

Impact of Leadership Style on Patient Safety Culture in the Department of Radiodiagnosis

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ABSTRACT

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Introduction:

Healthcare organization is a high reliability establishment since it tackles safety on daily basis. To achieve the desired level of safety, leaders need to work and behave in a way to make it a priority. This is due to the relationship between leadership principles and patient safety culture. This study aimed to assess the impact of leadership style on patient safety culture in the Department of Radiodiagnosis.

Materials and Methods:

This study was conducted on 80 health workers in Radiodiagnostic departments of two tertiary health institutions, South East Nigeria. The data were collected using two adopted questionnaires. Moreover, leadership style was assessed from subordinates' perspective; therefore, the questionnaires on leadership style were administered to 76 participants out of 80 ones while excluding four leaders in both units of the study areas. All participants were requested to complete the questionnaires on the patient safety culture. The Chi-square test was used to determine the impact of leadership styles on the patient safety culture.

Results:

Transformational and Laissez-faire leadership styles had no significant association with all domains of the patient safety culture. However, transactional leadership style correlated significantly with two domains of the patient safety culture. On the other hand, it had no significant association with other domains in this regard. An overall Chi-square analysis revealed that patient safety culture had no significant association with transformational ($P=0.156$), transactional ($P=0.156$), and Laissez-faire ($P=0.659$) leadership styles.

Conclusion:

There is no significant association between any of the leadership styles and patient safety culture.

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Introduction

Patient safety culture establishment in health care has shown a potential in improving patient safety by the avoidance of medical errors (1), which are inevitable in medical practice (2). These errors have been found to originate from organizational policies and standard sets by leaders in healthcare organization (3). Patient safety culture, as defined by World Health Organization (WHO) and as stated by (1), is the absence of avoidable harm to patients during the process of healthcare delivery. It is also reducing the risk of unnecessary harm associated with healthcare to an acceptable level (1). Moreover, it is paramount that healthcare organisations ensure that care is provided to patients in the least harmful manner (4). With reference to patient safety culture in Africa, it is observed that most countries lack necessary policies and strategies regarding delivering safe and high quality healthcare. These countries also suffer from inadequate healthcare funding, as well as low or absence of critical healthcare support structure, equipment, goals, poor health care delivery, inefficient management capacity, and inadequacy in equipping health facilities (5).

Simple solutions were proposed by WHO Patient Safety Program. These proposed solutions include modifications in the culture of patient safety through efficient communication, leadership, learning from errors, and commitment to the safety of the patients (5).

The issue of patients' safety is of utmost importance in healthcare; however, despite many positive changes in practice, systems, and regulations in health care, the desired level of safety has not been achieved. To achieve success in patient safety culture, healthcare leaders should be competent to provide a conducive work environment and manage changes necessary to practice this culture (6). It has been revealed that strong safety culture is related to good leadership principles (6). Transformational leadership style practices from the highest level of an organization have been noted to bring about an improvement in patient safety (7). This has resulted in a series of reports that transformational leadership has a strong

relationship with safety culture, which in turn is linked with the implementation of patient safety initiatives leading to favorable outcomes in this regard (7). High reliability establishments relentlessly tackle safety on daily basis. To achieve good practice of safety culture, leaders need to act and talk in a way that makes safety a priority in healthcare (8). Leaders must strive for anti-team behaviors by giving stern warning that such behaviors will not be condoned in the organization (8). In diverse ways, leaders contribute to safety and a teamwork environment. High-productive safety culture conscious organizations employ individuals with positive mindset towards teamwork, respectful attitude, and zeal for the achievement of a common goal in leadership positions (8). Professional skill is necessary; however, healthcare is an intense system for patients and relatives. Therefore, it needs a leader with positive mind towards all healthcare workers. Leaders need to support the organizational values by defining missions of the organization, thereby making them a part of the process for patients care. To achieve this, healthcare leaders have to vividly and continuously communicate patient safety culture as is a primary profound goal in health care (8).

The priority of leadership in healthcare organization is to be responsible for effective and safe protection of the patients and employees. Effective leaders contribute to advancements in safety culture (9). They are aware that flaws exist in human-based care systems; consequently, there is a possibility of failure in care delivery (10). Adverse events via inadequate incident reporting, poor communication, and punitive response to staff complaints can be experienced in case of ineffective leadership. (11). Leaders must therefore provide an atmosphere for patient safety culture to thrive. They must also visibly and tirelessly maintain and support an everyday culture of safety in the organization (8).

