



Translation and validation of the Nurses Self-Concept Instrument for college-level nursing students in Taiwan



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SUMMARY

Nurturing a professional nursing self-concept is crucial in nursing education. To determine whether it has been achieved, a reliable and valid measurement tool is necessary. This study therefore aimed to translate the Nurses Self-Concept Instrument (NSCI), and then ascertain the content and construct validity, and test–retest and internal consistency reliability in the Chinese version of the NSCI (NSCI-C). A methodological design was conducted with 1239 nursing students of a university recruited as the sample frame and 540 randomly selected. The results showed the content validity index of 0.81 overall, alpha of 0.92 overall, and correlation coefficient of 0.87. The mean score of the NSCI-C was significantly higher in freshman than in senior ($p < .01$). The hypothesized four-factor model did not fit the data well. After restructuring, two factors were explored, with 69.04% explained variance. The findings suggest that the NSCI-C is reliable and valid in nursing students.

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Introduction

Self-concept is a crucial factor in the nursing profession; it constitutes the basis for nurses' professional self-concept and plays a mediator role in their work performance. For nurses, professional self-concept relates to how they think and feel about themselves as nurses (Angel et al., 2012). Nurses with a well-developed professional self-concept are likely to provide healthcare positively (Hensel, 2011). By contrast, nurses who have a low professional self-concept are likely to provide patient care in a negative manner (Arthur and Randle, 2007). Numerous studies have associated the professional self-concept of nurses with job satisfaction (Cleary et al., 2013; Cowin et al., 2008) and job retention (Cowin et al., 2008; Cowin and Hengstberger-Sims, 2006).

Professional self-concept is considered relatively stable; however, it may develop as a person progresses from being a student nurse to a nurse (Arthur and Thorne, 1998; Cowin et al., 2006; Kelly and Courts, 2007). Developing a concept of oneself as a professional nurse is vital in nursing education (Ware, 2008). Numerous studies have emphasized the importance of supporting and enhancing nurses' self-concept during the transition from a student to a professional nurse (Arthur and Thorne, 1998; Cowin et al., 2006; Kelly and Courts, 2007). One study found that promoting the positive professional development of students can affect their desire to remain in nursing later in life (Kelly

and Courts, 2007). Another study found that new graduate nurses with high self-concepts are likely to retain their first job for at least one year (Cowin and Hengstberger-Sims, 2006). Developing nurses' professional self-concept as early as possible in the transition into the profession is crucial.

To examine the achievement of nursing education in developing a professional self-concept, a reliable and valid measurement tool is necessary. A self-concept instrument is based on a multidimensional and dynamic framework (Cowin, 2001; Marsh and Craven, 2006). This multidimensional conceptual framework of self-concept involves knowledge, care, leadership, satisfaction, communication, and staff relations (Angel et al., 2012; Arthur, 1995; Arthur and Thorne, 1998; Cowin, 2001). Nurses' professional self-concept not only reflects nurses' self-perception of professional competencies but also indicates the skills that are essential for patient care (Milisen et al., 2009). Professional self-concept is conceptualized as how nurses perceive themselves within their working environment (Cowin, 2001).

Three instruments for the nursing field have been developed, namely the Professional Self-Concept of Nurses Instrument (PSCNI; Arthur, 1992), the Nurses Self-Concept Questionnaire (NSCQ; Cowin, 2001), and the Nurses Self-Concept Instrument (NSCI; Angel et al., 2012). Table 1 summarizes these three scales and their dimensions. First, the PSCNI was developed by Arthur (1992) and comprised 56 items with seven dimensions of flexibility/creativity, knowledge, skill/competence, caring, communication, leadership, and satisfaction. After the psychometrics were validated, 27 items from the PSCNI remained and were categorized into three factors of professional practice (i.e., flexibility/creativity, skill/competence, and leadership), communication, and

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Table 1
Three instruments with dimensions for nursing profession.

PSCNI			NSCQ	NSCI
Arthur (1992)	Arthur (1995)	Arthur and Thorne (1998)	Cowin (2001)	Angel et al. (2012)
Flexibility/creativity	Professional practice	Flexibility	Care	Care
Skill/competence		Skill	Leadership	Leadership
Leadership		Leadership	Communication	
Communication	Communication	Communication		
Satisfaction	Satisfaction	Satisfaction	Knowledge	Knowledge
Knowledge			Nurse general self-concept	
Caring			Staff relations	Staff relations

satisfaction (Arthur, 1995). The two dimensions of knowledge and caring were deleted from the PSCNI because of a sample error pertaining to the nursing staff and students, which resulted in an unclear construct of the instrument (Arthur, 1995). Arthur and Thorne (1998) supported five factors of flexibility, skill, leadership, communication, and satisfaction. The overall Cronbach's alpha was 0.89 (Arthur et al., 1999), and those of the subscales ranged from 0.59 to 0.85 (Arthur, 1995) and from 0.40 to 0.89 (Arthur and Thorne, 1998). The total variance explained of the three subscales was 40% (Arthur, 1995) and 57.30% (Arthur and Thorne, 1998). The PSCNI has been widely used to measure the professional self-concept of clinical nurses (Arthur et al., 1999; Arthur et al., 1998; Kelly and Courts, 2007) and student nurses (Arthur, 1995; Arthur and Thorne, 1998).

