

## PERSONALITY CHARACTERISTICS OF PHYSIOTHERAPY STUDENTS

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*Seventy-nine first year physiotherapy students from Lincoln Institute were matched for age and sex with a sample of fifty-two trainee teachers from Melbourne State College. The two samples were compared on personality dimensions as measured by Cattell's Sixteen Personality Factor Inventory. Statistical analysis revealed significant differences on five dimensions; Factors I, M, N, O and Q<sub>1</sub>. Compared to the teaching students the physiotherapy undergraduates were less tender-minded, more practical and conventional, more forthright, more self-assured and more conservative. These results were reasonably consistent with other findings and had implications for professional behaviour and future training of physiotherapists.*

Overseas studies have suggested that physiotherapy students are characterised by personality variables that distinguish them from other tertiary students. For example, Child (1974), using the Eysenck Personality Inventory (E.P.I.) with British students, found that compared to other female tertiary students physiotherapy students were more extraverted and more anxious. Similarly, Rezler and French (1975), in a study of American health science students reported that extraversion types predominated in those professions with more opportunity for direct patient contact. In particular, they found that physiotherapy students and occupational therapy students were more extraverted than other groups, such as medical record administration and medical laboratory science students. Wellock (1975), using an attitude and interest scale found that, in comparison with eighteen other American student groups, physiotherapy students, both male and female, tended to have a higher interest in people and their interactions, higher levels of self-confidence and maturity and a higher need to be liked. The physiotherapy students also tended to give more socially desirable responses and to be more conventional in their ideas and behaviour.

These overseas findings are not easily generalised to Australian students. However, the few Australian studies that have been carried out have pointed to a similar profile of personality characteristics for physiotherapy students in this country. For example, Sweet (1972) tested physiotherapy students in Sydney on the E.P.I. and the Minnesota Importance Questionnaire (M.I.Q.), which attempts to measure ability, values and priorities. Sweet reported that the physiotherapy students scored highly on three measures; Ability Utilisation, Achievement, and

Social Service. They had low scores on the dimensions of Authority, Independence, and Social Status. This group also responded with slightly elevated scores on the extraversion and anxiety scales of the E.P.I.

Recently the personality characteristics of health science undergraduates, including physiotherapy students, in Melbourne (Allen and Foreman, 1976) and Sydney (Westbrook, *et al.*, 1976), were investigated using the Edwards Personal Preference Schedule (E.P.P.S.). In both studies it was found that, in terms of their motivational or need structure, the health science students consistently differed from norms for American tertiary students. The therapy groups were characterised by higher social or interpersonal needs. However, interpretation of these two studies needs to be qualified by the fact that American normative samples of tertiary students were used as the comparison group. Foreman (1977) reported a comparison of three female health science groups, physiotherapy, occupational therapy and speech therapy students and an Australian female university sample. In terms of E.P.P.S. scores, no differences were found between the three health science groups, but, compared to the university sample the therapy students were more outgoing and person-oriented, with stronger needs for close and rewarding relationships. The health science subjects were more concerned with satisfying their needs than with success or job persistence, and were not introspective or self-doubting, nor were they particularly empathic.

Although it appears that physiotherapy students may be discriminated from other tertiary students on the basis of personality variables, characteristics which distinguish them from students in closely related health areas

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are harder to find. Westbrook *et al.*, in their 1976 study compared personality profiles of students in five health sciences professions and showed the main differences occurred between students in degree courses, i.e. physiotherapy, occupational therapy and speech pathology and students in diploma courses. The medical record administration students were the most dominant and achieving group and like nurses showed lower affiliation needs and lesser feelings of inferiority.

In Foreman's (1977) study female physiotherapy, occupational therapy and speech therapy students were compared using Holland's (1965) vocational interest personality measure, the Vocational Preference Inventory (V.P.I.). The V.P.I. contains six scales corresponding to personality types: Realistic, Investigative,

Artistic, Social, Enterprising and Conventional, and five other scales, including measures of Masculinity, Status and Self-control. The physiotherapy students compared to the two other groups were low on the Enterprising and Artistic scale and higher on the Masculinity scale. They also showed a preference for structured, ordered environments where technical competencies and systematic activities were required and had in general more masculine interests.

