

# DEVELOPMENT, VALIDITY AND TESTING OF PATIENT HANDOVER DOCUMENTATION TOOL

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**Abstract:** The aim of this study was to develop and test the validity and reliability of the Patient's DVT Risk Assessment Tool. Patient's DVT Risk Assessment Tool is a new instrument designed to identify the risk of DVT in hospitalized patients. It consists of 27 items. The results of testing the Patient's DVT Risk Assessment Tool suggest that it is valid in measuring the DVT risk in patients admitted in medical, surgical, gynae wards, ICU and Emergency department. The content validity index of the newly developed tool is 0.986. Internal consistency (Cronbach's Alpha = 0.745). Interclass correlation coefficient value is 0.98, Cohen's kappa value is 0.898, percentage agreement is 96%. We conclude that Patient's DVT Risk Assessment Tool is a valid, reliable instrument that is quick and easy to use in the Hospital setting.

**Keywords:** Patient Handover, Patient Handover Documentation Tool, content validity index, Documentation, Staff Nurses.

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## I. INTRODUCTION

*"One must have something to communicate [and] have someone to whom to communicate it, and one must really communicate it- not merely express it for oneself alone."- Friedrich Von Schlegel (1772-1829).*

Shift handover is a commonly practiced among nurses on daily basis, but standard and effective handover and information communication skills are not taught formally during nursing academic education. Nurses learn such skills during their daily practice and from more experienced nurses. The primary goal of shift handover is to communicate the patients' clinical information and to provide a safe and high-quality care; however, poor information communication during nonstandard and ineffective shift handover may endanger patient safety.<sup>3</sup>

Hand-over communication relates to the process of passing patient-specific information from one caregiver to another, from one team of caregivers to the next, or from caregivers to the patient and family for the purpose of ensuring patient care continuity and safety. Hand-over communication also relates to the transfer of information from one type of health-care organization to another, or from the health-care organization to the patient's home. Information shared usually consists of the patient's current condition, recent changes in condition, ongoing treatment and possible changes or complications that might occur. Patient care handover occurs in many settings across the continuum of care, including admission from primary care, physician sign-out to a covering physician, nursing change-of-shift reporting, nursing report on patient transfer between units or facilities, anesthesiology reports to post-anesthesia recovery room staff, emergency department communication with staff at a receiving facility during a patient's transfer, and discharge of the patient back home or to another facility.<sup>4</sup>

Globally, patient handover has caused alarm with a link between poor communication and sentinel events. WHO, Ron Paterson, Health and Disability Commissioner, found grave flaws in the care a 50 year old man received at Wellington Hospital prior to his death, and linked some of the condemnation to the Registered Nurse who failed to monitor the patient's condition adequately, and gave an inadequate handover to the night staff. It was highlighted that national collaboration is needed stating standardized handovers of both nursing and medicine are a priority. A Progress Report showed that handover practices and the information that was handed over ranged widely with no consistency of practice.<sup>5</sup>

