

## The Relationships among DISC, Satisfaction of Clinical Practice and Self-Efficacy of Clinical Practice in Nursing Students

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### Abstract

The purpose of this study is to investigate the relationship between Hippocrates substrate type (DISC) of nursing students, Satisfaction of Clinical Practice and Self-efficacy of Clinical Practice. This study was implemented under explanation of purpose and agreement of a total of 300 students attending in nursing students. The subjects are nursing students in 3rd and 4th grade. The analysis was done using SPSS 23.0win program. The difference between Hippocrates temperaments, satisfaction and self-efficacy was analyzed by ANOVA and the effect between the subject's Hippocrates temperaments with satisfaction and self-efficacy of clinical practice was analyzed by stepwise multiple regression. As a result, the Hippocrates substrate type (DISC) of nursing students had the highest mucus (stable). The Satisfaction of Clinical Practice was  $3.48 \pm .60$ , and the Self-efficacy of Clinical Practice was  $3.87 \pm .64$ . Looking at the relationship between DISC, Satisfaction of Clinical Practice and Self-efficacy of Clinical Practice, Among the Hippocrates substrate types, bile duct (leading type) scored  $3.54 \pm .85$ , it was not statistically significant. In relation to Self-efficacy of Clinical Practice, bile duct (leading type) scored  $4.13 \pm .56$ , indicating that the Self-efficacy of Clinical Practice was the highest. For the research main factors attributing to satisfaction of clinical practice, subjects' general characteristics such as university life satisfaction, health status, satisfaction of clinical practice, nursing major satisfaction and Hippocrates temperaments were analyzed using multi center retrospective study. These variables showed effectiveness for satisfaction of clinical practice and was statistically significant ( $\beta = .317$ ,  $p = .000$ ). For the research main factors attributing to self-efficacy on clinical practice, Regression analysis results indicated satisfaction of nursing major ( $\beta = .323$ ,  $p = .000$ ) and DISC ( $\beta = -.079$ ,  $p = .004$ ) were the most effective. As a result of this study, it is considered to be the basic data for preparing various strategies for improving Self-efficacy of Clinical Practice according to Hippocrates substrate type (DISC).

**Keywords:** Nursing university student; DISC; Satisfaction of Clinical Practice; Self-efficacy of

## Clinical Practice

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## Introduction

Nursing education helps nursing students effectively fulfill their roles as specialized nurses(Waldner et al., 2007) and in order to achieve these education objectives, clinical education to apply theoretical information in to practice is essential. Also the Korea Institute of Nursing Education Evaluation includes clinical practices as an item for evaluation in nursing education therefore its significance is highlighted.

Clinical practice education is a process to improve creativity and potential(Locken et al., 2005). Competency is mandatory for clinical practices after graduation and through this education students can achieve the expectation and demand of the subject. However due to increase in patient demand, infections, safety and human rights, students lack the opportunity for direct clinical experience and settle with observant cases. Also unfamiliar environment, fear, gap between theory and practice, lack of coping ability and difficulties in interpersonal relationships with patients result in stress of clinical practices(Bocchi et al., 2004; Duck, 2014).These situations decrease satisfaction leading to lack of confidence resulting in decline of clinical practice abilities. Since these cases proved differences according to self-efficacy and satisfaction main causes to improve clinical practice abilities should be reviewed(Yang et al., 2011). Lately studies applying arbitration programs according to human behavior is receiving attention. One of these programs divide in to 4 groups abbreviated as DISC where D stands for dominance, I for Influence, S for Steadiness and C for Conscientious. These 4 groups were classified by Hippocrates according to how one perceives the environment and personal ability differences dealing with the environment. DISC is used widely in business, staff training, human resources development, corporate promotion agency and student education, teaching suitable task processing skills for each individual and maximizing quality and quantity of the outcome(Kim et al., 2013).DISC studies applied to nurses include occupation preference with major satisfaction, and how DISC affects education along with educational satisfaction(Roh et al., 2015). However studies applying DISC to improve clinical practice abilities are still insufficient.

Therefore this study seeks the methods to improve clinical practice abilities through analyzing how DISC affects satisfaction and self-efficacy of clinical practice, using the results for foundation of educational programs for individuals according to each propensity.

## **Materials and Methods**

### **Research Design**

This research is to comprehend the effect that Hippocrates temperaments have on satisfaction and self - efficacy on clinical practice of nursing students.

### **Research subject**

This research sampled 300 3rd and 4th year nursing students who experienced at least one semester of clinical practice. G-power 3.1 program was used for basis of calculation

### **Research tools**

#### **Hippocrates temperaments**

Hippocrates temperaments represent the 4 groups of Dominance, Influence, Steadiness conscientiousness divided by Willian Moulton Marston based on the 4 characteristics of Choleric, Sanguine, Phlegmatic and Melancholic by Hippocrates (Marston W M., 1979). Questionnaires are consisted with 40 questions on strengths and weaknesses of each characteristic and the highest overall score implies the main character.

