

THE USE OF AN AUTOBIOGRAPHICAL LETTER IN THE NURSING ADMISSIONS PROCESS: INITIAL RELIABILITY AND VALIDITY

Barbara Brown, Barbara Carpio and Jacqueline Roberts

Nursing education has a two-fold accountability. First it must provide nursing students with a quality education and second it must provide society with professional nurses capable of providing quality health care (Rothman & Rothman, 1977). To ensure this accountability, nursing programmes use a variety of admissions criteria and processes to identify students who will perform well academically and professionally. Yet the reliability and validity of admission criteria and the selection processes continues to be a recurrent and unresolved issue.

The admission process is an extremely complex issue, affected by a number of interacting factors (RNAO, 1981). Student-related factors include limited enrolments that necessitate the identification of the most suitable candidates, unidentified factors that motivate applicants to seek nursing education, recruitment activities of the nursing programmes, characteristics of success both in the nursing programme and in nursing practice, and reasons behind the attrition rates. Other factors include varying philosophies of education; curriculum models and teaching methods that may require particular unique student and faculty qualities and abilities; availability of resources in both the educational and clinical facilities; and, the changing expectations and demands with respect to the competence of nurses and to employment opportunities. Finally, there is a dearth of research activities that would result in increased reliability and validity of the admission criteria and processes.

Literature Review

A perusal of the literature addressing the issue of student selection reveals a diversity of admission practices and a continued search for valid predictors of achievement. Most of the literature focuses either on identifying factors that predict success and attrition in the nursing programme or on examining

Barbara Brown, R.N., M.Sc.N. is Associate Professor, Barbara Carpio, R.N., M.Sc.N. is Assistant Professor and Jacqueline Roberts, R.N., M.Sc. is Associate Professor. All are in the School of Nursing at McMaster University, in Hamilton, Ontario.

the predictability of success in professional certification. Measures of academic and non-academic attributes of students have provided the base for admission criteria and selection of nursing students. Previous academic performance, including the high school grade point average and standardized academic tests, are used most frequently to predict pre-professional academic achievement and the potential for successful completion of the nursing programme (Grant, 1986; Higgs, 1984). Non-academic attributes considered important in nursing include motivation, interest in nursing, problem-solving ability and personality characteristics (Bauwens & Gerhard, 1987; Berger, 1984; Burgess, 1980; George & Owen, 1983; Loos, 1983; Zagar, 1982). These are often assessed by standardized personality and interest tests, a pre-admission interview, questionnaires and biographical essays and a variety of demographic factors.

McMaster University School of Nursing is no exception in facing the challenge to develop reliable and valid admission criteria and procedures in order to select, from a large pool of applicants, those students most likely to succeed in a curriculum that portends to the small group, self-directed and problem-based learning style. To this end, an autobiographical letter is used as one component of the admission process. Literature addressing the autobiographical letter as a selection device is scarce. Interestingly, as far back as 1959, Beyerl suggested, as one of many selection options, that the applicant's written reasons for entering nursing be assessed to determine her or his interest. In two more recent papers, the Registered Nurses' Association of Ontario (1981) and Weinstein and colleagues (1979) suggested that the merits of the autobiographical essay or questionnaire should be explored, in terms of their effectiveness for collecting data on the interests, language skills and background of the applicants. Walden (1979) discusses the autobiographical letter:

Applicants can be asked to write personal essays by which they can be evaluated more comprehensively with regard to such qualities as motivation, values, degree of open-mindedness, coping strength, or whatever. The objective would be to translate into written form what one might hope to gain from a direct interview with an applicant. Admission raters could then be trained to examine these statements for the qualities desired. A probable result would be greater consistency and greater standardization among raters. [101:56].

Walden (1979) also identifies several disadvantages to the autobiographical letter. The organized, articulate writer is likely to fare better than one who has difficulty putting thoughts to paper. Also, there is no assurance that the applicant wrote the personal statement.

