Assessing Nurses' Competency on the use of Nursing Kardex in Region II Tertiary Hospital: Looking into the Perceived Effects of its Incomplete Documentation to Patient Transition of Care

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Abstract **-** This study was conducted **to** assess the implementation and outcomes of a redesigned Kardex system in improving communication and continuity of care within hospital nursing practice. A project-based quality improvement initiative was conducted in a tertiary care hospital, introducing a structured Kardex tool across selected nursing units. The project spanned three months and involved observational audits, staff feedback, and pre- and post-implementation assessments. Data were analyzed using descriptive statistics and thematic content analysis, focusing on the Kardex's impact on documentation accuracy, handover quality, and user experience. Post-implementation results indicated marked improvements in documentation completeness, clarity, and staff engagement. Handover reports became more structured and efficient,
improvement in information accuracy (p < 0.05). Staff reported greater confidence in communicating patient needs, with 85% expressing satisfaction with the modified system. Feedback also highlighted areas needing further standardization and training. The redesigned Kardex system enhanced the quality of nursing handovers, improved interdisciplinary communication, and supported safer, more coordinated patient care. Its structured format aligns with evidence-based practice and offers scalability for broader institutional use, provided continuous training and monitoring mechanisms are established.

Keywords: ***Kardex system, nursing communication, documentation, continuity of care, quality improvement***

I. INTRODUCTION

Nursing is an art and science by which people are assisted in learning to care for themselves whenever possible and cared for by others when they are, unable to meet their own needs. Nurses coordinate care and apply their knowledge and skills to deliver care. Breakdown of communication between, nurses can interfere with the client's treatment. Communication in nursing is a journey to a destination of clear meaning. Nurses travel this road to help patients, and families heal and promote health and wholeness. Communication is at the heart of nursing and is essential in conveying caring and applying nursing skills and knowledge (Mori & Shima, 2020).

A Primary role of a nurse is to ensure that every patient received proper nursing care in promoting health and preventing disease. Nursing Kardex is part of the nursing care that provides a summary of each patient and is updated every after shift which is used for nursing endorsement. Nursing Kardex is a quick access to patient's information, principal point of departure for the implementation of nursing care plans and medical orders concerning the care and treatment of the patients that is used in handling over of patient to the next shift.

Nursing Kardex plays essential role in continuous quality nursing care to patients who are admitted in the hospital. This tool is used in nurses' endorsement of outgoing staff nurses as they transfer their nursing duties and responsibilities to incoming staff nurses, it improved quality care, it to individual patient, decreases clinical and nursing errors that occurs during handling over of patients to incoming staff nurses on duty. It has great impact on how nurses will render their care to individual patient's needs.

In the United Stated, it is estimated that 80 % of serious medical errors have been attributed to breakdown in communication during handover and an analysis of local incident and clinical review reports indicates that up to 70% of adverse events occur because of miscommunication at points of transition or handover of care (Wang et al., 2021).

Transition of care is a hand over of nursing duties and responsibilities of outgoing staff nurses to incoming duty nurses that will help for continuous process of quality care to patients in healthcare. Complete nursing assessment and complete documentation of data will lead to a greater outcome for patients' recovery meanwhile incomplete documentation can cause harm to patients' life and can prolonged the agony. In handling over of patient Kardex is the main tool used of nurses in endorsement as a quick access to patient's healthcare plan. Nursing Kardex should always be complete documentation and must be updated every after shift or every after new prescribed orders by the doctors.

II. METHODS

Research Design

In this study, the researchers descriptive quantitative research design. Quantitative research methods focus on measurements that are objective, with statistical analysis or numerical data collecting. Data are gathered through different methods such as polls and questionnaires (Creswell, 2009). The method is perfectly suited for this study because it examine the significant difference of the scores or values about Kardex documentation and used when grouped according to specific demographic variables. The objective of the study was to assess the competency of Nurses in Kardex Documentation as well as determine the effects of incomplete documentation in Nursing Kardex on patients' transition of care.

Research Participants

This study involve Staff Nurses of Cagayan Valley Medical Center who are assigned at 5 units/areas catering medical cases only.

The following Inclusion and Exclusion criteria are set in qualifying the participants of the study:

4.1. INCLUSION CRITERIA:

- Age between 21-40 years old (Almost Staff Nurses older than 41 years old are typically assigned administrative task and are less likely to provide nursing bedside care based on Nursing Service Profiling System Committee of Cagayan Valley Medical Center).
- At least 6 months employed in Cagayan Valley Medical Center
- At least 6 months in assigned at the unit/ward.
- Can be Regular and Service Contract Worker
- Staff Nurse

4.2. EXCLUSION CRITERIA:

- Ward Staff Nurses who are at the same time assigned at Special Areas (Intensive Care Units, Operating Room, Post Anaesthesia Care Unit, Delivery Room, Hemodialysis and Endoscopy Unit) Frontline Referring Services and Isolation Areas
- Those who were involved in the pilot-testing of the questionnaire.
- Nurses who do not voluntarily give their informed consent.

The researchers stratified random sampling technique in determining the acceptable sample size. In the five (5) target wards/areas, the population of staff nurses is 85. Following the guidelines of identifying the sample size, the researchers approximately 50% of staff nurses; hence, to be statistically proportionate in accordance to the sampling technique to be used, 50% also of nurses from each target ward/area involved in this research study.

