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Original Paper

# Education as a Nurturing Attitude from the Perspectives of the Ego States and Basic Stances of Orthoptic Students

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## Abstract

By analyzing the ways in which students' emotional states worked in engagement with patients and medical professionals through orthoptic clinical practice (practice), the education of students and role of lecturers can be improved. 241 4th year students (33 male, 208 female participated). Scores using the five scale Tokyo University Egogram New Version® (TEG) were obtained before and after practice, and classification was carried out through the four basic positions (OK gram). Evaluation by practice supervisors was classified into four levels ("excellent", "good", "fair" and "poor"), and TEG features of the high grade and low grade student groups were investigated. Comparison of changes in students' ego-state according to TEG before and after practice showed that of the five TEG scales (Critical Parent [CP], Nurturing Parent [NP], Adult [A], Free Child [FC], and Adapted Child [AC] ), the highest was "NP". NP predominance was evident both before and after practice. The OK gram showed that the tendency to be positive toward the self decreased after practice, while the tendency to be positive toward others increased. In the high grade student group (36 students), "NP" rose significantly after practice, while "AC" rose significantly after practice in the low grade student group (17 students) ($p<0.05$). In practice, it is important that the lecturer and supervisor assume a management role in encouraging students' motivation for learning and promoting a sense of purpose and enjoyment in being an orthoptist.

## 1. Introduction

In the orthoptics course in the Department of Sensory Science, Kawasaki University of Medical Welfare, there is a requirement for students training to be orthoptists to engage directly with patients as medical professionals as part of their education. Accordingly, in addition to basic knowledge and techniques/skills, there is an emphasis on education in the emotional field, including personhood as a medical worker, sense of ethics, sense of responsibility and communication skills; these aspects occupy considerable time in lectures

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and practice. In the education of orthoptists, clinical practice (practice) is essential as the clinical field is a place where complex human relations occur between patients, families and many medical professionals, and where many unspecified variable factors such as constantly changing situations are intermingled. In this kind of situation, students experience high levels of tension as they think independently and engage in practice. Mizuno [1] claims that children nowadays have little experience of caring for others due to the weakening of human relations from when they were young, and that this leads to diminished skills in resolving problems arising in human relations. Furthermore, many students have little experience of putting themselves in somebody else's shoes and thinking from that perspective, and so find it difficult to notice symptoms and feelings that cannot be expressed verbally. Mizuno states that it is, therefore, important to improve general human resources, not only academic ability, through emotional education.

Orthoptic education needs to widen to include not only knowledge, techniques and skills, but also emotional and social perspectives. However, in contemporary orthoptic education, students are not being provided with objective guidance adapted to their individual level of maturity in their emotional and attitudinal development. The actual situation is that the evolving guidance to individuals is subjective and emotional. Students show no reaction to this kind of subjective guidance, but grasp things themselves, understand, and change themselves through this recognition. For those assuming responsibility for orthoptist education, it is necessary to respect each individual, understanding, engaging with and teaching each student in a concrete way. By introducing a transactional analysis egogram [2, 3] into orthoptist education, quantifying the overall ego-state of students and standardizing this, we managed to confirm the significance of indicators for individual guidance, such as educational evaluation and students' own self-understanding [4].

Within this context, a new version of the Tokyo University Type Egogram [5] was used to examine basic position vis-à-vis self and others using an OK gram [2, 6] for ego-state, considering what kind of changes occurred after practice with regard to students' ego-state and readiness for interpersonal relations with mental health.

## 2. Participants and methods

### *2.1. Study participants*

241 4$^{th}$ year students (33 male, 208 female) participated. They were enrolled in the orthoptic course of the Department of Sensory Science, Faculty of Health Science and Technology, Kawasaki University of Medical Welfare, and undertook orthoptic clinical practice over the eight years from April 2005 to July 2012. The mean age was 21.1 years ± 0.4 years (18-23 years).

### *2.2. Survey methods*

The Tokyo University Egogram New Version®II (TEG) psychological test questionnaire was used. It incorporated the OK gram showing the basic position vis-à-vis interpersonal relations.