In examining the validity of grades versus interview in predicting academic performance in a nursing programme, Stronck (1979) mentions briefly the

use of an autobiographical letter. A small proportion of points in the admission score were awarded on the basis of a short essay composed by the applicant. Results indicated that narrative skills of the applicants correlated with academic performance in the nursing college. The investigators recommended that applicants identify their professional goals and attitudes in writing.

The selection of medical students at McMaster University follows a similar admission format to that of the School of Nursing. Hamilton (1972) compared those applicants selected for interview, on the basis of autobiographical letter ratings, with 30 students selected at random. Even though the academic profiles of the two groups were similar, the randomly-selected group received poor interview ratings when compared to those selected on the basis of letter scores. There was also a weak positive association between the assessment given to the letters and the interviews of the same candidate. Three readers were asked to rate each letter. There was a total agreement in 42% random association. The question of whether the letter reflected the literary style or background experience of the applicants rather than their potential and concerns about "faking" the letter were also raised. No relation was noted between the letter assessment and the applicant's type of academic background or the applicant's age or verbal scores on the Medical College Admissions Test. It was acknowledged that there is no assurance that the letter is actually written by the applicant. However as far as they could judge, the applicants were honest and had taken "great pains" in writing the letter. It was expected that the interview would reveal those applicants who had been dishonest.

More recently, Heale, Blumberg, Wakefield and McAuley (1987) explored the reliability and validity of the autobiographical letter and of the interview used to select applicants to the Family Medicine residency programme over a three-year period. Significant correlations were reported between readers ($r = 0.49$), between interviewers ($r = 0.45$), as well as between the letter score and the interview score ($r = 0.32$). There was a significant correlation between the interview score and the number of exceptional ratings a resident received from clinical supervisors ($r = 0.40$). There were no differences in selection letter scores, or in overall selection rankings between "exceptional" ratings and "major problem" ratings. The investigators concluded that, although both the letter and the interview are reliable, the letter is not recommended for the selection of family residents; it does not discriminate between those residents who are exceptional and those residents who are having major problems in their residency.

In conclusion, the autobiographical letter has been suggested as an admissions selection procedure, and our counterparts in the medical school have deemed it as an acceptable component of the admissions process. The

RNAO (1981) position paper recommended that each nursing programme engage in systematic evaluation of its own admission process in order to determine reliability and cost-effectiveness as predictors of programme success. Therefore, the purpose of this research was to explore initial reliability and validity of the autobiographical letter, which is used as one component in the nursing admissions process. This study was conducted during the 1988 admission cycle.

Methods

Applicants to the four-year basic baccalaureate stream who are not admitted directly from high school and registered nurses who apply to the degree completion stream are asked to write an autobiographical letter. This focuses on three criteria: their personal qualities, their reasons for applying to the programme and their ability to function within its aims and objectives. The letter is to be typed and is limited to two pages in length. The applicants are informed that this letter is used to screen and select applicants for an interview.

The letters are assessed by a three-member reader team which includes a faculty member, a community representative and a third- or fourth-year nursing student or local nursing alumnus. There are two sets of reader teams; one set for the applicants to the basic stream and one set for the post RN degree completion applicants. Following an orientation session, each reader receives a package of approximately 10-15 letters. They score the letters independently, using a standardized Likert rating scale in which the scores range from unacceptable (1) to outstanding (7) suitability to the programme. A work sheet listing a series of questions is also provided to the readers in order to guide their assessment and rating of the three criteria that are expected to be discussed in the letter. Although there is not a specific score for each of the criteria, the three criteria are viewed as contributing equally to the score.

Once the reader has assessed the letter, the score out of seven is recorded on the standardized rating scale. The letter scores assigned by the faculty, community and student or alumnus reader teams are then totalled to produce a composite team score out of a possible 21 for each autobiographical letter. Those applicants whose letters receive a high rating are then invited to a team interview. In turn, files of all interviewed applicants are brought to collation and applicants are selected for acceptance into the programme.