Research Instruments

The researchers develop a survey questionnaire based on relevant literature to meet the objective of the study. Part I of the questionnaire gather demographic profile of the participants of the study. Part II determine the extent of nurses' competencies in Kardex documentation & use. Part III seek the opinion of the participants on the most common effects of incomplete Kardex documentation to patients' transition of care, based on the list enumerated in the questionnaire.

Since the researchers use a newly developed questionnaire, it first undergo validity and reliability tests. In the first phase of assessing the newly developed questionnaire, the researchers seek guidance from three (3) experts in the field of nursing, research, and quality assurance. These members of the Experts Panel assess the clarity of each item, at the same time score each item in accordance with its relevance (validity) to the research topic. The researchers then compute for the Content Validity Index (CVI) score. As per guidelines, each item that have a score of less than 0.70 will be revised; whereas each item that have a score of less than 0.60 will be deleted. In order for the questionnaire to proceed to the next phase of assessment, the overall CVI score must be at least 0.70. Result showed that 0.80.

The second phase of assessing the newly developed questionnaire measure the Cronbach's alpha coefficient to determine the internal reliability and consistency of each item. During this phase, a pilot test using the questionnaire conducted among at least 30 staff nurses. The researchers note that all staff nurses involved in the pilot-testing not be involved in the actual data collection procedure of this study. To prepare the questionnaire for pilot testing, the Statistician will guide the researchers to do the split-half reliability format or any other desired format. For the newly developed questionnaire to be finally "acceptable" for formal distribution to the target participants, the reliability coefficient must be at least 0.70. Though, at least 0.82 is a "satisfactory" result (Polit & Bech, 2018).Result of the pilot test showed that the "Personal Professional Competency" scale had a Cronbach's alpha of 0.828, indicating good reliability, while the "Collaborative Competency of Nurses" scale had a Cronbach's alpha of 0.874, indicating strong reliability. These results confirm the appropriateness of the scales for the study.

Data Gathering Procedures

Prior to data collection, the researchers ethical clearance from the Institutional Research Ethics Board, permissions from the Medical Chief, Office of the Chief Nursing Officer, and Assistant Chief Nursing Officer in Training and Research and Clinicals. As such, this study was given ethical clearance number CVMC RERC 2024-35-E.

Thereafter, the researchers the informed consent voluntarily, non- coercive recruitment the participants after performing full disclosure of relevant information on the conduct of the research study. Very important to highlight during the full disclosure of the information, the participants informed that confidentiality of information and anonymity of their identity will be strictly protected. They also be informed that they can withdraw anytime from the research study, without any consequence. After all the latter, the researchers personally distribute the questionnaires to each participant that take place in a private and comfortable at Unit Nurse Managers Office in Different Wards, ensuring confidentiality and creating a conducive environment for participants to ask questions and seek clarifications . All clarifications on the items of the questionnaire addressed properly and in detail. The participants requested to complete the questionnaire within a day. They informed that the researchers personally retrieve the completed questionnaires.

It is note-worthy that as the researchers retrieved and received the completed questionnaire from each participant, they ensured that all items were answered, while still with the participant.

Data Analysis

After data preparation, cleaning, and management, the researchers with the help of a Professional Statistician will use either the Social Statistical Package for Social Sciences (SPSS) software or the Statistics and Data (STATA) software to process the data.

The researchers use the following descriptive statistical tools:

- Frequency and Percentage used to tabulate the demographic profile.
- Mean of Scores used in determining the extent or degree of competency and occurrence of incomplete Kardex documentation.
- Mode used to determine the common effects of incomplete Kardex documentation on patients' transition of care.

The researchers use an inferential statistical tool in testing the null hypothesis:

- T –test and ANOVA used to assess if there is a significant difference on the degree of competency of staff nurses on Kardex documentation & use, according to their demographic profile.

In this study, the researchers aim to assess the competency levels of staff nurses using a Mean Guide**,** informed by Patricia Benner's Novice to Expert Nursing Theory. This model provided a clear framework for understanding how nurses evolve in terms of competence over time, progressing through distinct stages from novice to expert. The goal was to categorize nurses based on their ability to apply skills, knowledge, and clinical judgment within their specific work environment.

The researchers will based on the Mean Guide to assess the degree of competencies of the staff nurse:

- 1.00 - 1.49: *Novice* - Indicates minimal competency, with significant need for guidance.
- 1.50 - 2.49: *Beginner* - Reflects basic skills; performs tasks with frequent supervision.
- 2.50 - 3.49: *Competent* - Moderate competency; capable of performing tasks independently with some guidance.
- 3.50 - 4.49: *Proficient* - Strong competency; consistently performs tasks with little to no supervision.
- 4.50 - 5.00: *Expert* - Demonstrates comprehensive skills, can perform tasks innovatively and with a high level of independence.

Ethical Consideration

Prior to the actual on-field data gathering, approved ethical clearance number CVMC RERC 2024-35-E and formal permissions sought. Thereafter, informed consents requested from the participants by the researcher after performing full disclosure. It emphasized to them that confidentiality and anonymity protected and that they can withdraw anytime during the conduct of study without effect in any legal, ethical, or professional consequence. It mentioned also that they will not receive any financial payment or other form of reward for their participation.

The researchers explain that the information to be presented after the data collection phase an aggregate data and not an individual data so that the results not and cannot be associated to any one of the participants.

It further be emphasized that only the researchers, their direct supervisor, and their research consultant are the only ones who strict access to the individual questionnaires and other raw data that are gathered. At the conclusion of the study, all completed questionnaires shredded by the researchers, themselves.

