

# The Effect of Problem Solving - Focused Coping Skill Towards Stressed Nurses with Extrovert and Introvert Personality

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**Abstract--***Stress is a phenomenon that can not be avoided by individuals including nurses. Nurses - responsible to take care of patients - in various health care units will be faced by different conditions that can trigger stress. Several previous studies mentioned that the stress levels of nurses are in the high category. Nurses with a high-stress level will decrease the quality of their work. Therefore, nurses need to practice using appropriate coping strategies, one of them is problem-solving - focused coping skills to cope with the stress. Some researches indicate a strong correlation between stress and coping strategies with the nurse's personality. This research is to determine the effect of problem-solving focused coping skills towards stressed nurses with extrovert and introvert personality. This research was using a quasi-experiment with a randomized two-group design. Samples were selected through simple random, started with choosing the location of the workplace randomly, then screening using the ISMA instrument to determine the level of stress, and PSI instrument to determine the personality type of nurses. 22 samples fulfill the inclusion and exclusion criteria divided into 2 groups of extrovert and introvert. In this study, subjects are controlled through blood cortisol levels examination in pre and post-intervention - aside from the ISMA questionnaire - to determine the differences in decreased levels of stress before and after intervention. **Result** The results showed a significant difference between the scores of stress, before and after treatment in both groups, through the t-test with t value 10.647 and p-value of 0.000 on an extrovert group, then the t value 6.130 and p-value 0.000 on introvert group. *H<sub>a</sub>* has accepted that problem-solving skills focused coping affects the stress of nurses with extrovert and introvert personality.*

**Key words--***Stress, Coping Skills, Extrovert, Introvert.*

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## I. INTRODUCTION

Stress is an everyday occurrence phenomenon that can not be avoided by individuals. Stress conditions require individuals to constantly adapt in order to regain balance (homeostasis), as the statement of Davis, et al (1995) that stress is any changes that require adjustments so that people can adapt. Most stress appeared in the daily activities at home, in a journey, also in the work place. Nurses in providing services to patients in various health care units will be faced with a variety conditions that can lead to stress and claimed to be able to adapt. The research of Russeng, Usaman, and Saleh (2013) shows the correlation between stress in nurses with age, working period, marital status, work encumbrance, work shift, work relations, and their personality type. Some research indicates a strong correlation between stress and coping strategies with nurses personality.

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Rasmun (2004) states that someone's vulnerability and coping skills (coping capacity) plays a role in the occurrence and severity of acute stress reactions. It is important for nurses to have, then use the capabilities of more adaptive coping skills, in this case problem solving - focused coping skills in everyday life, in order to cope with the stress experienced by both in their personal lives and their work. This study was conducted to determine the effect of problem solving - focused coping skills towards stressed nurse with the extrovert and introvert personality types. The results are expected to be useful in order to be a consideration in the selection policy, placement, also nurses performance improvement in hospital especially for some institutes with high encumbrance or high stressor level.

## II. METHODOLOGY

The design of this research is quasi experiment with randomized two-group design. The population of this research is nurses who worked in the Health Care Unit at ex Regency of Kedu. Researchers used a simple random sampling technique. Researchers conducted the location by simple random lottery technique, and found that the location were *Tidar Hospital Magelang (RSUD Tidar)*, *Harapan Hospital Magelang (RS Harapan)*, *Temanggung Hospital (RSUD Temanggung)*, *Ngesti Waluyo Christian Hospital Parakan (RSK Ngesti Waluyo)*, also in clinics and several public health centers in the Health Department of Magelang, Temanggung District, Wonosobo District, and Purworejo District.

Data retrieval begins by measuring the stress level and personality type. After obtaining an appropriate sample, the next step is measure the blood cortisol. Data retrieval is continued after the training intervention of problem solving - focused coping skills to re-measure the stress levels and blood cortisol levels. The instrument of this research is a module of problem solving - focused coping skills as guides and standards of treatment. ISMA stress questionnaire to measure the stress of nurses, and Personality Style Inventory (PSI) is to measure the type of personality, also Elisa laboratory test to determine the content of cortisol in the blood as a control indicator of stress.

Data analysis was done to determine the effect of the intervention on stress level that is measured by ISMA questionnaire and blood cortisol levels. The measurement results were compared between the results at the time of pre-test and post-test through different test, then known the differences in pre and post test scores also cortisol levels among extrovert and instrovert respondents separately, simultaneously, and in the end the measuremet was done to know the differences in the decline scores amount and cortisol levels between the two personalities so that it can be seen the effect of the treatment of the two types of nursing personality.

## III. RESULT

1. The different test of pre and post score stress and cortisol levels nurses with extrovert personality.

**Table 5.3.1** Differences test of stress score before and after intervention

Variable	Mean	SD	t	df	p
Extroverts pretest	16.91	2,508			
			10.618	10	0,000
Extroverts posttest	13	2,569			

From the table, it can be identified that the average (mean) results of the pre-test stress scores in extrovert respondents is 16.91 with standard deviation of 2.508 while the average (mean) yield of post test stress score is 13 with standard deviation of 2.569. Through different test t test paired showed a significant difference with t value of 10.618 and p values of 0.000 ( $p < 0.05$ ). It shows that the problem solving skills focused coping proved to significantly influence the reduction of stress score of nurses with extrovert personality.

