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# Knowledge Attitude and Practice of Pharmacists in Transition of Care Services in Tertiary Healthcare Settings in Lagos State Nigeria

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***Abstract***

*Effective transition of care (TOC) is critical in enhancing patient outcomes, reducing hospital readmissions, reducing adverse events, cost of treatment and strengthening healthcare systems. This study investigates the knowledge, attitudes, and practices of pharmacists regarding TOC services in tertiary hospitals in Lagos, Nigeria. This study aims to evaluate hospital pharmacists' understanding, implementation, barriers and comparative practices of Transition of care services within the hospital setting. A cross-sectional quantitative study was conducted, utilizing non-probability sampling to select participants. A structured questionnaire, pre-tested with pharmacists from a private health facility, was distributed via Google Forms to gather data. Descriptive and inferential statistics were performed using SPSS Version 23.0. 64.5% of the surveyed pharmacists participated in the study. Notably, 87.3% had not received formal training in TOC, yet 85.3% understood the component of the process. Furthermore, 76.2% believed that TOC services significantly improve patient outcomes. Regarding practice, 24.6% of pharmacists were unaware of medication reconciliation as part of TOC services. Regarding the comparison of performance across the five tertiary institutions, the study revealed significant differences in knowledge p=0.034, however no significant differences were found in attitude and perceived barriers to transition of care services p=0.057 and 0.340 respectively. The findings highlight gaps and strengths in the knowledge, attitude and practice regarding transition of care services across the five tertiary hospitals. while pharmacists possess a moderate level of knowledge and a positive attitude towards TOC services, their practical application of medication reconciliation remains limited.*

***Keywords:*** *Attitude, Knowledge, Pharmacists, Practice Health System, Strengthening, Transition of Care (TOC).*

## Introduction

*Transition of care (TOC)* is essential in ensuring continuity and coordination of healthcare as patients move between different settings or levels of care, such as from hospital to home, between hospital departments, or from primary to specialty care [1, 2].

Effective TOC relies on clear communication and collaboration among healthcare providers to minimize the risks of medication errors, adverse drug events and other adverse outcomes that may arise if not properly managed [2-4].

TOC has gained attention for its potential to improve patient outcomes, reduce healthcare costs, and strengthen health system management [5]. Pharmacists play a crucial role in this process by ensuring medication reconciliation, patient education;and the accurate transfer of medication-related information [6, 7]. Their collaboration with other healthcare providers often through the patient health record is key to effective communication and smooth transitions [3, 8, 9].

Medication reconciliation, a core component of TOC, involves comparing a patient's medication orders across different healthcare

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settings to identify discrepancies and ensure accuracy [2, 10]. Research shows that pharmacist-led medication reconciliation significantly reduces the risk of medication discrepancies and adverse events thereby enhancing patient safety [1, 11].

Pharmacists also provide crucial patient education on medication usage, potential side effect and adherence strategies. This empowers patients and caregivers to manage medications effectively, leading to improved treatment outcomes and reduced hospital readmissions [1, 7, 12, 13]. Addressing patient concerns, providing clear instructions, and fostering medication adherence further contribute to better health outcomes [7, 10].

Pharmacists facilitate communication among healthcare providers, reducing care gaps, hospital readmissions, and enhancing patient satisfaction [11, 14]. Their proactive involvement optimizes TOC and ensures seamless and effective healthcare delivery for patients.

However, Healthcare professionals often lack familiarity with care delivery across different settings, leading to poor quality of care and poorly planned transitions. Improving care transitions requires a shift from an episodic to a longitudinal perspective, recognizing the patient's journey through various care settings. This commitment calls for better communication, awareness of differences in staffing and resources, and identification of necessary information for optimal care. Managing patients with complex needs and coordinating care across multiple settings is increasingly important.

The goal of Transition of Care standards is to establish a framework for seamless, coordinated, cost-effective transitions, aligned with safety and quality measures. It aims to standardize practices, ensure regulatory alignment, promote patient and family engagement, particularly for high-risk individual and expanding access to relevant information and utilizing technology which is also key [15].

