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Brief Note

Medical Students' Perception of Inpatients' Anxiety, Self-Esteem, Purpose-in-Life and Health Locus of Control as Compared with Nursing Practitioners'

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Medical students (fourth-year: n = 67; fifth-year: n = 63) estimated inpatients' feelings of anxiety, self-esteem, purpose-in-life, and multidimensional health locus of control. Their ratings were compared both with the ratings given by the 121 inpatients themselves and with those given by nursing practitioners (nurses and nursing students). Findings showed that the medical students overestimated inpatients' anxiety, while they underestimated the inpatients' purpose-in-life and internal health locus of control. Hence they underestimated, as did the nursing practitioners, the inpatients' positive emotional states and their positive attitude toward their own lives. Fifth-year medical students, with clinical experience, rated the inpatients' score of chance health locus of control higher than did the fourth-year medical students, who had no clinical experience. These findings indicate that medical students, like nursing practitioners, are inclined to pay more attention to inpatients' weaknesses than to their strengths.

Key words: inpatients' mental health, anxiety, self-esteem, purpose-in-life, health locus of control

In a previous study we showed that nurses and nursing students (hereafter both groups are referred to as 'nursing practitioners') overestimate inpatients' anxiety, while they underestimate inpatients' self-esteem, purpose-in-life and their belief in internal health locus of control (1). Self-esteem is a sense of personal worth and competence (2). Purpose-in-life concerns the extent to which people attach meaning to their own lives and existence (3, 4). These 2 concepts are closely related to positive mental health (5). Internal locus of control is the belief that what happens to individuals is primarily the result of their actions or abilities (6). People who perceive their locus of control to be internal as compared to external are motivated and effective in problem solving, more likely to have good social relationships, better able to forego immediate rewards in favor of more valued, long-term goals, and are more self-reliant (7). Thus, our findings (1) indicate that nursing practitioners underestimate the inpatients' positive psychological states and their positive attitude toward themselves and their own lives, concentrating more on inpatients' weaknesses than on their strengths and possibilities.

In this study, we asked 2 groups of medical students differing in clinical practice experience to estimate how inpatients would rate their own psychological state regarding anxiety, self-esteem, purpose-in-life, and health locus of control. We then compared the estimated scores with the 2 types of scores we had obtained previously: inpatients' self-reported scores and the scores given by the nursing practitioners. In particular, we explored the similarities and differences between the medical students' and the nursing practitioners' estimations of the inpatients' mental states.

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Subjects and Methods

Subjects. Subjects consisted of 67 fourth-year and 63 fifth-year medical students of Okayama University Medical School. The 2 groups of students differed according to clinical experience: the fifth-year medical students had experienced clinical practice while the fourth-year students had not. In this study, there were also 4 groups of subjects who had participated in our previous study (1): 121 inpatients, 73 nurses, 60 third-year nursing students and 70 first-year nursing students. The mean length of nurses' service was 7.8 years (*SD*: 7.5).

Testing instruments. 4 types of tests were used, a Japanese version (8) of the Spielberger State-Trait Anxiety Inventory (STAI) (9, 10), a Japanese version (11) of the Rosenberg Self-Esteem Scale (12), a Japanese version (13) of the Crumbaugh Purpose-in-Life Test (3, 4), and Multidimensional Health Locus of Control Scales (14).

Only the state anxiety version of the STAI was used, which measures the emotional states of an individual that vary in intensity and fluctuate over time. The scale consists of 20 items. The Self-Esteem Scale measures the extent to which individuals respect themselves and consider themselves worthy. This scale contains 10 items. The Purpose-in-Life Test measures the degree to which a person feels a sense of meaning and purpose in life. The scale used in this study was modified to include 15 items. (See Nagata *et al.* (1) for more details.) The Multidimensional Health Locus of Control Scales consist of 3 subscales: Internal Health Locus of Control (IHLC), Powerful Others Health Locus of Control (PHLC), and Chance Health Locus of Control (CHLC). IHLC concerns the belief that one remains or becomes healthy or sick as a result of one's own actions; PHLC concerns the belief that one's health is determined by powerful others such as health care professionals including physicians; and CHLC concerns the belief that one's health is determined by such things as luck, fate, or chance. PHLC and CHLC, as opposed to IHLC, are characterized by belief in an external health locus of control. Each subscale includes 6 items. (See Nagata *et al.* (1) for sample items and references therein regarding the validity and reliability of each scale.)