III. RESULTS

A. Demographic Profile of the Respondents

Table 1.1. Demographic Profile of the Respondents along Age

Age Group	Frequency	Percentage
25 years old and below	4	10.00
26-30 years old	11	27.50
31-35 years old	16	40.00
36 years old and above	9	22.50
Total	40	100.00
Mean Age	**32 years old**	

Table 1.1 shows that the majority of respondents (40%) were between 31-35 years old, with a mean age of 32 years, indicating that most participants were in their early thirties.

Table 1.2. Demographic Profile of the Respondents along Sex

Sex	Frequency	Percentage
Male	11	27.50
Female	29	72.50
Total	**40**	**100.00**

Table 1.2 shows that the majority of respondents were female (72.50%), while a smaller proportion were male (27.50%).

Table 1.3. Demographic Profile of the Respondents along Ward/Area of Assignment

Ward/Area	Frequency	Percentage
1. Medical Ward	12	30.00
2. Pearl Main	11	27.50
3. Brain and Spine Care	6	15.00
4. Cardiovascular Care	5	12.50
5. Lung Care	6	15.00
Total	**40**	**100.00**

Table shows 1.3 the distribution of respondents across different wards, with the highest proportion working in the Medical Ward (30.00%), followed by Pearl Main (27.50%). The Brain and Spine Care, Lung Care, and Cardiovascular Care wards had smaller proportions of respondents, each ranging from 12.50% to 15.00%.

Table 1.4. Demographic Profile of the Respondents along Length of Employment in the Hospital (Years)

Years	Frequency	Percentage
1 year and below	10	25.60
2 – 5 years	17	43.60
6 – 10 years	9	21.10
More than 10 years	3	7.70
Total	40	100.00
Mean Year	**4 years**	

Table 1.4 shows that the majority of respondents (43.60%) had 2 to 5 years of employment in the hospital, with a mean length of employment of 4 years, while fewer respondents had 1 year or less (25.60%) or more than 10 years (7.70%).

Table 1.5. Demographic Profile of the Respondents along Length of Assignment in the Current Work Area

Length	Frequency	Percentage
Less than 1 year	7	17.50
1-2 years	27	67.50
3 years and above	6	15.00
Total	40	100.00
Mean Length	**2 years**	

Table1.5 shows that the majority of respondents (67.50%) have been assigned to their current work area for 1 to 2 years, with an average assignment length of 2 years.

B. **Degree of Competency of Staff Nurses in Kardex Documentation and Use**

Table 2.1. Degree of Competency of Staff Nurses in Kardex Documentation and Use along Personal Professional Competency

Items	Mean	Description
I update on time the Nursing Kardex so that my colleagues in the same shift can also monitor relevant updates about our patient.	4.68	Expert
I ensure that the vital signs monitoring data of the patient during my shift is timely updated, complete, and accurate.	4.53	Expert
I make sure that I document accurately all doctor's order of laboratory and diagnostic tests.	4.80	Expert
I make sure that I document accurately medications administered and new medications ordered.	4.83	Expert
I document properly and on time the intake and output of my patient.	4.38	Proficient
I make sure to complete the Nursing Kardex before my shift ends.	4.65	Expert
I use Nursing Kardex in handling over my patients to the next shift.	4.98	Expert
Category Mean	**4.70**	**Expert**

Table 2.1 shows that staff nurse's demonstrated expert competency in Kardex documentation, with high mean scores for tasks such as updating patient information, documenting medications, and ensuring proper handover, resulting in an overall mean competency rating of 4.70.

Table 2.2. Degree of Competency of Staff Nurses in Kardex Documentation and Use along Team Management of Patients during the Shift

Items	Mean	Description
I use Nursing Kardex to monitor or trace all diagnostic/ancillary procedures of my patient's plan of care.	4.75	Expert
I ensure that my colleagues who handle the same patient are also fully aware of the patient's name and ward/area, and bed number.	4.83	Expert
I make sure that my colleagues who handle the same patient also understand the occurring problems of the patient during my shift.	4.78	Expert
I make sure that my colleagues who handle the same patient also understand the admission diagnosis and date of admission of the patient.	4.68	Expert
I see to it that my colleagues who handle the same patient also understand the brief medical history of the patient.	4.45	Expert
I see to it that I document properly and accurately changes from prior assessments of the patient so that my colleagues in the same shift handling the same patient also understand the patient's status.	4.70	Expert
I make sure that I document accurately medications administered so that repetition and overdosage will be prevented by colleagues handling the same patient.	4.68	Expert
Category Mean	**4.70**	**Expert**

Table 2.2 shows that staff nurses exhibited expert competency in team management using Kardex, with an overall mean rating of 4.70.

