

Effect of Self-leadership Recognized by Newly-employed Nurses on Job Satisfaction: Mediating Effect of Organizational Commitment

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Purpose: This study was done to provide fundamental data required to establish interventions to enhance job satisfaction of newly-employed nurses by understanding the relationship between self-leadership, organizational commitment, and job satisfaction, and by identifying mediating effects of organizational commitment. **Methods:** Research participants were 210 nurses from four university hospitals and who had less than 12 months of work experience. Data were collected from September 27 to November 4, 2013 through self-administered questionnaires and analyzed using SPSS/WIN 19.0 and AMOS 19.0. Sobel tests were conducted to determine the significance of mediation in the model. **Results:** Self-leadership and organizational commitment, self-leadership and job satisfaction, organizational commitment and organizational satisfaction were positively correlated. Organizational commitment mediated the relationship between self-leadership and job satisfaction. **Conclusion:** Study results indicate greater organizational commitment and job satisfaction with results in higher self-leadership, and better job satisfaction results in more organizational commitment. Results also reveal that self-leadership has a direct influence on increases in job satisfaction as well as, indirectly influencing job satisfaction through organizational commitment as a mediator, confirming the need to develop intervention programs that enhance self-leadership and organizational commitment as a practical effort to increase job satisfaction in newly-employed nurses at their clinical practice sites.

Key Words: Nurses, Leadership, Job satisfaction, Mediating effect, Organization

INTRODUCTION

Expansion and corporatization of medical facilities, increased awareness towards health, and higher demands on quality medical services all led to the specialization and segmentation of hospital tasks, causing the role of nurses to be more complex. Nursing organizations are the group where most hospital employees work. In order for nursing organizations to actively respond to the change and demands, nurses need more than an outstanding level of knowledge or new skill sets. A new type of leadership, which can induce nurses to cultivate the sense of unity to-

wards the organization while motivating them for their active participation at work with autonomy and independence, is also required[1]. Traditional leadership is demonstrated with directions, orders, controls, compensations, and punishments, but nursing leadership required in these days includes accurate judgment, willpower, respect towards others, and their professional capabilities with passion to help cure disease[2]. Adequate leadership in nursing organizations enhances nurses' effort on their job and influences their mental stability, improving job satisfaction by ameliorating productivity and efficiency of nursing practices. It eventually works as a key factor affecting high quality nursing service for patients[3].

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Self-leadership received attention recently due to the change in leadership trends. Self-leadership is one of those concepts that attracted attention in recent years with regard to change in leadership trends. The concept was initially coined and proposed by Manz in response to the heightened awareness among people in 1980s that organizations could not achieve their goals with traditional leadership because of the rapid change in environment and shift in values among members of organizations[4]. Self-leadership, a new form of leadership gaining attention recently, is the practice that influences thoughts, feeling and behavior intentionally to accomplish objectives. It is a developed sense of a person's identity, capability, direction coupled with the capability to influence an individual's communication, emotions and behavior to achieve goals[5]. This type of leadership encourages organization members to endeavor with passion in order to act appropriately. It also puts emphases on autonomous and self-initiative attitude such as setting their own goals, self-rewarding, and self-criticizing[6].

A number of researches had been conducted on self-leadership in the field of nursing, mainly to discover correlations between self-leadership and job satisfaction, organizational commitment, nursing job performance, organizational citizenship behavior, innovative action, or nursing information competency[1]. Studies about the development of self-leadership training programs or the verification of such programs' effectiveness were rare and could hardly be found.

Newly-employed nurses experience transition shock during their first year at work due to the discrepancy between theory and practice, ideal and reality, and knowledge learned from school and actual practice at work. Additionally, these nurses become incapable of effectively learning skills that are necessary to do their job or role well and unable to feel the sense of accomplishment, self-confidence, or self-satisfaction due to high level of stress from 3-shift work schedule, complicated relationship with co-workers, and their ambiguous role and role conflict while interacting with patients or guardians, causing them to experience conflict[7].

