

# Psychological Tests in Selection of Students to Schools of Nursing in Israel

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## OPSOMMING

Sielkundetoetse is reeds lank in gebruik en is die afgelope 25 jaar in die literatuur bespreek as een van die kriteria wat die keuring van kandidate vir verpleegskole beïnvloed en soms beslis.

Hierdie referaat doen verslag oor die gebruik van sielkundetoetse by die keuring van kandidate vir skole van geregistreerde verpleegsters in Israel. Die gegewens berus op drie studies wat van 1971 — 1977 onderneem is.

Psychological tests as one of the influential and, in some instances, crucial criteria in selecting candidates to schools of nursing, have long been used and during the last 25 years have been discussed in literature.

Time limitations do not permit a wide review of the literature here. In general it can be concluded that psychological tests:

- do not predict success in nursing
- do you predict attrition (dropout)
- do not predict success in practice
- may perhaps predict success in theory, and this is true not only for nursing itself.

I should state from the beginning that from former experience as a director of a school of nursing, and from involvement in research, I believe that the directors or admission committees should not deal with the details of psychological tests — that is the domain of psychologists. I also believe that those who are in charge of selection and admission should be prepared and experienced in the understanding and interpretation of the psychological evaluations, if and when they are used for selection of candidates to schools of nursing.

### A. 1971 - 1973

- 1) **In the years 1971 - 1973** a study was conducted to survey the use and validity of psychological tests in selecting candidates for schools of registered nurses in Israel (Bergman et al, 1974). Data revealed that psychological tests had been employed in selection of students in all 16 schools of nursing in Israel. In one school these were used for almost twenty years; most of the remaining 15 schools had introduced the use of tests two to seven years before the study. Because of the extent of the use of such tests, it seemed desirable to examine the relationships between psychological tester recommendations, rejection, attrition and achievement of the applicants.
- 2) **Utilization of psychological tests by schools of nursing:** all 16 schools for registered nurses participated in this phase of the study. The directors of the schools

answered a questionnaire that requested information on the number of students then (May 1971) present in the school; types of tests; number of years used; methods of administration of tests; weighting given to the tester recommendation in the selection process; knowledge of test results by the admission committee; other criteria used for selection; use made of tests in addition to selection; and plans for evaluation of the tests.

This paper will not describe the findings in detail; as previously mentioned, these have been published (Bergman, 1974).

To summarize: the total number of students in the 16 schools in spring 1971 was 1 164. Of these 409 were in the first year, 395 in the second and 360 in the third. Range of student population among the schools was 32 - 170, the mean 73 and median 68 students. Different types of psychological tests were used. 14 schools reported the use of intelligence and personality tests. Some schools also included manual dexterity. Some schools used individual tests, others group-tests, and some both methods. The findings indicated that psychological tests, although widely used, were not given major weighting in selection of students; in fact, the recommendations were usually not known to the admission committee. Evaluation of the validity and reliability of the tests as a selection criterion or for other purposes had not been reported at the time of this phase of the study.

- 3) **The relationships between the tester (psychologist) recommendation, rejection, attrition and success in the nursing education program:** of the 16 schools, 14 agreed to take part in this phase of the study. As one of these did not meet the study criteria of administering test in 1968, 13 schools made up the final sample. 1968 applicants were chosen for the study as this group had completed their studies in 1971, and it was expected that the relevant data would still be easily available. Data was gathered from the 13 schools on the 1968 applicants who had been tested and included 589 applicants made up of three groups:-
  - a) 132 rejected applicants (but these were from only 8

of the 13 schools — five schools did not have data on rejected applicants).

- b) 303 applicants who were admitted to and graduated from the school, and
- c) 154 students who had been admitted but left before completing the program (attrition).

A data sheet on each candidate was filled out by the school faculty. It included personal variables, tester recommendation, admission status, timing and reason for attrition of those who left before completing the program, and three measures of success of those who graduated. (grade point average in government exams; Final grade for practice; average grade for school's exams.)

A 34% attrition rate was found, similar to that of several other countries.