The knowledge, attitudes, and practices of pharmacists are critical in determining the effectiveness of TOC services. Studies show that pharmacists with a strong understanding of TOC processes engage more in medication reconciliation and patient education, leading to better patient outcomes and enhanced inter-professional collaboration [2]. Positive attitudes towards TOC, such as recognizing its importance for continuity of care and patient safety, are associated with higher engagement and adherence to protocols [1]. However, barriers like time constraints, limited resources and poor communication can hinder pharmacists' effectiveness in TOC [1, 16]. A study findings revealed that pharmacists view TOC as essential to patient care and are motivated to improve care quality through their involvement [17].

Experience and training also influence pharmacists' proficiency in TOC. Pharmacists with more experience in medication reconciliation and patient education are generally more confident and competent, leading to higher quality care [11]. Continuous education and tailored training programs help pharmacists stay updated with best practices and improve the quality of TOC services [11]. Despite this, pharmacists in Nigeria face challenges such as resource constraints, limited access to continuing education, and varying levels of training, which can affect the effectiveness of TOC services [16].

In Lagos, Nigeria, where tertiary hospitals serve a large and diverse population both within the state and neighboring state like Ogun State, understanding pharmacists' experiences, attitudes, and practices regarding TOC is crucial. Despite the potential benefits of TOC in improving patient outcomes and reducing healthcare costs, limited knowledge exists about pharmacists' roles in TOC at Lagos' tertiary hospitals. This study aims to assess pharmacists' knowledge, attitudes, and

practices related to TOC in these health facilities, comparing performance across health facilities. identifying gaps and developing strategies to improve their involvement in TOC.

The study will explore pharmacists' knowledge of TOC processes, including medication reconciliation, patient education, and inter-professional communication. It will also examine their attitudes towards TOC and identify barriers to effective service delivery. The findings will help improve TOC practices, empower pharmacists to take a more proactive role, and ultimately enhance patient care.

This research will provide valuable insights into the challenges and opportunities for optimizing TOC services at tertiary hospitals in Lagos, guiding policy and practice changes. Strengthening TOC will contribute to the professional development of pharmacists and improve the overall quality of healthcare in Lagos and by extension Nigeria.

# Method

## Research Design/Setting

This study employed a cross-sectional quantitative design to assess the knowledge, attitude, and practices of pharmacists regarding Transition of Care (TOC) services in tertiary hospitals in Lagos, Nigeria. The study was conducted from February to September 2024.

The study was conducted in Lagos State, Nigeria, which, although the smallest state geographically, is the most economically significant. The state has a population of approximately 17.5 million [18] and five tertiary hospitals: Lagos University Teaching Hospital (LUTH), Lagos State University Teaching Hospital (LASUTH), Federal Medical Centre (FMC) Ebute Meta, National Orthopaedic Hospital Igbobi (NOHI), and Federal Neuropsychiatric Hospital Yaba (FNPHY)

## Population

The target population comprised pharmacists working in the five tertiary hospitals in Lagos. The sample size was calculated using the Leslie-Kish formula [19] to estimate the unknown prevalence of pharmacists' knowledge, attitude, and practices regarding TOC services. Based on the calculation, the required sample size was 392, but since the total population of pharmacists across the five hospitals was 183, the entire population was surveyed.

## Sampling Technique

A non-probability convenience sampling method was used, with participants selected from the five tertiary hospitals.

## Instrumentation

Data were collected using an electronic questionnaire designed based on a literature review of similar studies. The questionnaire included:

### Section A

Demographic information (e.g., gender, age, education).

### Section B

Questions assessing knowledge, attitude, and practice regarding TOC services, as well as barriers and facilitators to TOC implementation. The questionnaire was pretested and its reliability calculated using Cronbach’s Alpha. The validity was assessed by the research supervisors. A link to the electronic form (Google Forms) was sent to 183 pharmacists via WhatsApp.

## Data Analysis

Descriptive statistics, including frequencies and percentages, and inferential statistics were used to analyze the data. Statistical analysis was performed using SPSS version 23.

### Inclusion Criteria

Pharmacists working in the identified health facilities.

**Exclusion Criteria p**

Pharmacists not working in the listed health facilities.

**Ethical Considerations**

Ethical approval was granted by the Lagos State University Teaching Hospital Health Review and Ethics Committee (Ref: LREC/06/10/2629).

## Results

A total of 183 pharmacists were sampled for the study, with 118 responding, representing a 64:5% response rate.

