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Inter-Professional Collaboration and Work Efficiency in Secondary Healthcare Delivery System in Rivers State

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Abstract

Inter-professional collaboration is fundamental to the safe, high quality, accessible, patient-centered care desired by all. This study examines the relationship between inter-professional collaboration and efficiency in healthcare service delivery in Rivers state. A cross-sectional research survey was used and the research data were collected from a sample of 123 healthcare teams working in the Secondary Healthcare Facilities (functional General Hospitals) located in the local government areas of Rivers state. Two hundred and ten (210) patients were selected using a convenient sampling technique during the field work period to ascertain their level of satisfaction with the services of the healthcare teams. The formulated null hypotheses were tested using Spearman's Rank Order Correlation Coefficient (Rho) at 5% level of significance, with the aid of the Statistical Package for Social Sciences (SPSS). This study found that professional interdependence and mutual trust are prerequisites for gainful team cohesiveness, efficient material resource utilization, and efficient time use in healthcare delivery system. However, professional diversity is inversely related to team cohesiveness and does not enhance minimization of time spent in healthcare services. This study argues that improved collaboration among healthcare professionals is an important strategy in the renewal of healthcare programmes if the sector is to achieve efficiency. This study recommends intensive professional diversity management through periodic team training programmes so as to build team spirit in the healthcare system and achieve the desired level of efficiency.

Keywords: Inter-Professional Collaboration, Work Efficiency, Secondary Healthcare, Healthcare Delivery System, Rivers State.

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INTRODUCTION

Teams are valuable organizational resources that are being used increasingly in organizations around the world. The importance of teamwork efficiency therefore, has become an issue of serious concern to organizational theorists and administrators (Ololube, Nwokolo, Onyekwere & Kpolovie, 2013). Robert and Zheng (2002), for instance, argue that teamwork embraces the value of considering diverse points of view and looking at the entire system, rather than just its

parts. This is supported by Robins (2005) contention that efficiency in organizations is largely and increasingly achieved with serious reliance on teams set up to accomplish specific tasks. This approach is gaining in popularity because team building uses high-interaction group activities to increase trust and openness among team members (Dyer, 2006). The healthcare industry is not exempt from this growing emphasis on teamwork.

Health teams are generally made up of doctors, pharmacists, nurses, laboratory scientists among other categories of health professionals. All are expected to work together to accomplish a shared objective, namely, the delivery of the best possible healthcare to the patient (Iyang, 2008). It follows that since organizations rely on teamwork for their success, efficient inter-professional collaborative effort becomes a crucial tool for achieving organizational goals.

In this study, "inter-professional collaboration" and "inter-professional teamwork" are used interchangeably and refer to a phenomenon of practice of core healthcare professionals. In recent years, the success and effectiveness of health organizations or institutions that embrace collaborative practice has received considerable attention from both scholars and practitioners. In a report of on the health sector in Rwanda, however, Sayer (2005) argues that the provision of enabling infrastructure is the critical factor influencing the effectiveness and efficiency of Rwandan health institutions. In a follow up to that study in a different setting (Liberia), Bulus (2006) argues that the lack of drugs and other vaccines is characteristic of the country's poor medical service delivery. The analytical perspective of both Sayer and Bulus thus focuses on the availability of physical health infrastructure and medication as the major determinants of efficiency in health organizations. Likewise, in Nigeria, much blame for the inadequacies of health service delivery has been directed at the lack of enabling infrastructure and drugs. It is therefore not surprising that Nigerians travel to India for medical attention on a daily basis. This analytical perspective appears to be common to developing economies grappling with deteriorating infrastructure and out of stock (OS) drug syndrome in hospitals.

Another perspective on poor health service delivery focuses on the issue of staff training. Harrison (2001) argues that training team members is necessary for the achievement of the desired objectives of national health programmes. Capacity building in the health sector remains a central justification for staff training and development in pursuit of a sustainable healthcare service. Similarly, Krukrubo in Onyekwere (2004) identify shortages of personnel and the mal-distribution of health institutions as causes of poor performance in the Rivers State health sector.

Nevertheless, while health infrastructure, drugs and staff training are necessary and veritable instruments for effective healthcare services, the issue of the social nexus (i.e. social work relations) and its systemic importance in inter-professional collaboration appears to be most critical. Unfortunately, knowledge gaps exist in the empirical research effort to explain whether and how the nature of inter-professional collaborative efforts influences efficiency in the healthcare service delivery system. Notable attempts in this regards, which were neither empirical nor quite explanatory, are shown in Borill and West (2002), Hall and Wavy (2001); and Osotemahin (as cited in Onyekwere, 2004). These research efforts advocate for teambuilding as a means of achieving optimum results in the healthcare sector in Nigeria and elsewhere. Their argument thus follows the report of the Canadian Health Services Research Foundation (2001 cited in Onyekwere 2004) that improved collaboration among healthcare professionals is a key strategy in healthcare renewals programmes (Clement, Dault & Priest, 2007). Our point of departure on this subject matter is empirical research focused on determining efficiency in the healthcare delivery system within the province of inter-professional collaborative effort.

The provision of healthcare services is indispensable, yet healthcare services in Nigeria are characterized by endemic inefficiency. Despite a sizable budgetary allocation for the improvement of healthcare service delivery, particularly at the interface of health workers and the patients, sector objectives are still going unmet (Harrison, 2001). One obvious manifestation of the real problems in this all-important sector is the number of identifiable professional rivalries (Iyang, 2008). These rivalries exist across all healthcare institutions and sometimes lead to patient dissatisfaction with the entire system, resulting in higher patronage of patent medicine shops and private hospitals.

The apparently uncoordinated nature of work relations among health workers is also increasingly worrisome. In some cases, a lack of mutual trust and team cohesiveness among professionals may have resulted in the sub-optimization of the goals informing this study. In this regard, Oandasan et al. (2006) argue that the achievement of objectives and teamwork efficiency has been frustrated by mistrust and personality clashes among different professional groups in the healthcare system. Furthermore, the difficulty of entrenching team spirit among members of different health professions has culminated in such problems as poor time management in patient handling, the underutilization of available resources, and in-cohesive work attitude among team members. Considering this outcome and the need for mutual interdependence in any institution for goal congruence, Bulus (2006) argues that a necessary prerequisite for the efficiency of any healthcare programme is the building of teamwork based on inter-professional collaboration.

Considering the many attempts by government to improve healthcare delivery by through the provision of enabling infrastructure, training, posting of health staff to hospitals, and the establishment of a revolving drugs scheme, it appears that the endemic inefficiency of the health sector is caused by poor internal team management of professional groups. Based on this contention, we therefore ask to what extent can work efficiency in healthcare be enhanced by inter-professional collaboration in the secondary healthcare delivery system in Rivers State and in turn improve patient satisfaction? As a starting point to this investigation it is important to evaluate the existing processes that influence collaboration among healthcare professionals in areas of work design that have to do with interdependence, mutual trust and diversity in professional skills. These have important consequences for the viability of the inter-professional collaboration model of practice as portrayed in the literature relevant to this study. An assessment of the extent to which this model has enhanced healthcare services in the general hospitals in Rivers State with respect to resources utilization, time minimization and level of patient satisfaction is also warranted.

The aim of this study is to empirically examine the influence of an inter-professional collaborative approach on efficiency in healthcare delivery systems in Rivers State. The specific objectives derivable from this general aim include:

1. To determine the existence and influence of mutual trust in inter-professional collaborative work practices in the secondary healthcare delivery system.
2 To evaluate the influence of professional diversity on work efficiency that ensures better patient care.
3 To determine the influence of interdependency of professionals on efficiency in healthcare delivery.
4 To ascertain the level of patient satisfaction in the hospitals chosen for the study.

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LITERATURE REVIEW

Conceptualization of Inter-professional Collaboration

Collaboration has been defined as "to work together, especially in a joint intellectual effort'' (Marquardt & Horvath, 2001, p.126). In healthcare, however, collaboration has been difficult to define, both conceptually and operationally. Within healthcare literature several definitions for collaboration can be found, ranging from simple definitions, a partnership or a complementary relationship of interdependence (Fagin, 2009), to more complex definitions including a process by which individuals from different professions structure a collective action in order to co-ordinate the services they render to individual clients or groups (Sicotte, D'Amour & Moreault, 2009). The former definitions focus on the interaction between healthcare providers alone, while the latter includes the target group that the collaboration aims to serve. Weiss (2005) defined collaboration in much the same way, as: "synergistic interactions to influence patient care". Although helpful starting points, these definitions are problematic in that they can be interchanged with concepts related to collaboration such as coordination, cooperation and sharing. While these related concepts might play a part in collaboration, they are not in and of themselves collaboration.

Kilmann and Thomas' (2007) model of conflict handling serves to illustrate the conceptual difference between collaboration and some of its related concepts. Within this model, collaboration is achieved through the combination of assertiveness and cooperation where assertiveness represents actions aimed to meet one's own needs and cooperation represents actions aimed to meet the needs of others. Cooperation is thus identified as necessary to, but not the same as, collaboration. Kilmann and Thomas also note that accommodation results from low levels of assertiveness and high levels of cooperation; competition results from high levels of assertiveness and low levels of cooperation; avoidance from low levels of both dimensions; and compromise from moderate levels of assertiveness and high levels of cooperation. Not surprisingly, the difficulty encountered by researchers in adequately defining the concept of collaboration in healthcare has also caused difficulties in defining collaboration operationally and developing tools that measure its intensity or its effect on healthcare (IPEC, 2011).

In order to measure collaboration and subsequently correlate collaboration with health outcomes, cost of service provision or work satisfaction, the thrust of this study, a definition of collaboration must be adopted that includes its measurable attributes. Along these lines, Baggs and Schmitt (2008) undertook a review of the literature to determine how the concept of collaboration was being used in healthcare literature in order to clarify and define the concept in a measurable way. Although the researchers were specifically interested in collaboration between nurses and physicians in a clinical ICU setting, their work shed light on the conceptualization of inter-professional collaboration in other healthcare settings as well. Through this review, Baggs and Schmitt found that the concept of collaboration was often being used in the literature without definition. They also found, however, that significant work

had been undertaken to elucidate the critical attributes necessary for collaboration to occur in an inter-professional context. Baggs and Schmitt identified these attributes, which they then used to develop a definition of collaboration, as "intensive care nurses and physicians cooperatively working together, sharing responsibility for solving problems and making decisions to formulate and carry out plans for patient care". They ultimately defined collaboration as a joint communicating and decision-making process with the expressed goal of satisfying the patient's wellness and illness needs while respecting the unique qualities and abilities of each professional.

More recently, Canadian researchers in primary healthcare have attempted to clarify the essential elements of collaboration. Anderson (2007) undertook a review of the inter-professional collaboration literature during the development of a Multidisciplinary Collaborative Primary Model for Maternity Care. Through this review, Anderson noted that effective collaboration requires health professionals to commit to several features of collaboration including open and honest communication, shared decision-making, mutual trust, shared values, goals and visions, willingness to openly discuss differences, understanding and valuing each other's perspective and way of thinking, willingness to devote time and energy to the relationship, familiarity with and valuing each other's style and scope of practice, unified front and mutual support, equality and shared power, willingness to share information, and professional competence. Frank discussion of financial issues, shared responsibility and accountability were also identified as important. Included in Anderson's review was work by Way, Jones and Busing (2009) which identified the seven essential elements of collaboration as mutual trust and respect, autonomy, responsibility, communication, coordination, assertiveness, and cooperation. Following his review, Anderson defined collaboration as "an inter-professional process for communication and decision making that enables the separate and shared knowledge and skills of care providers to synergistically influence the client/patient care provided" (p.31). This definition has garnered some acceptance by Canadian researchers investigating primary healthcare collaboration as well as within collaborative practice education modules.

Collaborative Practice in Healthcare

Some level of collaboration between healthcare providers is required in any healthcare setting. In hospitals, careful coordination of services between nurses, nursing assistants, physicians, and a variety of healthcare professionals (physical therapists, pharmacists, etc.) must routinely occur. In outpatient settings, healthcare providers may operate with varying degrees of collaboration depending on the types of services offered. No single discipline or specialty can meet all of a patient's needs. A hospitalized patient, for example, may need a physician to provide a diagnosis and treatment plan, a nurse to administer medications, a nursing assistant to help with bathing and toileting, a phlebotomist to take blood samples, a dietitian to monitor food intake, a physical therapist to aid in muscle strengthening and flexibility, and a social worker to coordinate home care following release. Without mutual trust and communication among all of these professionals, comprehensive and efficient treatment of the patient is not possible (Onyekwere, 2004).

According to Baggs and Schmitt (2008), collaboration involves the coordination of individual actions, cooperation in planning and working together, and sharing of goals, planning, problem solving, decision-making, and responsibility. Collaboration can happen between two people who represent the same or different disciplines, or among small groups of people representing a single or range of disciplines. Nonetheless, in general, healthcare providers tend to identify most strongly with their own discipline and its language, values, and practices (Furnham, 2008) and relate best to members of their own discipline. Collaboration may be difficult to negotiate, in part, because of differences in disciplinary socialization.

Cross-disciplinary communication can be complex for a myriad of reasons, but it also can be professionally rewarding and beneficial to patients' (and patients' companions') experiences. Although the different professions have their own unique issues around collaboration, nurses, pharmacists, and social workers face comparable issues when collaborating with physicians, including a lack of acceptance by physicians of the full breadth of their professional roles, ongoing status and gender differences, contradictory expectations regarding the autonomy of non-physicians, and a commonly expressed need for physician recognition of their competence (Abramson & Mizrahi, 2006).

