

Original Paper

Collaborative Shift-Scheduling and Perceived Procedural Justice
as Predictors of Clinical Decision-Making in Managed Care
Practice among Selected Samples of Health Workers in the
Federal Capital Territory (FCT), Abuja, Nigeria

Dennis Uba Donald^{1*}, Ugwu Callistus Chinwuba², & Owoseni S. Kayode³

¹ Baze University of Nigeria, (Department of Psychology), Federal Capital Territory, Abuja, Nigeria

² Madonna University, (Department of Psychology) Okija Campus, P.M.B, 407, Ihiala L.G.A, Anambra State, Nigeria

³ Department of Pure & Applied, Adekunle Ajasin University, PMB, 001, Akungba-Akoko, Ondo State, Nigeria

* Dennis Uba Donald, Baze University of Nigeria, (Department of Psychology), Federal Capital Territory, Abuja, Nigeria

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Abstract

This study examined the roles of collaborative shiftwork schedule and procedural justice as predictors of clinical decision-making in managed care practice among a selected sample of health workers in Abuja, Nigeria. The study was survey design conducted among 197 healthcare workers were selected using convenient sample from public and private healthcare institutions in Abuja. The Bergen Shift Work Sleep Questionnaire (BSWSQ) developed by Flo et al. (2012) was used to assess shiftwork collaborative scheduling. Procedural justice was measured using the Procedural Justice Scale (OJS) developed by Niehoff and Moorman (1993). While The Clinical Decision-Making Survey (CDMS) developed by Ferrell et al. (1991) was used to measure clinical decision-making. The result revealed that shiftwork did show significant relationship with clinical decision-making among psychiatric nurses [$r(197) = .451, p < .01$]. Results from the multiple regression showed that procedural justice significantly predicted clinical decision-making among healthcare workers [$\beta = .331, p < 0.01$]. The result of this study suggest that healthcare workers who engage in shift-schedule with a high perception of procedural justice have higher propensity to provide enhanced clinical decision-making at the

workplace. *The Nigerian healthcare reforms and policies should be reviewed, specifying issues relating to collaborative shiftwork for healthcare workers.*

Keywords

shiftwork schedule, procedural justice, clinical decision-making, healthcare workers

1. Introduction

Researchers and scholars agree that better healthcare outcome is not a mon-causal effect. For this reason, research into improving clinical decision-making within professional managed care practices have received immense attention. Factors such as shift-schedule have been reported to improve clinical outcomes (Fitzpatrick & Ellingsen, 2013; Uhde, Schlicker, Wallach, & Hassenzahl, 2020). Health workers who engage in proper collaborative shift-duty schedule that reflects flexibility and reliability has been associated with healthcare workers' ability to for individual interest that does not have negative implications for overall healthcare goals and by so doing improves psychological wellbeing of health workers (Uhde *et al.*, 2020). Well-designed shiftwork schedule can help improve health worker's perception of procedural justice that in the long run lead to improved performance of clinical decision-making.

The effect of globalization in the healthcare sector, have necessitated the importance of understanding and managing procedural justice in healthcare practice, as a consequence it has have received attention by scholars and researchers. Coupled with the emergence of doctors without borders' and owing to the rise in public health concerns all over the world, healthcare institutions have invested fairness and how employees perceive justice and equality in the workplace as measure to improve healthcare performance. The study of fairness has received major attention from researchers and this is because procedural justice affects performance as a result of its impact on employee attitude (Colquitt, Conlon, Wesson, Porter, & Ng, 2021; Magnavita, *et al.*, 2022). The principles of procedural justice reflect appropriateness in decision-making process and can be used to manage justice and fairness in organizations. Procedural justice refers to the extent to which employees perceive workplace procedure, interactions and outcomes to be fair in nature (Magnavita, *et al.*, 2022).