Table 2.3. Degree of Competency of Staff Nurses in Kardex Documentation and Use along During Patient Transition of Care (Endorsement)

Items	Mean	Description
I use Nursing Kardex to properly endorse all diagnostic/ancillary procedures done or to be done relevant to my patient's plan of care.	4.70	Expert
I use Nursing Kardex to ensure that my colleagues who will handle my patient on the next shift are also fully aware of the patient's name and ward/area, and bed number.	4.70	Expert
I use Nursing Kardex to make sure that I endorse to my colleagues who will handle my patient in the next shift the problems that occurred to my patient during my shift.	4.80	Expert
I use Nursing Kardex to make sure that my colleagues who will handle my patient in the next shift also understand the admission diagnosis and date of admission of my patient.	4.70	Expert
I use Nursing Kardex to see to it that my colleagues who will handle my patient in the next shift also understand the brief medical history of my patient.	4.58	Expert
I use Nursing Kardex to see to it that my colleagues who will handle my patient in the next shift will understand any changes from prior assessments about the patient's status.	4.78	Expert
I use Nursing Kardex to make sure that my colleagues who will handle my patient in the next shift are aware of the medications administered, not administered due to specific reasons, and/or newly-ordered, if applicable.	4.50	Expert
I use Nursing Kardex to make sure that my colleagues who will handle my patient in the next shift are aware of the current	4.83	Expert

IV fluids hooked, to follow, and/or newly-ordered, if applicable.		
I use Nursing Kardex to make sure that my colleagues who will handle my patient in the next shift are aware of the Intake and Output of my patient during my shift.	3.98	Proficient
I use Nursing Kardex to endorse to my colleagues in the next shift the timing of physician visit to or if the physician did not visit my patient.	3.88	Proficient
Category Mean	**4.54**	**Expert**

Table 2.3 reveals that staff nurses showed expert competency in using Kardex for patient transitions, particularly in endorsing diagnostic procedures, patient details, and medications, with an overall mean rating of 4.54; however, documenting intake and output and physician visit timings were rated as proficient.

Table 2.4. Summary Table of the Degree of Competency of Staff Nurses in Kardex Documentation and Use

Dimensions/Categories	Mean	Description
Personal Professional Competency	4.70	Expert
Team Management of Patients during the Shift	4.70	Expert
During Patient Transition of Care (Endorsement)	4.54	Expert
Overall Mean	4.64	Expert

Table 2.4 shows that staff nurses' demonstrated expert competency in all dimensions of Kardex documentation and use, with an overall mean competency rating of 4.64.

C. Significant Difference on the Degree of Competency of Staff Nurses in Kardex Documentation and Use when Grouped According to Demographic Profile

Table 3.1. Significant Difference on the Degree of Competency of Staff Nurses in Kardex Documentation and Use when Grouped According to Age

Age	Mean	df	F-value	P-value	Decision
25 years old and below	4.46	3	1.46	.0277	Not Significant
26-30 years old	4.66				
31-35 years old	4.60				
36 years old and below	4.77				

**significant at .05 level*

Table 3.1 shows that there is no significant difference on the degree of competency of Staff Nurses in Kardex Documentation and Use when grouped according to Age. Hence, the null hypothesis is accepted. Based on the study's findings, the competency levels of staff nurses in using and documenting with the Kardex system do not vary significantly across different age groups. In other words, the age of the nurses does not appear to influence their level of skill or effectiveness in Kardex documentation.

Table 3.2. Significant Difference on the Degree of Competency of Staff Nurses in Kardex Documentation and Use when Grouped According to Sex

Sex	Mean	Df	t-value	P-value	Decision
Male	4.61	38	-.399	.692	Not Significant
Female	4.65				

Table 3.2 shows that there is no significant difference on the degree of competency of Staff Nurses in Kardex Documentation and Use when grouped according to Sex. Hence, the null hypothesis is accepted. The competency levels of staff nurses in Kardex documentation and use do not significantly differ between male and female nurses. In other words, the sex of the nurses does not have a notable impact on their competency in using the Kardex system.

Table 3.3. Significant Difference on the Degree of Competency of Staff Nurses in Kardex Documentation and Use when Grouped According to Ward/Area of Assignment

Ward/Area of Assignment	Mean	df	F-value	P-value	Decision
1- Medical Ward	4.76*	4	3.23	.049	Significant
2- Pearl Ward	4.60				
3- Brain and Spine Care	4.84				
4- Cardio ward	4.62				
5- Lung Care	4.31*				

**significant at .05 level*

Table 3.3 shows that there is a significant difference on the degree of competency of Staff Nurses in Kardex Documentation and Use when grouped according to Ward/Area of Assignment. Nurses' skills and effectiveness in using the Kardex system vary depending on the specific ward or area they work in.

Table 3.4. Significant Difference on the Degree of Competency of Staff Nurses in Kardex Documentation and Use when Grouped According to Length of Employment in the Hospital

Length of Employment	Mean	df	F-value	P-value	Decision
1 year and below	4.66	3	2.04	.179	Not Significant
2 – 5 years	4.72				
6 – 10 years	4.44				
More than 10 years	4.70				

Table 3.4 shows that there is no significant difference on the degree of competency of Staff Nurses in Kardex Documentation and Use when grouped according to Length of Employment in the Hospital. Hence, the null hypothesis is accepted. the number of years a nurse has worked at the hospital does not appear to affect their competency in using the Kardex system. Since no significant difference was found, this suggests that both newer and more experienced nurses demonstrate similar levels of skill in Kardex documentation.

Table 3.5. Significant Difference on the Degree of Competency of Staff Nurses in Kardex Documentation and Use when Grouped According to Length of Assignment in the Current Work Area

Length	Mean	df	F-value	P-value	Decision
Less than 1 year	4.54*	2	8.69	.003	Significant
1-2 years	4.62				
3 years and above	4.86*				

Table 3.5 presents an analysis of the degree of competency of staff nurses in Kardex documentation and use, categorized by their length of assignment in the current work area. The mean competency scores reveal a significant difference among the groups. This finding suggests that the length of time staff nurses have been assigned to their current work area suggest to affect their competency in Kardex documentation and use. The progression in mean scores across the experience groups implies that as nurses gain more experience in their roles, their proficiency in documentation improves.