The Determinants of Successful Collaboration: Theoretical Review

According to Blake, Manton & Allen (2005), organizations are increasing dependent on teamwork and an organization's success or failure depends on how effective its people are at working together in teams. By bringing together in real time the competencies, experience and judgment of a variety of professionals, organizations are trying to respond to a reality that is increasingly complex in terms of both the knowledge and the working methods that are being applied. In this context, collaborative practice in inter-professional teams is described in the literature as an efficient, effective and satisfying way to offer healthcare services (Drotar, 2007; Hanson, Spross & Carr, 2001; Robinson & Kish, 2002). Collaboration in healthcare teams is the process by which interdependent professionals structure a collective action around patients' care needs. This collaborative process is built on a voluntary basis and implies negotiation. It requires that the parties forego a competitive approach and adopt one based on collaboration, both between professionals and between healthcare institutions. According to D'Amour, Ferrada-Videla, San Martin-Rodriguez and Beaulieu (2008), implementing this type of approach is not a simple matter. Developing collaborative practice among a group of healthcare professionals still represents a considerable challenge to both political decision-makers and organizational managers. Although changes to organizational structures are increasingly focused on the collaboration between professionals practicing in healthcare teams, managers and political decision-makers implementing institutional reorganizations are faced with a lack of empirical evidence that identifies the characteristics of organizations that effectively encourage the development of collaborative relationships within inter-professional teams.

Several elements determine how collaboration develops and is consolidated in healthcare teams. These determinants have been classified as interactional factors (interpersonal relationships between team members), organizational factors (conditions within the organization) and systemic factors (conditions outside the organization). In a professional practice setting, two levels of determinants are at work: the organization (organizational factors) and the team (interactional factors). Systemic factors are elements outside the organization, including components of the broader social, cultural, educational and professional systems. The environment in which collaborative practice takes place is influenced by these systemic factors.

Social factors are the source of the power differences that may exist between professionals in a team and have an impact on how collaborative practice develops. Equality between professionals, one of the basic characteristics of collaborative practice (Heinemann, Lee & Cohen, 2006), is impeded by power differences based on gender and/or disparate social status among the professionals on a team – an important barrier to inter-professional collaboration (Hanson et al., 2001). A recent study conducted by Baggs and Schmitt (2008) in an intensive care unit found that nurses identified power disparity as one of the principal factors preventing their collaboration with physicians.

Specific cultural values may also have an impact on the advancement of collaboration between professionals. According to Gage (2007), some cultures hold deep values that run counter to the spirit of collaboration. On healthcare teams, for instance, a strong cultural affinity for autonomy tends to foster and support individualism and specialization rather than collaborative practice. The consequences of divergent cultural values are captured in a study by Hojat et al (2008) on nurse-physician collaboration in the United States and Mexico. This study highlights the ways in which the cultural differences between the two countries influence how professionals perceive collaborative work.

The professional system also has a significant effect on the development of collaborative practice in that it promotes a perspective that is in direct opposition to the rationale for collaboration (D'Amour et al., 2008). The process of professionalization is, in fact, characterized by the achievement of domination, autonomy and control, rather than collegiality and trust (Freidson, 2006). The development of collaborative practice depends on mutual recognition by professionals of their interdependence as well as an acceptance of ''grey zones'' where their respective contributions may conflict or overlap (D'Amour et al 2008). The dynamics of professionalization, on the other hand, lead to a stark differentiation of professionals and to territorial behaviors within the team. Furthermore, throughout their professional socialization phase, health professionals are immersed in the philosophies, values and basic theoretical perspectives unique to their respective professions (Clark, 2007). An emphasis on these differences is a potential source of conflict that could hinder the development of a true collaborative practice.

According to Ivey, Brown and Teste (2006), the educational system is one of the main determinants of inter-professional collaborative practice as it represents the principal lever for promoting collaborative values among future healthcare professionals. They argue that traditionally, candidates of health-related professions have been socialized into strong professional identities and such socialization results in very limited knowledge of other professionals on a team. Members of each profession know very little of the practices, expertise, responsibilities, skills, values and

theoretical perspectives brought by other disciplines. This is considered to be one of the main obstacles to collaborative practice in healthcare teams. Glen (2009) observed that there is a need for an educational system that helps students to recognize the values and responsibilities of their profession while instructing them in professional plurality. Such an educational program would promote awareness, sharing and the integration of knowledge and practices across professions.

Organizational Determinants

Organizational structure has a strong influence on the development of collaborative practice in healthcare teams (Walsh, Brebeck & Howard, 2009). Organizational determinants include attributes of the organization that define the work environment of the team, such as its structure and philosophy, team resources and administrative support, as well as communication and coordination mechanisms. According to Walsh, Brebeck & Howard, (2009), successful collaboration between healthcare professionals requires a shift from traditional hierarchical structures toward more horizontal structures. Traditional structures fail to facilitate the emergence of key conditions for collaboration, such as shared decision-making and open and direct communication (Evans, 2008). Every organization has its own philosophy. This philosophy and the inherent values of an organization in turn have an impact on the degree of collaboration that will occur. The organization's philosophy must support collaborative practice among professionals. For instance, a philosophy that values participation, fairness, freedom of expression and interdependence will foster the development of collaboration within healthcare teams (Evans, 2008, Heinemann, Lee & Cohen, 2006). Likewise, according to Evans (2008), a climate of openness, risk-taking, integrity and trust fosters collaborative attitudes between professionals.

As noted above, the implementation of inter-professional collaboration requires administrative support (SanMartin-Rodriguez, Beauliey & Ferrada 2006) Indeed, the development of collaboration among team members is facilitated by leaders who know how to convey the new vision of collaborative practice, who motivate professionals to take up collaborative practice and who are able to create an organizational setting that fosters collaboration (Evans, 2008; Heinemann et al., 2006). Studies by Borill and West (2002) and D'Amour et al. (2008) revealed the importance of leadership in the development of collaboration in inter-professional teams and highlighted the negative effect of a lack of equipped managers.

Also within the domain of administrative support, the availability of time to meet and spaces to interact are preconditions for successful collaborative practice. Strong collaborative relationships demand that enough time be available for team professionals to share information, develop interpersonal relationships and address team issues (Hojat et al., 2008; Heinemann, Lee & Cohen, 2006). Furthermore, Freidson (2006) believes that sharing space and working in physical proximity reduces professional territoriality and atavistic behaviors and facilitates collaboration, especially when conflicts arise. It is therefore essential that the organization give consideration to these supportive requirements when structuring teams for inter-professional collaboration. Some authors also emphasize the need for adequate financial investments in order to promote the development of collaborative practice (Macintosh & McCormack, 2007, Walsh, Brabeck & Howard, 2009).

Interactional Determinants

Interactional determinants are components of interpersonal relationships among team members and include their willingness to collaborate and the existence of mutual trust, respect and communication. Although healthcare systems tend to make inter-professional collaboration mandatory by implementing structures and standards conducive to collaborative practice, collaboration is, by its very nature, voluntary (D'Amour et al, 2008). In order to achieve a collaborative practice, professionals must therefore be willing to commit to a collaborative process (Heinemann et al., 2006). For Heinemann et al. (2006), group cohesion is one key indicator of the willingness of individuals to be part of a team. The overall willingness of team professionals to work collaboratively appears to depend on factors such as professional education, previous experience in similar situations, and personal maturity (Heinemann et al., 2006).

Trust: Most researchers identify trust as a key requirement in the development of collaborative practice (D'Amour et al, 2008; Evans, 2008; Gage, 2007; Heinemann et al., 2006). Building trust in turn requires time, effort, patience and previous positive experiences (Heinemann et al., 2006). According to Heinemann et al (2006), self-confidence in one's role as a professional is essential, as is the display of trust toward other professionals. At both

levels of trust (confidence in one's own abilities and trusting others), researchers conclude that trust depends on competence – skills and knowledge – and on experience.

Communication: Communication is another interactional element that influences the degree of collaboration. The communication skills of professionals play a critical role in the development of collaborative relationships among team members (Burd, Cheung, Wong, Ying & Cheng, 2008, Evans, 2008). There are three main reasons that communication is considered a key determinant of collaboration in healthcare teams. First, the development of collaborative practices demands that professionals understand how their work contributes to outcomes and to team objectives (Evans, 2008) and that they know how to communicate the content of this contribution to other professionals. Second, efficient communication allows for constructive negotiations with other professionals (Heinemann, et al 2006). Thus, one can say that communication is a vehicle for the other determinants of collaboration, such as mutual respect, sharing or mutual trust. Third, open and active communication and active listening (Baggs & Schmitt, 2008; Sile´n-Lipponen, Turunen & Tossava-nen, 2008) make mutual knowledge possible among team professionals and allow improvements to processes for sharing clinical information.

Mutual respect: Mutual respect implies knowledge and recognition of the complementarities of the contributions of the various professionals on the team and of their interdependence. Lack of understanding, respect or appreciation of the contribution of other professionals thus constitutes a very real barrier to collaboration between healthcare professionals (Bradford, 2009). Studies conducted among health professionals indeed demonstrate that when working well in a collaborative setting, professionals attach much importance to mutual respect (Baggs & Schmitt, 2008; D'Amour et al., 2008).

Systemic Determinants

Some projects require interventions to modify systemic determinants, such as budget allocations, professional compensation schemes or professional practice regulations, in order to fully implement an inter-professional collaboration model. Lawmakers are often the only people mandated to make such modifications. In Nova-Scotia, for instance, the provincial government agreed to modify the *Pharmacy Act* to allow nurse practitioners to write prescriptions. In other projects, where existing laws had to be satisfied the implementation of a collaborative model can remain limited. Such considerations have been particularly important in several projects dealing with collaborative practice. Three projects in particular entailed moving to a capitation scheme for funding primary care services delivery as well as physician reimbursement. The professional associations and regional agencies involved did not allow this shift, even in the limited scope of the demonstration project, and so jeopardized the capacity of the projects to reach their full potential. Here, the following macro-structural barriers were identified: professional jurisdictional factors (some regulations must be reviewed to allow more flexible professional roles); traditional resource-driven rather than objective-driven funding; and professional compensation particularly fee-for-service compensation for physicians. This latter barrier is a two-fold hindrance to collaboration, since (a) unpaid time must be allocated to the team process and (b) fee for-service systems create a potential for competition in some areas and among certain clientele. A lack of clear policies governing professional practice in physician and nurse associations or licensing bodies and other medico-legal considerations may also hinder true collaborative practice.

The Concept of Team and Teams in Organization

A team represents a collection of individuals who are interdependent in their tasks, who share responsibility for outcomes, who see themselves and who are seen by others as an intact social entity embedded in one or more larger social systems, and who manage their relationships across organizational borders (Cohen, 2006). Sundstorm, Mense & Futrell (2007) likewise defined a team as an "interdependent collections of individuals who share responsibility for specific outcomes for their organizations", and as "individuals who see themselves and who are seen by others as a social entity interdependent, embedded in one or more larger social systems (e.g., community, organization), and who perform tasks that affect others such as customers or coworkers" (p.25).

According to Wellins, Byham and Dixon, (2002) teams have a number of unique features including being organized around work processes (such as speeding up cycle times or customers' orders, launching a new product, or devising new compensation plans), rather than specific functions like marketing, production, or sales. Team members, they noted, tend to have cross-functional training and hence a variety of skills. Instead of doing the same thing over and over, team members do many different things and can stand in for each other, which allows individuals to be more

flexible and the team's work to be completed on time. Teams generally govern themselves and so can roam freely throughout organizational hierarchies and structures and, in some instances, select their own leaders, whom they consider more like coaches than bosses. Following their conceptualization of teams in an organization, they observe that teams are often involved in organization-wide decisions; thus, decision-making is not relegated primarily to managers who may be far removed from the product or service around which the decision is being made.

Guzzo & Dickson (2006) categorized teams based on their primary mission. Thus, the mission of the team determined the type of team. Another factor that determines the type of team is the life cycle of the team. Some teams are created for a finite or fixed period (like a space team during a time of concentrated and extensive construction), whereas others are created for unlimited periods such as the healthcare teams at the centre of this study.

Most teams use computers to mediate meetings, generate ideas, and/or make choices. Dennis and Valacich (2006), and Gallupe, Cooper, Grise, and Bastiajiutti (2006) found that teams that interacted electronically (communicating via a computer) produced more ideas during a brain-storming task than did nominal groups (groups who did not interact in this way). Furthermore, they determined that groups that communicated solely or primarily by computer had greater equality of participation (even when members were of different status levels), made more extreme or risky decisions, and engaged in more hostile or extreme communications than did groups that interacted only in face-to-face meetings.

There are a number of other findings in the literature around successful teams and team work. These include:

- The effectiveness of self-managed teams appears to depend on the nature of the workforce (for example, shared dominant values) and the nature of the organization (for example, those with a reward system inclined to reinforce the group's rather than the individuals' work) (Guzzo & Dickson, 2006, Smith & Corner, 2003).

- In terms of team building, Katzenbach & Smith, (2001), found that it is important for a team to have a clear and urgent mission even if the task or problem is not clearly definable in the beginning.

- When team collaboration is based on the technical, interpersonal, and organization skills needed for the task at hand, clear definitions of the team's rules are necessary. These rules include issues of confidentiality, attendance, the use of constructive criticism, equal opportunities to speak, focusing comments on the immediate issue, and guidelines for decision making (majority or unanimous voting).

- It is important to recognize and respond accordingly to the team's activities, depending on the stage of group development. This should include recognition of members' and the team's achievement of intermediate goals and the processing or talking out conflicts in the group.