In other words, procedural justice is an umbrella term used to refer to individual's perceptions about fairness of decisions and decision-making processes within organizations and the influences of those perception on behaviour (Mengstie, 2020). The importance of studying procedural justice is a key issue for understanding organizational behaviour (Moorman, 1991). This is true, because procedural justice in the workplace has been underscored by findings that caused a sense of working for justice or lack of fairness in the workplace, which can lead to a decline in levels of organizational performance. In managed healthcare practice, decision-making is an important factor in improving healthcare outcomes. Clinical decision-making is a multifaceted procedure relating to how information is processed, and how clinical evidences are assessed as it concerns application of relevant knowledge in making decisions

pertaining to the appropriate interventions that provide high-quality care and reduce risk of patient harm (Miller, Singh, Arnold, & Klein, 2020; Abate, Birhanu, & Gebrie, 2022).

Healthcare organizations adopt a variety of work schedules during the course of carrying out duties and responsibilities, which comprise different times of day at which employees commence their duties, hours of work and the days of the week they work in given specified period of time. These shift schedules are usually systematic and flexible for healthcare workers (Totterdell, 2005). Some examples include but are not limited to; working morning shifts and night shift on rational plan, days-off duty, (three days on and one day off), are commonly used shift work schedules that are based on collaborative measures that form the basis of healthcare teams.

The term shift work refer to long-term day and night shifts and work schedules in which employees change and sometimes rotate and specific time of work over a given period of time (Potter & Wood, 2020; Dall’Ora & Dahlgren, 2020). Collaborative shiftwork schedule refers to the process of dividing work in shifts that are based on members that make up healthcare teams, over a set periods of time within which groups of workers carry out their duties, perform tasks and make decisions based on the overall objective of the organization (Almondes, Katie, & Araujo, 2009). Collaborative shift schedules are common features in managed care practice. Most medical teams consist of different healthcare professionals specialized in different aspects of healthcare practice. For example, psychiatric nurses, psychiatrists, clinical psychologists and social workers make up the medical team. This is peculiar to healthcare alone as law enforcement, fire fighters, and corporate organizations often make use collaborative shiftwork schedule. It is important to note that research link shiftwork and decision-making within managed care practice is scant and more research has been recommended in this direction (Wickwire, Geiger-Brown, Scharf, & Drake, 2016; Suter & Kowalski, 2021).

Statement of the Problem

Studies conducted on collaborative shift-schedule within healthcare settings generally provide inconsistent outcomes (Stewart, 2018; Uchendu, Windle, & Blake, 2020). Reason could be tied to the fact that most studies that conducted in this area have often developed conceptual frameworks that are either inadequate or generally lack theoretical underpinnings that provide answers to the problems presented by the general scope of such studies (Nibbelink & Brewer, 2018). In view of this recognized problem that the present study intends to fill this gap by examining the roles of collaborative shift scheduling and perceived procedural justice and how they could predict clinical decision-making in managed cares practice among health workers. Clinical decision-making is an important area of managed care practice with form the bases of healthcare outcomes. Despite its importance, in healthcare training and scientific literature research, studies in this direction particularly in Nigeria is relatively scarce.

Purpose of the Study

The purpose of this study is to examine collaborative shiftwork schedule and procedural justice as

predictors of clinical decision-making in managed care practice among a selected sample of health workers in Abuja, Nigeria. The specific objectives are:

- 1) To find out whether collaborative shiftwork schedule would predict health workers clinical decision-making outcome in managed care practice.
- 2) To determine if health workers perceived procedural justice would predict health workers clinical decision-making outcome in managed care practice.
- 3) To evaluate the joint prediction of collaborative shiftwork schedule and perceived procedural justice on clinical decision-making outcome in managed care practice.

Relevance of Study

The findings of this study would have some practical relevance for other researchers in the area of managed care practice, as the study has ecological validity, as it was conducted in real healthcare settings. The findings from this study serve as a reference point to stimulate more research in this direction among scholars and researchers interested in similar studies. This study will be of huge benefit for scholarly purposes. The findings of this study will also broaden the frontier of knowledge in healthcare professional practice because it will provide in-depth understanding of shiftwork schedule and health workers' perception of procedural justice as an integral factor in promotion clinical decision-making within professional healthcare practice.