### Socio-demographic Characteristics

The study found that respondents' age groups were as follows: 27 (22.9%) were aged 20-30, 30 (25.4%) were 31-40 years old, 38 (32.2%) were 41-50 years old, and 23 (19.5%) were aged 50 and above. Female pharmacists outnumbered their male counterparts, with 79 (66.9%) females and 38 (32.2%) males. In terms of educational qualifications, 59 (50.0%) held a B.Pharm, 42 (35.8%) had a Postgraduate Fellowship, 14 (11.9%) held a Master's degree, and 2 (1.7%) had a PharmD, while 1 (0.8%) held a PhD.

Regarding their professional designations, 34 (28.8%) were in the Pharmacist grade 1 cadre, 26 (22.9%) were Deputy Directors of Pharmacy, 24 (20.3%) were Assistant Director of Pharmacy, 9 (7.6%) were Directors, 8 (6.8%) were principal Pharmacists, 7 (5.9%) each held the titles of Senior Pharmacist and 3 (2.5%) selected others.

The sample was drawn from five health facilities: LUTH (29 or 24.6%), LASUTH (20 or 16.9%), FMC (23 or 19.5%), NOHI (27 or 22.9%), and 19 (16.1%) from FNPHY.

Work settings among respondents included drug stores within hospitals (6 or 5.2%), outpatient/clinics (52 or 44.8%), in-patient settings (28 or 18.1%), theatres/Critical care Pharmacy (4 or 3.44%), oncology (2 or 1.72%), pediatrics (2 or 1.72%), and accident & emergency units (17 or 14,7%), drug information (2 or 1.72%), drug compounding/ production (2 or 1.72%) and others( 11 or 9.5%). Regarding work experience, 43 (36.4%) had worked for 1-5 years, 19 (16.1%) for 16-20 years, 16 (13.6%) for less than 12 months, 11 (9.3%) for 11-15 years, and 12 (10.2%) for 6-10 years( see table 1).

**Table 1.** Socio-demographic Characteristics among Respondents

| **Variables Under Consideration** | | **Frequency (f)** | **Percentages (%)** |
|---|---|---|---|
| Age (in groups) | 20 – 30 | 27 | 22.9 |
| | 31 – 40 | 30 | 25.4 |
| | 41 – 50 | 38 | 32.2 |
| | 50 and above | 23 | 19.5 |
| Gender | Male | 38 | 32.2 |
| | Female | 79 | 66.9 |
| Educational Status | PhD | 1 | 0.8 |
| | Postgraduate Fellowship | 42 | 35.8 |
| | Masters | 14 | 11.9 |
| | Bpharm | 59 | 50.0 |
| | Pharm D | 2 | 1.7 |
| Designation | Grade 1 Pharmacists | 34 | 28.8 |
| | Senior Pharmacists | 7 | 5.9 |
| | Principal Pharmacists | 8 | 6.8 |
| | Chief Pharmacists | 7 | 5.9 |

| | | | |
|---|---|---|---|
| | Assistant Director | 24 | 20.3 |
| | Deputy Director | 26 | 22 |
| | Director | 9 | 7.6 |
| | Others | 3 | 2.5 |
| Health Facility | LUTH | 29 | 24.6 |
| | LASUTH | 20 | 16.9 |
| | FMC | 23 | 19.5 |
| | NOHI | 27 | 22.9 |
| | FNPH | 19 | 16.1 |
| Work Setting | Accident / Emergency | 17 | 14.7 |
| | In-patient | 18 | 18.1 |
| | Clinics/outpatients | 52 | 44.8 |
| | drug information | 2 | 1.72 |
| | Drug Store | 6 | 5.2 |
| | Theatre /critical care | 4 | 3.44 |
| | Pediatrics | 2 | 1.72 |
| | Oncology | 2 | 1.72 |
| | Production/Compunding | 2 | 1.72 |
| | others | 11 | 9.5 |
| Work Length at current Institution? | Less than a year | 16 | 13.6 |
| | 1 – 5 | 43 | 36.4 |
| | 6 – 10 | 12 | 10.2 |
| | 11 – 15 | 16 | 13.6 |
| | 16 – 20 | 19 | 16.1 |
| | 21 years and above | 10 | 10.2 |

*Mean Age; Mean + SD (40.3+ 10.26)*

## Knowledge of Transition of Care (TOC) Services

Table 2 presents findings on training in TOC, 105 (89.0%) respondents had never received training related to transition of care services, while 13 (11.0%) had received such training.