- In light of team building in the healthcare system, Poulton (2003) defines teamwork as the interaction or relationship of two or more health professionals who work interdependently to provide care for patients. She notes that effective teamwork means that members of the team are mutually dependent and see themselves as working collaboratively for patient-centered care, benefit from working collaboratively to provide patient care, share information which may lead to shared decision-making, and know when teamwork should be used to optimize patient-centred care.

- Teams are one way of collaborating in which members share goals and are mutually accountable for providing patient care. It is important to note, however, that professionals can collaborate with others without being part of a defined team. Because collaboration is defined by the relationships and interactions that occur between co-workers (implying collective action towards a common goal), D'Amour et al (2008) point out that ultimately it is health professionals themselves who determine whether or not collaboration occurs. (Heinemann et al, 2006).

- In terms of the healthcare delivery teams in which this study is interested, teams can be divided according to: patient population, (such as geriatric teams), disease type (such as stroke teams), and disease type settings (such as primary care, hospital and long-term care) (Lemieux-Charles & McGuire, 2006).

Factors Influencing Groups and Teams Effectiveness

A number of the factors that influence the performance of groups or teams have been studied extensively. These include cohesiveness and familiarity, composition, and context. Unfortunately most of these variables have been examined separately, rather than in combination, and the influence of each appears to depend, in large part, on the situational specifics associated with each team, task, and organizational setting.

Cohesiveness and Familiarity

Specific group goals and feedback on performance increase a group's cohesiveness, which is positively linked to performance (Koch, 2008). Smith and Corner (2003) found a positive correlation between the cohesiveness of top management teams and an organization's financial performance. Cohesiveness can be a double-edged sword in that when it becomes the primary focus or driving force of the team, the opportunity for groupthink can lead to premature decisions without full consideration of a variety of alternative solutions for the task or problem (Guzzo & Dickson, 2006).

Goodman and Leyden (as cited in Espinosa, Slaughter, Kraut & Herbsleb, 2007) found that lower levels of familiarity among members were associated with lower levels of productivity. Watson, Michelson and Sharp (2007) reported a similar relationship between effective decision making and familiarity. It thus appears that teams composed of members who are familiar with each other are more effective than teams composed of strangers (Guzzo & Dickson, 2006).

Diversity is also a fundamental feature of organizations, and the effect of the diversity of membership on the performance of teams has been studied extensively. Sessa, Jackson and Rapini (2005) suggest that there are two different perspectives and consequences of diversity for organizations in general, and teams in particular. According to the horizontal perspective of diversity, different types of diversity (such as age, gender, ethnicity, and race) yield about equal performance outcomes. Therefore, one type of diversity is as good as any other, and thus as long as a team is diverse it is assumed that the type of diversity will yield enhanced decision-making and problem-solving. In contrast, the vertical-differentiation perspective assumes that diversity serves as a marker for assigning members to positions in an asymmetrical power hierarchy (high-and low-status members). Hence, under vertical differentiation, team participation is moderated by the hierarchical relationships among members, so members' voices are not equal and team outcomes are compromised. It is important in negating these effects that team leaders always promote the principle that team members are different yet similar in their commitment so as to focus on members' performance, positive intent, and regard for each other and the organization. In most organizations around the world, both the horizontal and vertical perspectives and consequences of diversity are in operation (Watson, Kumar & Michelson, 2005).

Composition

This category includes variables that relate to how teams should be staffed. According to Koch (2008) consideration should here be given to the ability and personality of team members, allocating roles and diversity, the size of the team, member flexibility, and members' preference for teamwork (Koch, 2008). In terms of members' abilities, a team requires three different types of skills to perform effectively. First, it needs people with technical expertise. Second, it needs people with problem-solving and decision-making skills to be able to identify problems, generate alternatives, evaluate those alternatives, and make competent choices. Finally, teams need people with good listening, feedback, conflict resolution, and other interpersonal skills (Koch, 2008) No team can achieve its performance potential without all three types of skills and the right mix is crucial. Too much of one at the expense of others will result in lower team performance. At the same time, teams don't need to have all of these skills in place initially. It's not uncommon for one or more members to take responsibility for learning the skills in which the group is deficient, thereby allowing the team to reach its full potential (Weick, 2006).

Context

The three contextual factors that appear to be most significantly related to team performance are the presence of adequate resources, effective leadership, and a performance evaluation and reward system oriented to team contributions (Hackman, 2002). Work teams are part of a larger organization system. As such, all work teams rely on

resources outside the group. A scarcity of resources directly reduces the ability of the team to perform its job effectively. As one set of researchers concluded, after looking at thirteen factors potentially related to group performance, perhaps one of the most important characteristics of an effective work group is the support the group receives from the organization. This support includes timely information, adequate technology staff, encouragement, and administrative assistance. Teams must receive the necessary support from management and the larger organization if they are going to succeed in achieving their goals (Hackman, 2002; Robins, 2005).

Process Variables

Process variables are another factor related to team effectiveness. Process variables include member commitment to a common purpose, establishment of specific team goals, team efficacy, a managed level of conflict, and the reduction of social loafing. An effective team has a common and meaningful purpose or vision that provides direction, momentum, and commitment for members. The vision or purpose is broader than specific goals. Members of successful teams put a tremendous amount of time and effort into discussing, shaping, and agreeing on a purpose that belongs to them both collectively and individually. This common purpose, when accepted by the team, becomes the equivalent of what celestial navigation is to a ship captain. It provides direction and guidance under any and all conditions (Robins, 2005).

Successful teams further translate their common purpose into specific, measurable, and realistic performance goals. Goals lead individuals to higher performance and energize teams. Specific goals also facilitate clear communication and help teams to maintain a focus on results. Consistent with the research on individual goals, team goals should be challenging. Difficult goals have been found to raise team performance around those criteria for which they are set. Goals for quantity, for example, tend to raise quantity, goals for speed tend to raise speed, goals for accuracy raise accuracy, and so on (Hackman, 2002; Iyang, 2008).

The Healthcare System in Rivers State: An Overview

The term healthcare system encompasses the personnel, institutions, commodities, information, financing and governance strategies that support the delivery of health prevention and treatment services. The main objectives of the system are to respond to patient needs and expectations by providing services in a fair and equitable manner (WHO, 2006). Furthermore, a well-functioning health system is pivotal to achieving the Millennium Development Goals (MDGs) by 2015. (United Nations, UNMDGs, cited in HERFON, 2006).

Presently in Rivers State, healthcare services are delivered through the State Ministry of Health (RSMOH), the State Hospitals Management Board (RSHMB) and Local Governments. The RSMOH is responsible for formulating health policies, plans and programmes, advising government on the health of mothers, training health personnel, supervising the Hospital Management Board, implementing National Health Programmes, coordinating and supervising private health institutions, and liaising with health-oriented NGOs and international development agencies. These numerous RSMOH responsibilities are achieved through three main levels of care. Primary healthcare (PHC) involves the provision of general preventive, curative, promotive and rehabilitative health services to the population. The provision of care at this level is largely the responsibility of Local Governments with the active support of the RSMOH. Secondary healthcare includes specialized services to patients referred from the PHC level as well as out-patient and in-patient services for general medical, surgical, pediatric, obstetric and gynecological care. This secondary level also supervises healthcare activities in the peripheral units and provides supportive services such as: laboratory and diagnostic services, blood banks, rehabilitation and physiotherapy. All services at this level of healthcare are provided by healthcare personnel deployed to general/cottage hospitals located in various Local Government Areas. Tertiary healthcare provides highly specialized services, care for specific disease conditions, and is engaged in research and training of health personnel.

The RSHMB, amongst others, is responsible for the administration and management of the hospitals under their jurisdiction and for ensuring that standard national guidelines for hospitals are adhered to. Local Government responsibilities for healthcare, with the support of the RSMOH, include community oriented health related services, the provision and maintenance of health infrastructure, and workforce development for primary healthcare.

Current Situation of Secondary Healthcare Facilities in Rivers State

As mentioned, secondary healthcare services are provided in general/cottage hospitals. In Rivers State there are 38 such hospitals including both functional and non-functional hospitals with two specialist hospitals (Neuro-psychiatric

Hospital, Rumuigbo and Dental and Maxillo-Facial Hospital, Port Harcourt). While some Local Government Areas have two or three General Hospitals, three (Tai, Oyigbo and Obio-Akpor) have none.

The Rivers State Health Policy Document on Achieving Sustainable Development through Health (2008) reports that most of the hospitals in the state are dilapidated and lack adequate human and material resources to fulfill their expected role in the health system. Most of these hospitals have lost the confidence of the community in which they operate and some are critically under-utilized. Contemporary health policy aims to reverse present trends and to enable secondary healthcare facilities to fulfill their roles in the health system.

Roles and Responsibilities of Selected Healthcare Professionals

There are a range of individuals who act as members of an inter-professional healthcare team in a secondary healthcare facility. They tend to be the core health professionals and include:

The Medical Doctor

Medical doctors, as a group, make decisions concerning the explicit goals of the organization, that is, about the diagnosis and treatment of patients (Atemie and Okaba, cited in Onyekwere, 2004). A qualified medical doctor is a person who has undergone five to six years of professional training in a College of Medicine at a University as stipulated by the Medical Council. Upon graduation, doctors begin a one-year internship in a Medical Council-approved hospital. During the internship, doctors have provisional accreditation with the Medical and Dental Council of Nigeria. They are thus expected to reinforce the appropriate moral and technical attitudes and skills so that they can work alone without supervision. Upon completion, doctors apply for full registration with the Council and attach a properly signed internship form to demonstrate completion before entering for National Youth Service Corp (NYSC).

Regardless of the specialty or area of health services a doctor will eventually work in, all doctors have very similar undergraduate training. To a large extent, this training concentrates on providing students with the basic scientific knowledge and clinical experience needed to quickly and accurately diagnose and treat conditions. As Tucketts (2005) states that "the profession has become the legitimator of illness "as the doctor has the right to certify someone sick of a particular disease or illness".

The Registered Nurse/Midwife

The registered nurse/midwife is an individual trained to care for the sick and to render optimum care to a pregnant woman from the period of pregnancy through delivery. His or her role on the healthcare team is unique. The nurse/midwife plays the role of the manger in the ward by ensuring that there is a caring atmosphere in which all patients receive a high level of care. Though the physician prescribes the medical or surgical treatment for a patient, the nurse makes her own nursing diagnosis. Based on her knowledge of nursing process and expertise, she develops a care-plan. She/he is always in charge of the ward and the figurehead to whom everyone turns to with the expectation that she/he will be able to produce the answers to their many queries. A research project by Pembery (2001) shows that the head nurse can expect to be interrupted, on average, every six minutes. This unique ward-charge role obliges him/her to be both versatile and adaptable and to know how to cope with all situations and/or where to turn to for advice and guidance.

Davies (2002) notes that nurse practitioners have trained to act as surrogate physicians acquiring skills of diagnosis, investigation and treatment of common ailments. He further highlights that the experience of the nurse practitioner in USA has shown that the nurse can be as effective as a doctor in making initial assessments of patients, diagnosing and treating certain acute illness and supervising chronic disease care and therapy (e.g. hypertension). Nurse practitioner training involves a five year degree at a University for a Bachelor Degree in Nursing Science or three years of full time training in a Council-approved nursing school for a Certificate in Nursing as a Registered Nurse. An eighteen (18) month course in a Council-approved midwifery school is required for a Certificate as registered midwife. Acquisition of either or both certificates qualifies the candidate to enter into the licensing procedures authorized by the Nursing and Midwifery Council of Nigeria to fully practice as a professional nurse or midwife or both.

The Clinical Laboratory Scientist

Clinical laboratory services form an integral part of overall health services and have as part of their objectives, the provision of results that are reliable, timely and interpretable. According to Ojule (2004), without reliable laboratory support: (1) patients are less likely to receive the best possible care, (2) resistance to essential drugs will continue to spread, (3) the source of diseases may not be identified correctly, (4) the spread of major communicable diseases will not be checked reliably, and (5) valuable financial and human resources may be diverted to ineffective treatment and control measures.

The clinical laboratory scientist is involved in the production of a clinical laboratory result. To produce a laboratory result, a specimen must be obtained by the scientist or other member of the team. He/she then analyses the specimen in the laboratory and the result is transmitted to the doctor. An error at any point during acquisition, processing, analysis and reporting of the laboratory test can invalidate the quality of the analysis and cause the laboratory to fall short of its objectives. To avoid this and ensure that the laboratory performs effectively, there are guidelines that ensure that every step from the acquisition of the sample to the reporting of the result is carried out in accordance with prescribed procedures.

A clinical laboratory scientist usually has a five year Bachelor Degree with a Major in Medical Technology. A clinical laboratory technician has either an Associate's Degree or a Certificate of three to four years of training. As mentioned, laboratory scientists and technicians play a crucial role in the detection, diagnosis and treatment of diseases. The complexity of tests performed, the level of judgment needed, and the amount of responsibility assumed depends largely on the education and experience of the scientist/technician.

The Pharmacist

The pharmacist is an expert in the field of medicinal products. The former president of the Pharmaceutical Society of Nigeria, Akinkugbe, (as cited in Onyekwere, 2004) stated that the pharmacist has detailed knowledge of all aspects of medicines including formation, side effects, and possible interactions. He or she is thus an important link in the process leading to a decision on the choice of medication for a patient. Once the decision of the physician has been made, there is need for a team approach between the pharmacist and the nursing staff. This co-operation helps to ensure that no doubt exists in the minds of those who will administer the medication about the proper dosage, time of administration, and any precautions to be taken in its use.

Akinkugbe buttressed the point that for too long, the pharmacist in Nigeria was isolated in what was called "the hospital dispensary". Over time, other health professionals such as the physician and the nurse realized that they could discuss any problem with the pharmacist at ward level. This helped in the establishment of the pharmacy department as the recognized source of information about medical products in the hospital. The pharmacist is given special responsibility for the organization of an efficient information service part of which involves liaising with colleagues in the pharmaceutical industries who have intimate knowledge of the products marketed by their companies.