D. Most common effects of incomplete Kardex documentation to patients' transition of care

Table 4. Most Common Effects of Incomplete Kardex Documentation to Patient Transition of Care.

Effects	Mode	Percentage	Rank
Incoming nurses' confusion about patient ward/unit and bed number.	10	25.00	14.33
Incoming nurses not being fully aware of the chief complaint/s of the patient.	18	45.00	7
Incoming nurses not aware if all medications were administered and if on time.	12	30.00	11.5
Incoming nurses not knowing the admission diagnosis of the patient.	17	42.50	8.33
Incoming nurses not knowing the current length of hospitalization of the patient.	10	25.00	14.33
Incoming nurses not aware of the important medical history of the patient.	20	50.00	4.5
Incoming nurses not fully aware of the summary of up-to-date treatment of the patient.	22	55.00	2
Incoming nurses not fully aware of the updated vital signs of the patient in the previous shift.	10	25.00	14.33
Incoming nurses not aware of changes in assessments about the patient in previous shifts and days since start of hospitalization.	26	65.00	1
Incoming nurses not aware if the attending physician/s visited the patient.	12	30.00	11.5
Incoming nurses not aware of the time that the physician/s visited the patient.	11	27.50	13
Incoming nurses not being able to follow-up results of diagnostic and laboratory tests done in the previous shift.	21	52.50	3
Incoming nurses not aware of the physician's order/s for diagnostic and laboratory tests for the patient.	19	47.50	6
Incoming nurses not being able to understand the need to the newly-ordered diagnostic and laboratory tests	17	42.50	8.33
Incoming nurses not being able to carry out order for new medications of the patient.	17	42.50	8.33
Incoming nurses not being aware of additional or new intravenous fluids of the patient.	20	50.00	4.5

Table 4 identifies key effects of incomplete Kardex documentation on patient transitions, with the most common issues being incoming nurses' lack of awareness about changes in assessments, up-to-date treatments, and diagnostic test follow-ups, along with confusion regarding medical history, medications, and physician visits.

IV. DISCUSSION

Kardex documentation plays a pivotal role in nursing practice, facilitating the efficient delivery of patient care by providing essential information that is readily accessible. This analysis examines the demographic characteristics of nurses in a Region II tertiary hospital, describing how these factors might influence their proficiency in Kardex documentation. The study underscores the critical role of Kardex competence in ensuring accurate and timely patient care transitions. By analyzing the mean scores and descriptions from the survey data, this discussion provides a comprehensive understanding of nurses' skills in various aspects of Kardex documentation. Additionally, it highlights the potential consequences of incomplete documentation on patient care transitions, emphasizing the need for continuous education, technological advancements, and supportive work environments to optimize the use of Kardex documentation and improve patient outcomes.

Demographic Profile of the Respondents Age Distribution

The age distribution of nurses in this study reveals that the majority (40%) fall within the 31–35 age range, with a mean age of 32 years. This indicates a relatively experienced cohort, as nurses in the mid-career stage generally possess a balanced mix of foundational

clinical skills and advancing expertise in documentation (Mark et al., 2020). Younger nurses, aged 25 years and below (10%), may lack the same level of experience, which can affect their efficiency and accuracy in Kardex documentation (Johnson & Allen, 2021). Nurses aged 26–30 years (27.5%) are typically in the process of enhancing their clinical and documentation competencies, while those in the 36 and above age bracket (22.5%) may bring advanced judgment but potentially face challenges in adapting to newer technologies (Thompson & Zhou, 2024). Literature emphasizes the importance of targeted training programs and mentorship to ensure consistent competency across age groups and mitigate age-related disparities in documentation skills (Pichler et al., 2021).

Sex Composition

The demographic data indicates that the nursing workforce is predominantly female (72.5%), with males representing 27.5%. This gender distribution is consistent with global trends in the nursing profession, where women continue to make up the majority due to historical and cultural norms associated with caregiving roles (Lee et al., 2022). The gender composition may influence collaborative practices and patient care approaches, as studies have shown that female nurses often emphasize detailed communication and teamwork, both of which are essential for maintaining accurate Kardex documentation (Müller-Staub et al., 2020). Male nurses, though fewer in number, contribute diverse perspectives and are equally capable of proficient documentation when provided with standardized training (Thompson & Zhou, 2024). Ensuring equitable access to education and ongoing professional development can help bridge perceived differences in competency linked to gender, fostering a consistent standard of care across the workforce (Smith et al., 2022).

Ward/Area of Assignment

The distribution of nurses across different wards highlights how the specific nature of their assigned areas may influence their competency in Kardex documentation. The majority of respondents were assigned to the Medical Ward (30%) and Pearl Main (27.5%), with smaller representations in specialized wards such as Brain and Spine Care (15%), Cardiovascular Care (12.5%), and Lung Care (15%). Studies suggest that ward-specific demands significantly shape documentation practices. Nurses in general medical areas often handle diverse patient cases requiring comprehensive but routine documentation, whereas those in specialized wards may manage more complex cases that demand meticulous and detailed Kardex entries (Dehghani et al., 2022; Rivera et al., 2023).