#### **Satisfaction of Clinical practice**

Satisfaction of clinical practice was based on the modified tool of Lee Sun Heeetc. The questionnaire consists of a total of 31 questions divided in to 9 questions on clinical practice, 9 questions on practice guidance, 7 questions on practice environment, 3 questions on practice time and 3 questions on practice evaluation. The questionnaire used the Likert scale reaching from 1, not likely at all to 5, very likely, and higher scores imply higher satisfaction. The chronbach's  $\alpha$  in of Lee Sun Heeetc's research was .87 while in this study it was .89

#### **Self-efficacy of Clinical practice**

Tools used for measurement of self - efficacy were modified by An Hun Jungbased on Harvey and McMurray. The measuring tool consists of a total of 25 questions, and includes both invasive and non-invasive areas with items focusing on techniques in clinical practice. Invasive areas include blood glucose measurement, intravenous injection, and primary catheterization, and non-invasive areas consist of diagnosis with nurses, education on self-care or disease management, observation of side effects of drugs, and prevention of falls and bedsores et al. Questionnaires are a total of 25 questions with answers reaching from 1, not confident at all to 5, totally confident on the Likert scale. Higher scores indicates higher self-efficacy of clinical practice. The chronbach's  $\alpha$  in An Hun Jungstudy was .94 as well as this study..

## Research analysis

Data analysis was done using the SPSS 23.0win program. Subject's general characteristics and Hippocrates temperaments were analyzed by frequency and percentage while the difference between competency, satisfaction and self-efficacy of clinical practice was done by chi-square distribution, t-test and ANOVA. The difference between Hippocrates temperaments, satisfaction and self-efficacy was analyzed by ANOVA and the effect between the subject's Hippocrates temperaments with satisfaction and self-efficacy of clinical practice was analyzed by stepwise multiple regression.

## Results and Discussion

### Subject's general and clinical practice related characteristics

The subject's general and clinical practice related characteristics of this study as shown in table 1. Subject's gender percentage was 80%(240) female and 20%(60) male. Out of these students 53%(159) were 3rd year students and 47%(141) were 4th year. Age average was  $22.71 \pm 3.92$ , average health status was  $3.79 \pm .83$ , nursing major satisfaction was  $3.76 \pm .76$  and clinical practice satisfaction was  $3.54 \pm .74$ . 57.0%(171) students answered that interpersonal relationship with the nurse clinician was the most difficult part of the practice. Since interpersonal relationship is one of the important factors in clinical practice (Memarian et al., 2011) in order to enhance clinical practice abilities various measures should be instructed for improvement in interpersonal relations with the nurse clinician. Academic achievement showed highest percentage in 3.5-4.0 and 3.0-3.5 as 38.7%(116). Most of the field instructors were general nurses, 68.0%(204) and there was a 3:7 ratio of direct and observant clinical practice which was for 76%(228) of the students. As for the relationship between practice and theory, 38.3%(115) replied that partial theoretical information was educated before clinical practice and 59.3%(178) which was the majority replied that all to the theoretical information was educated prior to the practice.

**Table 1 : General and clinical characteristics**

(N=300)

Characteristic	Category	Frequency	Percentage (%)	Mean±Standard (M±SD)
Sex	Male	240	80.0	-
	Female	60	20.0	
Grade	3 <sup>rd</sup> year	159	53.0	-
	4 <sup>th</sup> year	141	47.0	
Age		-	-	$22.71 \pm 3.92$
Health status		-	-	$3.79 \pm .83$
Satisfaction of university life		-	-	$3.49 \pm .76$
Satisfaction of nursing major		-	-	$3.76 \pm .76$

Satisfaction of clinical practice		-	-	3.54±.74
Interpersonal difficulties during clinical practice	Clinical nurse	171	57.0	-
	Patient or guardian	45	15.0	
	Peer	28	9.3	
	Instructor	14	4.7	
	Other medical personnel	17	5.7	
	Other	25	8.3	
Grades	4.0 or higher	34	11.3	-
	3.5-4.0	116	38.7	
	3.0~3.5	116	38.7	
	Less than 3.0	34	11.3	
Practice instructor	Head nurse	75	25.0	-
	Preceptor nurse	21	7.0	
	General nurse	204	68.0	
Performance and observation ratio in clinical practice	Perform: observe=3:7	228	76.0	-
	Perform: observe=4:6	37	12.3	
	perform: observe=5:5	21	7.0	
	perform: observe=6:4	4	1.3	
	perform: observe=7:3	10	3.3	
Connection of practice and theory	Theoretical studies before clinical practice	115	38.3	-
	No theoretical studies before clinical practice	7	2.3	
	Partial theoretical studies before clinical practice	178	59.3	