#### *2.2.1. Tokyo University Egogram New Version (TEG)*

TEG is a personality test [2, 3] of objective self-analysis, a visual analysis of the five ego-states of self; Critical Parent (CP), Nurturing Parent (NP), Adult (A), Free Child (FC) and Adapted Child (AC). (1) About 50 question items are read in order, and replies to a self-administered questionnaire on a 3 point scale are scored 2 points for "yes", 1 point for "neither" and 0 points for "no". (2) Total scores for each scale, where 20 points is the maximum, are plotted on bar graphs, creating patterns. Based on scores obtained on the TEG test, the TEG pattern classification method developed by the TEG Research Group of the Department of Stress Sciences and Psychosomatic Medicine, Graduate School of Medicine, The University of Tokyo, is used to classify 19 patterns and 29 types [5]. (3) The tool is used for self-analysis, measuring features of personality and behavior.

*2.2.2. Reading the five TEG scales*

TEG is interpreted through high and low scores on five scales, and it is important to understand the mutual relationships between scales, for example, "CP" and "NP", or "FC" and "AC". It is also thought that each of the scales assumes a lead role in the behavior patterns of individuals. Accordingly, the amount of emotional energy on each scale from "CP" to "AC" is plotted, usually on a line graph, and then compared, with a focus on the highest elements to evaluate which ego-state is dominant. The actual way of interpreting the graph is to order which scale is highest, which is next and so on. By looking at the overall egogram pattern, the dominant pattern can then be identified. In terms of subdivisions of ego-state, "CP" comprises strict elements such as value judgments and sense of ethics, for example, ideals, conscience, responsibility and criticism. It has negative aspects such as being critical, dominant and exclusive, but also positive elements such as maintaining order and pursuing ideals. "NP" has positive elements such as sympathy, compassion, protectiveness and receptiveness. While it indicates receptiveness to others, warmth and care for others, compassion and deep love, it also has negative aspects such as over-protectiveness and excessive interference. "A" judges things on the basis of facts, collects information from obtaining facts objectively and from all angles, calculates dispassionately based on this, infers and makes decisions, and makes judgments accordingly, but, on the other hand, is mechanical, calculating and cold-hearted. "FC" pays no attention to rules, regulations and constraints, and has natural instincts. On the one hand, they are innocent, full of imagination and have strong curiosity, but they are also self-centered and emotional. "AC" is very cooperative and is an obedient, good child. On the other hand, they lack autonomy, are very dependent, and tend to be reserved [7].

*2.2.3. Classification of basic position (OK gram) through TEG*

On the basic position (OK gram), four classifications were established as comparative criteria for subscale scores on the egogram [2, 6]. The four basic position types on the four quadrants of the two axes are shown as follows (Fig. 1): the first quadrant is positive to self and positive to others (I'm OK: You're OK, positive to self and others type), the second quadrant is positive to self but negative to others (I'm OK: You're Not OK), the third quadrant is negative to self but positive to others (I'm Not OK: You're OK), and the fourth

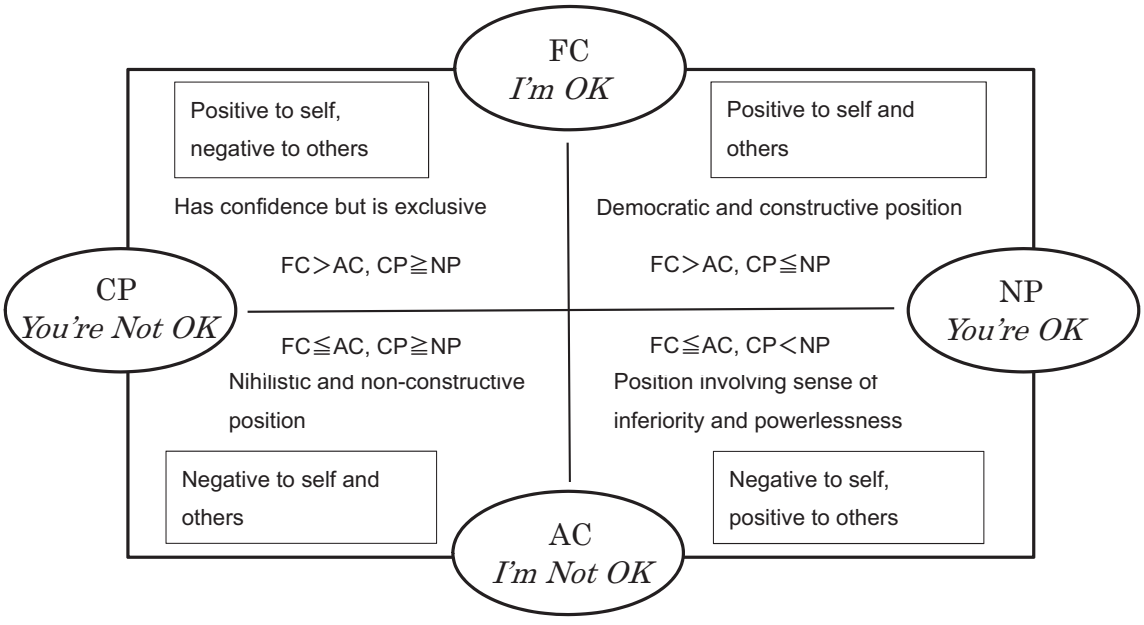


Fig. 1 Four types of basic position
Signs of inequality indicate superiority and inferiority relationships of scales along two axes (Adapted from positions shown by Stewart & Joines with reference to Niisato et al.).