## II. REVIEW OF LITERATURE

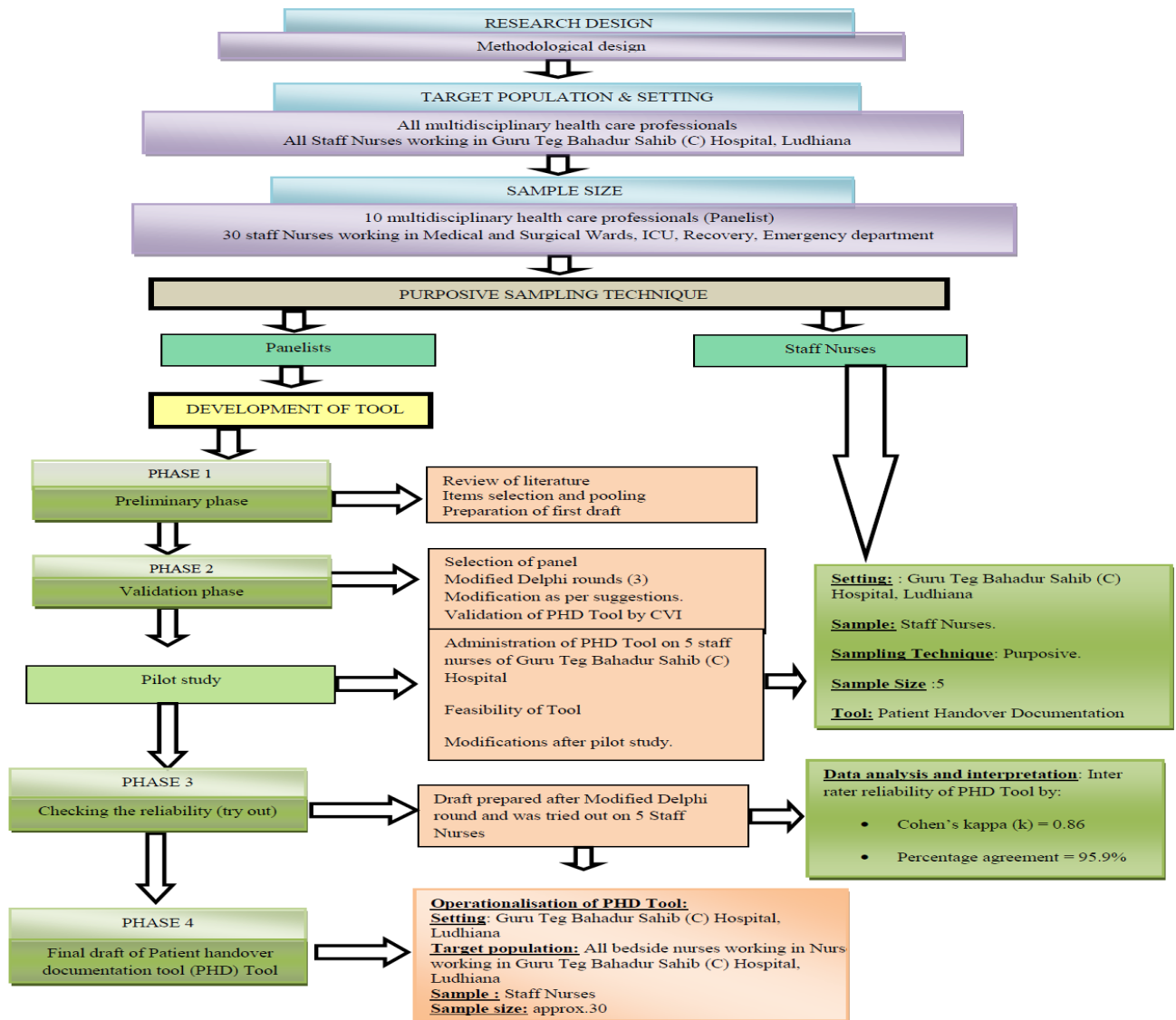
Professor John S Carroll, (2012)<sup>6</sup> conducted a study and found considerable variability across units, nurses and, surprisingly, roles. Incoming and outgoing nurses had different expectations for a good handoff: incoming nurses wanted a conversation with questions and eye contact, whereas outgoing nurses wanted to tell their story without interruptions.

More experienced nurses abbreviated their reports when incoming nurses knew the patient, but the incoming nurses responded with a large number of questions, creating a contest for control. Nurses' ratings did not correspond to expert ratings of information adequacy, suggesting that nurses consider other functions of handoffs beyond information processing, such as social interaction and learning.

Sexton Ac., Chan C., et., al (2004)<sup>7</sup> conducted a study on the content of nursing handover when compared with formal documentation sources. In this study twenty-three handovers, covering all shifts, from one general medical ward were audio-taped. Their content was analyzed and classified according to where, within a ward's documentation systems, the information conveyed could be located. Results showed that almost 84.6% of information discussed could be located within existing ward documentation structures and 9.5% of information discussed was not relevant to ongoing patient care. Only 5.9% of handover content involved discussions related to ongoing care or ward management issues that could not be recorded in an existing documentation source. Hence it is, concluded that streamlining the nursing handover may improve the quality of the information presented and reduces the amount of time spent in handover.