Patient safety culture is made up of 12 components, eight of which were assessed in this study. These components include teamwork within unit, continuous organizational learning, non-punitive response to error, staffing, frequency of events reported, overall perception of

patient safety culture, communication openness, as well as communication and feedback.

Leadership is defined from different perspectives. According to (12), leadership is defined as follows:

1. Leadership is an interactive dynamic. This means that leadership can influence and be influenced.
2. Leadership is a rewarding process in which leaders and group members exchange their time and energy for monetary and social rewards.
3. Leadership is often a motivational process in which members are encouraged to contribute their quota towards organizational goals.
4. Leadership is a cooperative process where the responsibilities of the leadership are conferred on an individual by some or all members of the group.
5. Leadership is an adaptive and goal-seeking process since it organizes and motivates group members' attempts to attain personal and group goals.

Furthermore, three types of leadership style established by are transformational (13), transactional, and Laissez-faire leadership styles. Transformational leadership style goes beyond personal interest for the good of an organisation. It aligns individual interest with organisational goals by transmitting clear and inspiring vision to subordinates and motivating them by stimulating their creativity and challenges, thereby giving purpose to their work (14). Transactional leadership behaviour focuses subordinates interests on personal interest using rewards and punishments depending on subordinate conducts and productivity. In summary, transactional leaders exchange resources valued by employees in return for productivity (14). Laissez-faire leadership behaviour is marked by the lack of profound supervision of subordinates (13). These three types of leadership styles were investigated in this study.

A study carried out by to assess the influence of leadership strengthening on patient safety culture on 358 and 325 healthcare staff before and after intervention, respectively. Moreover (15), studied seven patient safety culture dimensions using a safety attitudes questionnaire.

They revealed that strengthening leadership as a catalyst had a significant effect on the improvement of patient safety culture. The nurses' perceptions of safety culture in long term care settings were investigated in a study conducted by (16). They found that effective leadership was pertinent to thrive on patient safety culture program. A study titled "Patient safety and leadership: Do you walk the walk" by reported that leadership should establish a safety culture as a foundation to build on to improve patient safety culture. In the same line (17,18), assessed the leadership, nursing, and patient safety within a hospital based learning organization among nurses and found a significant association between leadership and patient safety culture. It is an established fact that leadership has effects on patient safety culture. With this background in mind, this study aimed to verify this fact in the Department of Radiodiagnosis in Nigeria.

Materials and Methods

This prospective cross-sectional study was conducted on 80 radiology health workers in two tertiary health institutions in South-Eastern Nigeria. The study protocol was approved by the Ethics Committee of Nnamdi Azikiwe University Teaching Hospital, Nnewi, Nigeria (NAUTH/66/vol. 10/168/2017/087). Moreover, an informed consent was obtained from the participants before administering the questionnaires, and they were all assured of their anonymity to ensure an honest response. Since the number of the participants was low (n=80), the sample size was not determined, and a population study was performed. The data were collected using two different validated questionnaires including a multifactor leadership questionnaire by Bass and Avolio (1993) and Hospital Survey on patient Safety Culture (HSOPSC) questionnaire by the Agency for Health Research and Quality (19). The HSOPSC questionnaire had been pilot tested and revised before it was administered in November 2004. The Cronbach's alpha of the questionnaire was obtained at 0.63-0.84 (1). Both questionnaires were pilot tested by the present researchers in a Radiology

Department of a secondary health institution in South-East Nigeria.

In total, 10 copies of the questionnaires on patient safety culture were given to the radiology staff, and 9 out of 10 copies of the questionnaires on patient safety culture were returned. Following that, 10 copies of the questionnaires on leadership style were also administered to the radiology staff, and all the questionnaires on leadership style were returned. The data were analyzed in SPSS software (version 17) through its scale reliability tests. Statements on the patient safety culture obtained a Cronbach's alpha (a reliability test) and a validity of 0.64 and 74%, respectively. Furthermore, leadership style statements had a Cronbach's alpha of 0.70 and a validity of 57.6%.

These questionnaires were scored based on a 5-point Likert scale.