The present study was concerned with further exploring the personality characteristics of physiotherapy students by comparing a sample of physiotherapy students with a comparable sample of tertiary students who were enrolled in a similar vocational "person-oriented" but non-health science course.

TABLE 1: THE PRIMARY SOURCE TRAITS COVERED BY THE 16PF INVENTORY  
(Cattell *et al.*, 1972)

FACTOR	LOW SCORE DESCRIPTION	HIGH SCORE DESCRIPTION	NO. OF ITEMS
A	<i>Reserved, detached, critical, aloof.</i>	<i>Outgoing, warm hearted, easy going, participating.</i>	6
B	<i>Low intelligence.</i>	<i>High intelligence.</i>	8
C	<i>Affected by feelings, emotionally less stable, easily upset, changeable.</i>	<i>Emotionally stable, mature, faces reality, calm.</i>	6
E	<i>Humble, mild, easily led, docile, accommodating.</i>	<i>Assertive, aggressive, competitive, stubborn.</i>	6
F	<i>Sober, taciturn, serious.</i>	<i>Happy-go-lucky, enthusiastic.</i>	6
G	<i>Expedient, disregards rules.</i>	<i>Conscientious, persistent.</i>	6
H	<i>Shy, timid, threat-sensitive.</i>	<i>Venturesome, uninhibited.</i>	6
I	<i>Tough minded, self reliant, realistic.</i>	<i>Tender minded, sensitive, clinging, overprotected.</i>	6
L	<i>Trusting, accepting conditions.</i>	<i>Suspicious, hard to fool.</i>	6
M	<i>Practical, "down to earth" concerns.</i>	<i>Imaginative, bohemian, absent minded.</i>	6
N	<i>Forthright, unpretentious, genuine but socially clumsy.</i>	<i>Astute, polished, socially aware.</i>	6
O	<i>Self assured, placid, secure, complacent, serene.</i>	<i>Apprehensive, self-reproaching, insecure, worrying, troubled.</i>	6
Q <sub>1</sub>	<i>Conservative, respecting traditional ideas.</i>	<i>Experimenting, liberal, free-thinking.</i>	6
Q <sub>2</sub>	<i>Group dependent, a follower.</i>	<i>Self sufficient, resourceful.</i>	6
Q <sub>3</sub>	<i>Undisciplined, self-conflict.</i>	<i>Controlled, socially precise.</i>	6
Q <sub>4</sub>	<i>Relaxed, tranquil, composed.</i>	<i>Tense, frustrated, over-wrought.</i>	6
MD	A scale designed to see whether the subject is giving a distorted picture of himself in the test situation. (Motivation Distortion).		7

# METHOD

The subjects were 131 first year tertiary students. One sample comprised 59 female and 20 male physiotherapy students from Lincoln Institute, Melbourne, with an age range of 17-20 years (mean age 18.5 years). The comparison sample comprised 39 female and 13 male student teachers from the State College of Victoria, Melbourne, with an age range of 17-20 years (mean age 18.5 years).

Subjects were given Cattell's Sixteen Personality Factor Inventory, (16PF) Form C. (Cattell, *et al.*, 1972). This test is designed to measure sixteen different personality dimensions or source traits. A description of each of the dimensions is given in Table 1. The test was administered according to the procedures laid down in the Manual for the 16PF (Cattell *et al.*, 1972).

# RESULTS AND DISCUSSION

The means and standard deviations were calculated for the sixteen personality variables and the motivation distortion scale (see Table 2).

To test for differences in the seventeen variables between the two samples a multivariate analysis, Hotelling's  $T^2$ , was carried out. This yielded an overall significant multivariate  $F$  ratio ( $F = 3.179$ ;  $df = 17, 113$ ;  $p < .001$ ) showing that scores on the test did differ significantly between the physiotherapy and non-physiotherapy groups.

Univariate  $F$  tests were then carried out on the scores for each scale to identify which particular variables had significantly different means between the two groups. These analyses showed that five of the variables differed at the .05 level, with the physiotherapy students, compared with the teaching students, scoring significantly lower on the following factors:

- I – Tough-minded vs. Tender-minded;
- M – Practical vs. Imaginative;
- N – Forthright vs. Shrewd;
- O – Placid vs. Apprehensive;
- Q<sub>1</sub> – Conservative vs. Experimenting.