Currie J (2000),<sup>8</sup> conducted an audit in orthopedic and surgical ward to find out the suitable handover method, and time spent on handover. The researcher audited ten handovers, five from each ward with the use of audit checklist. The audit report depicted that 60% of the sample group used the nursing documentation as part of handover, 70% included past medical history in their handover and only 20% of the hand over carried out in patient's room. The length of the handover was appropriate for the number of patients. The audit concluded the need for patient involvement and should be carried out using relevant information from up-to-date period.

### III. METHODOLOGY CHART



ANALYSIS AND INTERPRETATION OF DATA  
Descriptive and Inferential Statistics

#### IV. VALIDITY OF THE TOOL

The method used to validate the Patient Handover Documentation Tool includes:

Content validity and Face validity.

##### **CONTENT VALIDITY**

To ascertain the appropriateness and relevance of the content of the Patient Handover Documentation Tool for the purpose of the study content validity was taken. Content validity indicates a complete range of the attributes that are under study depicted by the content. To estimate the content validity a thorough review of the literature was undertaken to clearly define the conceptual framework of Patient Handover Documentation Tool and expert's opinion was taken. After establishment of the conceptual framework, purposely chosen experts in the fields of nursing were consulted to review the tool item to ensure its consistency with conceptual frame work. The relevance of the each item was rated independently by each expert on to the conceptual framework using 4 point Likert scale (1 = not relevant, 2 = somewhat relevant, 3 = relevant, 4 = very relevant). The validity of the items was estimated by using the Content Validity Index (CVI).

- The Content Validity Index for each item (CVI - i) in the tool, calculated with the following formula: -

$$CVI - i = \frac{\text{Number of experts agreeing on the value of relevance or pertinence of each items}}{\text{Total number of experts}}$$

CVI of items = 1

- The Content Validity Index for each expert (CVI - e), calculated with the following formula: -

$$CVI - e = \frac{\text{Number of items scored between 3 and 4 by an items}}{\text{Total number of items}}$$

CVI of experts = 1

- General Content Validity Index for the tool (CVI - total), calculated with the following formula: -

$$CVI - total = \frac{\text{Sum of all experts individual CVI}}{\text{Number of experts}}$$

CVI of tool = 1

**Table 1**  
**Individual validity index for each expert (CVI-e) Round III**

Expert panelist	Number of items scored between 3 and 4	Content validity CVI-e
Expert 1	124	1
Expert 2	124	1
Expert 3	124	1
Expert 4	124	1
Expert 5	124	1
Expert 6	124	1
Expert 7	124	1
Expert 8	124	1
Expert 9	124	1
Expert 10	124	1

CVI-e < 0.62: Low content validity

0.62 - 0.8: Average content validity

0.9-1: High content validity

**Table 1** depicts Individual validity index for each expert (CVI-e) I of round III. This shows that all experts has CVI-e = 1. Which indicative of high content validity index.

**FACE VALIDITY**

Face validity indicates the appropriateness of the Patient Handover Documentation Tool to the purpose of the study and content area. The questionnaire is evaluated in terms of feasibility, readability, consistency of style and formatting, and the clarity of the language used with the use of face validity. Face validity was given by all 10 experts.

**RELIABILITY**

After completion of the validity procedures, the final tool was examined to assess its reliability. The method of reliability used was: Inter rater Reliability

**Calculation of Interrater Reliability**

It was undertaken to estimate the degree of consistency among the raters. This is done by using percentage agreement measure, Cohen’s Kappa and the interclass correlation.

**Percentage agreement measure**

In this percentage of the occasions where the raters agree in the ratings is calculated by dividing the number of agreements by the number of agreements plus number of disagreements and multiplying by 100. The percentage agreement measure was 95.9%.