Research Hypotheses

- 1) Collaborative shiftwork schedule will significantly predict clinical decision-making in managed care practice among a selected sample of health workers in Abuja, Nigeria.
- 2) Perceived procedural justice will significantly predict clinical decision-making in managed care practice among a selected sample of health workers in Abuja, Nigeria.
- 3) Collaborative shiftwork schedule and perceived procedural justice will jointly significantly predict clinical decision-making in managed care practice among a selected sample of health workers in Abuja, Nigeria.

2. Method

2.1 Participants

A total of 197 healthcare practitioners across 3 public, and 5 private Hospitals within the Federal Capital territory were selected using convenient sampling technique. The participants comprised of (50.0%) males and (49.5%) females. Participants were nurses, 65 (32.9%), Doctors 25(12.6%), Psychologists 35(17.7%), Social workers, 22(11.1%), Pharmacists, 10 (5%) and Medical Laboratory Scientists 40 (20.3%). The ages ranged from 23 to 55 years with a mean age of 27.72% and SD of 6.23. The participant's cadre ranged from Junior, 77 (39%) to senior cadre 120 (61%).

2.1.1 Instrument

Relevant data were gathered through the use of validated questionnaire which comprises of four

sections (A-D). Section A: Socio-demographic information. These include age, gender, and job cadre. Section B: The Clinical Decision-Making Survey (CDMS) was used to measure clinical decision making which was developed by Ferrell, Eberts, McCaffery and Grant (1991). The CDMS was developed to obtain information from nurses relating to nurse's decision making processes when they are attending to patients. The CDMS was made up by 14 items, each answered in an ordinal frequency scale that varied from 1= Never and 5 = Always. Ferrell and colleagues reported a test-re-test reliability of .89 and for the present study, .91 Cronbach alpha was obtained. Procedural justice Scale (OJS). Procedural justice was measured with 20- items developed by Niehoff and Moorman (1993). This instrument has three dimensions measuring employees' perceptions of distributive justice, procedural justice, and interactional justice. First, distributive justice assessed the perceived fairness of different work outcomes, such as pay level, work schedule, and job responsibilities. Examples of distributive justice items are as follows: "My work schedule is fair", and "I believe my level of pay is fair". Next, the procedural justice part of the instrument measured the degree to which job decisions include mechanisms that insure the gathering of correct information, employee voice, and an appeals process. Examples of procedural justice items are as follows: "The decisions my organization makes in the level of organization are in an unbiased manner" and "My organization has procedures that are designed to allow the requests for clear explanation or additional information about a decision".

Procedural justice was measured using the Organizational Questionnaire (OQ) developed by Colquitt (2001). Procedural justice questions measured the degree to which employees feel their own needs are carefully considered and also the degree to which appropriate explanations are made for job decisions. Examples of interactional justice items are as follows: "When decisions are made about my job, my supervisor considers my personal needs with the greatest care", and "When making decisions about my job, my supervisor offers reasonable explanations that I understand clearly". The OJS has a reliability coefficient of .82 and the present study obtained a Cronbach's alpha of .93 (Niehoff et al., 1993).

2.1.2 Procedure

Health workers who participated in this study provided consent and volunteered to participate in this study. The questionnaire administration of this study took 13 weeks to complete. The questionnaire took approximately 20 minutes to fill. However, some participants received their questionnaire through google qualtrics forms and other collected via hard copies. Some of the hardcopies that were not found analyzable due to omissions and improper filling and multiple choice indications did not make it to final analysis. Total questionnaire distribution was 210 and only 197 questionnaires were properly filled. Participants were assured that responses filled were only meant for research purposes and by participating in this study, they will not experience any physical or psychological harm.

2.1.3 Data Analysis

In order to ascertain the extent and direction of relations among the study variables, Pearson Product Moment Correlation (PPMC) analysis was conducted. Multiple regression analysis was also used to

test the probability of the independent variables. Some of the socio-demographic variables were codified. For example, gender was coded male 1, female 2. All analyses were conducted using SPSS 20.0 Wizard

3. Result

Test of Relationships among Variable

Pearson Product Moment Correlation (PPMC) analysis was conducted to test the relationship among the variables of the study. The results are presented in Table 1.

