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# THE IMPACT OF TIME MANAGEMENT SKILLS ON CLINICAL PERFORMANCE AMONG REGISTERED NURSES WORKING IN TERTIARY CARE HOSPITALS

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## ABSTRACT

***Background:*** *Time management is a fundamental competency in nursing practice that enables registered nurses to prioritize clinical responsibilities, optimize workflow, and deliver safe, efficient, and high-quality patient care. In tertiary care hospitals Multan, nurses frequently manage heavy workloads, complex patient conditions, and multiple competing demands, making effective time management essential for maintaining high standards of clinical performance. Poor time management contributes to medication errors, delayed interventions, missed nursing care, occupational stress, and reduced quality of patient outcomes. Despite its recognized importance, limited evidence exists regarding the relationship between time management skills and clinical performance among registered nurses in tertiary healthcare settings.*

***Objective****: To examine the impact of time management skills on the clinical performance of registered nurses working in tertiary care hospital, Multan.*

***Study Design:*** *A descriptive cross-sectional study was conducted among 120 registered nurses selected through purposive sampling from five wards of the hospital. Time management was measured using the 30-Item Time Management Behavior Scale, and clinical performance was assessed using a 20-Istem observational checklist completed by trained independent observers. Data were analyzed using descriptive statistics, Pearson correlation, one-way ANOVA, and multiple regression.*

***Results :*** *The majority of nurses demonstrated moderate time management skills (68.3%). Time management was positively associated with clinical performance ($r = 0.67$, $p < 0.001$), with the mechanics of time management being the strongest predictor ($\beta = 0.38$, $p < 0.001$). More experienced nurses scored significantly higher on time management ($F = 14.3$, $p < 0.001$), and the model explained 52% of the variance in clinical performance.*

***Conclusion:*** *Effective time management is strongly associated with better clinical performance. Integrating structured time management training into nursing education and hospital orientation programs, particularly for newly qualified nurses, may improve clinical practice and patient safety.*

***Keywords:*** *Time Management skill, Registered Nurses, Clinical Performance, Patient Safety, Nursing Practice, Tertiary care hospital.*

**Introduction:**

Time management is a fundamental professional competency that enables nurses to prioritize patient care activities, allocate resources efficiently, and deliver safe, timely, and high-quality healthcare. In tertiary care hospitals, where patients often present with complex health conditions requiring specialized and multidisciplinary care, registered nurses are expected to manage multiple responsibilities simultaneously. These responsibilities include direct patient care, medication administration, clinical documentation, coordination with healthcare teams, patient education, emergency response, and compliance with institutional policies. Effective time management allows nurses to perform these tasks efficiently while maintaining patient safety and the quality of care (Qtait 2024).

Clinical performance is a critical indicator of nursing competence and reflects a nurse's ability to apply knowledge, technical skills, clinical judgment, communication, and professional behavior in delivering evidence-based care. High clinical performance is associated with improved patient outcomes, reduced medical errors, enhanced patient satisfaction, and increased organizational effectiveness (Raoush, Smadi et al. 2026). Conversely, poor clinical performance may contribute to medication errors, delays in treatment, compromised patient safety, increased workload, occupational stress, and lower quality of healthcare services (Riman, Harrison et al. 2022).

Time management has emerged as one of the most important determinants of nursing performance in contemporary healthcare settings (Arpacı, Karabörklü et al. 2025). Nurses working in tertiary care hospitals frequently encounter heavy patient loads, staff shortages, frequent interruptions, rapidly changing clinical priorities, and administrative demands that challenge their ability to manage time effectively (Gmayinaam, Nortey et al. 2024). Inadequate time management may result in missed nursing care, incomplete documentation, delayed interventions, poor communication, and increased levels of burnout (Aremu and Lawal 2025). In contrast, nurses who possess strong time management skills are more likely to prioritize clinical responsibilities effectively, complete essential nursing tasks within scheduled working hours, reduce work-related stress, and deliver comprehensive patient-centered care (Vizeshfar, Rakhshan et al. 2022).