Han et al., reported that newly-employed nurses expressed frustration and dissatisfaction towards nursing practices if these nurses could not cope with transition shocks or conflicts by themselves, bringing negative impact on attitude towards the organization and work that would ultimately cause nurses to misadjust, experience burnout, and change their job in early days of their employment. The study pointed low organizational commitment as one of the most important factor that has in-

fluence on newly-employed nurses' intention to resign[8]. Recent statistics from Hospital Nurses Association indicate that turnover rate of newly-employed nurses is 33.6 %, twice as that of nurses in general., portraying the severity of this problem[9]. Therefore, strategies and programs for promotion and enhancement of their organizational commitment and job satisfaction must be developed in order to prevent maladjustment and resignation for another job. Prior to the development of such programs and strategies, factors affecting abovementioned variables should be identified in order to use them as the fundamental data in constructing intervention programs. A number of preceding studies undertaken to improve organizational commitment and job satisfaction of nurses presented that self-leadership was one of key factors affecting abovementioned variables[10-13]. Nurses' leadership can be one of the most-decisive factors that leads to the success of a hospital since nurses confront many situations that should be dealt with promptly when taking care of patients. It is essential to escape from the conventional leadership where nurses work as middle managers and mainly rely on head nurses' leadership and seek for a new leadership model in order to satisfy medical consumers' demands towards high quality nursing services which was triggered by recent rapid development of modern medical technology and knowledge[14]. If the organizational commitment of nurses are enhanced by changing their attitude towards their jobs and encouraging their passion and dedication, all of which will be achieved through programs that train nurses to demonstrate self-leadership by internally motivating them since their employment as newly-employed nurses, such enhancement will positively influence towards job satisfaction and contribute in preventing maladjustment and resignation for another job in the end.

Until now, researches on self-leadership, job satisfaction, and organizational commitment in the field of nursing studies study of nursing were mainly focused on discovering correlations between each other, and only a few of them have been conducted to verify the structural relationship or mediating effect connected to such matters[1]. Especially, researches on newly-employed nurses that established a structural model that presents comprehensive relationship between variables and verified mediating role were rare and could hardly be found.

Therefore, this study for newly-employed nurses aims to recognize the significance of self-leadership and organizational commitment on job satisfaction and identify the mediating effect of organizational commitment in the relationship between self-leadership and job satisfaction,

thus ultimately providing fundamental data required in establishing intervention strategies to enhance job satisfaction of newly-employed nurses.

The purposes of this study were to identify the correlation between self-leadership recognized by newly-employed nurses, organizational commitment, and job satisfaction and to verify mediating effect in a hypothetical model based on such correlation.

Specific purposes of this research are as follows:

- Discover the correlation between self-leadership, organizational commitment, and job satisfaction that newly-employed nurses recognize.
- Verify mediating effect of organizational commitment in the relationship between self-leadership and job satisfaction recognized by newly-employed nurses.

METHODS

1. Research Design

This descriptive research on newly-employed nurses with clinical experience was designed to analyze mediating effect of organizational commitment in the relationship between self-leadership and job satisfaction.

2. Participants and Data Collection Procedure

Research participants were selected and data were collected in the manner described below. First, structural equation modelling suggested 200~400 samples as an ideal sample size for verification to enhance sensitivity[15], the quality which detects difference between data, and the number of research subjects was set based such recommendation. Second, subjects of this research were 230 newly-employed nurses working in one of four university hospitals equipped with more than 800 beds in D city from September 27, 2013, to November 4, 2013. All 230 subjects had been conveniently sampled and had agreed to participate in this study. Newly-employed nurses are the ones with a nurse license, graduated from a technical college or a four-year college of nursing, and had less than 12 months of work experience at a hospital ward since their employment as full-time nurses. Third, considering ethical issues of the study, researchers explained participants the purpose of this study, that nurses had participated in this research voluntarily, and that respondents had the right to withdraw consent at any time if answering questions was against their will. Participants were also notified that their private information would be kept confidential and their anonymity

would be guaranteed before obtaining written consent. Questionnaires were then provided to participants. The survey took approximately 10 minutes, and it was personally collected by a researcher. 20 samples that provided insufficient answers were excluded and 210 questionnaires were used for data analysis.