Table 1. Summary Table Showing the Relationship between Variables in the Study

Variables	Mean	SD	1	2	3	4	5	6	7
1. Age	13.72	2.23	1						
2. Sex	-	-	-.010	1					
3. Religion	-	-	.287**	.060	1				
4. Job Cadre	-	-	.254**	-.172*	.078	1			
5. Collaborative Shiftwork Schedule	30.45	3.29	-.173*	-.276**	-.118	-.071	1		
6. Perceived Procedural Justice	34.69	8.87	.154*	.036	.152*	-.052	-.197**	1	
7. Clinical Decision-Making	103.58	23.63	.163*	.101	.178*	.028	.451**	.320**	1

** . Correlation is significant at the 0.01 level (2-tailed).

Results in Table 1 indicated that gender had a significant relationship with clinical decision-making [$r(197) = .163, p < .05$], this implying that gender differences have the significant relationship on clinical decision-making, the result also indicated that health workers' religion had a significant relationship with empathetic [$r(197) = .178, p < .05$], this implying that the higher the perception of religion the higher the clinical decision-making outcome. The result indicated that health worker's collaborative shiftwork schedule did show significant relationship with Clinical decision-making [$r(197) = .451, p < .01$], this implying that collaborative shiftwork schedule has significant on clinical decision-making of health workers. Finally, the result indicated that perceived procedural justice had a significant relationship with clinical decision-making [$r(197) = .320, p < .01$], this implying that the higher the perceived procedural justice the higher the clinical decision-making outcome of health workers.

Table 2. Summary of Multiple Regression Analysis Showing the Predictor of Emotional Intelligent and Perceived Procedural Justice on Clinical Decision-Making

<i>Dependent</i>	<i>Independent</i>	β	<i>t</i>	<i>P</i>	<i>R</i>	R^2	<i>df</i>	<i>F</i>	<i>p</i>
Clin. Dec-Ma.	Collaborative Shiftwork Schedule	.671	.839	<0.05	.425	.56.6	197	11.624**	<0.05
	Procedural Justice	.331	4.820	<0.01					

Note: Clin.Dec-Ma = Clinical Decision-Making.

The results of the (Table 2 above) showed that collaborative shiftwork schedule significantly predicted clinical decision-making outcome among healthcare workers [$\beta = .671$, $p < 0.01$]. Therefore, hypothesis one was confirmed and accepted. This implies that healthcare workers' collaborative shiftwork schedule is a significant predictor of clinical decision-making outcomes within managed care practice. The results of the (Table 2 above) showed that perceived procedural justice [$\beta = .331$, $p < 0.01$] predicted clinical decision-making among healthcare practitioners. This result confirms hypothesis 2 and it was accepted. This implies that healthcare workers who have a higher perception procedural justice have a higher tendency to exhibit better clinical decision-making outcomes within managed care practice. The joint contributions of the predictor variables were also significant [$R^2 = .56$, $F = 11.624$; $p < .05$]. The R^2 indicates that observed joint prediction among variables is 56.6% of the total influence on the Clinical decision-making in managed care health workers. The other 89.4% influence is from other sources outside the variables in the study.

4. Discussion

The study examined the role of collaborative shiftwork schedule and perceived procedural justice as correlates of clinical decision-making among healthcare practitioners. Hypothesis 1, which stated that collaborative shiftwork schedule, will significantly predict clinical decision-making among healthcare practitioners, was tested. The result indicated that health workers who engage in collaborative shiftwork schedule reported significant prediction with clinical decision-making, this implies that collaborative shiftwork schedule is an important variable in determining clinical decision-making among health workers. Explanation for the outcome of this study is that systematic and flexible shiftwork schedule can help foster health worker health and wellbeing allowing them to focus on family issues and plan their time for other commitments away from work. Collaborative shiftwork schedule fosters sense of belonging and make members feel like important and significant contributors to the organizations overall objective. On the other hand, poorly managed shiftwork schedule have been linked to employee fatigue and burnout (Burch et al., 2009). Poor sleep patterns for night shift workers have been linked to ill-health, absenteeism and turnover intention (AbuAlRub, 2004; Berger & Hobbs, 2006; Alshahrani et al., 2016; Qanash et al., 2021).