Table 3 presents findings on respondents' knowledge of transition of care services. The majority, 103 (87.3%), reported not having received specific training on transition of care, while 15 (12.7%) had received such training. Regarding the definition of transition of care, 100 (85.5%) agreed that it involves the coordination and continuity of healthcare when moving from one setting to another, while 17 (14.5%) were unaware of its meaning.

In terms of medication reconciliation, 99 (84.7%) respondents believed it to be a key process in transition of care, while 17 (14.5%) were uncertain . Additionally, 89 (75.5%) respondents disagreed that patient education during transitions is not part of the transition of care process, while 11 (9.3%) agreed and 18 (15.3%) lacked opinion on the statement. Lastly, 105 (89%) respondents believed inter-professional communication is related to transition of care, while 12(10.2%) were uncertain of this and 1 (0.8%) did not.

**Table 2.** Knowledge of Transition of Care (TOC) Services among Respondents

| | | | |
|---|---|---|---|
| **Have you received training related to transition of care (TOC) Services?** | Yes | 15 | 12.7 |
| | No | 103 | 87.3 |

**Table 3.** Knowledge of Transition of Care (TOC) Services among Respondents

| Variables under consideration | Respondents in this study, N=118 | | | | |
|---|---|---|---|---|---|
| | **Strongly Agree** | **Agree** | **Strongly Disagree** | **Disagree** | **Neutral** |
| Knowledge of Transition of Care (TOC) Services | | | | | |
| I have received specific trainings related to transition of care services | 2(1.7%) | 13(11.0%) | 22(18.8%) | 47(40.2%) | 33(28.8%) |
| Transition of care is the coordination and continuity of health care during a movement from one health care setting to another | 38(32.5%) | 62(53%) | 0(0.0%) | 0(0%) | 17(14.5%) |
| Medication reconciliation is a transition of care process | 43(36.8%) | 56(47.9%) | 1(0.8%) | 0(0%) | 17(14.5%) |
| Patient education during care transitions is not process of transition of care service | 2(1.7%) | 9(7.6%) | 31(26.3%) | 58 (49.2%) | 18(15.3%) |
| Inter-professional communication is related to TOC | 50(42.4%) | 55(46.6%) | 0 (0%) | 1(0.8%) | 12(10.2%) |

## Attitude towards Transition of Care Services

The majority of respondents, 90 (76.2%), believed that transition of care services are crucial for improving patient outcomes, while 18 (15.3%) disagreed. Similarly, 45 (38.2%) disagreed that transition of care services are moderately important for improving patient outcomes, while 54 (46.6%) agreed that they are very important. Additionally, 100 (84.7%).

disagreed with the notion that transition of care services are not important in improving patient outcomes, while 8 (6.8%) agreed they are not important.

Furthermore, 107 (91.5%) respondents affirmed that pharmacists are willing to participate in transition of care services, while 10 (8.5%) were not sure (see Table 4).

**Table 4.** Attitude towards Transition of Care Services among Respondents

| Variables under Consideration | Respondents in this study, N=118 | | | | |
|---|---|---|---|---|---|
| | **Strongly Agree** | **Agree** | **Strongly Disagree** | **Disagree** | **Neutral** |
| Attitude Towards Transition of Care Services | | | | | |
| Transition of care services are very important in improving patient outcomes | 47(39.8%) | 43(36.4%) | 16(13.6%) | 2(1.7%) | 10(8.5%) |
| Transition of care services are moderately important in improving patient outcomes | 11(9.3%) | 44(37.3%) | 14(11.9%) | 31(26.3%) | 18(15.3%) |
| Transition of care services are not important in improving patient outcomes | 6(5.1%) | 2(1.7%) | 49(41.5%) | 51(43.2%) | 10(8.5%) |

| | | | | | |
|---|---|---|---|---|---|
| Pharmacist are willing to participate in TOC services | 42(35.9%) | 65(55.6%) | 0(0%) | 0(0%) | 10(8.5%) |
| Pharmacist are not willing to participate in TOC services | 2(1.7%) | 3(2.5%) | 40(33.9%) | 58(49.2%) | 15(12.7%) |

## Transition of Care Services Practice

Regarding the practice of transition of care services, the majority, 86 (72.9%), agreed that pharmacists engage in medication reconciliation daily as part of TOC services, while 14 (11.9%) disagreed. More than half, 66 (56%), stated that pharmacists engage in medication reconciliation weekly as part of TOC services, while 23 (19.5%) disagreed and 29(24.6% were not aware of the service. . Additionally, 90 (77%) respondents agreed that pharmacists are comfortable communicating with other healthcare providers regarding medication-related issues during TOC, while 7(6%) disagreed (see Table 5 for details).