To explore the reliability and validity of the autobiographical letter, the reader teams were sent their regular package of letters, and four control letters were included in each package (Time 1). Readers were blind to this maneuver and scored all letters in the package. To establish inter-rater reliability of the four control letters, a sample of 20 letters was randomly

selected from both the basic and post-RN stream applications. Three faculty members with experience in letter reading, (including two members of the admissions committee), read and scored these letters, using the standardized rating scale. Those letters that were scored consistently by all three raters were then identified. Of those, one letter from each of the standardized rating scale categories: unacceptable/reservations (≤ 3.9), acceptable (4-4.9), good (5-5.9) and very good to outstanding (6-7) was selected as a control letter.

To determine inter-team reliability, team reader scores for all four pre-rated letters were analyzed using analysis of variance and intra-class correlations. These four control letters were then sent to the same readers to score three months later (Time 2). Using repeated measures analysis of variance, the scores between teams were compared and reliability coefficients for teams were calculated. To determine intra-team reliability, team scores were initially to be compared between Time 1 and Time 2. However, the total return response rate for all categories of readers at Time 2 was low (Basic 67%; post RN 58%) and very few complete teams were represented at Time 2. Thus, intra-team reliability could not be compared between Time 1 and Time 2. Numbers did permit measurement of intra-status (faculty, community, student or alumnus) reliability.

Face validity was established through a variety of methods. The autobiographical letter has been used for several years and both the instructions to the applicant and the marking scheme to the readers have been designed, developed and revised to reflect the aims and objectives of the nursing programme. Letter readers attend an orientation session during which the aims and objectives of the program are reviewed, the three criteria are discussed in the context of the questions on the work sheet and the standardized rating scale and the scoring of two letters is practised. To improve face validity, reader packages included an evaluation form, and readers are encouraged to submit comments and suggestions as to how the process can be made more efficient and effective.

Concurrent validity was assessed by comparing the team reader letter scores with the four pre-rated letter scores using analysis of variance and Q Kappa. In addition, letter scores were correlated with interview scores for the post-RN degree applicants. The basic applicant pool was considerably larger; thus, only the highest scoring applicants (a combination of academic reference and letter scores) were invited to an interview. Consequently a comparison between basic applicants' letters and interviews was not done, as there were no applicants with low letter scores that were invited to be interviewed.

Results

The results of the reliability testing of basic degree applicants and post-RN degree completion applicants are presented separately. For the basic degree applicants, 12 reader teams read, on average, 10 basic applicant autobiographical letters, including the four pre-rated control letters. Using analysis of variance there was no statistical significant difference (ANOVA $F = 2.1$, $p = \text{NS}$) between the 12 teams. The team mean scores for the basic control letters are displayed in Figure 1. The intra-class correlation was .80, indicating good reliability for the teams at Time 1. Combined letter reliability estimates for Time 1 and Time 2 for each status of reader were also consistently good (Quadratic Kappa .72 (faculty); .77 (community); .71 (student)).

Turning to the post-RN applicant results, there were also 12 teams that read from 7-10 letters including the four control letters. There was no statistically-significant difference (ANOVA $F = 1.3$, $p = \text{NS}$) between the teams. The team mean scores for the post-RN control letters are displayed in Figure 1. Reliability of the team scores at Time 1 was satisfactory (ICC = .43). Time 1 and Time 2 combined letter reliability estimates, for all four letters, varied according to status of reader (Quadratic Kappa .67 (faculty); .65 (student); .38 (community)).

Face validity was examined through reader feedback and 56 out of 72, or 78%, of readers completed the reader evaluation forms. Of the 56 responses, 40 (71%) were from readers who had attended the orientation. The majority found the session very useful and reported that the opportunity to practise and review scoring two letters increased their confidence in their ability to evaluate fairly. The rating forms reportedly facilitated the scoring; were concise, yet addressed the three criteria; and promoted consistency in the ratings. Comments ranged from "time consuming but necessary", "the middle range letters were the most difficult to score" and "would be helpful to have a resource person available". Many readers commented on the value of the process and found it enjoyable and challenging. The time to read and score the questionnaires ranged from 1.5 to 12 hours with the majority taking 4-6 hours. Times reported by first time readers were longer than those by experienced readers.