In our study examination of the rejection and attrition rates revealed a relationship between high rejection and low attrition; high rejection rate of Asia-African born, the tendency to admit new immigrants followed by high attrition; minimal relationship to social class on both rates; and low rejection with low attrition for those with full high school matriculation.

The psychological tester recommendations were correlated with selected variables of the applicants. Examination of the relationships revealed:-

- a) a marked difference between schools in the distribution of the recommendations ("suitable"; "reservations"; "questionable"; "unsuited").
- b) positive relation between high recommendation and admission by the school;
- c) positive relation between high recommendation and low attrition in the total sample but with considerable differences among the schools;
- d) positive correlation between the recommendations and grades in theory, minimal or no correlation with practice grades;
- e) students with recommendations of "questionable" and "unsuitable" who did not complete the program left earlier than students with higher recommendations.
- f) the main reason for attrition (40%) was difficulty with theoretical studies. Almost half of the students left of their own volition;
- g) there were differences in recommendations by period of immigration, country of birth, and matriculation status. No difference was found by social class.

#### 4) Major Conclusions and Recommendations of the study were:

- i) The psychological tests correlated significantly with achievement in theoretical learning. As weakness in theory was the major cause of attrition, the use of tests in the selection of students was recommended as one way of reducing attrition.
- ii) Matriculation status was found to be the only personal variable influencing attrition and success and was recommended as a criterion in selecting students.
- iii) Vulnerable groups such as new immigrants and applicants born in Asia-Africa were found to have high attrition and/or rejection rates. It was suggested that these applicants should be given careful

consideration in psychological testing and in selection and provided extra support if admitted to the educational program.

- iv) The basis for evaluating success in nursing practice and tests to predict such success should be further sought or developed.
- v) It was recommended that alternative methods of selection be sought, tried and evaluated.

In summary, the study surveyed the use of psychological tests in all 16 schools of nursing in Israel and found them to be widely employed. Relationships between the tester recommendations and personal variables, rejection, attrition and selected grades were examined for 589 applicants in 13 schools.

Psychological recommendations were found to predict success in theory but not in practice as measured in this study. It appeared that tester recommendations should be used with reservation with some socially vulnerable groups. Psychological tests were recommended as a means of reducing attrition resulting from difficulty with theoretical learning.

#### B. Second Study: Attrition in One Diploma School of Nursing in Israel During the Years 1968 - 1974

- 1) In the former study, the use of psychological tests in the selection of students had been recommended as one way of reducing attrition on one hand; on the other hand, a wide range (15% - 54%) of attrition among schools was found. The author offered her services in examining the whole issue in one school — where there had been concern for a long time about the high attrition rate — acknowledging that local problems should be solved by conducting local studies. Attrition during the years 1968 — 1974 was investigated (Rotenberg, 1975). 1968 was chosen as a starting point because changes in high school educational prerequisites for entering nursing had been introduced two years before.
- 2) The study population included all the 269 students that had started their studies in the investigated school during the years 1968 — 1973. 178 students were admitted as nursing students to four classes that had commenced and completed their studies until October 1974, 81 of whom (45.5%) dropped out. No significant differences were found between classes although the relative attrition rate of the 1970 class was higher (63.4%) than others. The 1972, 1973 classes were still enrolled in October 1974. One class finishing the second year of studies started with 48 students of whom 14 dropped out. The other class that completed the first school year, had commenced with 43 students and till then had an attrition of 17 students.
- 3) In relation to the topic of this paper it should be mentioned that the school used psychological tests for almost all the applicants. The same psychologist administered the tests during all those years. Students who were tested by other psychologists were excluded on this variable from the study. This was done in order to be able to make valid comparisons between testers' recommendations and attrition or other relevant variables. Without describing details, psychological recommendations based on psychological tests did not predict attrition. No significant differences were found between dropouts and graduates by psychological recommendations (in contrast with the former findings). While testing relation-

ship between psychological recommendations and causes of attrition it was found that students rated as "suitable" did not differ from other dropouts by cause of attrition. Test of Pearson's correlation coefficient revealed a significant correlation ( $r = -.32$   $p < .01$ ) between psychological recommendation and time of attrition: students who had been rated as suitable dropped out somewhat later than others.