Researchers received approval from institution review board of A university in D city before conducting this research (IRB No. 13-148).

3. Measurements

1) Self-leadership

This study used a tool based on a questionnaire developed by Manz[16] and later revised, complemented by Kim[17]. The tool was composed with a total of 18 questions, three questions from each of the following six factors: self-expectation, rehearsal, goal setting, self-compensation, self-criticism, and constructive thinking. It adopted Likert's 5-point scale where 5 is the highest score and higher score indicates more self-leadership. Cronbach's α was .87 at the time of development, and that of this research was .86

2) Organizational commitment

The research used OCQ (Organizational Commitment Questionnaire) that was initially developed by Mowday, Steers, and Porter[18] and later revised, complemented by Park[19] as a tool to assess organizational commitment of participants. The questionnaire was composed of nine questions in total, three questions each to measure a sense of mission, self-esteem, and maintain intention. The tool adopted Likert's 5-point scale where higher score implies more commitment to the organization. Cronbach's α was .82~.83, and that of this research was .94.

3) Job satisfaction

The study adopted General Satisfaction Scale devised by Taylor and Bowers[20] and adapted by Lee[21] as a tool to measure the degree of job satisfaction. The tool consisted seven questions in total and uses Likert's 5-point scale for measurement where higher score implies more satisfaction towards their job. Cronbach's α was .87 at the time of development, and that of this research was .91.

4. Data Analysis

The study worked with SPSS/WIN 19.0 to analyze the

collected data as undermentioned in accordance with purposes of this research. First, the research used SPSS/WIN 19.0 to calculate frequency and percentage from general characteristics of research subjects and Pearson's correlation coefficients to analyze correlation of self-leadership, organizational commitment, and job satisfaction. Second, the research employed AMOS 19.0 when modeling structural equations to verify mediating effect of organizational commitment in the relationship between self-leadership and job satisfaction. Sobel test was conducted to identify the significance of mediating effect. As an effort for adequate and accurate verification, Bootstrapping test to confirm confidence level was additionally performed to check the validity of mediating effect. The study also adopted difference test, GFI, TLI, and RMSEA to evaluate adequacy of the model.

Table 1. General Characteristics (N=210)

Characteristics	Categories	n (%)
Age (year)	23~ < 24	52 (24.8)
	24	116 (55.2)
	≥ 25	42 (20.0)
Gender	Male	6 (2.9)
	Female	204 (97.1)
Religion	Christianity	91 (43.3)
	Buddhist	12 (5.7)
	Catholic	26 (12.4)
	None	81 (38.6)
Marital status	Unmarried	136 (64.8)
	Married	72 (34.3)
	Bereaved	2 (0.9)
Level of education	Diploma	115 (54.8)
	Bachelor	53 (25.2)
	Enrolled in graduate school	42 (20.0)
Assigned department	General ward	109 (51.9)
	Intensive care unit	49 (23.3)
	Outpatient department	19 (9.1)
	Others	33 (15.7)

Table 2. Correlations among Research Variables

(N=210)

Variables	Self-leadership	Organization commitment	Job satisfaction
	r (p)	r (p)	r (p)
Self-leadership	1.00		
Organization commitment	.61 (< .001)	1.00	
Job satisfaction	.61 (< .001)	.68 (< .001)	1.00

RESULTS

1. General Characteristics of Participants

55.2% of research participants were aged 24, while 24.8% were aged 23 to less than 24. The remaining 20.0% were 25 or older. In terms of the gender of research subjects, vast majority of them (97.1%) were female. 43.3% of the participants believed in christianity, being the most popular religion, and 38.6% were non-believers. For marital status, 64.8% marked as unmarried and 34.3% checked as married. Regarding their academic background, 54.8% graduated from a 3-year nursing college, 25.2% from a 4-year nursing college, and 20.0% are graduate school students. 51.9% of newly-employed nurses were assigned to a general ward, followed by 23.3% of respondents at an intensive care unit (Table 1).