**Table 5.** Frequency of Pharmacist Engagement in TOC Practices

| **Variables under consideration** | **Respondents in this study, N=118** | | | | |
|---|---|---|---|---|---|
| | **Strongly Agree** | **Agree** | **Strongly Disagree** | **Disagree** | **Neutral** |
| Transition of Care Services Practice | | | | | |
| Pharmacist engage in Medication Reconciliation daily as part of TOC services | 30(25.4%) | 56(47.5%) | 4(3.4%) | 10(8.5%) | 18(25.3%) |
| Pharmacist engage in Medication Reconciliation weekly as part of TOC services | 12(10.2%) | 54(45.8%) | 5(4.2%) | 18(15.3%) | 29(24.6%) |
| Pharmacist engage in Medication Reconciliation monthly as part of TOC services | 12(10.3%) | 45(38.8%) | 7(6%) | 23(19.8%) | 29(25%) |
| Pharmacist rarely engage in Medication Reconciliation as part of TOC services | 5(4.3%) | 16(13.7%) | 22(18.8%) | 53(45.3%) | 21(17.9%) |
| Pharmacist are comfortable with communication with other health care providers regarding medication related issues during TOC | 3(2.6%) | 87(74.4%) | 5(4.3%) | 2(1.7%) | 20(17.1%) |
| Pharmacist are not comfortable with communication with other health care providers regarding medication related issues during TOC | 1(0.8%) | 6(5.1%) | 26(22%) | 68(57.6%) | 17(14.4%) |

## Barriers Influencing Transition of Care (TOC)

More than half of the respondents, 83 (70.9%), agreed that resource limitations are a barrier to providing effective pharmacist transition of care (TOC) services, while 12(10.3%) disagreed. A majority, 102 (86.4%), agreed that lack of adequate training and education is a barrier, while 10 (8.5%)

disagreed. Regarding communication gaps, 102 (86.4%) agreed that they are a barrier to effective TOC services, while 9 (7.6%) disagreed.

Additionally, 97 (82.2%) agreed that insufficient electronic health records are a barrier, while 9 (7.6%) disagreed. On the issue of patient engagement, 90 (77%) agreed that a low level of patient engagement is a barrier, while 14 (11.9%) disagreed. Finally, 73 (61.9%) respondents agreed that cultural and language barriers hinder effective pharmacist TOC services, while 45 (38.1%) disagreed (see Table 6 for details).

**Table 6.** Barriers Influencing Transition of Care Services among Respondents

| **Variables under consideration** | **Respondents in this study, N=118** | | | | |
|---|---|---|---|---|---|
| | **Strongly Agree** | **Agree** | **Strongly Disagree** | **Disagree** | **Neutral** |
| Barriers influencing TOC | | | | | |
| Resource limitation is a barrier to providing effective pharmacist TOC services | 21(17.9%) | 62(53%) | 3(2.6%) | 9(7.7%) | 22(18.8%) |
| Lack of adequate training and education is a barrier to providing effective pharmacist TOC services | 34(28.8%) | 68(57.6%) | 2(1.7%) | 8(6.8%) | 6(5.1%) |
| Communication gap is a barrier to providing effective pharmacist TOC services | 32(27.1%) | 70(59.3%) | 5(4.2%) | 4(3.4%) | 7(5.9%) |
| Insufficient electronic health record is a barrier to providing effective pharmacist TOC services | 36(30.5%) | 61(51.7%) | 6(5.1%) | 3(2.5%) | 12(10.2%) |
| Low level of patient engagement is a barrier to providing effective pharmacist TOC services | 25(21.4%) | 65(55.6%) | 6(5.1%) | 8(6.8%) | 13(11.1%) |

## Comparison by Healthcare Facilities

Table 7 shows that poor knowledge of transition of care services was reported at LUTH (10 or 8.5%), LASUTH (5 or 4.2%), FMC Ebute Meta (4 or 3.4%), and FNPH (2 or 1.7%). The majority of respondents across the five healthcare facilities had average knowledge of transition of care services: LUTH (17 or 14.4%), LASUTH (14 or 11.9%), FMC Ebute Meta (18 or 15.3%), NOHI (23 or 19.5%), and FNPH (17 or 14.4%). NOHI had the highest number of respondents with good knowledge (4 or 3.4%), followed by LUTH (2 or 1.7%). The Pearson Chi-Square value of 0.034 indicates that the difference in knowledge of transition of care among the pharmacists working in the 5 tertiary hospitals is statistically significant ( at the 0.05 level), so therefore the pharmacists do not possess adequate knowledge of transition of care services.