**Table 5.3.2** Differences test of cortisol before and after intervention

Variable	mean	SD	t	df	p
Extroverts pretest	247.2	77.60974			
			1,514	10	0161
Extroverts posttest	208.6	50.66363			

Through different test paired t test showed the value of t is 1514 and 0161 the value of p ( $p > 0.05$ ). It shows that there is no difference in the pre and post, which means that cortisol test based on problem solving focused coping skill training not significantly affect the decrease in cortisol levels of nurses with extrovert personality.

2. Different test of pre and post stress score and cortisol levels on nurses with introvert personality.

**Table 5.4.1** Differences Test of Stress Score Before and After Intervention

variable	mean	SD	t	df	p
pretest Introvert	12.09	2,256			
			7.286	10	0,000
posttest Introvert	8.64	1,502			

From the table above, it can be identified that the average (mean) results of the pre-test stress scores on introvert respondents is 12.09 with standard deviation of 2.256. The average (mean) results of the post test stress scores on introvert respondents is 8.64 with standard deviation of 1.502. Through different test t test paired showed a significant difference to the value of t 7.286 and p value of 0.000 ( $p < 0.05$ ). It shows that the problem solving - focused coping skills proved to significantly affect the stress of nurses with introvert personality.

**Table 5.4.2** Different Test of Cortisol Levels Before and After Intervention

variable	mean rank	Z	p
Introvert pretest	4:00		
		-2223	0026
Introvert posttest	6:44		

This difference test using Wilcoxon signed ranks test for normally distributed data. From the table it can be identified that the results of the pre-test on introvert respondents, cortisol level's mean rank is 4:00, and the results of cortisol levels post test on introvert respondents got the mean rank of 6:44. with Z -2223 and p value 0.026 ( $P < 0.05$ ). Through cortisol test it shows that the problem solving - focused coping skills proved to significantly affect the nurses's stress with introvert personality.

3. Different Test on Pre And Post of Stress Score and Cortisol Levels on Nurse With Extrovert and Introvert Personality.

**Table 5.5.1** Differences Test of Stress Score on Entire Sample Before and After Intervention

variable	mean	SD	t	df	p
pretest	14:50	3:39			
			12 394	21	0,000
posttest	10.82	3:03			

From the table above it can be identified that the results of the pre-test of stress scores on introvert and extrovert respondents got the average (mean) of 14:50 with a standard deviation of 3:39. The results of the post test of stress scores on introvert and extrovert respondents got the average (mean) of 10.82 with a standard deviation of 3:03. Through different test paired t test showed a significant difference to the t value of 12 394 and p values of 0.000 ( $p < 0.05$ ). It shows that the problem solving - focused coping skills proved to significantly affect the stress of nurses with introvert and extrovert personality.

**Table 5.5.2** Different Test of Pre-Post Cortisol Levels on Entire Sample Before and After Intervention

variable	mean	SD	t	df	p
pretest	252.1	66.8			
			3,141	21	0,005
posttest	192.5	50.2			

From the table it can be identified that the results of the pre-test levels of cortisol respondents introvert and extrovert is the average (mean) of 252.1 with a standard deviation of 66.8. The results of the post-test cortisol levels

respondents introvert and extrovert is the average (mean) of 192.5 with a standard deviation of 50.2. Through different test paired t test showed a significant difference to the value of 3,141 t and p values of 0.005 ( $p < 0.05$ ). It shows that the problem solving skills focused coping proved to significantly affect the stress nurses introvert and extrovert personality together.

4. Different Pre and Post Test Score Decrease Stress and Cortisol Levels Nurse With Personality Extrovert and Introvert.

**Table 5.6.1** Score Decrease Stress Test Different Nurse With Personality Extrovert and Introvert Between Before And After Training Problem solving - focused coping skills

variable	mean rank	Z	p
Extrovert's Stress Score Decrease	12.59		
		-.822	0.411
Introvert's Stress Score Decrease	10.41		

These different test using the test non-parametric Mann Whitney test for not normal data distribution. From the table it can be identified that the progress in reducing stress score got the mean rank of extrovert respondents at 12.59, besides the results of stress reduction score got the mean rank of introvert respondents at 10.41. Z values obtained -.822 and the p-value 0.411 ( $p < 0.05$ ). It shows that there is no difference between the decreasing nurses's stress score with extrovert and introvert personality.

**Table 5.6.2** Different Test of Decreased Cortisol Levels In Nurses With Extrovert and Introvert Personality Between Before And After Intervention of Problem solving - focused coping skills

variable	mean	F	t	df	p
Extrovert's Cortisol Decrease	38.6473				
		0265	-1108	20	0281
Introvert's Decrease Cortisol	80.4455				

The use of different test of independent parametric t test test for normal data distribution. From the table it can be identified that the result of decreased cortisol levels on extrovert respondents got a mean of 38.6473, and the result of decreased cortisol levels on introvert respondents got a mean is 80.4455. The t value - 1.108 and p value of 0.281 ( $p < 0.05$ ). It shows that there is no difference between nurses's decreased cortisol levels on extrovert and introvert personality.