In terms of concurrent validity, there was a statistically-significant difference between the mean scores of the four control letters of the 12 reader teams (Basic: $F=50.13$, $p < .001$; Post-RN: $F=9.5$, $p < .001$ - see Figure 2). The agreement between the team reader scores and the pre-rated letter scores was acceptable for the basic applicants (Kappa = .63) and somewhat less so for the post-RN applicants (Kappa = .54). The team reader scores, did not correlate well with the interview scores ($r = .18$) and agreement above and beyond chance was low (Kappa = .11).

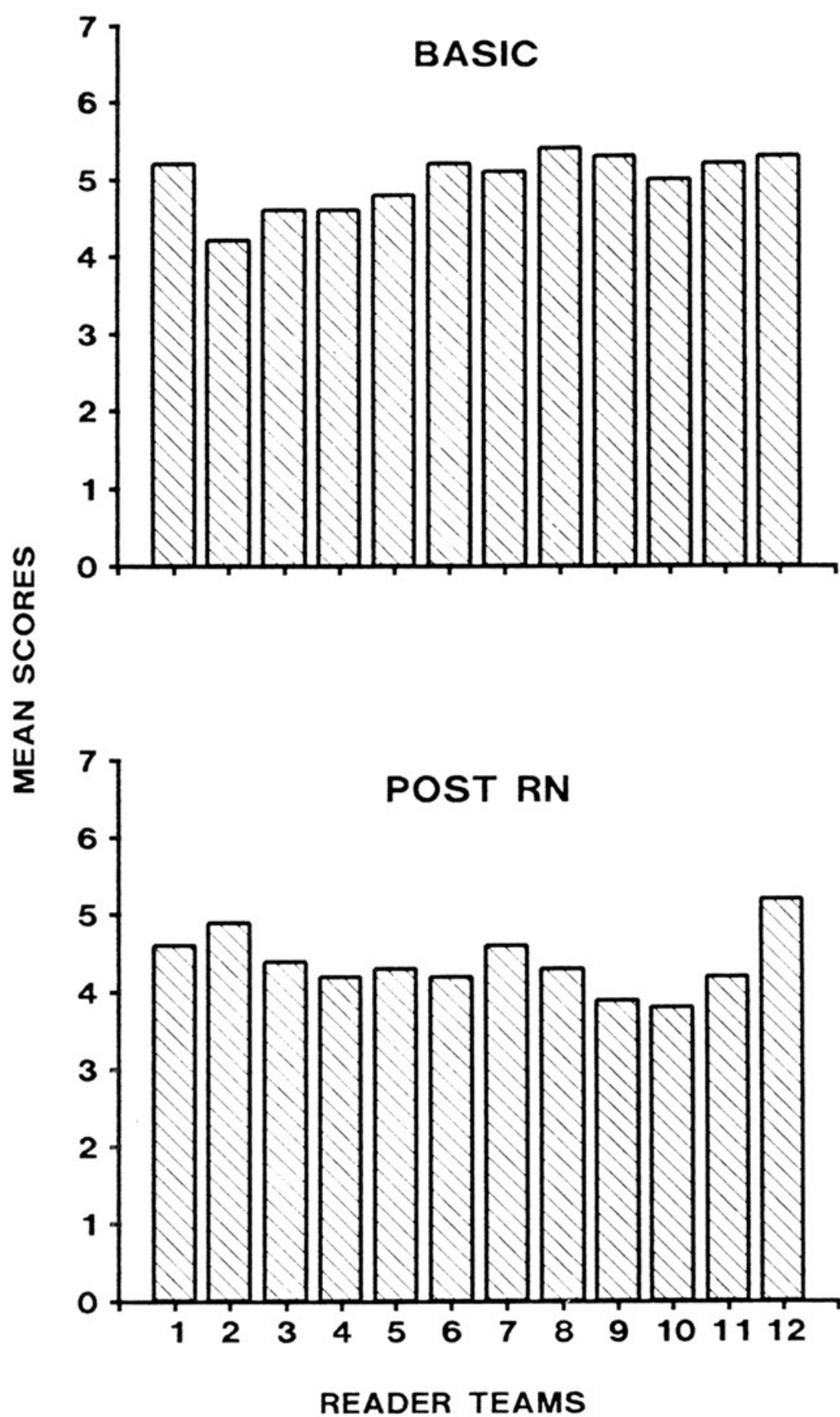


Figure 1
Team Scores for the Control Letters

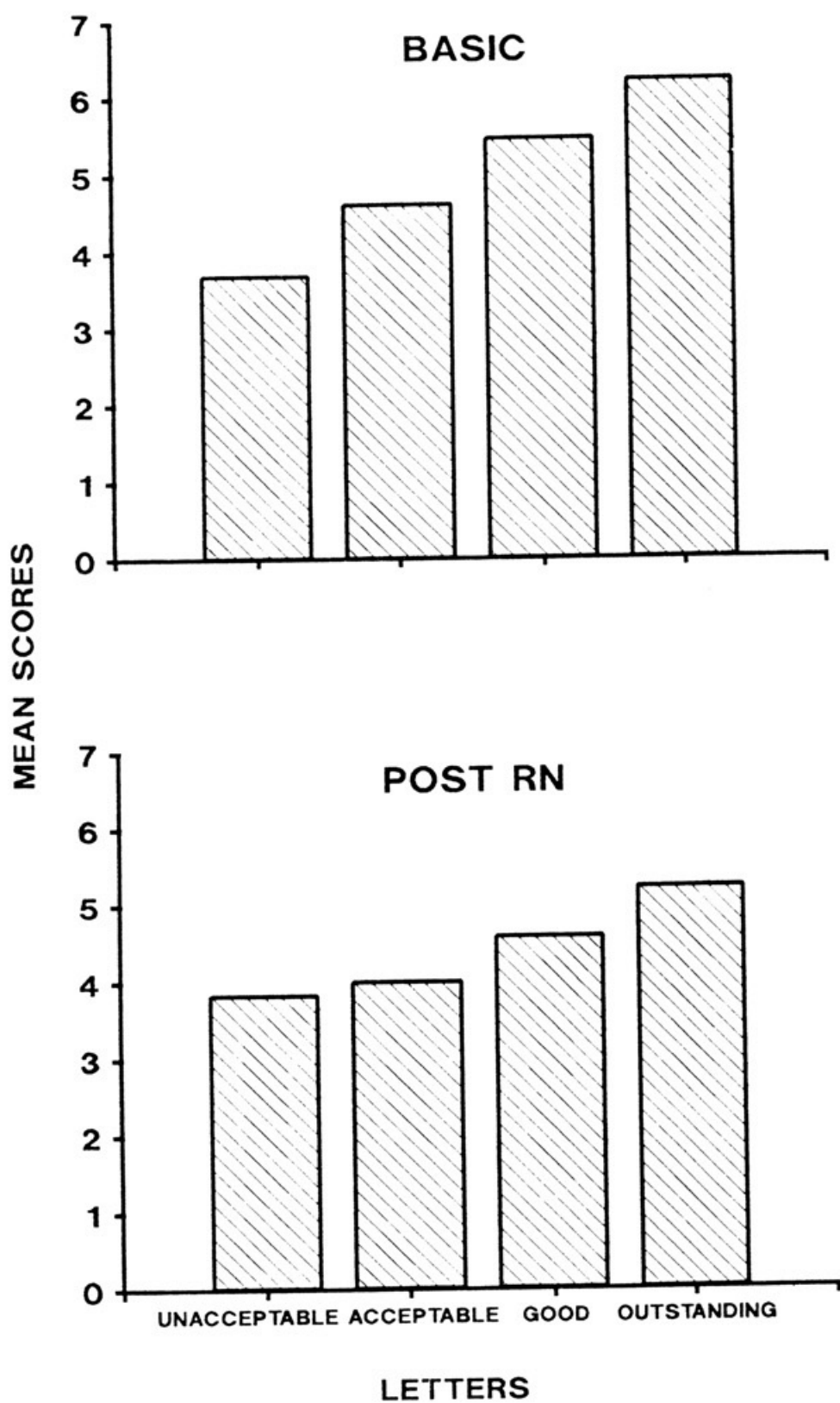


Figure 2
Control Letter Mean Scores

Discussion and Conclusions

The intent of this study was to explore the initial reliability and validity of the autobiographical letter that is used as one component of the nursing admissions process. With regard to reliability, the results are favourable. For both applicant pools, reader team reliability was acceptable, indicating the reader teams score consistently. When comparing Time 1 and Time 2 for each status of team members for the basic applicants, the reliability estimates were consistently good and did not vary according to category of the reader. For the post-RN applicants the reliability estimates varied with the community readers demonstrating the lowest reliability over time.