**Table 2**  
**Percentage agreement**

Total no. of agreement	Total no. item	Percentage agreement
595	620	95.9%

**Table 2** depicts percentage agreement (reliability) the inter-rater reliability. The total degree of agreement among raters that come out to be 595 out of 620 total items and the percentage agreement come out to be 95.9% i.e. tool is highly reliable.

**Cohen’s Kappa**

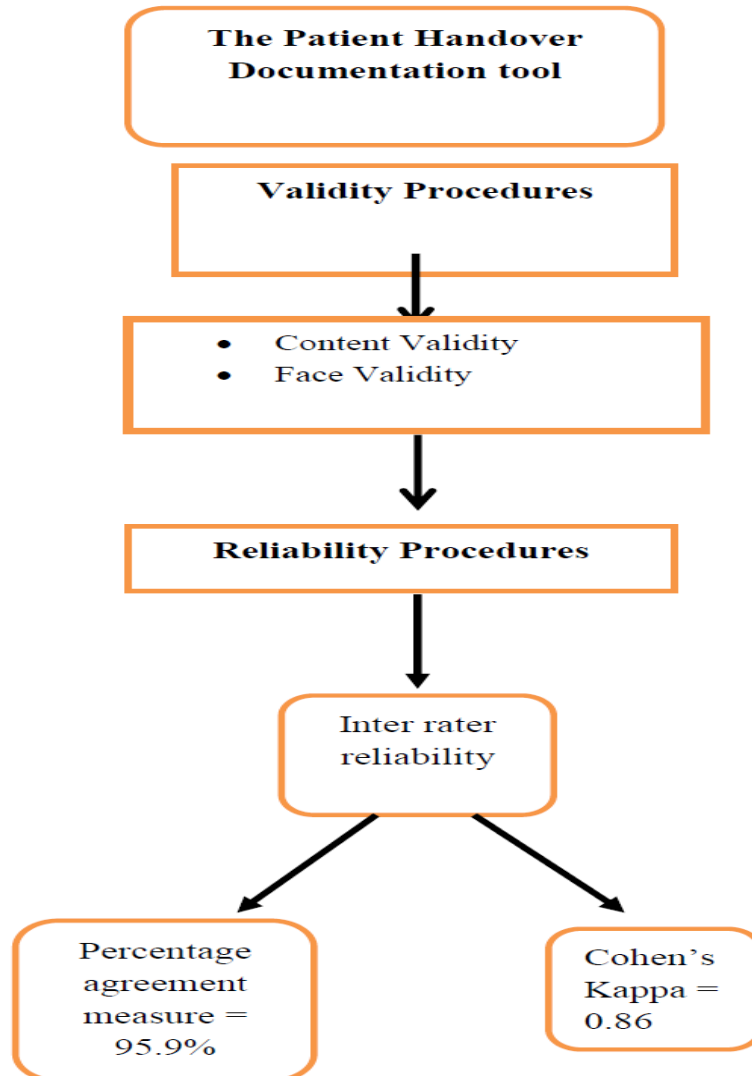
In this the raters classify the items into discrete categories. It was used to evaluate the extent to which there was agreement in the coding of the data. The value of Cohen Kappa was 0.86.

**Table: 3**  
**Inter-rater agreement for all items of Patient handover documentation tool**

		Rater 2		
		Yes	No	Row total
Rater1	Yes	495	10	505
	No	15	100	115
	Colum total	510	110	<b>620 (overall total)</b>

**Table 3** shows the agreement level between rater 1 and rater 2 at a given point of time for 5 patients. There were 495 items that were marked as yes by both rater 1 and rater 2 and 100 items that were marked as no by both raters. There were

10 items which were marked as yes by rater 1 and no by rater 2 and 15 items were marked as no by rater 1 and yes by rater 2. Rater 1 marked yes for total 505 items and no for 115 items. Rater 2 marked yes for total 510 items and no for 110 items. Cohen's kappa value came out to be 0.86 ( $k=0.86$ ). Generally, Kappa value of 0.7 or greater indicates acceptable reliability. Hence, the tool was found to be highly reliable.



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