In addition to organizing efficient information, the pharmacist also plays an advisory role. He or she carries out the necessary checks on doses and possible drugs interaction of concurrently prescribed medicines. He or she also ensures that the patient is absolutely clear about the dose to be administered and is given all necessary advice or caution about the use of drugs. Akinkugbe noticed that the advisory role of the pharmacist is assuming greater and greater importance as the sophistication and potency of medicine increases and as the danger of possible side effects becomes more apparent. There is firm evidence that verbal directions given by physicians are seldom accurately remembered, and when one is dealing with potent medicines, remembering half of what one has been told can be just as dangerous as remembering nothing at all. Akinkugbe argues that this should be more clearly recognized by physicians and that physicians should depend upon their pharmacist colleagues to ensure that directions are conveyed to the patient in the much less formal atmosphere of the pharmacy. Pharmacist training consists of a five year degree course.

THEORETICAL FRAMEWORK

Tuckman's Teamwork Theory

Tuckman describes working with a team of social psychologists on behalf of the U.S. Navy. The team studied small group behaviour from several perspectives. In doing so, Tuckman reviewed fifty articles on group development and noticed that there were two features common to these small groups: the interpersonal or group structure and the task activity. From this he concluded that groups evolved into teams through four common stages.

He tried to describe them as an orientation testing phase which often led to a period characterized by a degree of conflict. This generally resolved itself, leading to a more socially cohesive phase. Finally, groups settled into a functional phase, during which they focused on role-relatedness. Tuckman coined the terms forming, storming, norming and performing to summarize these four phases (Chapman, 2009).

Tuckman's teamwork theory is illustrated in the graph below which shows the link between group relationships (the horizontal axis) and task focus (the vertical axis). The optimal or performing position is reached when relationships have developed within the group and it has started delivering with a clear focus on the task. Tuckman's ideas clearly indicate, however, that it takes time to reach the performing stage and that it is normal for teams to go through ups and downs as they develop relationships. This is particularly true in the early period, which is why Tuckman called it the storming phase**.**

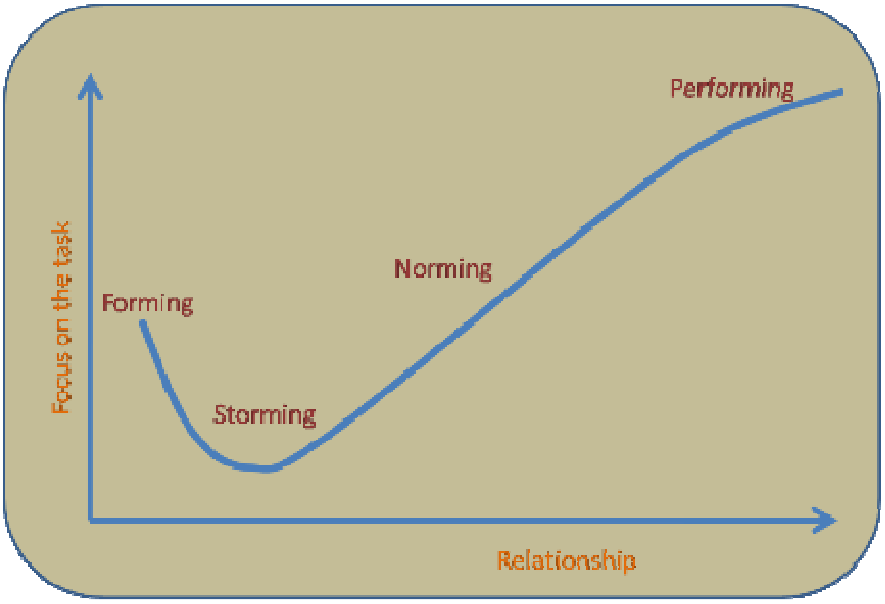


Figure 1: The Four Phases of Tuckman's Teamwork Theory

Forming: This is the initial stage of team development during which individuals have not yet gelled, everybody is finding their place in the team, sizing each other up, and asking themselves why they are there.

Storming: In this second stage, people begin to see themselves as part of a team. At this stage they may challenge each other and the team leader about such things as what the team is doing, and how things should be done. As the stage title suggests, conflict and confrontation typify this stage, as differences surface. This may result in some loss of performance or focus on the task, as the diagram illustrates**.**

Norming: This is the phase where team members start to come together, develop processes, establish ground rules, and clarify who does what, and how things will be done. This phase is characterized by a growing sense of "togetherness".

Performing: This is the final stage where increased focus on both the task and on team relationships, combines to produce synergy. Performance is delivered by people working effectively together.

The relevance of Tuckman's model to this study of inter-professional collaborative practice for better patient care and encouraging teambuilding in healthcare lies in its capacity to help us understand how teams evolve. It also gives us some insight into understanding how teams encounter different problems at different stages of their development. Nonetheless there are limitations to the model. Firstly, it makes team building appear too linear and sequential. Secondly, it does not help in determining how one should lead at the different stages of team development. Lastly, outside influence or factors are not taken into consideration in the model. Although it remains a useful analytical tool, it is important to remember that some teams may "loop" around in their development as not all teams evolve smoothly through Tuckman's stages but may struggle between norming and storming, for example, until they either begin to function, or are disbanded.

HYPOTHESES

The research hypotheses in this study are drawn from the dimensions of the predictor variable and measures of the criterion variable. The predictor variable in the study is inter-professional collaboration, which has the following dimensions: degree of trust, degree of professional diversity, and degree of professional interdependence. The criterion variable is work efficiency in healthcare measured by: time minimization, efficient material resource utilization, and perceived team cohesiveness. The formulated research hypotheses based on this categorization are thus:

- H_1: The more diverse the healthcare professional groups are the higher the strength of perceived team cohesiveness.
- H_2: The more diverse the healthcare professionals are in their expertise in patient care, the higher the efficient use of material resources.
- H_3: The more diverse the healthcare professional groups are the higher the minimization of time in the delivery of care to patients.
- H_4: The higher the level of inter-professional interdependency, the higher the strength of perceived team cohesiveness in patient care.
- H_5: The higher the degree of perceived mutual trust amongst diverse professional groups in a collaborative work setting, the higher the level of perceived team cohesiveness.
- $H_{6:}$ The higher the degree of perceived mutual trust amongst diverse healthcare professionals in a collaborative practice, the higher the minimization of time spent in the delivery of care.
- H_7: The higher the degree of professional interdependency the higher the level of patient satisfaction with respect to patient access to care and attention.

METHOD

Research Design

The research design of this study was correlational and aimed to determine the association between the study variables (selected indices of collaboration and efficiency in healthcare in the secondary healthcare delivery system). A correlational design was chosen because it determines the relationship between two or more variables and normally indicates the direction and magnitude of the relationship (if any).

This study was carried out in twenty Local Government Areas in Rivers State that have General/Cottage Hospitals. Both up land and riverine parts of the state were covered. The remaining three Local Government Areas that were not covered do not have general hospitals but rather health centres. Thirty-five secondary healthcare facilities exist in these LGAs, but as was discovered, only twenty-one are actually functional with almost all categories of healthcare professionals and other groups of workers.

The general hospitals manage all kinds of illnesses depending on their facilities and healthcare professionals. Thus, medical, surgical, obstetric/gynecological, and orthopedic cases visit the General hospitals. Referred cases from the primary healthcare delivery system (i.e. health centres) are taken and managed as well. Cases the hospitals are unable to manage are referred to tertiary healthcare facilities (teaching hospitals) for further and expert management.

Population of the Study

The study population consisted of core healthcare professional groups in general/cottage hospitals in Rivers State. Records made available at the Rivers State Hospital Management Board shows that each Local Government Area in the State has at least one general hospital with the exception of three, the Obio/Akpor, Tai and Oyigbo LGAs. In all, there are thirty-five functional and non-functional general/cottage hospitals. Seven health professional groups were included (medical doctors, registered nurses/midwives, pharmacists/technicians, medical laboratory technologists/technicians, radiologist/radiographers, physiotherapists and medical social workers). Twenty-one (21) functional hospitals with 147 healthcare professional groups were considered as the unit of analysis for the study. Two hundred and ten (210) patients that visited the hospitals during the period of field work were included in the population.

Table 1: Functional General Hospitals Used in the Study

S/N	HOSPITAL	LGA	SENATORAL DISTRICT
1.	General Hospital Isiokpo, Isiokpo	Ikwerre Kelga	Rivers South East
2.	General Hospital Ubima	Ikwerre Kelga	Rivers South East
3.	General Hospital Elele Alimini	Emohua Emolga	Rivers South East
4.	General Hospital Emohua	Emohua Emolga	Rivers South East
5.	General Hospital Okehi	Etche	Rivers South East
6.	General Hospital Eberi	Omuma	Rivers South East
7.	General Hospital Okirika	Okirika	Rivers South East
8.	General Hospital Ogu	Ogu/bolo	Rivers South East
9.	Braithwaite Memorial Hospital P.H.	Phalga	Rivers South East
10.	General Hospital Omoku	Onelga	Rivers West
11.	General Hospital Ahoada	Ahoada West	Rivers West
12.	General Hospital Abua	Abua/Odual	Rivers West
13.	General Hospital Buguma	Asalga	Rivers West
14.	General Hospital Abonnema	Akulga	Rivers West
15.	General Hospital Joinkrama	Ahoada West	Rivers West
16.	General Hospital Edagberi	Ahoada West	Rivers West
17.	General Hospital Bori	Khana	Rivers East
18.	General Hospital Bodo	Gokana	Rivers East
19.	General Hospital Nchia Eleme	Eleme	Rivers East
20.	General Hospital Opobo	Opobo/Nkoro	Rivers East
21.	General Hospital Bonny	Bonny	Rivers East

Sample and Sampling Technique

A purposive sampling method was used to choose twenty-one functional general/cottage hospitals out of a total of thirty-five in the Local Government Areas of Rivers State. Across these twenty-one hospitals, 147 healthcare teams were identified and studied. This complies with Zikmund's (2003) contention that a researcher studies the whole population when the number of units is sizeable or small enough for him or her to handle. An accidental sampling technique, on the other hand, was used to administer the patient satisfaction survey form to 210 patients.

Data Collection Techniques

The main data collection device for this study was a research questionnaire. This was supported by a structured patient satisfaction survey form. These tools were preferred in this study because of the choice of the survey research design. Relevant and available secondary (documentary) data available to the researcher were also used.

The adoption of the questionnaire as the major data collection method, and the supportive survey form, introduced into the study the need for and implications of social sciences quantitative data analysis (Ahiauzu, 2006 and Smith& corner, 2003). This approach is, in turn, rooted in the philosophical traditions of positivism and idealism.

Research Instrument

Two instruments were used for this study. They included the Teamwork Assessment (perception) Scale and Patient Satisfaction Survey Form. Both were developed by the researchers to assess the following dimensions of collaborative practice: professional diversity, mutual trust and interdependence, all in relation to efficiency in healthcare with its measures as material resource utilization, time minimization, team cohesiveness and patient satisfaction.

The first instrument consisted of three sections: A, B and C. Section A was designed to elicit personal information from the respondents such as name and location of hospital, years of service and professional category. Section B which contained ten (10) statement items was designed to collect information on dimensions so as to ascertain perceived collaborative practice among the healthcare professionals. Section C contained nine (9) statement items meant to elicit information from the respondents on measures of work efficiency in the secondary healthcare system. In total, the instrument contained twenty four (24) items. These items were responded to on a five-point Likert-type scale of strongly agree (SA), agree (A), undecided (U), disagree (D) and strongly disagree (SD).

The second instrument, the patient satisfaction survey form, was developed to assess how satisfied patients were with the services of the healthcare teams in the various hospitals. It was designed to elicit information about the nature of the services provided by healthcare teams including politeness and sympathy, time spent waiting to be attended to, availability of prescribed drugs, etc. There were eight (8) items on the survey form that were responded to on a five-point Likert-type scale of very satisfied (VS), satisfied (S), average (A), somewhat dissatisfied (SD) and very dissatisfied (VD).

Validity and Reliability Test

This study adopted the Crombach alpha test (.824) to determine the validity and the reliability of the research instrument. Zikmund (2003) contends that construct validity is established by the degree to which the measure confirms a network of related hypotheses generated from a theory based on the concepts. In construct validity, the empirical evidence is consistent with the theoretical logic about the concepts. This occurred in the analysis of the data. In its simplest form, the instruments measured what they were supposed to measure, in a pattern of intercorrelation with a variety of other variables (Sonquist and Dunkelburg, 1977). Professional colleagues and expert opinions subsequently enhanced the intended (face) validity of the measurement instruments.

Data Analysis Techniques

Data analysis involves the presentation of data in an understandable form. In this study, data was organized in frequency tables and percentages to show pattern of responses to each of the independent and dependent variables under investigation. Figures were also used to create visual impressions of the data. Mean and standard deviation were used to describe the distribution of scores as were other necessary descriptive measures which preceded the testing of formulated null hypotheses. Considering the aim of the study, and its causal nature, this study adopted Spearman's rank order correlation coefficient to test the bivirate hypotheses. The actual operation of these analyses and statistical models was done using the Statistical Package for the Social Sciences (SPSS).

RESULTS

Data Cleaning

As shown in Table 2, 147 copies of the questionnaire were distributed and 138 (94%) were retrieved. These 138 were then subjected to a data cleaning exercise. The data cleaning process involves checking the responses on every item on the questionnaire for conformity. This screening was done to avoid using questionnaires with double entries on response options, unanswered questions, unidentified respondents and copies of the questionnaire with mutilated pages. After a thorough examination, fifteen copies of the questionnaire were screened out and 123 were retained for analysis.