This variation in assignment areas aligns with findings by Santos et al. (2021), which noted that nurses in specialized units like intensive care or neurology often develop heightened documentation skills due to the critical nature of their patient care responsibilities. Conversely, nurses in general wards may face challenges related to high patient turnover, which can affect the completeness of Kardex entries during care transitions (Berry & Phillips, 2023). Addressing these variations through targeted training and tailored documentation protocols can enhance competency across all wards, ensuring consistency in patient information management regardless of the assignment area.

Length of Employment

The length of employment data shows that a significant proportion of respondents have moderate tenure, with 43.6% having 2–5 years of experience, and a mean length of 4 years. This finding aligns with the research of Santos et al. (2021), which suggests that nurses in their early years of employment possess foundational documentation skills but may require ongoing training to address specific gaps in Kardex usage. Newer nurses (1 year and below, 25.6%) may lack the advanced experience needed to fully understand the complexities of care transitions, as noted by Reid et al. (2023).

In contrast, those with over 10 years of experience (7.7%) tend to exhibit stronger competencies due to their familiarity with hospital systems and processes. This supports observations by Rivera et al. (2023), who found that length of employment enhances efficiency in documentation. However, the smaller representation of highly experienced nurses suggests potential challenges in mentorship and skill transfer, as senior nurses often serve as role models for best practices in Kardex documentation (Lee et al., 2022). These findings underscore the need for continuous professional development programs that are tailored to nurses at various career stages, ensuring consistent documentation practices across experience levels.

Length of Assignment in Current Work Area

The majority of respondents (67.5%) have been assigned to their current work area for 1–2 years, with a mean duration of 2 years. This suggests a moderate level of familiarity with specific workflows, patient populations, and documentation requirements. As noted by Choi et al. (2021), consistency in work assignments enables nurses to develop expertise in managing the documentation processes unique to their wards, which can enhance both the efficiency and accuracy of Kardex usage. However, 17.5% of respondents with less than one year in their current assignment may face challenges in achieving full competency due to limited exposure to ward-specific practices.

Conversely, nurses with over three years in the same work area (15%) are likely to exhibit greater proficiency in Kardex documentation, as their familiarity with recurring patterns and procedures enhances their ability to maintain comprehensive records. This aligns with findings by Garcia et al. (2024), which suggest that extended experience in a specific ward promotes mastery in documentation. These observations underscore the importance of providing targeted onboarding and mentorship for newer staff, while also fostering continuous skill refinement for more experienced nurses to ensure uniform competency across all work assignments.

Degree of Competency in Kardex Documentation

1. **Personal Professional Competency**

The findings indicate a high degree of competency among staff nurses in using the Nursing Kardex, with an overall category mean of 4.70, classified as "Expert." Key aspects such as accurately documenting doctor's orders for laboratory tests (mean = 4.80), administering and ordering medications (mean = 4.83), and ensuring the effective use of the Kardex during patient handovers (mean = 4.98) were rated at expert levels. These results align with the research of Thompson and Zhou (2024), which emphasizes that meticulous and timely documentation practices are essential for improving patient safety and ensuring continuity of care.

The high competency levels demonstrated in areas such as monitoring vital signs, updating intake and output records, and completing the Kardex before the shift ends reflect a commitment to standardized documentation practices, as supported by Garcia et al. (2024), who highlight the importance of accuracy and timeliness in reducing medical errors. Furthermore, the use of the Nursing Kardex during handovers ensures seamless transitions of care, a practice endorsed by studies such as those by Choi et al. (2021), which underscore the role of structured tools like the Kardex in enhancing communication across shifts.

Despite the overall expert-level competency, the slightly lower mean score for intake and output documentation (4.38, "Proficient") suggests an area where further emphasis may be required to ensure consistency across all domains of Kardex use. These results highlight the importance of fostering continuous professional

development and ensuring that even proficient skills are regularly refined to meet expert-level standards.

2. **Team Management of Patients During the Shift**

The results demonstrate a high level of competency among staff nurses in managing team-based patient care during shifts using the Nursing Kardex, as reflected by a category mean of 4.70, classified as "Expert." Critical areas such as ensuring colleagues are aware of the patient's diagnostic/ancillary procedures (mean = 4.75), patient identification details (mean = 4.83), and understanding patient problems and admission information (means = 4.78 and 4.68, respectively) were rated at expert levels. These competencies facilitate effective teamwork, seamless communication, and comprehensive care.

The use of the Kardex for accurately documenting changes in patient assessments (mean = 4.70) and medication administration (mean = 4.68) highlights its role in preventing medical errors, as emphasized in studies by Thompson and Zhou (2024), which link structured tools to reduced risks of repetition and overdosage. Similarly, research by Garcia et al. (2024) underscores that shared knowledge among healthcare team members improves both workflow efficiency and patient outcomes.

Furthermore, ensuring that team members are informed about patient status aligns with recommendations from Choi et al. (2021), who found that structured documentation tools like the Kardex enhance interdisciplinary communication and support patient-centered care. The slightly lower score for documenting brief medical histories (mean = 4.45) suggests a potential area for targeted improvement to ensure uniform excellence across all aspects of documentation. Overall, these findings reaffirm the critical role of the Nursing Kardex in promoting cohesive, competent team management during shifts.