Procedure. The same inventory that we had used in our previous study (1) was employed. It consists of Set A and Set B, with Set A including a total of 48 items: 20 for the Anxiety Scale, 10 for the Self-Esteem Scale, and 18 for the Multidimensional Health Locus of Control Scales; and Set B, including 15 items for the Purpose-in-Life Test. The subjects rated each item on a 7-point Lickert scale (1–7), both for Set A and Set B. Thus, the greater the score, the higher the respective psychological state. The medical students scored each item, estimating the inpatients' feelings for each item.

Demographic data concerning sex, age and prior hospitalization experience were gathered. The survey was carried out from September to November of 1997.

Results

Here, we are going to report the results of the medical students vis-à-vis the inpatients and compare these results with those obtained for the nursing practitioners vis-à-vis the inpatients.

Demographic data. Table 1 gives the demographic data for the 2 groups of medical students.

Anxiety. Table 2 shows the mean scores for anxiety. It also shows, for comparison, the scores obtained for the inpatients and the nursing practitioners in our previous study (1). A one-way analysis of variance (ANOVA) with 6 levels (inpatients, fourth-year medical students, fifth-year medical students, first-year nursing students, third-year nursing students, and nurses) showed the effect of group, $F(5,448) = 30.78$, $P < 0.001$. Subsequent Tukey analyses ($P < 0.05$) showed that the inpatients' score was lower than the scores given by the 2 groups of medical students, indicating that these groups overestimated the level of inpatients' anxiety. No statistically significant difference was found between the 2 groups of medical students, nor between the medical students and any of the three nursing practitioner groups.

Self-Esteem. Table 2 presents the mean scores.

Table 1 Demographic characteristics of each group

		4th-year students	5th-year students
Sex	Male (*n*)	53	47
	Female (*n*)	14	16
Age	Mean ± *SD*	22.3 ± 1.1	23.6 ± 2.2
Prior hospitalization experience			
	Yes (*n*)	32	22
	No (*n*)	35	41

n: Number of cases.

The ANOVA showed the effect of group, $F(5,448) = 5.34$, $P < 0.001$. No statistically significant difference was found in rating among the 5 groups (inpatients, fourth-year and fifth-year medical students, third-year nursing students, and nurses) except that the inpatients' score was greater than that of the first-year nursing students.

Purpose-in-Life. Table 2 gives the mean scores. The ANOVA showed the effect of group, $F(5,448) = 12.41$, $P < 0.001$. The inpatients' score was greater than any score of the 2 groups of medical students, indicating that the medical students underestimated the inpatients' sense of purpose-in-life. This finding was comparable to that of the nursing practitioners. Thus, there was no statistically significant difference between the medical students and the nursing practitioners.

Multidimensional Health Locus of Control. Table 3 shows the mean scores. An ANOVA was performed with 6 groups and 3 loci of control (IHLC, PHLC, and CHLC), with the second variable treated as a repeated measure. The analysis showed the main effect of group, $F(5,448) = 3.95$, $P < 0.01$, and locus of control, $F(2,896) = 37.76$, $P < 0.001$, as well as interaction between the 2 variables, $F(10,896) = 5.87$, $P < 0.001$.

Tukey analyses showed that the inpatients' IHLC score was greater than the IHLC scores given by the 2 groups of medical students. The 2 groups of medical students estimated the inpatients' IHLC as lower than the first-year nursing students. The CHLC score given by the fifth-year medical students was higher than the CHLC scores given by the fourth-year medical students and the first-year nursing students.

Tukey analyses showed that the fourth-year medical students' estimation of PHLC scores was lower than their estimation of IHLC scores, whereas the fifth-year medical students' estimation of CHLC scores was greater than their PHLC scores.

Table 2 Mean scores ($\pm$ *SD*) for anxiety, self-esteem and purpose-in-life

	Inpatients	4th-year medical students	5th-year medical students	1st-year nursing students	3rd-year nursing students	Nurses
Number of cases	121	67	63	70	60	73
Anxiety	3.56 ± 0.98	4.52 ± 0.83	4.60 ± 0.76	4.88 ± 0.85	4.68 ± 0.73	4.66 ± 0.86
Self-esteem	4.50 ± 0.98	4.30 ± 0.87	4.40 ± 0.81	3.90 ± 0.78	4.10 ± 0.88	4.14 ± 0.74
Purpose-in-life	5.10 ± 0.87	4.41 ± 0.92	4.59 ± 0.81	4.35 ± 0.98	4.31 ± 0.85	4.34 ± 0.77

The data for inpatients and nursing practitioners are from Nagata *et al.* (1). Comparison of medical students' and inpatients' responses (Tukey test; $P < 0.05$). Anxiety: Inpatients < 4th-year medical students, 5th-year medical students. Purpose-in-life: Inpatients > 4th-year medical students, 5th-year medical students.