Table 2: Questionnaire Response Rate & Data Cleaning

Professional Categories of Respondents	Number Distributed	Number Retrieved	Usable (%) Copies
Medical Doctors	28	28	25
Nurse midwives	31	29	27
Pharmacists/Technicians	31	31	29
Radiologists/Radiographers	11	9	7
Physiotherapists	10	8	6
Lab. Scientists/Technicians	30	29	27
Medical Social Workers	6	4	2
Total	147(100%)	138 (94%)	123 (89%)

Descriptive Analysis

The demographic section of the data analysis helped to identify and categorize the respondent based on years of service and professional category.

Table 3: Professional Category of Respondents

P

PROFESSIONAL CATEGORY OF RESPONDENTS		Frequency	Percent	Cumulative Percent
Valid	MEDICAL DOCTOR	25	20.3	20.3
	NURSE/MIDWIFE	27	22.0	42.3
	PHARMACIST/TECHNICIAN	29	23.6	65.9
	RADIOLOGIST/ RADIOGRAPHER	7	5.7	71.5
	PHYSIOTHERAPIST	6	4.9	76.4
	LAB. SCIENTIST/TECHNICIAN	27	22.0	98.4
	MEDICAL SOCIAL WORKER	2	1.6	100.0
	Total	123	100.0	

As shown in Table 3 and Figure 2 (below), medical doctors represent 20.3% of the 123 respondents; nurse midwives represent 22.0%; pharmacists represent 23.6%, radiologists represent 5.7%, physiotherapists represent 4.9%, lab Scientists represent 22.0%, and medical social workers represent 1.6%. Respondents thus came from different professional groups to make-up the healthcare teams and contribute their various professional skills to the management of patient care. The table also reveals, however, that some professional groups do not exist in some hospitals, hence the inadequate composition of some healthcare teams which may affect the delivery of services and achievement of team goals. This observation warrants a serious concern for healthcare managers should the secondary healthcare system aspire to provide quality healthcare services to all patients.

Figure 2: Bar Chart on Professional Category of Respondents

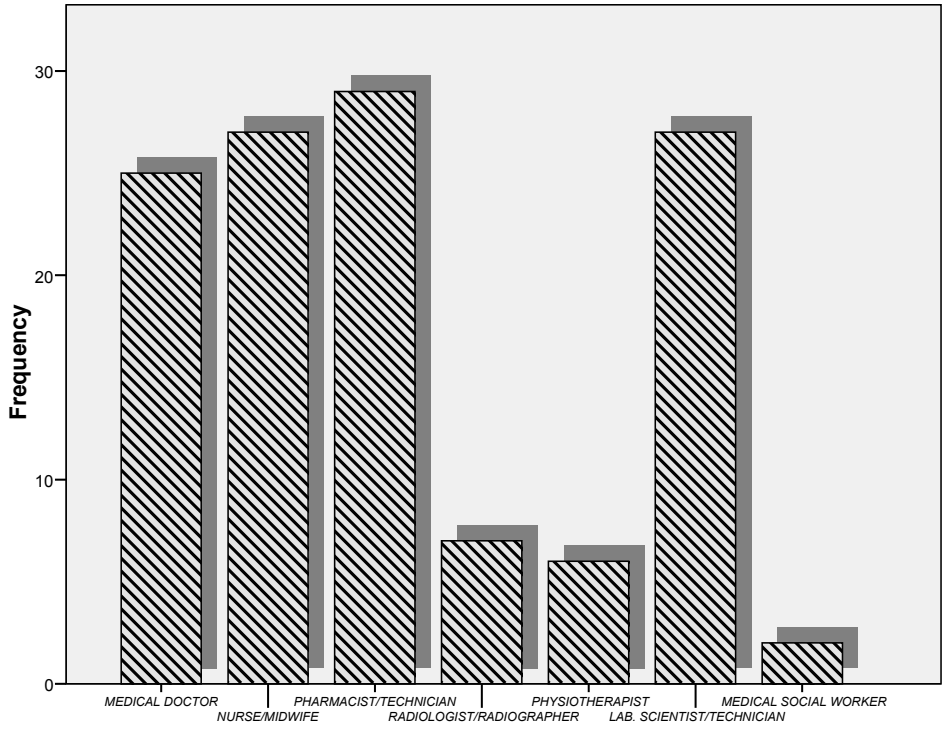


Table 4: Respondents' Years of Service

RESPONDENTS' YEARS OF SERVICE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	LESS THAN 1 YEAR	1	.8	.8	.8
	1-3 YEARS	5	4.1	4.1	4.9
	4-6 YEARS	12	9.8	9.8	14.6
	7-9 YEARS	25	20.3	20.3	35.0
	10 YEARS AND ABOVE	80	65.0	65.0	100.0
	Total	123	100.0	100.0	

Figure 3: Bar Chart on Respondents' Years of Service

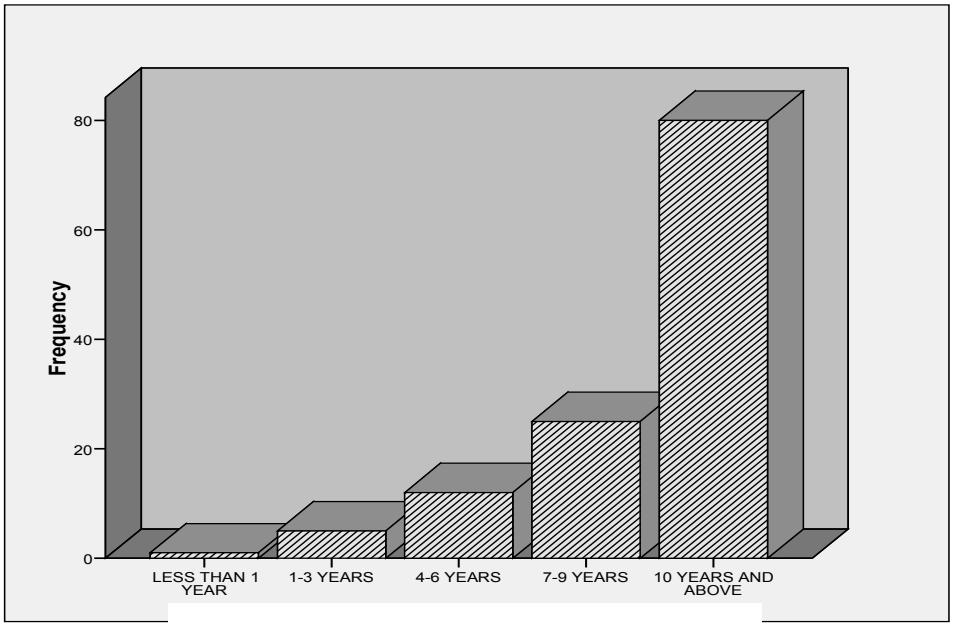


Table 4 and Figure 3 indicate respondents' years of service. Of the 123 respondents, 1 representing 0.8% has less the one year of service; 5 representing 4.1% have between 1 and 3 years of service; 12 representing 9.8% have between 4 and 12 years of service; 25 have between 7 and 9 years of service; and 80 respondents have 10 or more years of service. These results imply that the great majority of respondents have been in service for a very long time and have had significant experience working other professionals in the healthcare industry.

Univirate Analysis of Study Variables

This study involved two major variables: inter-professional team work – the predictor variable, and work efficiency in healthcare – the criterion variable. The dimensions of inter-professional collaboration considered in this study are professional diversity, professional interdependence, mutual trust. The measures of healthcare work efficiency are: material resource utilization, time minimization, level of team cohesiveness and patient satisfaction. In this section, unvaried analysis of these dimensions and measures of the predictor and criterion variables is performed using descriptive statistics. Frequency distribution tables, showing the frequency of observation and analysis of responses to the variables using mean and standard deviation tools, are presented.

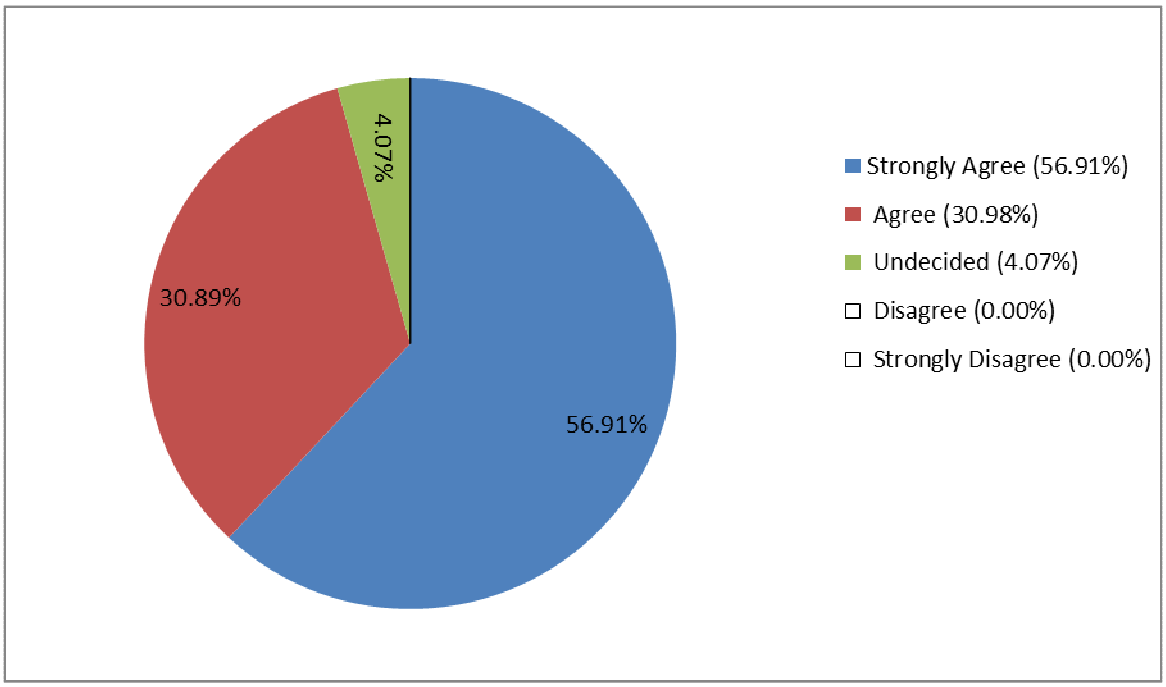
Table 5: Descriptive Analysis of Professional Diversity

Descriptive Statistics

	N	Sum	Mean	Std. Deviation
My profession is quite different from those of my team members	123	462	3.76	1.270
Other team members can do my bit of professional requirement in our teamwork	123	419	3.41	1.536
The skills of team members in a healthcare team are overlapping	123	420	3.41	1.454
Valid N (listwise)	123			

Table 5 shows the sum of the scores for the three statement items above as 462, 419 and 420 respectively with corresponding mean scores of 3.76, 3.41 and 3.41. The respective standard deviations are 1.270, 1.536, and 1.454. Respondents agreed with the statement item: 'my profession is quite different from those of my team member' with a mean score of 3.76. Surprisingly, they also tended to agree with the statement items 'other team members can do my bit of professional requirement' and 'the skills of team members in a healthcare team are overlapping' with mean scores of 3.41and 3.41 respectively which are above the criterion mean cut-off point of 3.0 of acceptance. This implies that although the professions are distinct from each other, the professionals have some sense of the jobs of the others. This of course, makes room for the detection and correction of mistakes and in some situations allows team members to stand in for each other. These types of understandings are an essential part of teamwork.

Figure 4: Pie Chart Showing Percentage Responses for Professional Diversity



Results as displayed in Figure 4 indicate that the majority of respondents agreed (strongly agree, 56.91% and agree, 30.98%) with the item statements intended to elicit information on their perception of the diversity of professional skills and functions. A very low aggregate percentage of respondents (4.07%) were undecided.