The responses under strongly agree and agree were counted as positive responses. Moreover, the responses under strongly disagree and disagree were counted as negative responses, whereas the responses under not sure were counted as neutral responses. Leadership style was assessed from subordinates' perspective, and the questionnaires on leadership were administered to 76 participants. It is worth mentioning that four leaders (two Heads of Radiology Departments and two Heads of Radiography units) were excluded from this study. Questionnaires on patient safety culture were administered to all the participants in the study areas. Each response is given a mark of one, and cumulative score for each variable was recorded under appropriate response scale. The terms "Radiodiagnosis Unit(s)" and "Radiology Department" were used interchangeably; however, both describe an area in the hospital, where ionizing radiation and other energies are used for diagnostic purposes via imaging internal body structures.

The data were analyzed in SPSS software (version 17), and the Chi-square test was employed to determine the relationship between leadership style and patient safety culture. In addition, percentage scores of respondent responses were obtained in this study. A p-value less than 0.05 was considered statistically significant.

Results

Out of 80 questionnaires, 56 ones were recovered making it a response rate of 70%. Moreover, of the 76 questionnaires on leadership style, 56 ones were recovered making it a response rate of 73.7%. Table 1 tabulates the analysis among the components of patient safety culture, including "teamwork, staffing, organizational learning, non-punitive response to error, communication feedback, communication openness, frequency of events reported, and overall perception of safety"; additionally, the components of the leadership style are "transformational, transactional and Lassiez-faire leadership styles".

Table 1: Domian to domain chi-square analysis of leadership styles and patient safety culture.

Variables	TF	TR	LF
TW	0.930	0.632	0.701
ST	0.913	0.015	0.429
OL	0.516	0.723	0.954
NPR	0.661	0.046	0.595
CF	0.972	0.857	0.469
CO	0.491	0.151	0.812
FER	0.782	0.191	0.189
OV	0.631	0.877	0.821

*p-values listed. Source: Field survey, (2017).

DF - Diagnostic facility.

SCE- Service cost effectiveness.

WT - Waiting time.

PPR - Patient-provider relationship.

QS - Quality of service.

EN - Environmental neatness.

Tw- Teamwork. ST - Staffing.

Cont. Org - Continuous organisational learning. N.P.R -

Non-punitive response to error. C.F - Communication and feedback. C.O - Communication openness.

FER- Frequency of events reported. O.V - Overall perception of PSC.

According to the results, transformational and Lassiez-faire leadership styles had no significant association with all domains of the patient safety culture.

However, transactional leadership style correlated significantly with staffing (P=0.015) and non-punitive response to error (P=0.046). On the other hand, transactional leadership style had no significant association with other domains of the patient safety culture. An overall Chi-square analysis revealed that patient safety culture had no correlation with transformational (P=0.156), transactional (P=0.156), and Lassiez-faire (P=0.659) leadership styles.

Discussion

This study was conducted among health workers in a Radiodiagnostic units of two tertiary health institutions to investigate the impact of leadership style on patient safety culture practice. The results revealed no significant association between any of the studied leadership styles and patient safety culture. This result is in line with the finding of a study performed by that reported no significant relationship between nurses' leadership style and patient safety culture (20). Furthermore, the results of domain by domain Chi-square analysis between leadership styles and patient safety culture showed that transformational and Laissez-faire leadership styles had no significant association with any domains of the patient safety culture. However, transactional leadership style correlated significantly with staffing and non-punitive response to errors. This result is consistent with the findings of study by who assessed the effect of strengthened leadership on the practice of patient safety culture in a Psychiatric Department in Denmark (16). They reported that leadership intervention had significant effects on various components of patient safety culture. They concluded by implying that strengthening the leadership could act as a catalyst to get more staff to develop positive attitude towards patient safety culture, thereby improving its practice. Although both studies have differences in terms of instruments for data collection, study locations, professionals, and work requirements, the same result was obtained from the two studies. Contrary to the result of this study (18), conducted a study on 180 nursing staff and three frontline leadership team. He reported a significant relationship between leadership style and patient safety culture. It is worth mentioning that the present study was conducted on Radiology staff, whereas was carried out on nurses (18). The observed differences in the results of these studies can be attributed to the work schedule and details. The result of this study was not consistent with the finding of who carried out a systematic review of published studies and reported a relationship between leadership styles and patient safety culture(21). With this background in mind, it

is imperative to improve the domains of leadership, especially transformational leadership style, which aligns individual goals to those of the organization. Moreover, the components of patient safety culture should be improved upon to ensure safe health care delivery.

Conclusion

There is no significant relationship between any of the leadership styles and patient safety culture in this study. This shows that leadership styles have no impact on the practice of patient safety in the Department of Radiodiagnosis.

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