Evidence from nursing and healthcare research suggests that effective time management is positively associated with productivity, job satisfaction, clinical decision-making, teamwork, and patient safety (Aremu and Lawal 2025). Nurses who effectively organize their workload demonstrate greater efficiency in patient assessment, medication administration, care planning, documentation, and interdisciplinary collaboration (Almughamisi, Alshehri et al. 2025). Furthermore, efficient use of time contributes to improved continuity of care, reduced adverse events, shorter hospital stays, and better utilization of healthcare resources. Given the increasing complexity of healthcare systems and the growing demand for quality nursing services, strengthening time management competencies has become an essential strategy for improving nursing performance and organizational outcomes.

Despite increasing recognition of the importance of time management, many registered nurses continue to experience challenges in balancing competing clinical demands, particularly in tertiary care hospitals where workloads are high and patient acuity is greater (Coventry, Maslin-Prothero et al. 2015). Factors such as inadequate staffing, excessive documentation requirements, frequent interruptions, overtime, and limited organizational support may hinder effective time utilization and adversely affect clinical performance (DeLucia, Ott et al. 2009). Although several international studies have explored the relationship between time management and nursing outcomes, evidence from tertiary care hospitals, particularly in developing countries, remains limited. Differences in healthcare infrastructure, staffing patterns, organizational

culture, and resource availability may influence the relationship between time management skills and clinical performance, highlighting the need for context-specific research.

Understanding the impact of time management skills on clinical performance among registered nurses is essential for nursing administrators, educators, policymakers, and healthcare organizations (Filomeno, Chaoui et al. 2024). Findings from this study may provide evidence to support the development of targeted educational programs, time management training, leadership strategies, and organizational interventions aimed at improving nurses' efficiency and clinical competence. Enhanced time management skills may contribute to better patient care, increased professional satisfaction, improved workforce productivity, and higher standards of nursing practice (Filomeno, Chaoui et al. 2024).

Therefore, this study has examined the impact of time management skills on the clinical performance of registered nurses working in tertiary care hospital, Multan.

**Materials and Methods:**

The cross-sectional approach was employed for this investigation to assess the time management skills among registered nurses and examine their relationship to clinical performance at Nishtar Hospital Multan. Data were collected from five designated clinical units that collectively represent the breadth of nursing specializations present at the institution: (1) the Medical Ward, (2) the Surgical Ward, (3) the Obstetrics and Gynecology Ward, (4) the Pediatrics Ward, and (5) the Intensive Care Unit (ICU).

**Study Setting:**

The study setting and data collection site was Nishtar Hospital Multan, located in Multan, Punjab, Pakistan.

**Study Population:**

The study population was all registered nurses currently employed on active clinical duty at Nishtar Hospital Multan during the designated data collection period of January to April, 2026.

The registered nurses assigned to the five designated clinical units: the Medical Ward, Surgical Ward, Obstetrics and Gynecology Ward, Pediatrics Ward, and Intensive Care Unit.

**Sampling Technique:**

Calculation parameters were set as follows: an estimated population proportion (p) of 0.50, which maximizes the required sample size and therefore provides the most conservative estimate; a 95% confidence level (Z = 1.96); and a margin of error (d) of ±0.05. Application of the Cochran formula yielded an initial estimate of 384 for an infinite population. After applying the finite population correction for N = 245, the adjusted sample size was 106 registered nurses. A 15% attrition allowance was added to compensate for anticipated non response and incomplete questionnaires, yielding a final target sample of 120 registered nurses.

**Data Collection Procedure:**

Data collection was carried out over a period of ten weeks, from January to April 2026, following the receipt of institutional ethical approval and administrative permission from the Nursing Superintendent and Hospital Director of Nishtar Hospital Multan.

Self-report data were collected through the TMBS questionnaire and the demographic data sheet, which were distributed to consenting participants during their scheduled rest break to minimize interference with patient care. Participants were given approximately 20–25 minutes to complete the questionnaire independently in a quiet area of the unit.