This result could be attributed to the somewhat more diverse nature of this group of readers, in contrast to the nursing faculty and students, thus raising the possibility that their criteria for rating may not be as objective. For example, letter readers included a Dean of Health Sciences and a Health Science librarian, as well as hospital and community directors of nursing and several clinical nurse specialists. An explanation for the discrepancy between the high reliability score of .77 for the basic community raters and the low reliability score for the post-RN community raters is less apparent. Perhaps the post-RN community readers are open to subjectivity bias between Time 1 and Time 2 in that they have some pre-conceived expectations of what they are looking for when scoring the letters of applicants who are already nurses, versus the basic applicants who are expected to know little about nursing.

In reflecting on the concurrent validity results, the reader teams were also able to rate letters consistently and discriminate as to applicant suitability to the programme, in keeping with the pre-rated predictions of the four control letters. The team letter scores for post-RN applicants were not significantly correlated with the team interview scores. Rather than viewing this result as indicative of poor validity for the autobiographical letter, the results may suggest that the letter and the interview are two different approaches that measure distinct applicant qualities.

In conclusion, we plan to continue to use the concept of the autobiographical letter as part of our admissions process. However, in terms of on-going improvement, and increasing reliability and validity, the applicant is now given three specific questions to address rather than three broad headings. For example, "comment on your personal qualities" has been changed to "describe a situation which reflects your personal strengths and limitations". The scoring system has been devised to reflect the expectations of each question as well as a global score. This admissions component is now referred to as the autobiographical questionnaire rather than letter.

A more in-depth orientation to questionnaire reading is warranted particularly for the community readers. In addition to practising scoring several letters, the orientation session should include a more in-depth discussion of the nursing programme itself. A resource person for readers may also be warranted. On the other hand, including only nurses as community readers may also improve the reliability of this group of readers; however, this would be at the cost of narrowing the perspective and pool of readers.

The School of Nursing strongly endorses this admissions process as necessary to select candidates who will not only perform well academically and professionally in nursing but also will succeed in a curriculum that is based on small group, self-directed and problem-based learning. Needless to say, this type of admissions process is resource intensive from both School of Nursing and bureaucratic perspectives. Consequently, we should continue to evaluate and to monitor our admissions process.

Future research directions will examine the reliability of the more structured autobiographical questionnaire approach. Also, to explore predictive validity, the students accepted into the program will be followed to graduation and their autobiographical letter and interview scores will be compared with their grades.