Table 3 Mean scores ($\pm$ *SD*) for Multidimensional health locus of control

	Inpatients	4th-year medical students	5th-year medical students	1st-year nursing students	3rd-year nursing students	Nurses
Number of cases	121	67	63	70	60	73
IHLC	4.98 ± 1.08	4.30 ± 0.95	4.22 ± 0.87	4.75 ± 0.84	4.53 ± 0.77	4.38 ± 0.72
PHLC	4.28 ± 1.08	3.87 ± 0.79	4.03 ± 0.77	4.27 ± 0.81	4.06 ± 0.85	3.80 ± 0.80
CHLC	4.17 ± 1.05	4.03 ± 0.91	4.52 ± 0.75	3.85 ± 0.93	4.14 ± 0.90	4.27 ± 0.81

The data for inpatients and nursing practitioners are from Nagata *et al.* (1). Comparison of medical students' and inpatients' responses (Tukey test; $P < 0.05$). IHLC: Inpatients > 4th-year medical students, 5th-year medical students; 1st-year nursing students > 4th-year medical students, 5th-year medical students. CHLC: 5th-year medical students > 4th-year medical students, 1st-year nursing students. 4th-year medical students: PHLC < IHLC. 5th-year medical students: CHLC > PHLC. IHLC: Internal Health Locus of Control; PHLC: Powerful Others Health Locus of Control; CHLC: Chance Health Locus of Control.

Discussion

The 2 groups of medical students overestimated the inpatients' anxiety, while they underestimated the inpatients' purpose-in-life. These findings are the same as those we obtained for the nursing practitioners. Thus, medical students, like nursing practitioners, are inclined to misperceive inpatients' mental states, overestimating their anxiety and underestimating the inpatients' positive attitude toward their own lives.

However, there was a difference in perception of inpatients' self-esteem between the medical students and the nursing practitioners. Specifically, the nursing practitioners underestimated the inpatients' self-esteem, while the medical students did not, with their estimated scores not differing from the inpatients' self-reported scores. The accuracy of the medical students in judging the inpatients' sense of self-esteem, in comparison to the nursing practitioners, may suggest that the medical students possess a greater skill in perceiving patients' actual sense of worth and competence. This is unlikely, however. If this were the case, the medical students would have shown their sensitivity when they estimated the inpatients' psychological states other than self-esteem. The similarity is better accounted for by the mechanism of projection, which may have led the medical students to project onto the inpatients their own — undoubtedly high — level of self-esteem.

Both groups of medical students underestimated the inpatients' feeling of internal control of health, a finding again similar to that for the nursing practitioners. However, a notable finding concerns the style of perception which the medical students showed for chance health locus of control. As they gained clinical experience, the medical students increased their estimations of the inpatients' perception of this health locus of control. This suggests that they regard inpatients as being more inclined to perceive chance or luck, rather than powerful others including themselves, as influencing inpatients' sickness or recovery. This tendency, although not significant, was also observed for the nursing practitioners (Table 3). However, there was a noticeable finding regarding the nursing practitioners' estimation of inpatients' perception of powerful others health locus of control. Specifically, the weight the nursing practitioners attached to powerful others declined as nursing experience increased. We believe that this indicates the fact that nursing practitioners, after experiencing a variety of difficulties and the limits of their abilities, projected this feeling of impotence onto the inpatients, thereby underestimating the degree to which inpatients believe that their health is controlled by powerful others. If this projection interpretation is correct, then it may mean that when nursing practitioners are unable to care a patient, they believe that they themselves or their nursing interventions are to blame, while when medical students are unable to cure a patient, they are likely to blame chance or bad luck for their failure.

This study shows that medical students, like nursing practitioners, misperceive the psychological states of their patients. The patients actually experience less anxiety, have a more positive attitude toward their own lives and feel more able to control their own health than the medical students give them credit for. We must again emphasize that the medical students, too, are inclined to pay more attention to inpatients' weaknesses than to their strengths. It seems reasonable to conclude that the present findings obtained for the medical students would also be obtained for physicians. It has long been emphasized in clinical medicine that medical activities should be directed not only to the disease itself but also to a whole person suffering from that disease. The present results indicate that medical practitioners are still unable to empathize sufficiently with their patients.

The similarity between the results obtained for the medical students and the nursing practitioners might be explained in part by similarities in the education which they have received or are still receiving. The present findings suggest the possibility that nursing as well as medical education emphasize inpatients' weaknesses rather than their strengths. If this is the case, then the findings could also have implications for individuals who are engaged in medical and/or nursing education.

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