### Hippocrates temperaments, satisfaction and self-efficacy on clinical practice of nursing students

Hippocrates temperaments, satisfaction and self-efficacy on clinical practice of nursing students are indicated in Table 2. The percentage of students according to the Hippocrates temperaments are Sanguine 31.7%(95), Choleric 7.3%(22), Phlegmatic 35.0%(105) and Melancholic 26.0%(78). Other studies such as (Lee, 2015) implied highest percentage in Sanguine with 54.0% which was different to this study however No EunKying and Shin Seung Ok's (2015) study also resulted highest in Phlegmatic 41.6% which indicated changes according to subjects participating in the study.

Satisfaction of clinical practices showed an average of  $3.48 \pm .56$ , as practice curriculum resulted highest  $3.75 \pm .66$  and practice education resulted lowest as  $3.30 \pm .76$ . The item with the highest satisfaction in clinical practice was mainly simple and functional repetition during clinical practice ( $3.99 \pm .88$ ), and the lowest item was the appropriate amount of assignments charged during practice ( $2.82 \pm 1.03$ ). This research resulted higher than Han Jung Jin's (2012) study which resulted in  $3.23 \pm .44$ . However since low clinical practice satisfaction hinders effectiveness of clinical practice (Gu, 2008), professors should diversify practice materials according to student's

needs and ability along with nurses using this as a guideline to help students experience various clinical opportunities. In addition, the simple and repetitive work of nursing students in clinical practice is continuous, and it is found that the amount of assignments is large. Therefore, The professor should diversify the contents of the practice by creating a robust checklist for the practice that the student should perform, and it seems that the nurse should provide a variety of practical experience opportunities to the training students as a guideline.

Self-efficacy of clinical practice resulted in  $3.87 \pm .64$  which was higher than Han Jung Jin's (2012) study of 3.74 however the reason behind low satisfaction and self - efficacy is due to decrease of direct clinical practices with patients because of increasing emphasis on patients safety and human rights. Hence, the insufficient clinical practices should be supplemented through practice models and simulations. The items with low scores were intravenous injection and maintenance ( $3.34 \pm 1.06$ ), enema or suppository administration ( $3.29 \pm 1.08$ ), and care of the isolated subjects ( $3.40 \pm .98$ ). This was the same as the results of previous studies that showed that nursing students performed invasive examination nursing, injecting, and administering less than average (Han J J., 2012; Cho. M. H. *et al.*, 2007). On the other hand, the self-efficacy score was high for nursing practices that were relatively simple such as blood glucose measurement, fall prevention, and cold and warm therapy and did not significantly affect the patient's well-being. In order to reinforce clinical skills in items with low self-efficacy, models and simulators should be used to enable repetitive experiences similar to real life. In addition, not limited to basic nursing practice, but also through the use of self-

**Table2 : Degree of DISC, Satisfaction of Clinical Practice and Self-efficacy of Clinical Practice**

(N=300)

Subject	Detailed subject	Mean±Standard(M±SD)	
DISC	Bloody	95	31.7
	Bile	22	7.3
	Melancholy	78	26.0
	Mucus	105	35.0
Satisfaction of Clinical Practice	Practice course	3.75± .66	3.48± .60
	Practice contents	3.62± .60	
	Practice guidance	3.30± .76	
	Practice environment	3.45± .70	
	Practice time	3.33± .92	
	Practice evaluation	3.40± .62	
Self-efficacy of Clinical Practice	Self-efficacy	3.87± .64	

study rooms throughout the practice Education must continue, In addition, the importance of stude

nts should be emphasized by conducting practical evaluation as well as theoretical evaluation at school.

### **The effect between Hippocrates temperaments, satisfaction and self-efficacy on clinical practice of nursing students**

The effect between Hippocrates temperaments, satisfaction and self-efficacy on clinical practice of nursing students is shown on Table 3. The relationship between Hippocrates temperaments and satisfaction of clinical practice showed highest in Choleric students with  $3.54 \pm .85$ , however was statistically insignificant ( $F=.110$ ,  $p=.954$ ). In the relationship with self-efficacy Choleric students also resulted the highest score of  $4.13 \pm .56$  and was statistically significant ( $F=4.253$ ,  $p=.006$ ).