2. Correlation of Self-leadership, Organizational Commitment, and Job Satisfaction

As described on Table 2, statistically significant positive correlations were observed between self-leadership and organizational commitment ($r = .61, p < .001$), self-leadership and job satisfaction ($r = .61, p < .001$), and organizational commitment and job satisfaction ($r = .68, p < .001$).

3. Verification of the Mediated Model

1) Verification of mediating effect

Analysis result of a model describing mediating effect of organizational commitment in the relationship between self-leadership and job satisfaction was presented in Table 3. The study conducted an analysis based on mediation model identification process suggested by Baron and Kenny[22] and Kenny and Milan[23]. In the first step of identification, an independent variable was self-leadership and significantly affected organizational commitment, a parameter ($\beta = 0.76, p < .001$). Second, self-

leadership had significant influence on job satisfaction ($\beta=0.63$, $p<.001$). Finally, the study identified the influence of organizational commitment on job satisfaction after controlling self-leadership, an independent variable. It was discovered that organizational commitment had statistically significant influence on job satisfaction ($\beta=0.28$, $p=.005$). Self-leadership's influence on job satisfaction was also statistically significant ($\beta=0.63$, $p<.001$) but lower than β value ($\beta=0.85$) at the second stage, proving that organizational commitment partially mediated between self-leadership and job satisfaction.

Sobel test was conducted to identify the significance of this mediating effect. According to calculation based on Sobel's Z formula, Z value was 2.65 ($p<.001$), indicating significance of mediating effect by organizational commitment between self-leadership and job satisfaction. The research additionally identified confidence level through Bootstrapping test to eliminate criticisms which asserted that mediating effect was not on the normal distribution[23]. Bootstrapping test confirmed that value zero (0) was not observed in 95% confidence in-

terval (.51~.97) of mediating effect between self-leadership and job satisfaction, portraying that mediating effect by organizational commitment level was significant. The model was described in Figure 1.

2) Fitness of mediation models

In an aim to evaluate fitness of this research model, the study adopted CFI and TLI, the most widely used relative fit indices, and an absolute fit index called RMSEA. As explained in Table 4, the model could be considered to be fit as the value of CFI and TLI was .95 and .94 respectively, exceeding the fitness standard of .90. was stricter standard than other fit indices and its value was 35.5 ($p<.001$). Although the value was not entirely flawless, such value could be regarded as acceptable since test results suggested significant difference in most cases with 200 or higher sample size[15]. A fully mediated model was also considered, but its TLI value recorded .86 and its value was 82.15, which was higher than the alternative. Thus, a partially mediated model was judged to be more adequate.