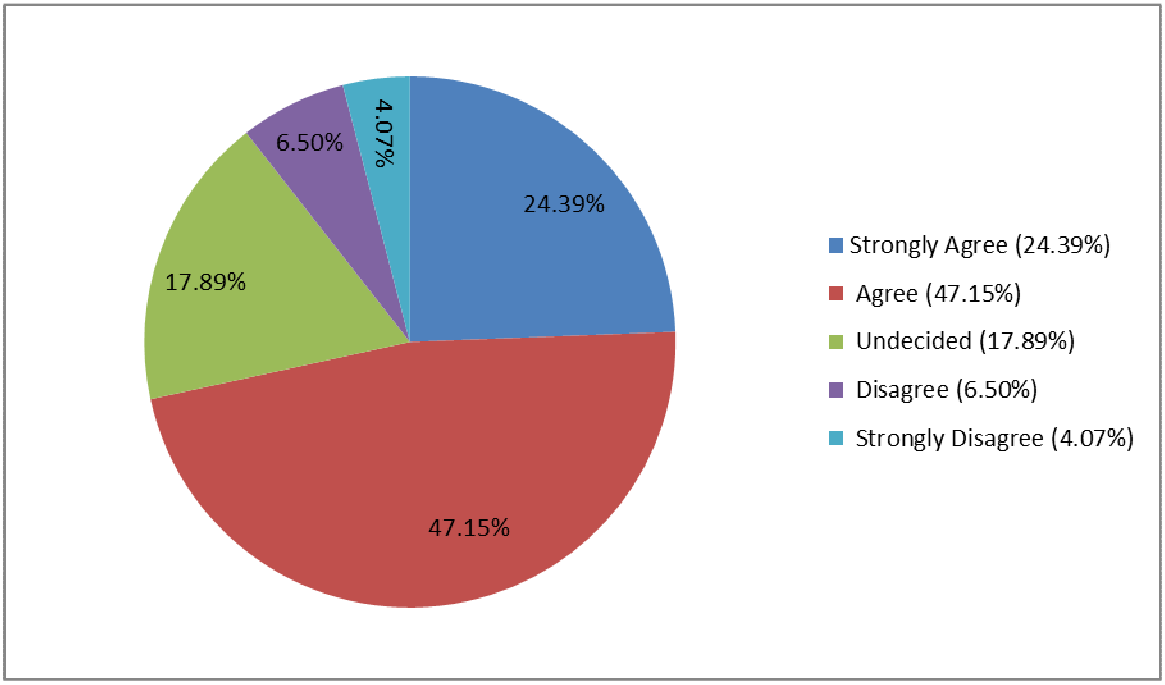
Table 6: Descriptive Analysis of Professional Interdependence

Descriptive Statistics

	N	Sum	Mean	Std. Deviation
I largely depend on the report/work of other professionals in the team to effectively carry out my own functions	123	455	3.70	1.342
It is possible that one professional group can carryout the functions required in a healthcare service	123	242	1.97	1.221
There is no professional skill that is inevitable in the delivery of a healthcare service	123	399	3.24	1.528
Valid N (listwise)	123			

As shown in Table 6, the aggregate response frequencies on the three statement items are: 455, 242 and 399, with mean scores of 3.70, 1.97, and 3.24 and standard deviations of 1.342, 1.221 and 1.528 respectively. The high mean score of 3.70 revealed that the different professional groups largely depend on the reports/work of others to work effectively. This is confirmed by the very low mean score of 1.97, far less than the criterion mean cut-off of 3.0, for those disagreeing with statement that, 'it is possible that one professional group can carry out the functions/services required in a healthcare delivery system'. Respondents also agreed with the statement that, 'there is no professional skill that is inevitable in the delivery of a healthcare service' implying a higher degree of interdependence among healthcare professionals in turn influencing work efficiency.

Figure 5: Pie Chart Showing the Percentage Responses on Professional Interdependence



Based on the percentages shown in the above figure on the level of interdependence among the diverse professional groups in the healthcare system, it is evident that team players depend on each other to effectively meet the demands of their patients. The aggregate percentage scores of 4.07% for "strongly disagree" and 17.89% for "undecided" is, however, quite striking. This may have arisen from responses to the item statement in Table 6 – there is no professional skill that is inevitable in the delivery of healthcare services. Though the aggregate mean score is high (3.24), the dispersion is great suggesting that the degree of interdependence reflected by the mean is not common to all the respondents in the teams studied.

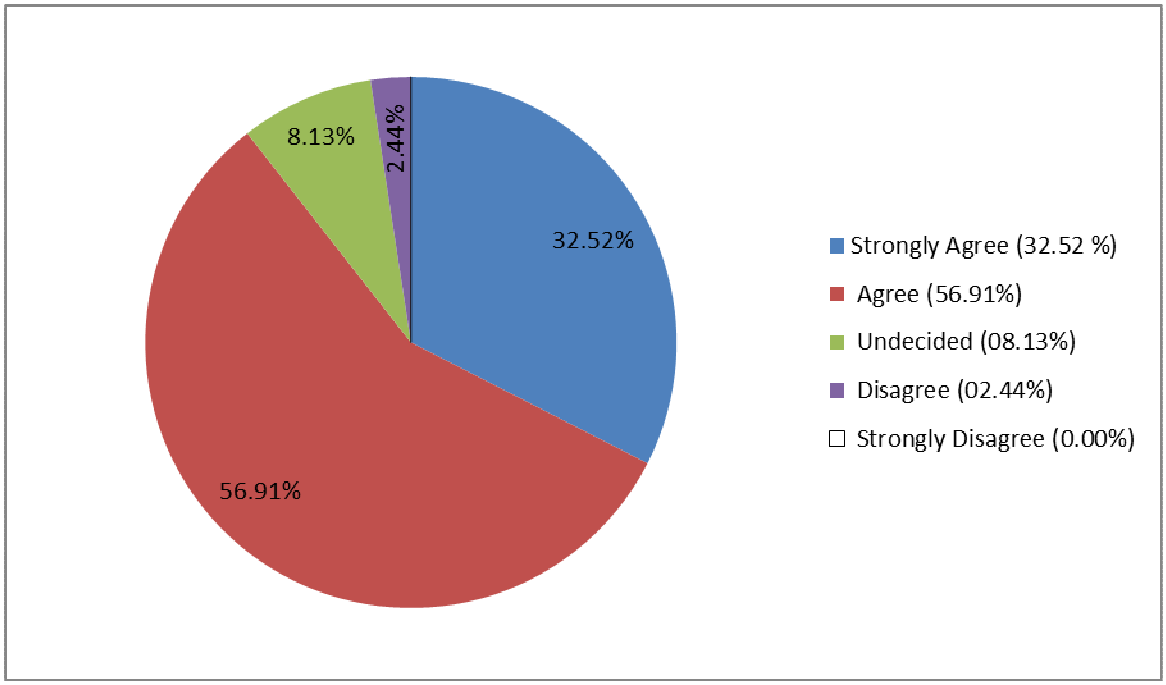
Table 7: Descriptive Analysis of Mutual Trust

Descriptive Statistics

	N	Sum	Mean	Std. Deviation
I have confidence in the reports/work of other professional team members in the performance of my job in healthcare service delivering	123	509	4.14	1.011
Other professional members in my team rely on my professional input in the discharge of healthcare service in our hospital	123	533	4.33	.893
My team members communicate openly and authentically with one another and different points of view are encouraged	123	531	4.32	.871
Valid N (listwise)	123			

In terms of the items intended to elicit information on the degree of mutual trust among members for work efficiency, Table 7 (above) shows aggregated response frequencies of 509, 533 and 531, and mean scores of 4.14, 4.33 and 4.32, with corresponding standard deviations of 1.011, .893 and 871. The majority of respondents accepted that 'they have confidence in the reports/works of other members in the team to perform their job' with high mean scores of 4.14 and 4.33 respectively. Respondents also agreed that communication is open and members encourage different points of view as revealed by a high mean score of 4.32. This, in turn, indicates a high level of mutual trust and confidence among health professionals. A climate of openness and trust fosters collaborative attitudes between professionals (Evans, 2008).

Figure 6: Pie Chart Showing Percentage Responses on Mutual Trust



As shown in the above figure, the vast majority of respondents perceived the existence of mutual trust among them given the agreement options of Agree (56.91%) and (Strongly Agree) 32.52%. A very low percentage of respondents (2.44%) disagreed with the statements and 8.13% were indifferent. While there are thus differences in feelings about the perceived mutual trust, the relatively low corresponding standard deviations for the mean scores of the item statements, of course almost identical in Table 7, prove the existence of high levels of trust in the system.

Table 8: Descriptive Analysis of Material Resource Utilization

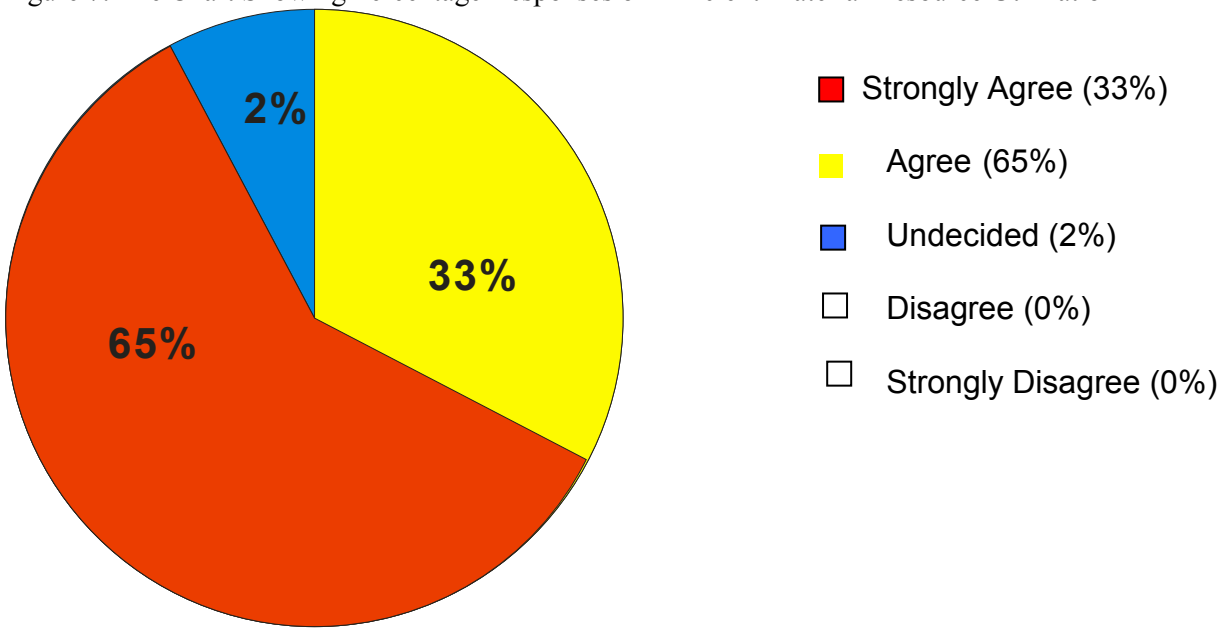
Descriptive Statistics

	N	Sum	Mean	Std. Deviation
Available healthcare material resources are adequately deployed to the hospital for our healthcare service delivery	123	347	2.82	1.355
Our healthcare delivery team has experienced adequate use of available material resources	123	472	3.84	1.217
Our healthcare delivery team has minimal wastage and loss of health material resources	123	517	4.20	.923
use in our operation				
Valid N (listwise)	123			

Table 8 shows the material utilization outcomes for the healthcare institutions included in this study. The aggregated frequencies for responses to the three items are 347, 472 and 517 points with mean scores of 2.82, 3.84, and 4.20 points and standard deviations of 1.335, 1.217 and 923 points. This suggests that the loss or wastage of work materials is minimized in hospitals given the high mean scores of 3.84 and 4.20. Nonetheless, teams struggle with the inadequate

deployment of the material resources needed to work efficiently. The response to the corresponding item has a mean score of 2.82 which is less than the criterion mean cut-off of 3.0. It is thus a rejection of the statement by the respondents. To achieve the goals of the health system, the necessary materials must be provided to the team by managers of the organizations. This supports the findings of Way et al, (2009), Siegler & Whitney, (2001) and Lemieux-Chartes & McGuire, (2006) from their field studies which demonstrated that organizational culture and structures directly and indirectly influence team outcome, and that organizations need to provide appropriate resources and tools to support the implementation and maintenance of teamwork so as to enable teams to achieve their targets or objectives (Mathieu et al, 2001). Hackman (2002) likewise noted that one of the three contextual factors that appears to be most significantly related to team performance is the presence of adequate resources.

Figure 7: Pie Chart Showing Percentage Responses on Efficient Material Resource Utilization



An overwhelming number of respondents agreed that available working materials are used efficiently by team members: strongly agree (33%) and agree (65%) as shown in Figure 8 (above). No respondents disagreed or strongly disagreed that team members used available resources efficiently.

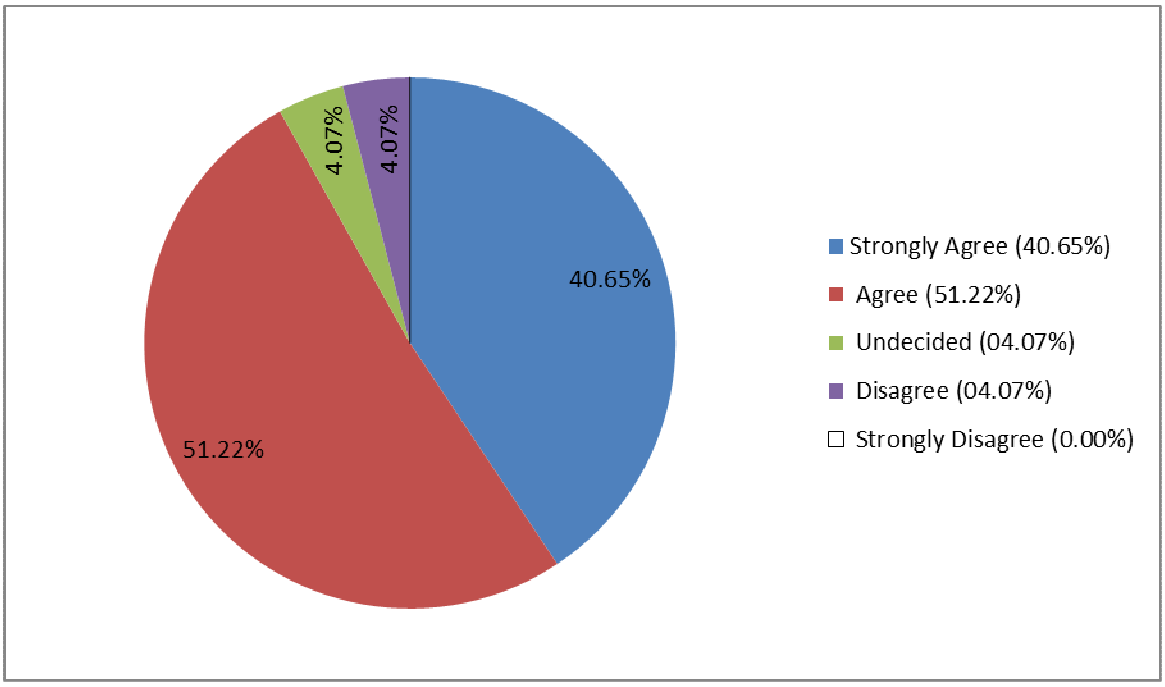
Table 9: Descriptive Analysis of Time Minimization

Descriptive Statistics

	N	Sum	Mean	Std. Deviation
There is an ap0precialbe reduction of patients waiting time for medical attention in our healthcare institution	123	480	3.90	1.237
The expected time for the delivery of reports/response from other team s professional is appreciably minimal	123	503	4.09	1.016
On the average, there is serious improvement in patients recovery time due to attention form healthcare team members	123	536	4.36	.811
Valid N (listwise)	123			

Responses to statement items indicate a serious improvement in patient recovery time as a result of attention from team members. Table 9 (above) shows aggregate frequencies for responses to items on time minimization in the delivery of healthcare. The sums are 480, 503 and 536, while the corresponding mean scores are 3.90, 4.09, and 4.36 points, with respective standard deviations of 1.237, 1.016 and 811. The high mean scores for these statement items confirm that respondents accept the statements to be true.