Clinical performance observations were conducted independently by the two trained observers during each participant's clinical shift, using the structured 20-item Clinical Performance Observation Checklist. Each observation session lasted approximately 60 minutes and covered a complete clinical task cycle to ensure that all five performance domains were assessed.

**Data Analysis:**

All collected data were entered into IBM-25 SPSS Statistics and Multiple linear regression analysis

was runed to identify the independent predictors of clinical performance from among the four TMBS subscales, after controlling for the demographic covariates of years of experience and educational qualification.

**Results:**

Table.1 represented participant distribution across the five clinical units and three shift patterns. The Medical Ward had the highest representation (23.3%, n=28), followed by the Surgical Ward (21.7%, n=26), OB/GYN Ward (20.0%, n=24), Pediatrics Ward (18.3%, n=22), and the ICU (16.7%, n=20). The morning shift accounted for the largest proportion (45.0%, n=54), followed by evening (31.7%, n=38) and night (23.3%, n=28) shifts.

| *Variable* | *Category* | *n* | *%* |
|---|---|---|---|
| ***Clinical Unit*** | Medical Ward | 28 | *23.3* |
| | Surgical Ward | 26 | *21.7* |
| | OB/GYN Ward | 24 | *20.0* |
| | Pediatrics Ward | 22 | *18.3* |
| | ICU | 20 | *16.7* |
| ***Shift Pattern*** | Morning | 54 | *45.0* |
| | Evening | 38 | *31.7* |
| | Night | 28 | *23.3* |
| ***Total*** | | ***120*** | ***100.0*** |

**Correlation Between Time Management Skills and Clinical Performance**

Pearson's product-moment correlation analysis was conducted to examine the bivariate relationship between total TMS scores and total CP scores. As reported in Table 4.9, a statistically significant, strong positive correlation was found ($r = 0.67$, $p < 0.001$, 95% CI [0.56, 0.76]). This result indicates that nurses with higher time management skill scores consistently demonstrated higher clinical performance scores. The coefficient of determination ($R^2 = 0.45$) shows that 45% of the variance in clinical performance is explained by total TMS score alone, representing a large effect size by Cohen's (1988) conventions.

| *Variable* | *r* | *p-value* | *Interpretation* |
|---|---|---|---|
| ***Total TMS Score × Total CP Score*** | **0.67** | **< 0.001** | *Strong positive correlation* |
| *95% Confidence Interval* | [0.56, 0.76] | — | *Large effect size (Cohen, 1988)* |
| *$R^2$ (Variance Explained)* | 0.45 | — | *45% of CP variance explained by TMS* |
| ***N*** | *120* | – | *df = 118* |

Note. r = Pearson correlation coefficient. 95% CI computed using Fisher's Z transformation. $R^2$ = proportion of CP variance explained. ** p < .001 (two-tailed). Effect size: large (r > 0.50, Cohen, 1988).