REFERENCES

- Bauwens, E.E., & Gerhard, G.G. (1987). The use of the Watson-Glazer critical thinking appraisal to predict success in a baccalaureate nursing program. *Journal of Nursing Education*, 26(7), 278-281.
- Berger, M.C. (1984). Critical thinking ability and nursing students. *Journal of Nursing Education*, 23(7), 306-308.
- Beyerl, M.C. (1959). Selection procedures - Why and when. *Nursing Outlook*, 7:36-37.
- Burgess, G. (1980). The self-concept of undergraduate nursing students in relation to clinical performance and selected biographical variables. *Journal of Nursing Education*, 19(3), 37-44.
- Fleiss, J.L. (1981). *Statistical methods for rates and proportions*. Toronto: John Wiley & Sons.
- George, V.D., & Owen, L. (1983). Personality attributes of RN students and female collegiate students. *The Journal of Psychology*, 115, 221-231.
- Grant, R.E. (1986). Predicting academic success in a baccalaureate nursing education program. *Journal of Nursing Education*, 20(6), 4-8.
- Hamilton, J.D. (1972). The selection of medical students at McMaster University. *Journal of Royal College of Physicians of London*, 6:348-351.
- Heale, J.A., Blumberg, P., Wakefield, J., McAuley, R. (1987). The relationship between admission selection scores and performance of family medicine residents. Unpublished manuscript, McMaster University, School of Medicine, Hamilton, Ontario.
- Higgs, Z.R. (1984). Predicting success in nursing: From prototype to pragmatics. *Western Journal of Nursing Research*, 6(1), 77-95.
- Loos, R. (1983). Nursing students: Personality dimensions and attitudes toward women. *Psychological Reports*, 52, 504-506.
- Registered Nurses' Association of Ontario. (1981). *Position Paper on the Selection and Admission of Students to Diploma and Baccalaureate Nursing Programs*, Toronto.
- Rothman, P.A., & Rothman, N.L. (1977). *The professional nurse and the law*. Boston: Little, Brown.
- Stronck, D.R. (1979). Predicting student performance from college admission criteria. *Nursing Outlook*, 27, 604-607.
- Walden, T. (1979). The graduate admissions interview: Benefits and costs. *College and University*, 55, 50-59.
- Weinstein, E.L., Brown, L., and Wahlstrom, M.W. (1979). Selection procedures and attrition. *Journal of Nursing Education*, 18, 38-46.
- Woods, N.F., Catanzaro, M. (1988). *Nursing research: Theory & practice*. Toronto: Mosby.
- Zagar, R., Arbit, J. & Wengel, W. (1982). Personality factors as predictors of grade point average and graduation from nursing school. *Education and Psychological Measurement*, 42, 1169-1175.

RÉSUMÉ

Le rôle de la lettre autobiographique dans les modalités d'admission à un programme de sciences infirmières: fiabilité et validité initiales

Les tenants de la lettre autobiographique maintiennent que les raisons invoquées par un candidat à l'appui de sa demande d'admission à un programme de sciences infirmières devraient pouvoir servir à évaluer ses attitudes, ses valeurs et ses motifs et éventuellement à identifier les étudiants qui ont le plus de chances de réussir. Le dossier de candidature au programme de sciences infirmières de l'Université McMaster doit comporter une lettre dans laquelle l'étudiant décrit ses qualités personnelles, les motifs de sa demande et ses chances d'atteindre les objectifs du programme. Les lettres sont évaluées par un jury de trois membres formés d'un professeur, d'un représentant de la communauté et d'un étudiant. Les candidats retenus sont invités à passer une entrevue. La présente étude a pour objet de déterminer la fiabilité et la validité initiales de l'évaluation de la lettre autobiographique par le jury. Les lettres témoins de 4 candidats détenteurs d'un diplôme et de 4 candidats au programme ordinaire ont été évaluées pour déterminer si elles reflétaient le profil des candidats inadmissibles, admissibles, acceptables ou idéaux et ont été incluses dans la trousse remise aux équipes de lecteurs. Chaque lettre a été lue et notée indépendamment selon une échelle normalisée. Les équipes qui ont noté les lettres des candidats détenant un diplôme et les équipes qui ont jugé les lettres des candidats au programme régulier ont fait état d'une différence dans les moyennes des lettres ($F=9,5$, $p<0.001$; $F=50.13$, $p<0,001$ respectivement), en revanche, aucune différence n'a été notée au niveau des moyennes des équipes ($F=1,3$, $p=NS$; $F=2,09$, $p=NS$ respectivement). On n'a pas établi de corrélation positive entre les scores des lettres des candidats détenteurs d'un diplôme ($r=0,18$) et les scores de l'entrevue. Les observations corroborent cette composante des modalités d'admission et il y a lieu de poursuivre les tests de validité.