A study to develop nursing aptitude test (NAT) for students seeking admission to nursing institutes

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ABSTRACT

Everyone has a fire under one’s belly for a particular vocation: the inborn potential to learn its nuances easily, excel in it, and feel at ease in it: which may be referred to as ‘having aptitude for it.’ It is the aptitude for an occupation whether it is engineering, medicine, law, management or nursing-which instills and infuses in persons the flair for it. Further, although cognitive variables have been assessed as reliable predicators of successful academic performance, affective and combative variables do influence the cognitive predictors.

Knowledgeable nurses with expertise in nursing practice (cognitive aptitude or 1.Q): sharp emotional intelligence (affective aptitude or E.Q): and psychomotor skills (conative aptitude) make a significant difference in the life of others; as well as in nursing profession. Therefore, the researcher decided to develop nursing aptitude test (NAT) to ensure that only the candidates, who have the potentials/aptitudes prerequisite for nursing get admission to nursing institutions.

The study aimed to develop a valid and reliable theory-based NAT for identifying and measuring the aptitudes required for excellent proficiency in nursing, both academically and clinically.

The objectives of the study were to identify the attributes to be included in nursing aptitude test: develop nursing aptitude test; establish validity of nursing aptitude test; determine reliability of nursing aptitude test; establish norms for applying NAT and set eligibility criteria for selection of students for admission to nursing institutions; and pre-test nursing aptitude test.

The conceptual framework was based on aptitude traits complexes theory Ackerman and aptitude treatment interaction model (cronback & snow)

Quantitative and methodological approach and non-experimental survey research design was selected to develop the NAT. A survey was conducted from January, 2009 to November 2009. (i.e eleven months) to collect data from the selected nursing institutes scattered throughout the length and breadth of India. Its central, northern, southern, eastern and western zones.

The NAT was developed by the investigator from review of professional literature; answers to the open-ended questions from the nurses with at least two years of clinical experience; opinions of the experts; and feedback from the students.
Face validity of the draft NAT was determined by incorporating the suggestions of five experts; whereas its content validity was determined by incorporating the suggestions and opinions of eight experts.

Pre-testing was carried out on ten nursing-experts as subjects and item analysis was done to ensure technical feasibility of implementation of the NAT.

A pilot study was conducted to assess the feasibility of the study and requisite amendments were made after comparing the results of item analysis of pre-testing and pilot study. After deletion of items have discriminating index (D-value) < 0.21, the NAT having 129 items was ready for field testing. The reliability of NAT indicated high inter-item co-relation.

The population of the study was students of nursing institutes from all the said five zones of India. The sample comprised of 40 GNM 1st, 2nd, 3rd and 4th year students each plus 30 B.sc (N) 1st, 2nd, 3rd and 4th year students of nursing institutes of India. Convenience sampling technique was used to select the nursing institutes.

The study was conducted in government as well as private nursing institutes, duly approved by a state government and recognized by Indian Nursing council as well as affiliated to State Nurses’ Registration Council and a university. From this sample frame of subjects, 1200 (300 GNM and 600 B.Sc (N) students each of the chosen nursing institutes were selected by probability simple random sampling technique data from 25 experts was collected by non-probability purposive sampling technique. Test-retest data was collected from 49 nursing students by simple random sampling technique to establish stability of the (NAT)

Independent variables in the present study were nursing aptitude (cognitive, affective and conative) dependent variable was scholastic achievement.

Data analysis was carried out manually as well as with the help of SSPS-PC computer programme (version 17.0). Descriptive statistics such as frequencies, percentages, mean and SD were used to describe socio-demographic variables of the subjects and experts.

A test to measure nursing aptitude of students name nursing aptitude test (NAT) has been developed.

Evidence for construct validity was obtained through item analysis with satisfactory to fairly satisfactory correlation of an item with the total score on the test. Criterion related validity indicated correlation of cognitive and affective domains of NAT with scholastic achievement. However, the correlation of conative domain of NAT with scholastic achievement was nil. Predictive validity revealed significant influence of cognitive, affective and conative domains of NAT on scholastic achievement.
The findings of equivalence (inter-tem co-relation and internal-constistancy) demonstrated high spearman split-half reliability and cronbach alpha. Test retest (n=49) also depicted high stability reliability. Statistical item reliability analysis was also found to be high.

Based on percentiles and stanine norms, the eligibility/selection criteria were established. While the students who obtained ‘D’ or ‘E’ grades in any of the three domains of NAT demonstrated ‘Below Average’ and ‘Poor’ nursing aptitude; those who obtained ‘A’ ‘B’ or ‘C’ grades demonstrated ‘Good’, ‘Above Average’ and ‘Average’ Nursing aptitude respectively.

NAT was applied on 12 respondents selected randomly from the main study. The results revealed that only 50% of the students possessed nursing aptitude and 50% lacked the same.

The results of this study suggested that NAT is a valid and reliable test for identifying and measuring the aptitudes required for excellent proficiency in nursing, both academically and clinically.

A manual was prepared for smooth conduct of the NAT in future.