One additional finding should be mentioned: in contrast with the 1973 findings, in this school students with higher educational status had a higher rate of attrition than others.

- 4) Recommendations to the school regarding psychological tests suggested making a decision on the issue and choosing between two alternatives:
  - a) sending for psychological tests only those candidates that were questionable after an interview and a checking of formal needed records, or
  - b) if the decision would be to continue the tests for all the candidates, then psychological recommendation should **be used** with much consideration and as a means of preventing possible problems and/or for offering better individual care of the students.

The author, who was a neutral person, stated that to her the first alternative seemed suitable for the investigated school.

- 5) Study results supported the argument that in order to resolve problems in a specific school, a local study should be conducted when the range of differences among schools was found to be wide.

### C. Third Study: Handling and Results of Applications to School of Registered Nurses in Israel

- 1) By coincidence, during the examination of school records, in the course of the second study (Rotenberg, 1975), a by-finding revealed that about 50% of the applicants to the investigated school did not start their nursing studies in that school. This variable was not studied further at that time. As the admission policy to schools of nursing has an impact on the reservoir of nursing manpower, it was decided to receive a description of the situation for the 1975 - 1976 school year in regard to the number of applications; duplications in application to schools; characteristics of applicants; duplications in use of resources (examinations, psychological tests, health exams, etc.); characteristics of those who did not start studies either because of rejection or of their own volition. The study (Bergman *et al*, 1977) was also designed to clarify the selection policy of the schools' directors.
- 2) The number of applications to 14\* schools of RN for the year 1975-76 was 1764. The number of persons who had applied (candidates) for admission was 1288. 291 candidates made between two to seven applications to different schools of nursing. 740 candidates were approved for admission, of these 634 started their studies and were enrolled one month after commencement of the school year.
- 3) In relation to psychological tests it was found that:
  - a) most duplication in the use of selection resources was in the use of psychological tests that are costly in terms of time and money. It was then recommended to concentrate psychological and other tests in order to prevent duplications in the use of selecting resources;
  - b) the directors of the schools ranked psychological

tests as an important criterion among the criteria for selecting candidates to schools of nursing. For analysis of this part of the study, Factor analysis and Q method analysis were used. It was found, among other things, that some of the directors attached more importance to potentiality, hence appreciated the results of psychological tests, while others preferred achievements and gave higher weighting to high school grades; namely, a significant negative correlation was found between appreciating results of psychological tests and high school grades. This part of the study also revealed different "styles" in the selection of candidates by selection criteria. For example: one group of directors attached relatively high importance to "personal impression" based on interviews, and also preferred the results of psychological tests. Another group saw importance in the health situation of the candidates and also clearly preferred high school grades; this group also attached relatively more importance to socio-cultural variables. A third group of directors clearly stated the importance of psychological tests in comparison with all other criteria. The fourth group of directors gave most importance to psychological tests but also medium importance to high school grades and also valued the individual interview quite highly.

In summary, it was found that the directors did not differ on all the criteria and there was agreement about the importance or non-importance of some. These were: sex, age, letters of recommendation, record in high school, parents in a health profession, a letter describing curriculum vitae, entrance examinations, full high school matriculation and army service. In those criteria on which directors differed, differences were found in appreciating criteria for the selection of candidates and there were also differences in the groups of criteria, between selection criteria. The groups of criteria were: "data from personal impression"; "health"; "academic criteria" and "socio-economic data".

\*Those schools that admitted new students that year

D It should be mentioned that in 1976 a review of personality measurement among nurses, based on 66(!) references, was published (Lewis & Cooper, 1976). This paper discusses different personality tests, results and recommendations.

### E. Summary

This paper reported on the use and results of psychological tests in selecting candidates to schools of registered nurses in Israel. Data was based on three studies conducted during the years 1971-1977.

### REFERENCES

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