In hypothesis 2, which stated that perceived procedural justice will have significant relationship with

the clinical decision-making among healthcare practitioners, was confirmed and the result accepted. The outcome indicated that perceived procedural justice is a significant predictor of clinical decision-making. This implying that the health workers who have a high perception of procedural justice have a higher chance to provide better clinical decision-making outcome. This stud is in line with Deressa et al. (2022) who reported that health workers who have a string perception of organizational justice tend to show more commitment to work than their counterparts who have low perception of procedural justice. These authors suggest that organizational justice has been acknowledged as a stimulus factor influencing healthcare workers level of organizational commitment leading to better decision-making outcomes. Health workers who perceive that the hospital management is treating them fairly and consider them as important part of the organization are more likely to make clinical decisions that produce better healthcare outcomes (Mohamed, 2014).

In hypothesis 3, which states that collaborative shiftwork schedule and perceived procedural justice will jointly predict clinical decision-making among healthcare practitioners. The result was confirmed in Table 2. The joint contributions of the predictor variables were significant. When considered together collaborative work shift schedule and health workers perceived procedural justice were significant predictors of clinical decision-making. This outcome portend that systematic collaborative shiftwork schedule when handled properly with high perception of health workers perceived organizational justice, this would improve clinical decision-making leading to improved managed care professional practice.

Limitation of the Study and Way for Future Study

This study has some limitations. First, the participants were sampled from Abuja only, and it included only 3 public healthcare institutions and 5 private hospitals, and therefore the results of the study should be generalized with restraint. Secondly, only 197 health workers participated in the study, this number is too meagre to make generalization regarding clinical decision-making among health workers. Thirdly, the study made use of self-report questionnaires as such, the results of this study is vulnerable to responder bias and social desirability. Future investigation can use this study a platform to extend the area of research into the understanding of clinical decision-making. Future studies should also consider using both public and private healthcare institutions from other states within Nigeria in other to be able to make more generalizations regarding research within this discourse.

5. Conclusions

Prospects for clinical decision-making among healthcare practitioners should not be assumed to result only from accepting specific roles of collaborative shiftwork schedule and perceived procedural justice. Instead, the data from the current study indicate that these expectations may be associated with other factors. Although, collaborative shiftwork schedule may have predicted clinical decision-making and this is because collaborative shiftwork schedule is a fixed employee practice within healthcare

management, it is considered that there is little reason to think that it would be dampened by participations misapprehension and bias regarding collaborative shiftwork schedule. Thus, the findings of this study suggest that healthcare management systems and other stakeholders, should consider collaborative shiftwork schedule as an integral part of healthcare operations and policy while, more attention and resources should be allocated to improve the process and course of action that best utilizes these practice.

6. Recommendation

Based on the findings of this study, the researcher recommends as follows:

- 1) Health workers interact and work directly with patients and they hold the best interest of patients when carrying out their duties. As such, the researcher therefore recommends that the Nigerian healthcare reforms and policies should be reviewed, specifying issues relating to collaborative shiftwork for healthcare workers. For example, shiftwork scheduling can be digitalized to transform the way healthcare institutions determine which employee would be changing shift. This digitalization will eliminate human error and bias in the systematic allocation of shift days and durations.
- 2) Healthcare institutions must adopt ways that emphasize fairness and equity in the formation of healthcare policies and improve transparency in carrying out organizational policies within healthcare professional practice. This is important because the welfare, wellbeing and safety of health workers is important, if the health outcomes and the quality of care of patient's is to be achieved.
- 3) The complex nature of healthcare management and the huge burden it places on health workers is inescapable. However, it is recommended that healthcare management must uphold the ideals and principles of organizational justice and more attention should be paid to it by seeking consultations from professional organizations. To this end, factors such as, organizational culture, defined line of communication, perceived integrity and fairness in the formation and implementation of policies, and a proper outlining of procedure for conflict resolution, allocating and distribution of resources, justifiable sharing of workload, and compensation and rewards systems must be perceived as being impartial.

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