Regarding attitudes towards transition of care, FNPH had the highest positive attitude (15 or 12.7%), followed by NOHI (14 or 11.9%), FMC Ebute Meta (13 or 11.0%), LUTH (11 or 9.3%), and LASUTH (8 or 6.8%). The Chi-Square value of 0.057 suggests that there is no significant difference in the attitude of pharmacists in the different institutions towards transition of care services ( at 0.05 significance level); therefore, the pharmacists working in the hospitals likely have a positive attitude towards transition of care services.

As for practices of transition of care services, the performance was generally average across the healthcare facilities. FMC Ebute Meta (17 or 14.4%) and NOHI (16 or 13.6%) had the highest scores, while LUTH, LASUTH, and FNPH all had 13 (11.0%). The Chi-Square value of 0.191 is not statistically significant, so pharmacists working in these institutions likely have positive practice in the transition of care.

In terms of barriers to transition of care services, LUTH reported the highest number of barriers (21 or 17.8%), followed by NOHI (20 or 16.9%), FNPH (15 or 12.7%), LASUTH (13 or 11%), and FMC Ebute Meta (12 or 10.2%). The p- p-value of 0.340 is not statistically significant; therefore, there is no significant evidence to suggest that pharmacists do not encounter barriers in the transition of care services in hospitals.

**Table 7.** Comparison by Healthcare Facilities among Respondents

| **Variables Under Consideration** | | **Respondents in this study, N=118** | | | | | |
|---|---|---|---|---|---|---|---|
| | | **LUTH** | **LASUTH** | **FMC Ebute Meta** | **NOHI** | **FNPH** | **Chi-square Sig (2-sided)** |
| Level of Knowledge | Poor | 10(8.5%) | 5(4.2%) | 4(3.4%) | 0(0.0%) | 2(1.7%) | 0.034 |
| | Average | 17(14.4%) | 14(11.9%) | 18(15.3%) | 23(19.5%) | 17(14.4%) | |
| | Good | 2(1.7%) | 1(0.8%) | 1(0.8%) | 4(3.4%) | 0(0.0%) | |
| Attitude Towards Transition of Care Services | Poor | 18(15.3%) | 12(10.2%) | 10(8.5%) | 13(11.0%) | 4(3.4%) | 0.057 |
| | Good | 11(9.3%) | 8(6.8%) | 13(11.0%) | 14(11.9%) | 15(12.7%) | |
| Transition of Care Services Practice | Poor | 16(13.6) | 7(5.9%) | 6(5.1%) | 11(9.3%) | 5(4.2%) | 0.191 |
| | Average | 13(11.0%) | 13(11.0%) | 17(14.4%) | 16(13.6%) | 13(11.0%) | |
| | Good | 0(0.0%) | 0(0.0%) | 0(0.0%) | 0(0.0%) | 1(0.8%) | |
| Barriers influencing TOC | Low barrier | 8(6.8%) | 7(5.9%) | 11(9.3%) | 7(5.9%) | 4(3.4%) | 0.340 |
| | Barrier present | 21(17.8%) | 13(11.0%) | 12(10.2%) | 20(16.9%) | 15(12.7%) | |

## Discussion

This study examined the knowledge, attitudes, and practices of pharmacists regarding transition of care (TOC) services in tertiary hospitals. As healthcare systems increasingly emphasize patient-centered care, pharmacists play a crucial role in facilitating smooth transitions between care settings, which can improve patient outcomes and reduce healthcare costs. The findings from this study provide valuable insights into the current state of TOC services and highlight areas for improvement.