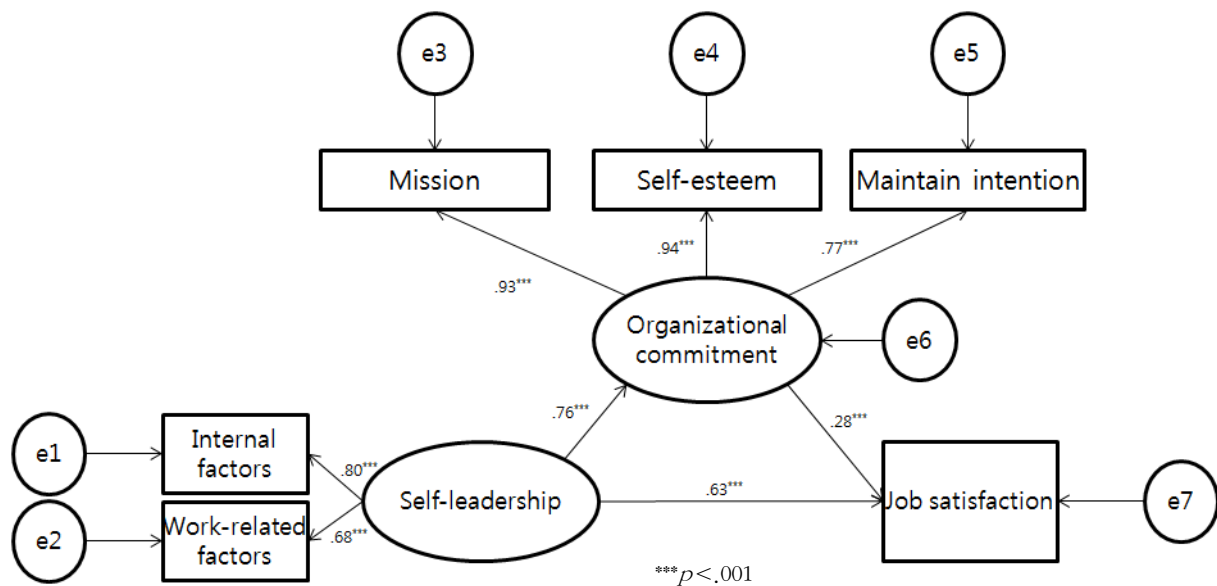


Figure 1. Research model: partially mediated model (standardized beta weight).

Table 3. Mediating Effects of Partially Mediated Model

(N=210)

Path	β	Estimate	SE	CR	p	SMC	Direct effect	Indirect effect	Total effect
OC \leftarrow SL	.76	1.18	.14	8.68	<.001	.58	.76*		.76*
JS \leftarrow SL	.63	1.25	.24	5.27	<.001	.75	.63*	.22*	.85*
JS \leftarrow OC	.28	0.36	.13	2.79	.005		.28*		.28*

OC=Organizational commitment; SL=Self-leadership; JS=Job satisfaction; SE=Standard error; CR=Critical ratio; SMC=Squared multiple correlation.
* $p<.05$.

Table 4. Model Fitness Indices

Model	χ^2	df	p	RMSEA	GFI	TLI	CFI	NFI
Partially mediated model (A)	35.35	7	< .001	.13	.95	.94	.97	.97
Fully mediated model (B)	82.15	8	< .001	.20	.90	.86	.93	.92
χ^2 Difference (A:B)				$\Delta\chi^2 = \chi^2_B - \chi^2_A = 46.796^* (\Delta df = 1)$				

RMSEA=Root mean square error of approximation; GFI=Goodness of fit; TLI=Tucker-Lewis index; CFI=comparative fit index; NFI=Normed fit index.

DISCUSSION

This research identified whether organizational commitment had mediating effects on self-leadership's influence towards job satisfaction. It first investigated to understand the correlation between each variable, then discovered mediating effect of organizational commitment on the relationship between self-leadership and job satisfaction. The discussion below focused on such results.

First, the level of organizational commitment increased with higher self-leadership as self-leadership and organizational commitment were positively correlated ($r=.61$, $p<.001$). It concurred with Park and Park's research results[11]. Their research asserted that while actively endeavoring to provide training opportunities and information for the development of nurses' self-leadership, nursing organizational culture should also be changed to provide more autonomy to nurses. Such improvements would alleviate conflicts between departments and further enhance organizational commitment. Lim et al. [24], also suggested in their research that higher level of self-leadership, the quality that leads people to set their own goals and either compensate or criticize themselves for goal achievement, had more influence on organizational commitment of individuals. These results supported Bligh's research result[25], which stated that members who utilized self-leadership experienced rise in their ownership during performance of their jobs.