Figure 8: Pie Chart Showing Percentage Responses on Time Minimization



The results presented in Figure 8 (above) show that 40.65% of respondents felt that there has been a reduction in patient wait-time for medical attention as well as a reduction in the expected delivery time for reports/responses from other team members. Table 9 confirms identical mean scores with relatively low standard deviations for the item

statements. A few of the respondents, however, were undecided (4.07%) and few did not share the positive perceptions of the majority (4.07%).

Table 10: Descriptive Analysis of Level of Team Cohesiveness

Descriptive Statistics

	N	Sum	Mean	Std. Deviation
There is high feeling of cohesion in the delivery of healthcare service in my team, which has reflected on patients lengths of stay, depending on the condition	123	526	4.28	1.043
There is mutual consultation and understanding among professionals in the delivery of healthcare service in my hospital	123	516	4.20	.972
Essentially, tasks and responsibilities are handled by every team member with serious enthusiasm in the delivering of healthcare in hospital, which has reasonably lowered the rate of re-admission of our patients	123	520	4.23	.939
Valid N (listwise)	123			

As shown in Table 10, the aggregate response frequencies on team cohesiveness are 509, 533, and 531. The mean scores are 4.14, 4.33 and 4.32, which are all above 3.0 (the criterion mean cut-off). The respective standard deviations are 1.011,893 and 871. These results indicate a perceived high level of team unity among healthcare professionals and a willingness to be part of a team. According to Heinemann et al (2006), group cohesion is one of the key indicators of the willingness of individuals to be part of a team.

Figure 9: Pie Chart Showing Percentage Responses on Team Cohesiveness

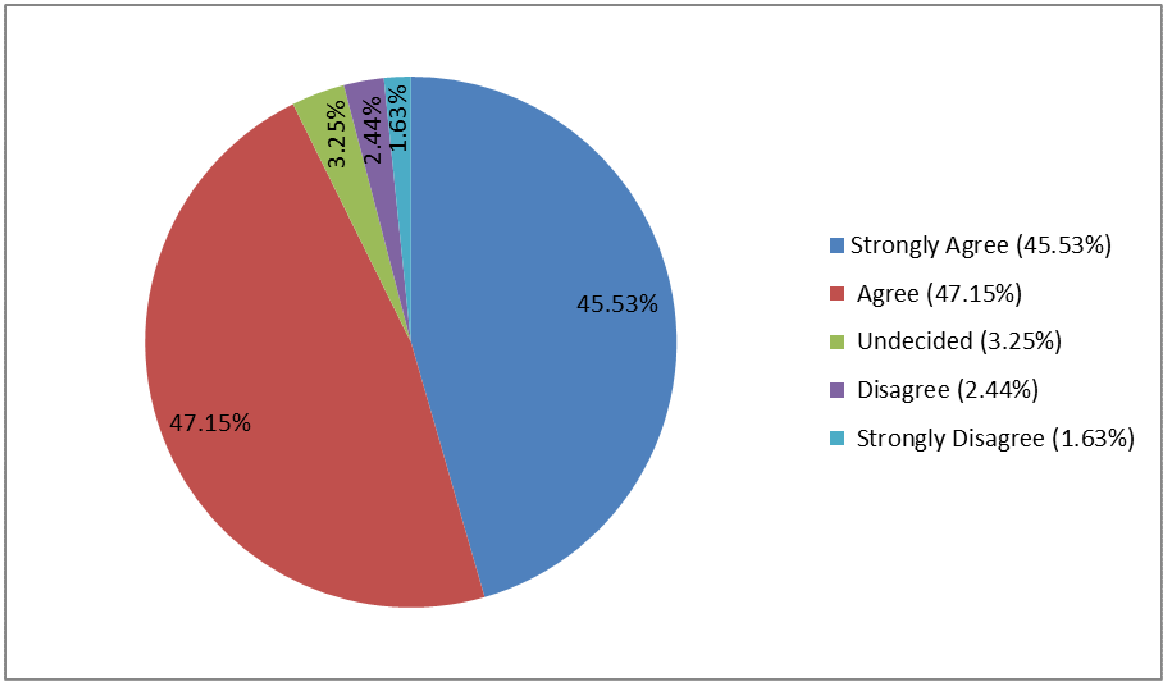


Figure 9 (above) shows an overwhelming majority of the respondents (strongly agree at 45.53% and agree at 47.15%) agree with the statement items related to the perception of team members on team cohesiveness. This is also reflected in the almost identical mean scores in Table 12 suggesting that these respondents are homogeneous as far as their high perception of team cohesiveness; that is, the professional groups have a cohesion score that is close to their group's mean score. Some respondents, however, disagreed with the stated statements in Table 12 a while few were indifference to the statements, 2.44%, 3.25% and 1.63% respectively.

Analysis of Level of Patient's Satisfaction

The eight (8) items on the Patients' Satisfaction Survey Form were responded to with "Very satisfied", "Satisfied", "Average", "Somewhat dissatisfied" and "Very dissatisfied". For analysis purposes, the means of the items and the grand mean were calculated by quantifying response as "Very satisfied" = 5 points, "Satisfied'' = 4 points "Average" = 3 points "Somewhat dissatisfied'' = 2 points and "Very dissatisfied" = 1 point.

Table 11: Assessment of Level of Patients' Satisfaction

	ITEMS	MEAN	RESULT
1.	Politeness and sympathy	3.3	Average satisfaction
2.	Efficiency and professionalism	3.8	Satisfied
3.	Time spent waiting to be attended to	2.8	Some what Dissatisfied
4.	Availability of the healthcare personnel when needed	3.6	Satisfied
5.	Availability of prescribed drugs	3.2	Somewhat dissatisfied
6.	General neatness and tidiness of the wards /hospitals	3.7	Satisfied
7.	Availability of running water	3.4	Average
8.	Availability of electrical power	2.3	Somewhat dissatisfied

Grand mean = 3.3 which is equivalent to the response category of average satisfaction.

In the above table, the first item had a mean of 3.3 indicating that patients were averagely satisfied with healthcare personnel in terms of their display of politeness and show of sympathy. Some patients actually commented that some personnel were not polite and friendly. In the area of display of efficiency and professionalism as they attend to their

clients, respondents were satisfied with team services as the mean of 3.8 is above the grand mean of 3.3 (average). This finding is not surprising because the State Ministry of Health seeks to ensure that qualified professionals are employed in the healthcare system. The results also revealed that patients were somewhat dissatisfied (mean 2.8) with the time spent waiting to be attended to. Eleven of the respondents from Braithwaite Memorial Specialist Hospital and Bori General Hospital, for example, cited instances of waiting to be attended to by nurses before seeing doctors because of the number of patients.

Patients were satisfied (mean 3.6), however, with the availability of healthcare personnel when needed. Respondents were somewhat dissatisfied with regards to the availability of prescribed drugs. Some noted that they could hardly get all the drugs prescribed by the doctors in the hospital pharmacy. They bought what they could and had to procure the remaining drugs outside of the hospitals. Patients were satisfied with the general tidiness of the wards (mean 3.7) and averagely satisfied with the availability of running water. Some complained that the hospitals seemed to run short of water when the water pumping machine failed to work, the hospital power generating plant failed to work, or sufficient diesel wasn't available for the plant.

Respondents were somewhat dissatisfied with the regular electrical power supply or lack thereof. Most patients felt that the hospitals didn't know that PHCN light exist, rather they used generating sets to supply light whenever a doctor was operating in theatre and for a few hours at night. In fact, a few respondents suggested that government should caution PHCN officials to deny hospitals light because many patients and their relations become frightened in the night and this can worsen patient conditions. Some observed that the hospitals looked/felt like graveyards when there is no light and the majority of hospital staff have gone home for the night.

Bivariate Analysis of the Hypothesized Relationships

The null hypotheses formulated in this study were tested using Spearman's Rank Order Correlation Coefficient given as 'r' value. The Statistical Package for Social Sciences (SPSS) Software was used in the calculation of 'r'. Kerlinger and Lee (2000) as argued in Irving (2005, p-16) give guidelines for accepting or rejecting the null hypotheses as follows: (1) r-value of < 0.20 (less than) is the benchmark for accepting the null hypotheses and (2) r value of > 0.20 is the benchmark for rejecting the null hypotheses. In Ahiauzu and Asawo (2010), it is argued that r-value of > 0.20 (greater than) is a benchmark for accepting the alternate hypotheses and r-value of < 0.20 is the benchmark for rejecting the alternate hypotheses.

Guildford's (1956) scale given in Irving (2005, p.16) is used for interpreting the strength of correlation (r) between variables. It is thus stated: (a) < 0.20 = slight correlation, almost negligible; (b) 0.20 to < 0.40 low correlation, definite but small relationship; (c) 0.40 to < 0.70 = moderate correlation, substantial relationship; (d) 0.70 to < 0.90 = high correlation; and (e) 0.90 = very high correlation, very dependable relationship.

Hypothesis one: There is no significant relationship between professional diversity and team cohesiveness in the delivery of healthcare

Table 12: Correlation Analysis Showing the Relationship between Professional Diversity and Team Cohesiveness

Correlations

Type	Variables1	Statistics	PROFESSIONAL DIVERSITY	TEAM COHESIVENESS
Spearman's rho	PROFESSIONAL DIVERSITY	Correlation Coefficient	1.000	-.508
		Sig. (2-tailed)	.	.000
		N	123	123
	TEAM COHESIVENESS	Correlation Coefficient	-.508	1.000
		Sig. (2-tailed)	.000	.
		N	123	123

The result of the test of Ho_1 shows that there is an inverse relationship between professional diversity and team cohesiveness in the healthcare delivery system. This is shown in the correlation coefficient (r-value) of -0.508 in Table 12. Furthermore, the null hypothesis is accepted because the r-value of -0.508 is less than an r-value of < 0.20, (benchmark for accepting null hypothesis) with negligible strength of correlation. This result therefore reveals the

existence of the process of professionalism in the system, which may be characterized by the struggle for dominance, autonomy and control, rather than collegiality and cohesion. This diverges from the views of Heinemann et al (2006). They noted that group cohesion is one of the key indicators of the willingness of individuals to be part of a team. This inverse relationship among team players may be due to an unwillingness of some members to work or be regarded as a member of the health team.

Hypothesis two: There is no significant relationship between professional diversity and efficient material resource utilization

Table 13: Correlation Analysis Showing the Relationship between Professional Diversity and Efficient Material Resource Utilization

Correlations

Type	Variables1	Statistics	PROFESSIONAL DIVERSITY	MATERIAL RESOURCE UTILIZATION
Spearman's rho	PROFESSIONAL DIVERSITY	Correlation Coefficient	1.000	.670
		Sig. (2-tailed)	.	.000
		N	123	123
	MATERIAL RESOURCE UTILIZATION	Correlation Coefficient	.670	1.000
		Sig. (2-tailed)	.000	.
		N	123	123

Table 13 (above) shows a correlation coefficient (r-value) of 0.670. The test results for Ho_2 indicate the existence of a moderate association between professional diversity and efficient material resources utilization in the secondary healthcare delivery system. Furthermore since the r-value of 0.670 is greater than the r-value of 0.20, the benchmark for acceptance, the null hypothesis is rejected and the alternate hypothesis, which states that there is a significant relationship between professional diversity and efficient material resource utilization in the secondary healthcare delivery system, is accepted.

Hypothesis Three: There is no significant relationship between professional diversity and time minimization

Table 14: Correlation Analysis Showing the Relationship between Professional Diversity and Time Minimization

Correlations

Type	Variable	Statistics	PROFESSIONAL DIVERSIY	TIME MINIMIZATION
Spearman's rho	PROFESSIONAL DIVERSITY	Correlation Coefficient	1.000	-.035
		Sig. (2-tailed)	-	.703
		N	123	123
	TIME MINIMIZATION	Correlation Coefficient	-.035	1.000
		Sig. (2-tailed)	.703	.
		N	123	123

The test results for HO_3 show that professional diversity is negatively associated with time minimization. The prescription for decision suggests rejection because the test result shows r = -.035 where the p value = .703. Following Irving (2005), the null hypothesis is therefore accepted because the r value is < .20.

Hypothesis four: There is no significant relationship between professional interdependence and team cohesiveness

Table 15: Correlation Analysis Showing the Relationship between Professional Interdependence and Team Cohesiveness

Correlations

Type	Variables1	Statistics	PROFESSIONAL INTERDEPENDENCE	TEAM COHESIVENESS
Spearman's rho	PROFESSIONAL INTERDEPENDENCE	Correlation Coefficient	1.000	.802
		Sig. (2-tailed)	.	.000
		N	123	123
	TEAM COHESIVENESS	Correlation Coefficient	.802	1.000
		Sig. (2-tailed)	.000	.
		N	123	123

The test results show that professional interdependence is not just related to team cohesiveness but has a high association with the delivery of healthcare services by health professionals. The r-value is 0.802 and so > 0.20 the benchmark for acceptance. Ho_3 is therefore rejected meaning that there is a significant relationship between the variables.