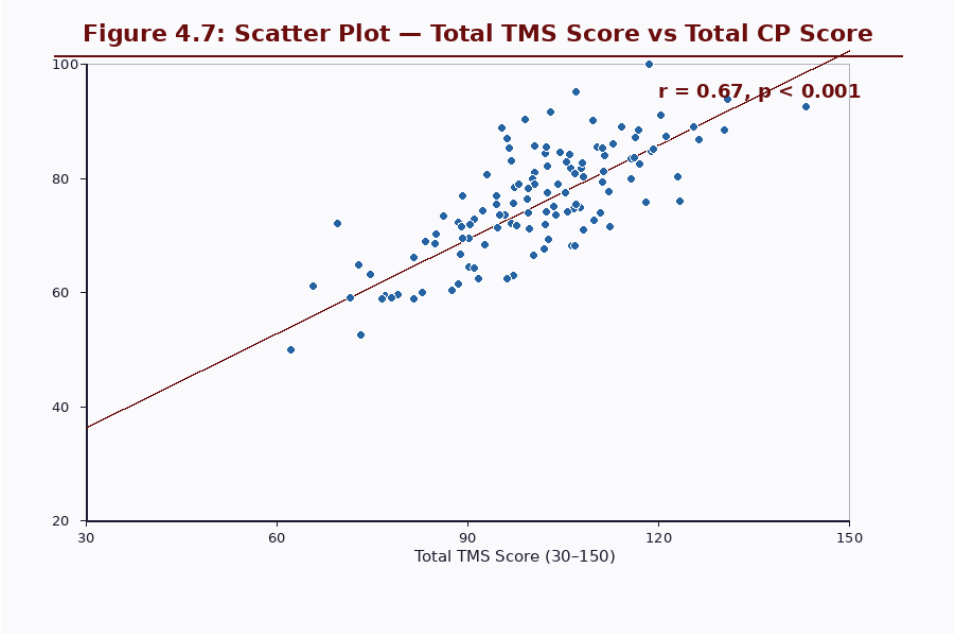


**Figure 4.7: Scatter Plot of Total TMS Score vs Total Clinical Performance Score (n = 120). The regression line shows a strong positive linear trend (r = 0.67, p < 0.001).**

Table 3. extends this analysis by presenting the full correlation matrix between each of the four TMBS subscales and each of the five CP domains. All correlations were statistically significant (p < 0.01). The Mechanics of Time Management subscale showed the strongest correlations across CP domains, particularly with Medication Administration (r = 0.71). The weakest correlation was between Perceived Control of Time and Interdisciplinary Communication (r = 0.44). These differential patterns support the hypothesis that specific TMS components have varying degrees of influence on distinct clinical performance domains.

| *TMBS Subscale* | *Pt Assess.* | *Med. Admi.* | *Care Plan* | *Doc. Acc.* | *Interdisc.* | *Total CP* |
|---|---|---|---|---|---|---|
| *Goals* | 0.54** | 0.61** | 0.48** | 0.52** | 0.58** | 0.60** |
| *Mechanics* | 0.63** | 0.71** | 0.55** | 0.60** | 0.53** | 0.66** |
| *Control* | 0.49** | 0.57** | 0.51** | 0.48** | 0.44** | 0.55** |
| *Org.* | 0.52** | 0.60** | 0.46** | 0.54** | 0.47** | 0.57** |
| *Total TMS* | 0.60** | 0.68** | 0.54** | 0.58** | 0.52** | 0.67** |

Table.3: All correlations significant at ** p < .01 (two-tailed). Values represent Pearson r coefficients. Pt Assess. = Patient Assessment; Med. Admin. = Medication Administration; Care Plan = Care Planning & Prioritization; Doc. Acc. = Documentation Accuracy; Interdisc. = Interdisciplinary Communication.

The results of this study provide robust empirical evidence for a significant positive relationship between time management skills and clinical performance among registered nurses at Nishtar

Hospital Multan. The majority of nurses demonstrated moderate TMS and high CP levels. The Mechanics of Time Management subscale emerged as the most influential predictor of CP, followed by Goals and Priorities and Perceived Control of Time. Clinical experience was a significant moderator of TMS, with nurses having more than five years of experience demonstrating substantially stronger time management behaviors. Together, the four TMBS subscales and covariates explained 52% of the variance in clinical performance.

**Conclusion:**

A strong, statistically significant positive correlation was established between total TMS scores and total CP scores ($r = 0.67$, $p < 0.001$). This finding conclusively confirms the central premise of this study — that time management is a significant determinant of clinical performance in registered nursing practice. The magnitude of this relationship (large effect size) and the proportion of CP variance explained by the regression model ($R^2 = 0.52$) together constitute compelling evidence that TMS is not merely a peripheral organizational competency but a core professional skill that is directly and substantially linked to the quality of nursing care delivered to patients. Improving TMS in the nursing workforce is therefore a high-priority lever for enhancing patient care outcomes.

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