Second, the level of job satisfaction rose with higher self-leadership since self-leadership and job satisfaction were positively correlated ($r=.61$, $p<.001$). Seomun's research[10] on hospital nurses also presented high positive correlation between self-leadership and organizational commitment, especially with constructive thinking among self-leadership factors. Seomun's another research[26] emphasized that self-leadership in the field of nursing improves nurses' job performance, and its relation with job satisfaction leads nurses to provide quality medical service in nursing patients. Kim and Hong's study[11] indicated weak positive correlation between self-leadership and organizational commitment; the study

also reported that establishing goals by oneself and providing internal reward based on performance led the person to have positive attitude towards jobs and to feel satisfaction. A research by Kang et al.,[27] also showed that aforementioned two variables were closely related; it was also discovered that self-expectation and constructive thinking, both of which were components of self-leadership, had the highest impact on job satisfaction of nurses. Lim et al.,[24] presented that self-leadership was highly influential to job satisfaction. Such result concurred with Choi et al.'s work[13], implying that nurses who are confident to their capabilities and utilize self-leadership, the tool indicating possession of definite goals and constructive thinking, tend to feel higher job satisfaction.

Third, the level of organizational commitment became high with higher job satisfaction due to the positive correlation ($r=.68$, $p<.001$) between organizational commitment and job satisfaction. It was the same as results from Kang et al.'s paper[14] on hospital nurses that reported significant positive correlation between organizational commitment and job satisfaction. Park and Yang [28] concluded that each of organizational commitment and job satisfaction worked as a key factor affecting each other on their study on the relationship between nurse managers' facilitative communication and nurses' organizational commitment, job satisfaction, and empowerment. On the other hand, Zhou et al.,[29] asserted in their research for nurses in Chinese hospitals that organizational commitment was one of key predictive factors that had influence in job satisfaction, and suggested that intervention programs to enhance organizational commitment should be provided to improve nurses' job satisfaction. Lu et al.,[30] presented significant positive correlation between organizational commitment and job satisfaction, and reported factors like working conditions, organizational environment, job stress, and role conflict were related to job satisfaction of nurses.

Fourth, organizational commitment played the role of a partially mediating variable between self-leadership and job satisfaction ($Z=2.65$, $p<.01$). It presented that while self-leadership functioned as a direct factor in the

improvement of job satisfaction, the leadership also affected job satisfaction indirectly using organizational commitment as a mediator. Direct comparison with other studies was difficult since no research had been conducted to discover mediating effect of organizational commitment in the relationship between self-leadership and job satisfaction. Nevertheless, results of this study indicated that albeit job satisfaction of newly-employed nurses could be improved by solely strengthening self-leadership, adoption of strategies for the improvement of organizational commitment, a variable closely connected to nurses' job in a hospital, during development of programs for self-leadership enhancement was proven to be more effective in improving job satisfaction in the long run.

Han et al.'s research[8] pointed organizational commitment as one of key factors influencing newly-employed nurses' intention to resign and asserted that members with high commitment actively participate in group activities, are not absent from work on their will, have a great desire to stay in the organization, are willing to continuously contribute to achieve goals of the organization, and put more effort for the group. The study also emphasized that characteristics of an individual, a task, and an organization should all be taken into account during the assignment process and thoughtful consideration from department managers and colleagues to assist newly-employed nurses settle into the group were essential in improving organizational commitment of newly-employed nurses. It is believed, therefore, that hospital managers could contribute in preventing turnover of newly-employed nurses by developing strategies that would improve job satisfaction by promoting organizational commitment of nurses.

In conclusion, a different type of approach is required for newly-employed nurses unlike the one for experienced nurses. Newly-employed nurses should be encouraged to utilize self-leadership during their work to cultivate strong sense of unity towards the organization that these nurses belong and award self-initiative, autonomy, and self-motivation in an aim to alleviate newly-employed nurses' maladjustment and curb their turnover rate, both of which were incurred from conflicts and stress felt by nurses themselves. It is essential for hospital organizations to thoroughly understand factors relevant to job satisfaction of newly-employed nurses and endeavor to establish adequate environment so newly-employed nurses can stay longer in the assigned nursing field, utilize better skill sets, and provide high quality of nursing services to patients. Additionally, a

various efforts should be made, including adoption of training programs to enhance self-leadership and organizational commitment of newly-employed nurses and expansion of nurses' autonomy in hospital operations.