3. During Patient Transition of Care (Endorsement)

The results indicate that staff nurses exhibit a high level of competency in using the Nursing Kardex during patient transitions of care, with a category mean of 4.54, classified as "Expert." The highest-rated competencies relate to endorsing diagnostic and ancillary procedures (mean = 4.70) and ensuring that the next shift is fully informed about key patient details (e.g., name, ward, problems, diagnosis) with mean scores between 4.68 and 4.80. These practices are essential for maintaining continuity of care and preventing errors, as emphasized in the literature (Thompson & Zhou, 2024; Garcia et al., 2024). Proper documentation and communication during patient handovers are vital for reducing miscommunication and enhancing patient safety during transitions, as described by Choi et al. (2021).

Although most items achieved expert-level competency, two aspects were rated slightly lower. Specifically, the endorsement of intake and output (mean = 3.98) and the timing of physician visits (mean = 3.88) were rated as "Proficient." This suggests that while documentation of these aspects is generally performed well, there may be room for improvement in ensuring these details are consistently included, which could directly impact patient care outcomes. A study by Kim et al. (2023) highlights that incomplete documentation of such parameters could lead to communication gaps and affect patient care quality during transitions, emphasizing the importance of thorough and complete Kardex records.

Overall, the high competency scores suggest that staff nurses are effectively utilizingthe Nursing Kardex to ensure smooth patient handovers, contributing to improved patient safety and continuity of care. However, attention to specific documentation elements, such as intake and output and physician visits, could further optimize the transition process.

Overall Competency Analysis

The analysis of staff nurses' competency in Kardex documentation reveals that nurses at the Region II Tertiary Hospital demonstrate high proficiency across various dimensions of documentation. With an overall mean of 4.64, categorized as "Expert," nurses exhibit exceptional competence in both personal professional competency (mean = 4.70) and team management of patients during shifts (mean = 4.70). These competencies are crucial for effective patient management and seamless communication within the healthcare team. These findings align with existing literature, which indicates that high competency in documentation contributes to improved clinical outcomes and enhanced team collaboration (Choi et al., 2021; Kim et al., 2023).

However, the dimension of "During Patient Transition of Care (Endorsement)" shows a slightly lower mean of 4.54, though it still falls within the "Expert" category. This suggests that while nurses are highly proficient in utilizing the Kardex for patient transitions, there remains room for improvement in ensuring the completeness of documentation, particularly in areas such as Intake and Output and physician visit timing. The importance of accurate and timely patient handovers is well-documented in the literature, where incomplete or delayed documentation can lead to miscommunication, errors in care, and adverse patient outcomes (Thompson & Zhou, 2024).

In summary, the nurses' demonstrated expertise in Kardex documentation emphasizes the critical role of thorough and consistent documentation in ensuring quality patient care and smooth transitions between shifts. The findings are consistent with best practices in nursing and suggest that enhancing documentation practices, particularly in specific areas, could further optimize patient transitions and overall safety (Garcia et al., 2024).

Demographic Profile and Competency Analysis Competency by Age

The analysis presented in Table 3.1 reveals no significant difference in the degree of competency in Kardex documentation when grouped by age. With an F-value of 1.46 and a p-value of 0.0277, which is greater than the 0.05 significance level, the null hypothesis is accepted. This indicates that age does not influence the competency of staff nurses in using the Kardex system. Competency levels are consistent across different age groups, from nurses aged 25 years and below to those aged 36 years and older.

This finding aligns with research by Mark et al. (2020), which indicated that age does not significantly affect nursing documentation proficiency. Both younger and older nurses are able to demonstrate similar competencies if they receive adequate training and possess comparable experience in using electronic documentation systems. Similarly, Thompson and Zhou (2024) suggest that factors such as training and familiarity with documentation protocols have a greater impact on proficiency than age. This underscores the importance of professional development and training to ensure that nurses of all ages maintain high standards in documentation and patient care transitions.

Competency by Sex

The analysis in Table 3.2 shows no significant difference in the degree of competency in Kardex documentation when grouped by sex. With a t-value of -0.399 and a p-value of 0.692, which exceeds the 0.05 significance level, the null hypothesis is accepted, suggesting that the sex of nurses does not significantly affect their competency in using the Kardex system. Both male and female nurses exhibit similar levels of proficiency in documentation and patient handover processes.

This result is consistent with studies indicating that gender does not significantly influence nursing competencies related to documentation and patient care. For instance, a study by Mark et al. (2020) found no gender-related differences in the proficiency of nurses regarding documentation practices, as both male and female nurses

performed similarly in recording and managing patient information. Moreover, Thompson and Zhou (2024) emphasized that factors such as education, training, and experience play a more significant role in determining documentation proficiency than gender. This is further supported by Jackson et al. (2021), who found that male and female nurses demonstrated comparable competencies in clinical task when they had undergone consistent training including documentation, when provided with equal opportunities for training and exposure to the same systems.

Thus, the results suggest that variations in competency are more likely to stem from professional experience, training, and access to resources rather than gender. This aligns with the broader understanding in nursing literature that emphasizes the importance of skill-building and professional development over demographic characteristics such as sex.

Competency by Ward/Area of Assignment

The results presented in Table 3.3 indicate a significant difference in the degree of competency in Kardex documentation when grouped by ward or area of assignment. With a p-value of 0.049, which is less than the 0.05 significance threshold, the null hypothesis is rejected, indicating that the work environment influences the effectiveness of Kardex use. Nurses assigned to certain areas, such as the Brain and Spine Care and Medical Wards, demonstrated higher competency compared to those in other areas, such as Lung Care. Research supports the idea that specific ward conditions, such as patient care complexity and workload, can impact nursing performance and documentation practices. A study by Jackson et al. (2021) suggests that high-acuity settings, like intensive care or specialty wards, require more detailed and frequent documentation, thus promoting better competency in using systems such as Kardex. In contrast, nurses in lower-acuity wards may have fewer opportunities to engage in complex documentation tasks, which can impact their proficiency.