quadrant is negative to self and negative to others (I'm Not OK: You're Not OK, negative to self and others type). As far as the features of each basic position are concerned, the hypothesis is that the positive to self and others type has a position of being democratic and forward-looking through respect for self and others, the positive to self and negative to others type has a position of being narcissistic and exclusive, the negative to self and positive to others type has a position of being self-sacrificing and having a sense of inferiority, and the negative to self and others type has a position of being nihilistic and futile [8].

*2.3. Overview of clinical practice and evaluation methods*

The period of practice was 12 weeks in total, comprising a first term practice of 6 weeks from April, and a later term practice of 6 weeks from June. Over the eight years evaluated in this study, 82 practice facilities were included. Practice supervision and evaluation at each facility were carried out by an orthoptist with at least five years clinical experience.

Practice supervisors were requested to carry out practice evaluation as a subjective general evaluation based on experience, focusing mainly on practice content (use of appliances and instruments, knowledge and skills in various tests, ability to solve problems etc.), skills in expression (basic technical terms, explanations of phenomena, practice records, summaries of content of reports etc.), and practice behavior (engagement with patients and medical professionals, enthusiasm, cooperativeness, communication skills etc.). Standards of evaluation were excellent (80-100 points), good (70-79 points), fair (60-69 points) and poor (59 points or below).

*2.4. Analytic methods*

Statistical processing was done using t-tests and the Mann-Whitney U-test for non-parametric data, with the significance level set at 5% or less.

*2.5. Ethical considerations*

Before conducting the study, an explanation was given to students to the effect that changes on TEG before and after practice would be used to examine the relationship between students' ego-states and practice, and this would be used as basic data for future practice supervision. Consent to participate in the study was requested together with this explanation, and responses were collected only from those who provided consent and cooperated in completing the questionnaire. It was explained that quantitative analysis on the results at group level would be conducted, so individual data would not be used as such, that data would not be used for purposes other than the research, and that protection of personal data would be ensured. Students were told that results of egogram changes would be returned to them on personal cards, using a registered form. The study was carried out after receiving approval from the Kawasaki University of Medical Welfare Ethics Committee (Approval No. 394).

## 3. Results

*3.1. Comparison of pre- and post-practice ego-states*

Table 1 shows mean scores by scale for the five TEG scales (Table 1). Mean scores by scale, shown before and after practice respectively, were highest for Nurturing Parent (NP), showing no great changes, but some small movements. "NP", which indicates the compassion considered necessary for medical professionals, scored highest, and was a healthy type. Scales for the strict, rule-respecting "CP" and the

Table 1 Scores on egogram scales before and after clinical practice

| | CP | NP | A | FC | AC | Total |
|---|---|---|---|---|---|---|
| Before practice | 10.7 ± 4.6 | 15.6 ± 3.8 | 9.9 ± 4.6 | 12.6 ± 5.0 | 12.7 ± 5.5 | 61.5 ± 11.7 |
| After practice | 10.1 ± 4.6 | 15.7 ± 4.0 | 10.2 ± 4.8 | 13.0 ± 5.1 | 13.0 ± 5.7 | 61.9 ± 12.4 |

Mean score ± standard deviation

scientifically thinking "A", who is capable of making general judgments, showed low patterns. Highest mean scores were evident on the "NP" scale, both before and after practice, showing NP predominance, followed by the Adapted Child (AC) N type. After practice, Critical Parent (CP) decreased by 0.6 points, while Free Child (FC) and AC increased by 0.4-0.3 points. In the TEG shown by scale before and after clinical practice, "NP" was the highest of the five scales both before and after practice, followed by "AC" N type. The distribution of students by TEG type shows NP predominant by having the most students, followed by AC predominant and FC predominant both before and after practice.

