectional survey design to examine the predictors of withholding effort among healthcare workers. Key socio-demographic variables include age, sex, marital status, job category, employment status, years of experience, and responsibility for dependents (parents or children). The study sample comprises 477 healthcare workers purposively selected from state specialist hospitals in Ondo State, South-western Nigeria.

Data were collected using a structured, standardized questionnaire with two sections. The first section captured socio-demographic characteristics, while the second section included the tuberculosis outbreak scenario with the 11-item Healthcare Workers' Effort Propensity Scale (HEPS), a five-point self-report measure (1 = Strongly Disagree to 5 = Strongly Agree) with a Cronbach's alpha reliability of 0.71.

Ethical approval was obtained from the relevant Committee, and an introductory letter was presented to the administrative heads of participating hospitals. Healthcare workers were approached in their offices and wards upon securing institutional approval. The purposive sampling technique was used to select participants using the set inclusion criteria. The study's objectives were explained, and participants were screened for eligibility. Informed consent was obtained, ensuring voluntary participation and anonymity.

Six hundred questionnaires were distributed, with 524 retrieved (87% response rate). Of these, 477 were completed correctly and used for analysis, yielding a final response rate of 91%.

# Ethical Consideration

The research proposal and protocol were submitted to the Social Sciences and Humanities Research Ethics Committee (SSHEC) of the University of Ibadan. Based on the submitted documents, the Committee reviewed them and fully approved the research.

# **Statistical Analysis**

Data were analyzed using Statistical Package for Social Science (SPSS) version 20.0 software. Descriptive statistics, including mean and percentages, were used to analyze socio-demographic variables. Independent T-Test and Multiple Regression Analysis were utilized to test the hypotheses and determine the predictive influence of socio-demographic factors on effort propensity.

# Results

Out of the four hundred and seventy-seven (477) respondents, 274 (57%) were female, and 203 (43%) were male, with ages ranging from 19 to 66 years (M = 31 years). Regarding marital status, 322 (67.5%) were married, 136 (28.5%) single, 11 (2.3%) separated, and 8 (1.7%) divorced (Table 1).

Categories	Frequency	Percent
$\leq 20$	36	7.5
21 - 40	368	77.1
41 - 60	67	14.0
$\geq 60$	6	1.3
Male	203	57.4
Female	274	42.6
us		
Married	322	67.5
Single	136	28.5
Separated	11	2.3
Divorced	08	1.7
v		
Nurses	289	60.6
Doctors	102	21.4
Laboratory Technician	n 44	9.2
Pharmacists	42	8.8
Status		
Full Time	449	94.1
Part-Time	28	5.9
perience ( <i>in vears</i> )		
1-20	444	93.1
21-40	33	6.9
	$\leq 20$ $21 - 40$ $41 - 60$ $\geq 60$ Male Female Married Single Separated Divorced V Nurses Doctors Laboratory Technician Pharmacists t Status Full Time Part-Time Derience ( <i>in years</i> ) 1-20 21-40	$\leq 20$ 36 $21 - 40$ 368 $41 - 60$ 67 $\geq 60$ 6         Male       203         Female       274         us       us         Married       322         Single       136         Separated       11         Divorced       08         y       Nurses       289         Doctors       102         Laboratory Technician       44         Pharmacists       42 <b>Status</b> Full Time         Full Time       28         perience (in years)       1-20         1-20       444         21-40       33

# Table 1: Demographic profile of the participants (N=477)

Table 1 shows that respondents had between 1 and 34 years of experience (M = 7 years). By profession, nurses were the most represented at 289 (60.6%), followed by doctors 102 (21.4%), laboratory technicians 44 (9.2%), and pharmacists 42 (8.8%). Most participants, 449 (94.1%), were employed full-time, while 28 (5.9%) worked part-time.

Table 2: T-test Summary Table showing Age	Differences in Withholding	Effort
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Age	Ν	ĪX	Std	df	t	р
Young	275	26.74	4.83			
Toung				474	.18	> 0.05
Old	201	26.83	6.15			

Table 2, which examined differences in withholding effort between young and older HCWs, found no significant difference between the two age groups [t (474) =.18, p > .05]. The result indicates that young HCWs did not withhold a lower level of effort than the older HCWs.

Table 3 grouped variables into two categories to fit into the regression model. All the variables: sex (male=0 and female=1), marital status (married=0 and unmarried=1), category of healthcare work (nurses=0 and others=1), employment status (full time=0 and part time=1), and years of experience (short service =0 and long service=1) were dummy coded 0 and 1 for ease of interpretation. A positive beta means an association with 1, while a negative beta means an association with 0 (USQ, 2022).