**Table 3 : Correlations among DISC, Satisfaction of Clinical Practice and Self-efficacy of Clinical Practice**

Characteristic	Category	Satisfaction of Clinical Practice		Self-efficacy of Clinical Practice	
		M $\pm$ SD	F(p)	M $\pm$ SD	F(p)
DISC	Bloody	$3.47 \pm .59$	.110 (.954)	$3.91 \pm .61$	4.253 (.006)
	Bile	$3.54 \pm .85$		$4.13 \pm .56$	
	Melancholy	$3.48 \pm .57$		$3.97 \pm .64$	
	Mucus	$3.46 \pm .57$		$3.71 \pm .66$	

### **The effect of Hippocrates temperaments on satisfaction and self-efficacy on clinical practice of nursing students**

For the research main factors attributing to satisfaction of clinical practice, subjects' general characteristics such as university life satisfaction, health status, satisfaction of clinical practice, nursing major satisfaction and Hippocrates temperaments were analyzed using multi center retrospective study which is shown on Table 4. These variables showed effectiveness for satisfaction of clinical practice and was statistically significant ( $\beta=.317$ ,  $p=.000$ ).

**Table 4 : Multiple Regression Analysis on Satisfaction of Clinical Practice**

Variable	$\beta$	t	p
Satisfaction of Clinical Practice	.317	7.354	.000
adjusted R <sup>2</sup> : .154, F= 54.083, $p<.05$			

For the research main factors attributing to of self-efficacy on clinical practice, Other variables

such as year, university life satisfaction, clinical practice satisfaction, nursing major satisfaction, and Hippocrates temperaments were independent variables analyzed using multi center retrospective study which is shown on Table 5. Results indicated satisfaction of nursing major ( $\beta=.323$ ,  $p=.000$ ) and DISC ( $\beta=-.079$ ,  $p=.004$ ) were the most effective.

**Table 5 : Multiple Regression Analysis on Self-efficacy of Clinical Practice**

Variable	$\beta$	t	p
Satisfaction of nursing major	.323	7.147	.000
DISC	-.079	-2.871	.004
adjusted R <sup>2</sup> :.160, F= 28.304, $p<.05$			

Through these results Choleric students showed most effective on self-efficacy out of the 4 Hippocrates temperaments and was statistically significant. These results contraindicates the study of Kim Hae Ran(2018)which focused on the difference of knowledge and practice skills according to DISC and Influence type subjects showed highest outcome. This implies repetitive studies are needed since research materials related to temperaments and clinical practice are insufficient. Hence, various strategies that can effect self- efficacy of nursing students should be provided.

## Conclusion

This study was to find the relationship of Hippocrates temperaments on satisfaction and self-efficacy during clinical practice of nursing students. The research was done to a total of 300 3/4th year nursing students after explanation and approval of the study. SPSS 23.0 Win program was used for analysis. The results of this study is as following.

1. Subject's gender percentage was 80%(240) female and 20%(60) male. Out of these students 53%(159) were 3rd year students and 47%(141) were in 4th year. Out of 5 points health status showed an average of  $3.79 \pm .83$ , university life satisfaction was  $3.49 \pm .76$ , nursing major satisfaction was  $3.76 \pm .76$  and clinical practice satisfaction was  $3.54 \pm .74$ . The most difficult interpersonal relationship for 171(57.0%) of the subjects was the nurse clinician. Clinical instructors for 204(68.0%) subjects were general nurses. 228 of the subjects answered that the ratio of direct and observant clinical practice was 3:7.
2. The percentage of students according to the Hippocrates temperaments are Sanguine 31.7%(95), Choleric 7.3%(22), Phlegmatic 35.0%(105) and Melancholic 26.0%(78). Satisfaction of clinical practice showed an average of  $3.48 \pm .56$  and self-efficacy of clinical practice showed an



average of  $3.87 \pm .64$ .

3. The relationship between Hippocrates temperaments and satisfaction of clinical practice showed most effective in Choleric subjects with an average of  $3.54 \pm .85$  however was statistically insignificant ( $F=.110$ ,  $p=.954$ ). The relationship between Hippocrates temperaments and self-efficacy of clinical practice also showed most effective in Choleric subjects with an average of  $4.14 \pm .56$  and was statistically significant ( $F=4.253$ ,  $p=.006$ ).
4. Variables that effect the satisfaction of clinical practice showed significant changes and themain factor was nursing major satisfaction ( $\beta=.323$ ,  $p=.000$ ) and temperaments ( $\beta=-.079$ ,  $p=.004$ ).

Hence through these results I propose the following.

First, continuous and multiple studies of various and extended subjects indicating the relationship of Hippocrates temperaments on satisfaction and self-efficacy of clinical practice should be done. Second, a follow up study to develop teaching methods to improve self- efficacy according to Hippocrates temperaments of nursing students.

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