The physiotherapy students compared with trainee teachers scored significantly lower on Factors I, M, N, O and Q<sub>1</sub>. Thus the physiotherapy students can be described as less tender-minded, sensitive, dependant and effeminate

TABLE 2: MEANS AND STANDARD DEVIATIONS OF PHYSIOTHERAPY AND TEACHER-TRAINING STUDENTS FOR THE SEVENTEEN VARIABLES OF THE 16PF, FORM C

FACTOR	PHYSIOTHERAPY GROUP n = 79		NON-PHYSIOTHERAPY GROUP n = 52	
	MEAN	S.D.	MEAN	S.D.
A	8.44	2.12	8.08	2.41
B	5.48	1.37	5.15	1.47
C	6.68	2.25	6.02	2.57
E	5.27	2.18	5.00	2.07
F	6.48	2.23	6.62	2.67
G	5.75	2.67	6.35	2.50
H	6.39	2.32	6.00	2.49
I*	6.99	2.32	8.13	2.06
L	5.58	1.82	5.77	1.91
M*	5.49	1.67	7.23	2.17
N*	4.41	1.99	5.21	1.99
O*	7.14	2.31	8.09	2.66
Q <sub>1</sub> *	5.75	2.09	6.88	2.71
Q <sub>2</sub>	4.69	1.94	5.42	2.35
Q <sub>3</sub>	6.82	2.02	6.37	2.04
Q <sub>4</sub>	7.87	2.39	7.25	2.55
MD	6.37	2.13	5.77	2.41

\* Indicates which means differed significantly ( $p < .05$ ).

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(lower on I); more conventional, practical and prosaic (lower on M); less socially aware, more forthright, unpretentious and gregarious (lower on N); more self-assured, placid and serene (lower on O); less experimenting and showing a stronger preference for the use of established ways and ideas (lower on Q<sub>1</sub>).

Using the more detailed description of each of the source traits, as given in the Handbook (Cattell *et al.*, 1970) and Manual for the 16PF (Cattell *et al.*, 1972), it is possible to draw a more complete profile. People who score lower on Factor I tend to be more practical, independent, realistic and responsible. When in a group, they tend to keep it working on a practical, no-nonsense basis. On the other hand, people more likely to seek affection, attention, help and sympathy, and who are more effeminate, will have higher Factor I scores.

A lower Factor M score is associated with people who are more conventional, practical, down to earth and concerned with details. These people are often found in occupations requiring mechanical sense, alertness and realism.

The forthright, spontaneous, natural and gregarious person will score lower on Factor N. These people also tend to show a natural warmth and liking for people, and are more often content with things as they are.

A lower Factor O score is more associated with the placid, mature, self-assured and confident person. Those with higher Factor O scores, tend to have more feelings of guilt and neuroticism.

The conservative, conventional person, with respect for established and traditional ideas, will score lower on Factor Q<sub>1</sub>. Similar to those with low Factor N scores, they are also more cautious in accepting new ideas or changing their points of view.

The profile revealed in the present study is reasonably consistent with earlier findings (e.g. Wellock, 1975, Foreman, 1977) which gives some weight to the validity of these results and suggests that physiotherapy as a vocation does attract a definable type of individual.

### CONCLUSION

The characteristics which distinguish the physiotherapy student in this study do not seem incompatible with those necessary for a practically-oriented career where the working environment is typically a hospital characterised by hierarchical organisation and a clear authority structure. However, the physiotherapy students may be less likely than trainee teachers to challenge accepted practice and to accept innovative approaches, thus making the

profession as a whole less open to change. Further the results suggest that the physiotherapy student is more likely than the trainee teacher to be more concerned with the concrete skills and techniques of his or her profession rather than the subtleties of interpersonal behaviour, including the effects of his or her behaviour on others.

This interpretation supports a finding from Foreman's (1977) study in which therapy students were compared to a university sample. The therapy students scored lower than the university group on an empathy measure. One important implication is that empathic-type interpersonal skills should not be taken for granted in physiotherapy students who are otherwise outgoing and self-confident.

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