 

 Table 3: Summary of Regression analysis showing joint and independent predictive influence of Socio-Demographic factors on Effort Propensity

Fa	actors	В	β	t	sig	R <sup>2</sup>	F	р
1	Sex	-0.52	-0.05	-1.03	0.30	.00	0.34	> 0.05
2	Marital Status	-0.16	-0.01	-0.28	0.79			
3	Category of Healtho Work	care-0.20	-0.02	-0.39	0.69			
4	Employment Status	-0.55	-0.02	-0.49	0.62			
5	Years of Experience	0.07	0.01	0.12	0.91			

Table 3 presents the results of the multiple regression analyses, showing that sex (t = -1.03, p > .05), marital status (t = -0.28, p > .05), category of healthcare work (t = -0.39, p > .05), employment status (t = -0.49, p > .05), and years of experience (t = 0.12, p > .05), had no significant independent predictive influence on effort propensity. Therefore, the hypothesis was not confirmed, as socio-demographic factors did not significantly predict effort propensity.

Further analysis revealed the results of the multiple regression analyses, showing that sex, marital status, job category, employment status, category of healthcare work, and years of experience had no significant joint predictive influence on effort propensity [F (5,470) = 0.34,  $R^2 = .00$ , p > .05]. This result indicates that these socio-demographic factors (sex, marital status, category of healthcare work, and years of experience) did not contribute to the total variance of effort propensity; thus, the hypothesis was not confirmed. The result indicates that socio-demographic factors did not significantly predict effort propensity.

### Discussion

The objectives of this study were to investigate whether younger healthcare workers (HCWs) withhold a lower level of effort compared to their older counterparts and to examine the predictive influence of sociodemographic factors (sex, marital status, job category, employment status, and years of experience) on effort withholding during communicable disease outbreaks. The findings revealed that younger HCWs did not withhold less effort than older HCWs. Contrary to expectations, it was anticipated that older HCWs would withhold higher levels of effort due to their perceived vulnerability to communicable diseases like COVID-19 (Cocuzzo et al., 2022). However, the analysis found no significant age-related differences in withholding effort, suggesting that age did not influence HCWs' propensity to withhold effort. This finding aligns with the findings of Greyling and Stanz (2010), who similarly found that age did not significantly influence turnover intentions among South African nurses.

Moreover, the socio-demographic factors of sex, marital status, job category, employment status, and years of experience, whether examined jointly or independently, did not significantly predict HCWs' withholding of effort during a communicable disease outbreak. These findings suggest that individual characteristics, such as gender, years of experience, or job category, do not play a determining role in a healthcare worker's likelihood to withhold effort in the face of an outbreak. Specifically, the results indicate that being male or female, young or older, highly experienced or relatively new to the field, or holding a particular job title (e.g., nurse, doctor, pharmacist, or technician) does not significantly influence the tendency to withhold effort.

The unique context of working during a communicable disease outbreak may have influenced healthcare workers' behaviour in this study. Contrary to Knoke's affective bonding perspective, healthcare workers did not develop emotional bonds based on personal characteristics such as age, marital status, or gender. Had they formed such bonds, we would have expected to see differences in their propensity to withhold effort based on these demographic factors. Instead, their decision to withhold or offer effort seemed independent of their gender, age, professional status, or years of experience. Additionally, the affective bond could have been reinforced by unwritten union norms and expectations of rewards. This finding aligns with Greyling and Stanz (2010), who found that among nurses in Gauteng, South Africa, voluntary turnover was unaffected by age, gender, education, marital status, and tenure, suggesting that personal factors may not always predict workplace behaviours. Similarly, gender, academic degree, and experience did not influence nurses' performance in Hebron hospitals (Qtait & Sayej, 2016).

These findings contrast with previous studies that reported significant influences of demographic factors, such as age, gender, and years of experience, on healthcare workers' willingness to work during outbreaks. For instance, Zewudie et al. (2021) found that years of experience and marital status were significant predictors of unwillingness to work during the COVID-19 pandemic. Similarly, Chua and Francisco (2024) reported that gender and occupation influenced healthcare workers' willingness to report to work during COVID-19 in the Philippines, with females, nurses, residents, and fellows more willing to work than males, medical doctors, and technicians. While demographic factors may predict willingness to work during an outbreak, they may not significantly predict withholding of effort, even when the two constructs are similar. Willingness to report to work and withholding effort are related but distinct; healthcare workers may willingly report to work to preserve their jobs but still withhold effort to protect themselves from potential infection.

# Recommendation

The findings suggest that organizations and policymakers should look beyond the socio-demographic attributes of HCWs when designing strategies to enhance HCWs' commitment and motivation during preparedness for disease outbreaks. Researchers should explore alternative models incorporating psychological and contextual variables to understand better variations in withholding effort.

# Limitations and Further Studies

A key limitation of this study is the use of scenario, which may have introduced social desirability bias. Future research should explore various determinants influencing withholding effort.

### Conclusion

The study concludes that socio-demographic factors do not significantly predict withholding effort among healthcare workers during communicable disease outbreaks

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