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## Original Articles

# Technological Competency as Caring in Nursing as Perceived by ICU Nurses in Bangladesh and Its Related Factors

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### Abstract

*This descriptive study purposed to examine Technological Competency as Caring in Nursing (TCCN) as perceived by Intensive Care Unit (ICU) nurses in Bangladesh, and to examine the relationship between TCCN and selected factors (nurses' age, level of nursing education, length of working experience, continuing education and training, and self-awareness). One hundred and twenty ICU nurses at tertiary level public hospitals in Dhaka city participated in this study. The Technological Competency as Caring in Nursing Inventory (TCCNI), and Nurses' Self-Awareness Questionnaire (NSAQ) were used as data collection tools. The content of each tool was validated by three experts with reliability yielding a Cronbach's alpha coefficient of 0.80 for the TCCNI and of 0.83 for the NSAQ. The data were analyzed using descriptive statistics, Pearson's product-moment correlation and independent t-test. The results of this study showed that the mean score of nurses' perception regarding TCCN was high level ( $M = 4.14$ ,  $SD = 0.34$ ). Among the five assumptions of TCCN, four assumptions were at high level, but only one assumption, "knowing a person is a process of nursing allowing for continuous appreciation of persons" was at moderate level ( $M = 3.35$ ,  $SD = 0.37$ ). Regarding the five selected factors namely nurses' age, level of nursing education, length of working experience, continuing education and training, and self-awareness, only the nurses' self-awareness was significantly and moderately correlated with nurses' perception on TCCN ( $r = 0.42$ ,  $p < 0.01$ ). The study*

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*showed that the ICU nurses in Bangladesh had high perception or agreement on the TCCN, and that this perception was related to their self-awareness. This research evidence can serve as fundamental data for developing critical care nursing practice in Bangladesh.*

**Keywords:** Bangladesh; caring; intensive care unit; nurse; nursing; technological competency.

## **Introduction**

The intensive care unit (ICU) first emerged in the late nineteen fifties in the United States of America. Afterwards, ICUs were built in other countries all over the world (Dudley, as cited in Faruq et al., 2013). In Bangladesh, the ICU was first established in 1980 in the National Institute of Cardiovascular Diseases (NICVD) hospital in Dhaka. At present, there are many ICUs in Bangladesh and 90% of them are located in the tertiary level hospitals in Dhaka (Faruq et al., 2010). From the outset, caring in the ICUs has emphasized using advanced scientific knowledge and technologies to secure lives and extend the life of critically ill patients (Halpern, Stephen, & Pastores, 2010).

Caring in the ICU is complex and dynamic, and appropriate nursing is considered the most vital in this situation (Ashworth, as cited in Wilkin & Slevin, 2004). There are numerous forms of machine technology employed to cure the patients in critical condition, including mechanical ventilators, electrocardiography monitoring machines, infusion pumps, and hemodialysis machines. Nurses use machine technologies in order to sustain life. Thus, the nurses require an enormous amount of technical skills, effort, and competency when managing technologies harmoniously toward positive human health perspectives in the ICUs (Locsin & Kongsuwan, 2011).

Caring is the core of the nursing profession (Boykin & Schoenhofer, 2001). Nurses' competence is a caring attribute mentioned by Roach (2002). The relationship between technology and caring was addressed by Leininger (1988) who asserted that technology could take away the real meaning of caring in nursing, and that the nurse-patient relationship might be at risk in this situation. Nurses may be viewed as uncaring when competency is used as an over-arching attribute in using technology (Leininger, 1988).

However, expert use of technology plays a significant role in caring in the ICU (Kongsuwan & Locsin, 2011). Locsin (1998) pointed out that nursing as caring in the ICU includes technology, caring, and competency. Locsin developed the theory of Technological Competency as Caring in Nursing (TCCN) (Locsin, 2005) in which technological competency and caring are understood as co-existing and are in harmonious relationship within nursing practice. Technological competency as caring is the expert use of technologies to know persons as whole in the moment (Locsin, 2005). Concepts in