Competency by Length of Employment

The analysis in Table 3.4 reveals no significant difference in the degree of competency in Kardex documentation when grouped by length of employment within the hospital. With a p-value of 0.179, which exceeds the 0.05 significance threshold, the null hypothesis is accepted, indicating that both novice and more experienced nurses demonstrate similar levels of competency in Kardex documentation. This finding aligns with research suggesting that training and system familiarity, rather than length of employment, are the primary determinants of proficiency. For example, Thompson and Zhou (2024) noted that standardized training and regular updates in documentation systems have a greater impact on competency than a nurse's length of tenure. Similarly, Mark et al. (2020) found that nurses with varying years of experience demonstrated similar levels of proficiency in documentation if they received consistent professional development.

Competency by Length of Assignment in Current Work Area

The analysis in Table 3.4 also reveals no significant difference in the degree of competency in Kardex documentation when grouped by the length of assignment in the current work area, with a p-value of 0.179, which exceeds the 0.05 significance threshold. This suggests that both novice and more experienced nurses demonstrate similar levels of competency in Kardex documentation, regardless of their duration of assignment in their current work area. This finding further supports the notion that training and system familiarity, rather than assignment length, are key factors in determining competency. Thompson and Zhou (2024) emphasized that ongoing training and familiarity with the system are more important than the length of a nurse's assignment. Similarly, Mark et al. (2020) found that nurses with varying years of experience performed similarly in documentation tasks when they had undergone consistent training.

Effects of Incomplete Kardex Documentation on Patient Transition of Care

The analysis of the most common effects of incomplete Kardex documentation highlights several critical areas where gaps in information can disrupt the transition of care between nursing shifts.

The most significant consequence of incomplete Kardex documentation is that incoming nurses are unaware of changes in patient assessments made during previous shifts, with this issue ranked first, affecting 65% of cases. This lack of awareness can result in a breakdown of continuity in patient care, as nurses may fail to recognize or act on critical changes in a patient's condition, potentially leading to adverse outcomes (Schnock, 2022). Nurses rely on accurate, up-to-date documentation to inform their decision-making, and incomplete Kardex entries can lead to miscommunication and fragmented care. Turner et al. (2021) identified poor handover communication, exacerbated by incomplete documentation, as a leading cause of medical errors, particularly during shift transitions.

A second significant effect is that incoming nurses may not have a complete understanding of the patient's current treatment summary, with this issue affecting 55% of cases. This lack of clarity can result in a failure to coordinate patient care plans, especially when treatment protocols have been altered. Incomplete documentation impedes the ability of the next shift to track treatment progression accurately. Williams et al. (2020) observed that inconsistent charting and failure to update patient care details led to delays in treatments, particularly when nurses were unaware of recent changes in therapeutic interventions.

The third most common issue, affecting 52.5% of cases, is the inability to follow up on diagnostic and laboratory test results from the previous shift. Without clear documentation of test results and physician orders, incoming nurses may overlook critical tests, causing delays in diagnosis and treatment. Robinson and Toms (2019) found that miscommunication regarding test results is a significant contributor to delays in care and missed diagnoses.

Additionally, a lack of awareness regarding the physician's visit and any changes in the patient's condition further underscores how incomplete Kardex documentation disrupts care continuity. Nurses are typically responsible for relaying essential patient information, including whether a physician has visited, any changes in treatment, or the need for further medical interventions. Inaccurate or incomplete documentation increases the risk of delayed or missed care, which can lead to adverse patient outcomes (Greenfield et al., 2020).

These findings align with existing research, emphasizing the critical role of complete and up-to-date Kardex documentation in preventing confusion during handovers, enhancing communication among care teams, and ensuring patient safety. The absence of crucial information not only hampers nurses' ability to provide effective care but also exposes patients to greater risks during transitions between shifts or care providers (Leape et al., 2018).

Over- all, the effects of incomplete Kardex documentation identified in this study have significant implications for patient safety and the continuity of care. Addressing these issues by ensuring timely, accurate, and thorough documentation can substantially improve patient outcomes during transitions of care.

V. CONCLUSION AND RECOMMENDATIONS

The study concludes that ward nurses generally demonstrate an expert level of competency, and that both the specific ward of assignment and the duration of assignment significantly influence staff nurses' proficiency in Kardex documentation and use. Incomplete Kardex documentation was found to most commonly affect incoming

nurses by leaving them unaware of assessment changes in previous shifts, recent treatments administered, and pending diagnostic or laboratory results, thereby potentially compromising timely patient care and continuity between shifts. To address these issues, the study recommends the integration of proper Kardex completion into nursing standards and training programs, including the B.E.S.T. (Basic Enhancement Skills and Training for Nurses) Program, alongside the standardization of documentation protocols. Adoption of user-friendly electronic health record (EHR) systems, continuous monitoring with feedback, mentorship programs, and the promotion of accountability and best practices are also advised. These measures are expected to enhance documentation accuracy, reduce errors, and improve patient care outcomes. Future research should explore the impact of advanced EHR systems, longitudinal assessments of training effectiveness, and the role of team collaboration in strengthening documentation practices.

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