

Table 1: *Studies That Have Applied Informatics Competency Tools*

<i>Investigator(s), Date, Country, Purposes</i>	<i>Methods Sample,</i>	<i>Tool</i>	<i>Variables, Data Analysis</i>	<i>Results</i>	<i>Limitations</i>
<p>1) Hwang & Park (2011) Korea</p> <p>To examine factors affecting informatics competency to help develop strategies to improve nurse informatics practice.</p>	<ul style="list-style-type: none"> Quantitative, descriptive, cross-sectional, correlation design. Convenience sample: nurse (total population 363, sample= 292) 	<ul style="list-style-type: none"> Self-report questionnaire Informatics competencies questionnaire 7 items based on Murphy et al 2004 study results Basic Computer skill 13 items & Nurses attitude toward computerization 20 items 	<ul style="list-style-type: none"> Nursing informatics competencies, Basic computer skills and attitudes toward computerization Data Analysis: Descriptive (frequencies, % mean and SD); T test, Pearson correlation; Multiple regression 	<ul style="list-style-type: none"> Informatics competencies below average (<3.0) Informatics competency negatively correlated with nurses age ($r = -0.20$, $p < .01$), length of service ($r = -0.19$, $p < .01$) Positively correlated with attitudes toward computerization ($r = 0.12$, $p < .05$) and computer skills ($r = 0.61$, $p < .0001$) 	<ul style="list-style-type: none"> Participants not randomly selected Data collected through self-report questionnaires.
<p>2) Yang, et al. (2014). China,</p> <p>Investigate the level of informatics competencies of nurse managers and examine the influencing factors.</p>	<ul style="list-style-type: none"> Quantitative, descriptive. Convenience sample, Nurse managers (Population=75, Sample=68) 	<ul style="list-style-type: none"> Survey, Questionnaire Based on Heart's informatics competencies list Cronbach's α, Higher than 0.85 	<ul style="list-style-type: none"> Demographic data Informatics competencies: (Computer skill, informatics knowledge, & informatics skill) <p>Data Analysis: descriptive (mean \pm SD), ANOVA; Multiple Linear Regression.</p>	<ul style="list-style-type: none"> Total informatics competencies Mean (77.65), (SD \pm8.14) Informatics Knowledge (82.29) significant higher than computer skills (74.24) and informatics skills (75.81). Significant impacts of education level, experience of nursing administration, and information education and training on informatics competencies ($P > 0.000$, 71.2%) 	<ul style="list-style-type: none"> Participants not randomly selected Single location Data collected through self-report questionnaires.
<p>3) Chung & Staggers (2014),</p>	<ul style="list-style-type: none"> Quantitative, descriptive cross- 	<ul style="list-style-type: none"> Self-report questionnaire 	<ul style="list-style-type: none"> Demographic data: Clinical experience, staff position, working 	<ul style="list-style-type: none"> 99.1% response rate informatics knowledge (mean 3.38, SD \pm0.499) computer skill (mean 3.29, SD 	<ul style="list-style-type: none"> Participants not randomly selected

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Korea To develop an instrument to measure informatics competencies and to explore the possible influence of clinical factors on the level of informatics competencies	sectional, correlation design. • Convenience sample: nurse and nurse managers (total population 230, participants = 228)	<ul style="list-style-type: none"> • Based on Chang, Poynton, Gassert, & Staggers's (2011) competencies list. • NICQ 112 items for beginning and experienced level. • Cronbach's $\alpha = .981$ 	site, hours of computer use at work, and prior informatics related education revived. <ul style="list-style-type: none"> • Nursing informatics competencies: (Computer skill, informatics knowledge, & informatics skill) • Data Analysis: Descriptive (mean, % SD); Multiple regression 	± 0.558) & informatics skills (mean 3.11, SD ± 0.594) <ul style="list-style-type: none"> • Sig. associations with: -Staff position (beta= $-.304$, $P < .001$) -Informatics education (beta= $.187$, $p = .005$) -Hours of computer use at work (beta= $.144$, $p = .045$) • Nurses not involve in managerial work had lower score on NICQ than nurses involve in managerial work (beta = $-.441$; 95% confidence interval, $-.680$ to $-.202$). 	<ul style="list-style-type: none"> • Sample was homogeneous • Single location • Data collected through self-report questionnaires.
4) Simpson, (2013), USA To identify & validate the gaps existing between selected Chief Nurse Executives (CNEs) self-described lived experience in IT competencies	<ul style="list-style-type: none"> • Qualitative , • Purposive sample: Chief Nurse Executives, N= 7 	• Interview	<ul style="list-style-type: none"> • Information technology in American Organization of Nurse Executives: (Technology knowledge, collaboration, Health information technology selection, executive leadership, and standardization). Data Analysis: content and thematic analyses	Five themes emerged (technology knowledge, collaboration, health information technology selection, executive leadership, standardization). <ul style="list-style-type: none"> • CNEs IT knowledge & skills were not considered in selecting and evaluating informatics competencies • CNEs roles were marginalized • Informatics competencies were not based on CNEs level and decision making role 	<ul style="list-style-type: none"> • Sample size small. However, it appropriate for qualitative study. • Single location

Legend: United States of America= USA; Nursing informatics competencies questionnaire = NICQ; Significant= sig. Information Technology = IT

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