### Demographic Findings

The majority of pharmacists in the study were aged between 31-50 years (57.6%), indicating a relatively experienced workforce, while 22.9% were younger professionals aged 20-30 years. This suggests a mix of experienced practitioners and newer graduates, each group potentially requiring different approaches for training and professional development. Younger pharmacists may benefit from mentorship, while older pharmacists may need updates on evolving practices and standards. This demographic distribution aligns with

findings from global pharmacy workforce reviews [20-25].

A significant proportion of female pharmacists (66.9%) was observed, which reflects gender trends reported in previous studies.[21, 26-29]. This demographic could face specific challenges or opportunities for professional growth, and training programmes should be tailored to address gender-specific needs.

Educationally, the workforce comprised pharmacists with varying qualifications, ranging from basic degrees to specialized postgraduate qualifications. This diversity suggests that professional development programs should cater to all qualification levels to ensure that every pharmacist is equipped with the latest knowledge and skills in TOC services.

## Knowledge of Transition of Care

The study found that a majority of pharmacists (87.3%) had not received formal training on TOC, which may contribute to gaps in their knowledge and understanding of the process. While 85.5% correctly defined TOC, indicating a basic understanding, 14.5% were unaware of its meaning. This highlights the need for targeted educational programmes to address these knowledge gaps. In line with findings from another study,[16] training on medication reconciliation was recognized as essential, with 84.7% acknowledging its importance in preventing medication errors and ensuring patient safety. However, 14.5% of respondents expressed uncertainty, suggesting a need for further clarification.

Regarding patient education, 75.5% of pharmacists disagreed with the statement that patient education is not part of TOC, indicating an understanding of its importance. This is consistent with findings emphasizing the role of pharmacists in educating patients about medications, treatment plans, and follow-up care [29-32]. However, 9.3% of respondents agreed that patient education was not a critical component of TOC, highlighting a significant knowledge gap that needs addressing.

## Attitudes Toward Transition of Care

Pharmacists exhibited a generally positive attitude toward TOC services, with 76.2% recognizing their importance in improving patient outcomes. This aligns with evidence supporting the positive impact of coordinated TOC on reducing readmissions and improving patient satisfaction [33-35]. The strong conviction about TOC's importance was further demonstrated by the 84.7% who disagreed that TOC services are unimportant. However, a small proportion (6.8%) disagreed with the significance of TOC, suggesting that some pharmacists may not fully appreciate the value of these services in patient care.

The majority of respondents (91.5%) expressed a willingness to participate in TOC services, reflecting a positive outlook. However, 8.5% expressed uncertainty, likely due to concerns about workload, lack of training, or unclear roles in the process. These concerns can be addressed through more robust training and role clarification

## Practices of Transition of Care Services

The majority of pharmacists (72.9%) reported engaging in daily medication reconciliation, a core component of TOC services. This demonstrates a strong commitment to ensuring safe medication management during transitions. However, 11.9% of respondents disagreed with this practice, possibly due to resource limitations or variability in hospital protocols. Additionally, 56% reported performing medication reconciliation weekly, but 24.6% were unaware of this practice, suggesting a significant gap in integrating TOC into daily routines. These gaps highlight the need for standardized practices and clear communication regarding the importance of regular medication reconciliation.

The study also found that 77% of respondents were comfortable communicating with other healthcare providers about medication-related issues during TOC, which is essential for effective care coordination. This aligns with findings from previous studies [36-39]. However, 23% expressed concerns, indicating a need for formalized communication protocols and enhanced training in inter-professional collaboration. Addressing these issues can further improve the quality of care during transitions.

## Barriers to Effective Transition of Care Services

The study identified several key barriers to implementing effective TOC services. A significant majority (70.9%) of pharmacists cited resource limitations, which may hinder their ability to provide comprehensive follow-up care and medication reconciliation. Similarly, 86.4% highlighted the lack of training as a barrier, underscoring the need for continuous professional development. Hospitals should prioritize resource allocation and invest in educational programs to enhance pharmacists' skills in managing complex care transitions.

Communication gaps were also a major concern, with 86.4% of pharmacists acknowledging this issue. Poor communication among healthcare providers, patients, and caregivers can lead to medication errors and poor patient outcomes. Implementing standardized communication strategies, such as clear discharge summaries and patient counseling, could bridge these gaps. Additionally, enhancing electronic health records (EHRs) to ensure seamless information sharing between departments and healthcare settings would improve medication reconciliation and patient safety. The findings align with findings by other studies that reported similar barriers [16, 40].