CONCLUSION

This research proved its significance since this study was conducted on self-leadership for newly-employed nurses, compared to other preceding ones performed only for experienced nurses, and identified mediating effect of organizational commitment in the relationship between self-leadership and job satisfaction. The results presented that self-leadership of newly-employed nurses, their organizational commitment, job satisfaction were positively correlated to each other. It also revealed that organizational commitment worked as a partial mediator between self-leadership and job satisfaction. Such results indicate that newly-employed nurses' self-leadership skills should be improved to lead themselves and achieve something, which would boost their job satisfaction and prevent resignation at the early days of employment. The results also suggest that hospital managers need to realize the importance of organizational commitment and exert effort to discover ways to enhance organizational commitment.

This paper suggests clinical practitioners in psychiatric mental health nursing to develop training programs based on findings of this research, programs that can enhance self-leadership skills and organizational commitment simultaneously and conduct researches to verify its effect as a practical effort to improve job satisfaction of newly-employed nurses. Replicating this research is also necessary for confirmation purpose due to the lack of researches on self-leadership for newlyemployed nurses. As subjects of this research were sampled from a certain city instead of nationwide basis, stretching the interpretation of research results is difficult. Thus, follow-up researches with various regional distribution and size of medical institutions are necessary.

REFERENCES

1. Won HJ, Cho SH. A review of research on self-leadership in nurses. *J Korean Acad Nurs Adm*, 2013;19(3):382-93.
<http://dx.doi.org/10.1111/jkana.2013.19.3.382>
2. Watson L. Self-leadership: becoming an exceptional leader. *Radiol Technol*. 2003;75(6):457-67.
3. Dolbier CL, Soderstrom M, Steinhardt MA. The relationships between self-leadership and enhanced psychological, health,