*3.2. Comparison of basic position (OK gram) before and after clinical practice*

Basic positions (OK gram) before and after practice were divided into four types and the proportion for each shown before practice and after practice (Table 2). Combining positive to the self, positive to others and negative to the self, and positive to others, a total of 190 students (79.1%) showed a tendency to be positive to others before practice, and this increased to 196 students (81.3%) after practice. On the other side of the coin, 51 students (20.9%) were negative to other students before practice, but this decreased to 45 students (16.7%) after practice. The tendency to be positive to the self decreased from 101 students (41.7%) before practice to 98 students (38.4%) after practice. Conversely, the tendency to be negative to the self increased from 140 students (58.3%) before practice to 143 students (59.6%) after practice.

*3.3. Comparison of ego-state by grades before and after clinical practice*

Students who received the grade "excellent" from their practice supervisor in both the first and later

Table 2 Basic position before and after clinical practice

| Type of basic position | Before practice No. students (%) | After practice No. students (%) |
|---|---|---|
| Positive to self, positive to others | 76 (31.3) | 77 (31.5) |
| Positive to self, negative to others | 25 (10.4) | 21 (6.9) |
| Negative to self, positive to others | 114 (47.8) | 119 (49.8) |
| Negative to self, negative to others | 26 (10.5) | 24 (9.8) |

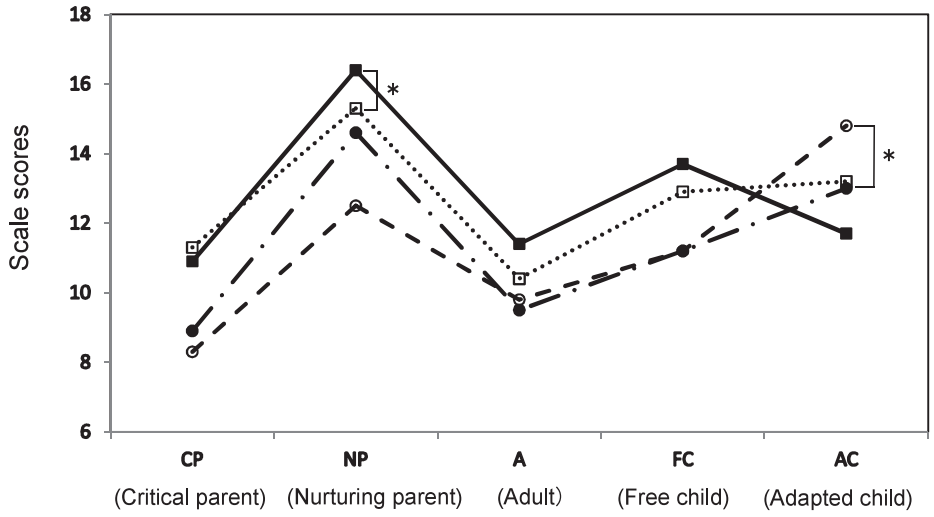


Fig. 2 Egogram results before and after practice for high and low grade student groups

····· High grade student group before practice (n=36)

——— High grade student group after practice

—·— Low grade student group before practice (n=17)

– – – Low grade student group after practice

* Indicates $p<0.05$

practice terms were labeled "high grade students", while those with "fair" or "poor" grades were labeled "low grade students". The high grade student group (n=36) had mean scores of 15.3 on the "NP" scale before practice, and this increased significantly to 16.4 after practice ($p<0.05$). The low grade student group (n=17) scored 13.0 on the "AC" scale before practice, and this rose significantly to 14.8 after practice ($p<0.05$) (Fig. 2). In the evaluations of the practice by the supervisors for both the first and later terms, 36 (15%) students had "excellent" scores while 17 (7%) had "fair" or "poor" scores.

*3.4. Shifts in evaluation from first term to later term*

The evaluations by practice supervisors for first term and later term practices are shown in Table 3. The percentage of students obtaining "excellent" rose 10.0 points from 78 students (32.4%) to 103 students (42.7%) from the first term practice to later term practice, while the percentage obtaining "good" fell 6.2 points from 103 students (42.7%) to 88 students (36.5%), and the percentage obtaining "fair" fell 5.0 points from 59 students (24.5%) to 47 students (19.5%). There was an increase of 0.8 points in the percentage obtaining "poor", rising from one person (0.4%) to three students (1.2%).