Other barriers included low patient engagement (77%) and cultural or language differences (61.9%). To address these, pharmacists should play a proactive role in patient education and implement strategies like follow-up phone calls or educational materials to enhance patient understanding of their care. Moreover, training pharmacists in cultural competence and employing multilingual staff could help mitigate the impact of cultural and language barriers on TOC services.

## Comparison of Health Institutions

The comparison of performance across five tertiary hospitals reveals key insights into pharmacists' knowledge, attitudes, practices, and perceived barriers regarding transition of care (TOC) services. The findings indicate significant differences in knowledge, with pharmacists at NOHI having the highest proportion of respondents with good knowledge (3.4%), while most others showed average understanding. A Pearson Chi-Square value of.034 suggests that institutional factors, such as training and resources, influence knowledge levels, highlighting the need for targeted educational interventions across hospitals to improve TOC knowledge.

In terms of attitude, most pharmacists demonstrated a positive outlook on TOC services, with FNPH and NOHI having the highest proportions of positive responses. However, no significant differences were found in attitudes across hospitals (Chi-Square = 0.057), suggesting a generally favorable stance towards TOC.

Regarding practices, the overall performance across institutions was average, with FMC Ebute Meta and NOHI leading. While practices were adequate, a Chi-Square value of 0.191 indicates room for improvement. The study also found no significant differences in perceived barriers across hospitals ($p = 0.340$), with resource limitations, insufficient training, and communication gaps being common challenges. Addressing these barriers through resource allocation, training, and

enhanced communication could strengthen TOC implementation.

## Conclusion

In conclusion, this study highlights important gaps and strengths in the knowledge, attitudes, and practices of pharmacists regarding transition of care (TOC) services across five tertiary hospitals. While pharmacists generally exhibit a positive attitude towards TOC, with most recognising its importance in improving patient outcomes, significant gaps in knowledge and inconsistent practices were identified. The findings suggest that pharmacists in some hospitals lack sufficient training and awareness, particularly regarding the frequency of medication reconciliation and the role of inter-professional communication during transitions.

Resource limitations, insufficient training, and communication barriers were consistently reported as major obstacles to effective TOC service delivery. Despite these challenges, pharmacists expressed a willingness to engage in TOC services, which presents an opportunity to further integrate them into multidisciplinary care teams.

## Recommendations

To optimise the impact of TOC services, targeted interventions are needed, including improved training programs, standardised practices, and enhanced communication protocols. Hospitals should invest in resources and infrastructure that support pharmacists in delivering high-quality TOC services and effective monitoring and evaluation of the interventions

Targeted training programmes for pharmacists focusing on TOC components should be offered regularly probably through workshops or continuing education programmes

The practices across the health facilities through the use of evidenced- based protocols and guidelines for TOC Should be put in place to help reduce inconsistencies in areas like the frequency of medication reconciliation so as to ensure all pharmacists are following best practices.

Increasing resource allocation, including technological tools, staffing and time is recommended. Addressing resource limitations can help overcome barriers to effective TOC service delivery.

The willingness of pharmacists to carry out TOC services can be leveraged upon to promote multidisciplinary engagement and foster stronger communication and collaboration between pharmacists and other healthcare providers during patient transition. This could provide opportunities for multidisciplinary rounds, team meetings and shared health records that promote seamless information transfer.

Ultimately, addressing these gaps and barriers will contribute to better patient outcomes and a more seamless care transition process across healthcare settings.

## Limitations

Despite the meticulous planning and execution of this study, certain limitations were identified; for example, the underrepresentation of pharmacists in Lagos State may not accurately make the findings reflect the situation for all pharmacists in Nigeria. It might lead to biased study results.

The self-reported data may also lead to overreporting or underreporting of practices, experiences or attitudes, which may distort the findings in the study thereby limiting its generalization,

The convenience sampling employed in this study may introduce bias because the sample may not reflect the larger population leading to limited generalizability of the findings.

### Consent to Participate

Every participant gave their consent before participation in the study. Participants received assurances regardless the privacy of their data.

Before responding to the resesrch questions, participants had to check the " I consent" option to express their agreement.

### Consent for Publication

The author hereby gives her consent for publication.

### Availability of Data and Materials

Upon notification, the author can supply the datasets utilized and or analyzed in this work.

## Competing Interest

The author declares no conflict of interest.


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