- and work outcomes. *J Psychol*. 2001;135(5):469-85.
<http://dx.doi.org/10.1080/00223980109603713>
4. Manz CC. Self-leadership: toward an expanded theory of self-influence processes in organizations. *Acad Manage Rev*. 1986; 11(3):585-600.
 5. Bryant A, Kazan AL. Self-leadership: how to become a more successful, efficient, and effective leader from the inside out. New York: The McGraw-Hill Companies; 2012. 224 p.
 6. Neck CP, Houghton JD. Two decades of self-leadership theory in theory and research: Past developments, present trends, and future possibilities. *J MP (Journal of Managerial Psychology)*. 2006;21(4):270-95.
<http://dx.doi.org/10.1108/02683940610663097>
 7. Sin KM, Kwon JO, Kim EY. Factors associated with new graduate nurses' reality shock. *J Korean Acad Nurs Adm*. 2014; 20(3):292-301. <http://dx.doi.org/10.1111/jkana.2014.20.3.292>
 8. Han SS, Sohn IS, Kim NE. New nurse turnover intention and influencing factors. *J Korean Acad Nurs*. 2009;39(6):878-87.
 9. Kim SH, Lee MA. Effects of emotional labor and communication competence on turnover intention in nurses. *J Korean Acad Nurs Adm*. 2014;20(3):332-41.
<http://dx.doi.org/10.1111/jkana.2014.20.3.332>
 10. Seomun GA. The relationship of self-leadership, job satisfaction, and perceived outcome in nurses. *J Korean Acad Nurs*. 2005;11(1):45-58.
 11. Kim JY, Hong JY. Self-leadership, job stress and job satisfaction among clinical nurses. *J Korean Acad Nurs*. 2007;13(2): 184-90.
 12. Park KN, Park MK. A study on nurses' self-leadership, organizational commitment and the nursing performance. *J Korean Acad Nurs Adm*. 2008;14(1):63-71.
 13. Choi SH, Jang IS, Park SM, Lee HY. Effects of organizational culture, self-leadership and empowerment on job satisfaction and turnover intention in general hospital nurses. *J Korean Acad Nurs Adm*. 2014;20(2):206-14.
<http://dx.doi.org/10.1111/jkana.2014.20.2.206>
 14. Kang YS, Choi YJ, Park DL, Kim IJ. A study on nurses' self-leadership, self-esteem, and organizational effectiveness. *J Korean Acad Nurs Adm*. 2010;16(2):143-51.
 15. Kim GS. Analysis of structural modeling with Amos 18.0. Seoul: Hannarae Publishing Co.; 2010. 664 p.
 16. Manz CC. The art of self-leadership: strategies for personal effectiveness in your life and work. Englewood Cliffs, NJ: Prentice-Hall, 1983. 115 p.
 17. Kim HS. The relationship between teachers' self-leadership and the job satisfaction at secondary schools [master's thesis]. [Seoul]: Soongsil University; 2002. 48 p.
 18. Mowdays RT, Steers RM, Porter LW. The measurement of organizational commitment. *J Vocat Behav*. 1979;14(2):224-47.
 19. Park SW. A study on the organizational commitment of registered nurses and the related factors [dissertation]. [Seoul]: Kyung Hee University; 2004. 63 p.
 20. Taylor JC, Bowers DC. Survey of organization: a machine-scored standardized questionnaire instrument (group process scale). Ann Arbor: University of Michigan, Institute for Social Research; 1972.
 21. Lee MH. Relationship between organizational culture types and organizational effectiveness in hospitals [dissertation]. [Daejeon]: Chungnam National University; 1998. 141 p.
 22. Baron RM, Kenny DA. The moderator-mediator variable distinction in social psychological research: conceptual, strategic and statistical consideration. *J Pers Soc Psychol*. 1986;51(6): 1173-82.
 23. Kenny DA, Milan S. Identification: a non-technical discussion of technical issues. New York: Guilford; 2012. pp.145-163. (Hoyle R, editor. Handbook of structural equation modeling).
 24. Lim KM, Bae SK, Kim HS. The effect of self-leadership and self-efficacy on organizational effectiveness and organizational citizenship behavior in nurses. *The Korean Journal of Health Service Management*. 2013;7(4):259-72.
<http://dx.doi.org/10.12811/kshsm.2013.7.3.259>
 25. Bligh MC, Pearce CL, Kohles JC. The importance of self-leadership in team based knowledge work. *Journal of Managerial Psychology*. 2006;21(4):296-318.
 26. Seomun GA, Chang SO, Cho KH, Kim IA, Lee SJ. The relation between self-leadership and outcome of nursing practice. *J Korean Acad Nurs Adm*. 2006;12(1):151-58.
 27. Kang SY, Kim SY, Doe HJ, Lee HS, Jeon SH, Jeon HS, et al. Job-satisfaction of nurse according to the self-leadership. *J Nurs Assoc Ewha Womans Univ*. 2009;43:51-60.
 28. Park YR, Yang S. Nurse managers' facilitative communication and nurses' organizational commitment, job satisfaction, and empowerment. *J Korean Acad Psychiatr Ment Health Nurs*. 2008;17(3):342-52.
 29. Zhou WB, Ouyang YQ, Qu H. The impact of psychological empowerment and organizational commitment on Chinese nurses' job satisfaction. *Contemp Nurse*. 2014;10:4336-67.
<http://dx.doi.org/10.5172/conu.2014.4336>
 30. Lu H, Barriball KL, Zhang X, While AE. Job satisfaction among hospital nurses revisited: a systemic review. *Int Nurs Stud*. 2012;49(8):1017-38.
<http://dx.doi.org/10.1016/j.ijnurstu.2011.11.009>