Table 3 Shifts in supervisor evaluation of practice

| Evaluation | Before practice No. students (%) | After practice No. students (%) |
|---|---|---|
| Excellent | 78 (32.4) | 103 (42.7) |
| Good | 103 (42.7) | 88 (36.5) |
| Fair | 59 (24.5) | 47 (19.5) |
| Poor | 1 (0.4) | 3 (1.2) |

## 4. Discussion

The ways in which students' ego-states and attitudes to interpersonal relations changed before and after practice in practical orthoptic education was examined by using TEG and the OK gram to study basic position vis-à-vis the self and others.

In terms of changes in mean TEG scores by scale before and after clinical practice, "NP" was the highest of the five scales both before and after practice, followed by "AC" N type. There were no major changes in patterns of graphs before and after practice. Both before and after practice, the Critical Parent (CP) and Adult (A) scales were low, and the Nurturing Parent (NP), Free Child (FC) and Adapted Child (AC) scales were high. Both before and after practice, "NP" was the highest, and it increased further after practice.

Comparing mean scores on each scale before and after practice, "CP" decreased after practice, while "AC" scores rose. This may be because students understood the characteristics of the practice facilities over the three months, engaging in practice through trial and error, and building up experience. TEG control is more effective in raising low elements than in lowering high elements. In other words, raising low "CP" and "A" seems to be more closely linked to self-transformation than reducing high "AC". Shiratori [10] suggests that a sense of achievement in practice can be motivating for further self-development, and that this may lead to the fostering of sensibilities such as a sense of responsibility, reflectivity and compassion. In the content of orthoptic clinical practice, there are scientific aspects based on actual facts, such as problem solving skills and an inquiring mind. Accordingly, a low "A" score, or no change from before practice to after practice, suggests that it may be difficult to make general judgments based on scientific evidence, combined with other information. In the future, practice supervision facilitating the objective ordering of problems and the improvement of problem-solving skills is necessary.

In terms of changes in the OK gram, the basic position on interpersonal relations, there was an increase in a positive tendency toward others from 79.1% to 81.3% from before practice to after practice, and a similar increase in negative tendency toward the self from 58.3% to 59.6%. On the OK gram, the negative

to others scale was extremely low compared to other scales, which seems to reflect students' attitudes of acceptance of others. Being positive toward others is an essential prerequisite to being an orthoptist who engages well with patients. The rise in the positive to the others scale and fall in the positive to self scale may be the result of the manifestation of a lack of confidence in their own abilities after approximately three months experience of clinical practice. Mino et al. [6] suggest that for the basic position of university students on interpersonal relations, those who are positive to the self and others or positive to the self and negative to others have higher levels of mental health than those who are negative to the self and positive to others or negative to the self and others, and that they experience lower levels of psychological stress reactions. For this reason, they suggest that the level of university students' mental health is regulated more by their basic position vis-à-vis the self than by attitudes toward others. Shido et al. [11, 12] claim that a significant positive correlation between subjective sense of health and understanding of self on the OK gram is evident. Accordingly, in practical education, it is necessary to raise the subjective sense of physical and mental health to affect a change from negativity toward the self, which involves high levels of psychological stress reaction, to a positive interpretation of the self.

In terms of ego-state by grade before and after clinical practice, "NP" increased significantly after practice in the "high grade student group", while "AC" increased significantly after practice in the "low grade student group". Kawabata et al. [13] state that there are particular features of correlations between practice grades and TEG, whereby "CP", "NP", "A" and "FC" increase and "AC" decreases after practice in the "high grade student group", while "CP", "NP" and "FC" decrease and "AC" increases after practice in the "low grade student group". The "high grade student group" increased further when receiving guidance from high "NP" practice supervisors [14]. However, in the "low grade student group", because "AC" was high and they did not have confidence in themselves even when they wanted to gain experience themselves through clinical practice, there was an aspect of being unable to undergo experience due to being unable to make requests to supervisors on their own initiative.

There was a 10 point rise in students obtaining "excellent" in the later term practice compared to the first term practice. This suggests that the clinical practice supervision of the supervisors over approximately three months was effective. Practice causes both physical and mental tension, but is practical learning that carries expectations of substantial growth. This means that it is desirable to provide support so that students do not become unnecessarily tense during practice, and do not damage their sense of self-esteem. A sense of achievement in practice can be motivating for further self-development, and this may lead to the fostering of sensibilities such as a sense of responsibility, reflectivity and compassion. In order to raise the educational effectiveness of practice, it is important that supervisors fully understand students' behavior, psychology and ways of thinking, and that they engage with them meticulously [10].