Hypothesis five: There is no significant relationship between mutual trust and team cohesiveness.

Table 16: Correlation Analysis Showing the Relationship between Mutual Trust and Team Cohesiveness

Correlations

Type	Variables1	Statistics	MUTUAL TRUST	TEAM COHESIVENESS
Spearman's rho	MUTUAL TRUST	Correlation Coefficient	1.000	.831
		Sig. (2-tailed)	.	.000
		N	123	123
	TEAM COHESIVENESS	Correlation Coefficient	.831	1.000
		Sig. (2-tailed)	.000	.
		N	123	123

The results of the test for Ho_5 indicate a very strong relationship between mutual trust and team cohesiveness. This is shown in the calculated r-value of 0. 831. This is, by Guilford's 1956 scale, described as a high correlation or marked relationship. The tested null hypothesis is therefore rejected. The alternate hypothesis is accepted. This hypothesis states that there is a significant relationship between mutual trust and team cohesiveness in terms of achieving quality patient care in the healthcare industry.

Hypothesis six: There is no significant relationship between mutual trust and time minimization

Table 17: Correlation Analysis Showing the Relationship between Mutual Trust and Time Minimization

Correlations

Type	Variables1	Statistics	MUTUAL TRUST	TIME MINIMIZATION
Spearman's rho	MUTUAL TRUST	Correlation Coefficient	1.000	.239
		Sig. (2-tailed)	.	.041
		N	123	123
	TIME MINIMIZATION	Correlation Coefficient	.239	1.000
		Sig. (2-tailed)	.041	.
		N	123	123

The test of Ho_6 shows a correlation coefficient of 0.239. According to Guilford's 1956 scale, this represents a very low correlation, which further indicates a small relationship. The prescription for decision suggests rejection because the r-value of 0.239 > 0.20 (the benchmark for acceptance). Ho_7 is therefore rejected. The final result is such that there is a relationship, although it entails a weak association between mutual trust and time minimization in the delivery of patient care.

Hypothesis seven: There is no significant relationship between professional interdependence and patient satisfaction in the delivery of healthcare.

Table 18: Correlation Analysis Showing the Relationship between Professional Interdependence and Patient Satisfaction

Correlations

Type	Variables1	Statistics	PROFESSIONAL INTERDEPENDENCE	PATIENT SATISFACTION
Spearman's rho	PROFESSIONAL INTERDEPENDENCE	Correlation Coefficient	1.000	.802
		Sig. (2-tailed)		.000
		N	1	123
	PATIENT SATISFACTION	Correlation Coefficient	.802	1.000
		Sig. (2-tailed)	.000	.
		N	123	123

The test results show that there is a strong relationship between professional interdependence and patient satisfaction in healthcare delivery. The hypothesis is rejected because r-value 0.802 > 0.20.

Table 19: Summary of Decisions on Null Hypotheses Tested

S/NO	STATE OF HYPOTHESIS	DECISION
Ho_1	There is no significant relationship between professional diversity and team cohesiveness	Accepted
Ho_2	There is no significant relationship between professional diversity and efficient material resource utilization	Rejected
Ho_3	There is no significant relationship between professional diversity and time minimization	Accepted
Ho_4	There is no significant relationship between professional interdependence and team cohesiveness	Rejected
Ho_5	There is no significant relationship between mutual trust and team cohesiveness	Rejected
Ho_6	There is no significant relationship between mutual trust and time minimization	Rejected
Ho_7	There is no significant relationship between professional interdependence and patient satisfaction	Rejected

DISCUSSION OF FINDINGS

Professional Diversity and Team Cohession

The test for an association between professional diversity and team cohesiveness indicated not only the lack of a relationship, but the presence of negative correlation. In other words, professional diversity is inversely related to team cohesiveness. This appears to buttress Robins (2005) argument that diversity in groups tends to create demarcation among heterogeneous entities in the homogenous unit. These smaller diverse units thus tend to struggle for identity, superiority, status, resources, uniqueness, and fame, which further highlight their distinction over their sameness.

D'Amour,(2008) argued that whereas the development of collaborative practice depends on the mutual recognition by professionals of their interdependence as well as the acceptance of 'grey zones' where their respective contributions may overlap, the dynamics of professionalization lead to a differentiation of professionals and to territorial behaviors within the team. It is further pointed out by Clark (2007) that during the professional socialization phrase, health professionals are immersed in the philosophies, values and basic theoretical perspectives inherent to their respective professions. Such differences between the various professionals are potential sources of conflict and hinder the development of a true collaborative practice.

Considering the professional diversity that naturally exists in the delivery of healthcare services in the health sector, it is expected, based on the argument above, that these doctors, nurses-midwives, pharmacists, laboratory technologists, radiographers, and medical social workers will pursue self-serving goals to strengthen their own ego/prestige and economic gains. This study has indeed found that the in-cohesive nature of healthcare medical teams is caused by professional differences that breed struggles for professional identity, power and economic self-interest.

Professional Diversity and Efficient Material Resource Utilization

Tests of the relationship between professional diversity and efficient material resources utilization show a positive and significant association. The diversity in terms of skills indicates the need for different materials in the dispensation of healthcare services. Since each professional category in the healthcare system tends to be largely unique in its material resource requirements and usage, the politics of material interdependence tends to be very weak or absent. The absence of self-serving-based competition around who uses which materials for which professional interest tends to make for efficiency in material resources utilization. This corroborates the argument by Pfeiffer (1982) that in population ecology, dependence on the same resources by members of the population leads to utilization problems because interest is diverted from economic utilization to political utilization. Conversely, resources tend to be properly utilized when they are unique to a work unit. This study found that efficiency in material resources utilization in a healthcare delivery system is a function of diversity in professional categories.

Professional Diversity and Time minimization

Tests of the relationship between professional diversity and time minimization show a lack of association. This implies that professional diversity does not minimize the time spent on the delivery of healthcare services to a patient. Diversity in professional skills tends to create dependency on shared resources like time, particularly when the services rendered by different professionals are done so in sequence. The outcome is that one professional depends on the time utilization efficiency of the other in the sequence to perform a required service or function. Within the healthcare system, for example, a nurse may depend on the efficiency of a doctor, and a doctor may depend on the efficiency of a laboratory technician. This unbroken chain of time dependence reduces time utilization efficiency in healthcare delivery. Ottih (2006) argued that such chains of dependence among functions tend to introduce friction among the functions. They also breed wastage and idle time as one function can be carried out only when another specific function has been completed. This study has found that professional diversity reduces the time efficiency of healthcare delivery teams.

Professional Interdependence and Team Cohesiveness

Tests of the relationship between professional interdependence and team cohesiveness show the presence of association. This implies that there is an awareness of professionals on a healthcare team that mutual interdependence is necessary for their functional relevance and for team cohesiveness.

Smiths and Corner (2003) argue that team cohesiveness can become the primary focus of the team and the opportunity for group think can then lead to premature decisions without a full consideration of a variety of alternative solutions. However, the need for functional interdependence created by the uniqueness of the professional contributions to the team does tend to produce closer ties among professionals on the team. Robins (2005) has further argued that mutual interdependence among entities, particularly where the interdependence is indispensable, evokes the spirit of unity. This study thus found that the relative indispensability of the professional units in a healthcare system makes interdependence inevitable. This breeds further team cohesiveness.

Mutual Trust and Team Cohesiveness

Tests of the relationship between mutual trust and team cohesiveness show the existence of positive relationship. Trust is a positive expectation that another will not through words, actions or decision acts opportunistically. Mutual trust as argued in Robins (2005) is the reciprocal expectation among people of the foregoing. Among the types of trust, Robins further argued that knowledge-based trust does not exist on some teams. In healthcare delivery services, however, knowledge-based trust is dominant. This trust is based on the behavioural predictability that comes from a history of interaction and is possible when members of a team have enough information about someone to be able to accurately predict their behaviour. In the healthcare sector there appears to be mutual professional trust as professionals share information to the extent that the behaviour of other team members is quite predictable. This study has found that mutual trust engenders team cohesiveness on healthcare delivery teams.

Mutual Trust and Time Minimization

Tests of the relationship between these variables show that time minimization is a function of mutual trust, though lowly correlated. Trust breeds reliance on co-members (Katzenbach and Smith, 2001) and the existence of reciprocal trust tends to quicken decision making time and enhance the minimization of time spent in the discharge of healthcare services. This follows the argument by Robins (2005) that the key factor of team existence is mutual trust which tends to enhance the way work is done. Work enhancement in the delivery of healthcare services is quickly seen in the optimum utilization of time. Conversely, this means that mistrust breeds delays in work operations. This study found that mutual trust among health professionals saves time and in turn quickens the delivery of healthcare services.

Professional Interdependence and Patient Satisfaction

Tests on professional interdependence and patient satisfaction produced a strong association implying that patient satisfaction is largely a function of professional interdependence. When the established chain of professional interdependence is maintained in the delivery of healthcare services, the outcome tends to be more efficient and patient satisfaction tends to increase (Heinemann et al., 2006).

The result of this study which shows a strong association between professional interdependence and patient satisfaction is further corroborated by Evans' (2008) view that the whole essence of the healthcare is the wellbeing of the sick. The sick as the focal point of healthcare services are therefore the ultimate recipient or either healthcare team interpersonal harmony exist or disorder. Given this strength of relationship, this study concludes that patients are satisfied or better cared for when healthcare professionals accept their interdependent role in healthcare units.

CONCLUSION AND RECOMMENDATIONS

This study empirically examined collaborative practice among professionals in secondary healthcare facilities in Rivers State, and how this enhances work efficiency and patient satisfaction. The interest in this area of study emanated largely from state government concerns about improving the healthcare system. While some attention has been paid to certain aspects of the system, such as the provision of healthcare infrastructures or staff recruitment, little or no consideration has been given to the nature of work relations (interactional factors) that can also affect the efficiency of the system.

This study has reviewed relevant literature on theories and models of collaborative teamwork. In light of the literature reviewed and the earlier stated objectives, seven hypotheses were formulated and tested. The findings can be summarized as follows:

- Team cohesiveness among healthcare professionals is hampered by the diversity of the professionals on the team.
- The efficient use of available material resources by healthcare professionals on healthcare teams is encouraged by professional diversity. The required material resources, however, are often not provided.
- Time minimization in the execution of healthcare delivery functions is negatively related to the diverse nature of professional categories on healthcare teams.

- Team cohesiveness amongst healthcare professionals on health teams is largely achieved through professional interdependence.
- Team cohesiveness in healthcare is strongly and positively influenced by mutual trust among the various professionals on the team.
- Time minimization in the delivery of healthcare services is enhanced by mutual trust among the various professionals on the team.
- Patient outcomes in terms of satisfactory treatment/attention are greater when there is professional collaboration in healthcare delivery.
- Most hospitals do not have some of the professional groups that are needed on healthcare teams.
- Most of the hospitals experience poor water and power supply which breeds inefficiency and time wastage in the delivery of needed healthcare services (some cases are referred out).

This work has empirically tried to show that there is a relationship between inter-professional collaboration and work efficiency in healthcare service delivery. This study has revealed that team cohesiveness is not easily achieved where there are different professionals with their own unique skills, although it is essential to achieving the objectives of the healthcare system. This study suggests that conflict of professional interests, professional identities or status and professional prestige will negatively affect the desired unity or cohesiveness of a healthcare team. This should be a concern for all stakeholders in the healthcare industry. In terms of this study's theoretical contributions, which attempted to address the meaning, insights and usefulness of collaborative practice in healthcare, this study evinces a theoretical design or framework of thought for scholars in this area of teamwork efficiency in general and healthcare teams in particular.

This study recommends that:

- Professional diversity is unavoidable on healthcare teams yet it does hamper team cohesiveness. This study recommends intensive diversity management among professionals to reduce feelings of importance, superiority, and/or inferiority that tend to breed in-cohesiveness.
- Healthcare administrators should provide the material resources needed for effective healthcare delivery to reduce the rate of referrals and out of stock syndrome.
- Healthcare administrators should manage the functional interfaces between professional services to reduce the time wastage created by the unavoidable sequence in the delivery of healthcare services. The provision and use of automation may also reduce the wastage of time due to interdependence.
- The unavoidable interdependence of healthcare professionals should be emphasized in hospital personnel management so as to encourage team cohesiveness. Understanding the indispensability of the other professionals in a complete healthcare system will make for stronger ties among practitioners.
- The management of interdependence between professionals in healthcare delivery should focus on enhancing the speed at which a function is completed so as to allow the subsequent function to commence. This will reduce the idleness of available facilities and staff.
- Hospital staff administrators should enhance the management of trust among healthcare workers to create the team cohesiveness needed for work efficiency.
- The efficient utilization of material resources and time should be enhanced through the encouragement of mutual trust relationships in healthcare delivery.
- Hospital management should focus on professional interdependence and mutual trust among team members to enhance patient satisfaction.
- Finally, periodic teamwork training programmes should be organized for staff to instill in teams and the healthcare system the spirit of collaboration.

Further research studies are needed in the following areas: to examine how political behaviour/organizational climate influence the workforce with respect to the bureaucratic system that makes it difficult for teams to collaborate effectively, to examine how to link inter-professional education with collaborative practice, and to reach out to the professional groups that make up healthcare teams to seek input on how to help minimize conflicts.

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