The NSCQ was developed by Cowin (2001) and based on the multidimensional self-concept model (Shavelson et al., 1976). The NSCQ measures the development and stability of self-concept in working nurses. It consists of 36 items categorized into six subscales of care, leadership, communication, knowledge, nurse general self-concept, and staff relations. The reliability of the NSCQ has been supported with a Cronbach's alpha of various dimensions ranging between 0.83 and 0.93 (Cowin, 2001), 0.78 and 0.95 (Cowin and Hengstberger-Sims, 2006), and 0.85 and 0.95 (Cowin et al., 2008). The construct validity of the NSCQ was supported by a model test (Cowin, 2001). The total variance of the six subscales was 72.9% (Cowin and Hengstberger-Sims, 2006). Nurses may not distinguish any difference between communicating with other people and working with other people (Cowin, 2001). In addition, the subscale of staff relations in the original conceptualization was problematic because nurses might not distinguish between staff relations and communications (Cowin, 2001).

The NSCI was developed by Angel et al. (2012) and based on previous scale development (Arthur, 1995; Cowin, 2001) as well as a multidimensional perspective of self-concept, which was reinforced by the model of self-concept (Shavelson et al., 1976) and the reciprocal effects model (Marsh and Craven, 2006). A total of 14 items were categorized into four factors of care, leadership, knowledge, and staff relations, of which three items were applied and four items modified from the NSCQ. The communication subscale was omitted from the NSCI because it was considered biased toward students whose native language is English (Angel et al., 2012). The nurse general self-concept dimension was deleted from the NSCI because its conceptualization is too close to the self-esteem aspect of professional nurse identification (Cowin et al., 2006). The NSCI was tested and exhibited reliability and construct validity in a sample of Australian student nurses, with an overall Cronbach's alpha of 0.94, ranging from 0.81 to 0.88 for the subscales; the model fit the data well based on the result of confirmatory factor analysis (CFA) (Angel et al., 2012).

Purposes of the Study

No cross-culturally validated instrument is available for assessing the perceptions of Chinese nursing students. The NSCI simplifies the multidimensional nature of nurses' self-concept; each item stem is

less than 12 words, enabling easy and accurate translation from the original English into Chinese. The NSCI can be applied to different societies and ethnicities, and a cross-culturally validated instrument is necessary. This study involved translating and assessing the reliability and validity of the Chinese version of the NSCI (NSCI-C) in two phases. In Phase I, the primary purpose was to translate the NSCI. Phase II consisted of two stages. The objective of Stage I was to examine the validity and reliability of the NSCI-C and subsequently improve the structure of the NSCI-C according to CFA. The objective of Stage II was to reconstruct and revalidate the NSCI-C.

Methods

This was a methodological study. To answer the research questions, translation and validity assessment were conducted in two phases.

Phase I: Translation

With the permission from the developer of the NSCI, a forward-backward translation was performed from the original English into Chinese. The linguistic translation was performed using a decentered strategy to ensure equivalency of meaning in the two cultures (Yeh and Chen, 1998). The NSCI-C was completed by comparing the original and translated versions. The procedure entailed adapting self-report measures for use in a different country and language (Beaton et al., 2000). The NSCI was translated by a native Chinese speaker who had a high English capability and was familiar with both cultures. A backward translation was performed by a senior English instructor whose native language was Chinese and who was blinded from the NSCI. The authors ensured that the Chinese version is identical in meaning with the English version. Regarding the discrepancies between the original and backward-translated versions, the authors assessed the significance of these discrepancies and amended the backward-translated version to produce an appropriate and satisfactory translation (Peters and Passchier, 2006).

The wording "proud of" was found in the backward-translated version; it was translated to express the meaning of "satisfied" in consideration of Chinese cultural values. Regarding this, recommendations were obtained from three senior nursing experts in nursing education, and opinions were obtained from five graduates of a 5-year nursing program. Additionally, the backward-translated version was evaluated for readability and acceptability by these five nursing graduates. Consequently, "proud of" was retained in the NSCI-C because it is appropriate for representing nurses' self-concept of nursing care in current clinical practice.

Phase II: Validation

Research Design and Participants

This study validated the NSCI-C according to measurement theory (Waltz et al., 2012). The reliability and validity were assessed using a two-stage research design. Stage I was involved in examining the

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