Regarding nursing professionals' TEG, Umezu et al. [15] state that education to raise not only "NP", but also low ego-states of "CP", "A" and "FC" is necessary to draw closer to the "hill-shaped type" seen in progress from the N type to the ideal mature medical professional who is positive to the self and others. Similarly, the ego-state of orthoptists as medical professionals needs to work toward having the Nurturing Parent (NP) ego-state at the peak of the hill shape by the time of graduation, and to do this, the development of compassionate behavior considered to be required in an orthoptist needs to be encouraged, along with an ego-state of being positive to the self and to others.

## 5. Conclusion

An investigation of the ego-states of 241 students was conducted in order to obtain insights into educational methods for students specializing in orthoptics. Results showed particular features of students' ego-states. Specifically, students showed high levels of the sympathy and spirit of acceptance required of medical professionals, which is a strength of NP predominance. In contrast, AC predominant students have the characteristics of being unable to assert themselves, tend to become stressed, and find interpersonal relations tiring.

In terms of the role of the lecturer, it is important to give classes that promote systematic thinking about matters by students, to extend the strengths of each student, and to implement teaching methods that make students aware of areas for improvement. In clinical practice, it is necessary for the supervisor and the lecturer to work in collaboration to assume their educational role and responsibility. For this purpose, the lecturer and supervisor need to work very closely together to exchange information, to evaluate student learning positively, and to promote the development of confidence and sense of achievement.

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## References

1. Mizuno M:「Kokoro no Kyouiku」to Kihontekikamae・Stroke・Toukaseichouseiryoku tono Kanren. *Jpn J Trans Anal* 32: 118-123, 2007 (in Japanese).
2. Stewart I, Joines V: *TA TODAY: A new introduction to transactional analysis*. Tokyo, JITSUMUKYOIKU-SHUPPAN Co., Ltd. 1998 (in Japanese).
3. Dusay JM: *EGOGRAMS. How I See You and You See Me*. Osaka, Sogensha Inc., 2000 (in Japanese).
4. Namba T, Yamashita T, Tabuchi A: Correlations between students' objective self-evaluations and their supervisors' assessments. *Jpn Orthopt J* 38: 313-319, 2009 (in Japanese).
5. Department of Psychosomatic Medicine, Faculty of Medicine, University of Tokyo: *Egogram pattern* (second edition). Tokyo, Kanekoshobo, 2006 (in Japanese).
6. Mino S, Kanemitsu Y: A study of the relationships between transactional basic positions and mental health in university students. *Kawasaki J Med Welfare* 18: 481-484, 2009 (in Japanese).
7. Suematsu H, Wada M, Nomura S, Tawara R: *Egogram pattern*. Tokyo, Kanekoshobo, 1990 (in Japanese).
8. Shinzato R, Mizuno M, Katura T, Sugita M: *Transactional Analysis series3*. Tokyo, TEAM IRYO, 1989 (in Japanese).
9. Inamitsu T, Takamura S: Egogram karamita Kangogakusei no Seityoukatei. *Jpn J Trans Anal* 32: 73-80, 2007 (in Japanese).
10. Shiratori S, Sato K, Hiejima Y: Study of the adaptation of nursing and Medical students to profession and ego status. *Med Educ* 35: 235-244, 2004 (in Japanese).
11. Shido K, Shimizu K, Miyamoto M, Yamashita M, Takeuchi Y, Kameyama I: A study of the relationships between ego-gram and health in fresh students. *J Nurs Soc Serv, Health Sci Univ Hokkaido* (13): 17-24, 2006 (in Japanese).
12. Shido K, Shimizu K, Kanbara R, Miyamoto M, Hayakawa A, Shimaya A, Furukawa T: The fundamental posture to interpersonal relationship may affect the mental / physical subjective symptoms in fresh students. *J Nurs Soc Serv, Health Sci Univ Hokkaido* (14): 11-17, 2007 (in Japanese).
13. Kawabata S, Tate K, Sasaki Y, Suzuki T: Jissyuseiseki to Egogram tono Soukanni tuiteno Ichikousatu <Dainihou>. *Jpn J Nurs Sci* 13: 1023-1027, 1988 (in Japanese).
14. Sugaya K, Asakawa I, Mikawa C, Sasaki E, Fukayama S: Ichijissyusei niokeru Toudaisiki Egogram wo siyousita rinsyoujissyu no kokoromi. *Phys ther Ibaraki* 9: 31-33, 2005 (in Japanese).
15. Umezu Y, Yoshioka S: A comparison of the consideration behavior and ego state of nursing students and nurses. *J Yonago Med Ass* 62: 91-102, 2011 (in Japanese).