### 1. The Effect of Problem Solving - Focused Coping Skill Against Nurse's Stressor With Extrovert Personality

From Table 5.3.1 can be identified that result different test (t-test) between the pre-test and post-test scores extrovert respondent's stress showed significant differences in the value of 10.618 t and p values of 0.000 ( $p < 0.05$ ). case mentioned show that problem-solving skills focused coping proved to significantly affect the stress nurses with an extroverted personality. Isiah's research results and Hastuti (2014) concerning the effect of problem-solving interventions also showed the same thing regardless of the variables of different types of personalities respondents to this study. The results of different tests show otherwise that cortisol levels between pre and post-test were statistically no difference, indicated by the value of t 1,514 and p-value 0.161 ( $p > 0.05$ ), however, can mean the levels of pre and post stays indicate a difference ie the mean cortisol levels post-test (208.6) is lower than the pre-test (247.2), so that substantive intervention in this study still bring results or benefits.

As we know that the problem solving focused coping is a form of coping likely to be directed in an attempt to reduce the demands of a stressful situation, in the sense of coping that appears focused on individual issues that would cope with stress by studying ways new skills. Cavanaugh (2000) and Girdano (2005) says that stress and handle strategy can be caused or influenced by personal factors, one of which is the type of personality and character inherent in a person, factors that determine which strategies are most widely or frequently used depends on one's personality and the extent of the stress level of a condition or problem that happened, In this study the personality of the respondents are extroverted.

### 2. Effects of Problem Solving Focused Coping Skill Against Stress Nurse With Personality Introvert

From table 5.4.1 it can be identified that different test results of pre-test and post-test stress scores of introvert respondents indicate difference insignificance with the t value 6.130 p-value 0.000 ( $p < 0.05$ ). Likewise, for the different test results of blood cortisol levels showed similar things significantly on their differences through the Wilcoxon z different test with value -2223 and the p-value 0.026 ( $p < 0.05$ ), it means that the problem solving - focused coping skills proven significant influence to stress nurses with an introverted personality. Regardless of the type of respondents's personality, in line with the study's results by Malouff invention, Thorsteinsson, Schutte (2005) conducted a meta-analysis of 31 studies using 39 models of analysis and involved 2895 respondents, the analyze results shows that problem solving – focused coping skills is effective to cure physical and mental problems.

Introverts personality-oriented to himself. Individuals interested in the world of ideas, thoughts, and concepts so that the people liked the tranquil atmosphere to be alone or to think and act. An introvert tends to have a closed attitude, does not really like crowds. An introvert is also often seen as a shy, introspective or antisocial behavior, however, Slamet and Markam (2003) says that every individual has a special way of self-adjustment and depend on the ability of each individual to make adjustments themselves effectively, that is by direct action on specific targets in order to tackle the causes of stress.

### 3. The Difference of Stress Score Decrease and Cortisol Levels In Nurses With Extrovert and Introvert Personality Between Before And After Problem Solving - Focused Coping Skill Training

From table 5.6.1 can be identified that through the Man Whitney different test, obtained the results of z value  $-0.822$  and the p-value  $0.411$  ( $p > 0.05$ ). As for the different test cortisol levels decreased for extrovert and introvert respondents (Table 5.6.2) showed the t value  $-1108$  and the p-value  $0.281$  ( $p > 0.05$ ). It shows that stress scores decrease and cortisol levels decreased among extrovert and introvert respondents had no differences, both showed a similar reduction. This means that focused coping skills of problem-solving interventions influence on both personalities. This is made clear by the results of the stress score difference between pre and post-test on both personalities together showed a significant difference to the t value of  $12.394$  and p values of  $0.000$  ( $p < 0.05$ ), while for the different test of cortisol pre- and post-also shows the difference with t value of  $3,141$  and p values of  $0.005$  ( $p < 0.05$ ). The results of the different tests simultaneously explain that there is an influence on both the personality of problem-solving - focused coping skills interventions on their stress.

These results can be understood rationally as Cavanaugh (2000) and Girdano (2005) said that stress and handle strategy can be caused or influenced by personal factors, one of them is the type of personality and character that inherent in a person, factors that determine which strategies are most widely or frequently used depends on one's personality and the extent of the stress level of a condition or problem that happened, Sarafino (2006) stated that the process of coping is not a singular occurrence as coping involve a transaction with the environment continuously. Contextual factors and personal influence on how individuals assess the events of life, what ways of coping to be chosen, and how effective that coping can cope with stress. That seems to support the results of this study, given the extrovert characteristics are more outward-oriented, social contacts and easily receive input and influence from others, especially when involving in problem-solving coping skills training (Burger (1986). While the introvert personal characteristics are self-oriented, more interested in the world of ideas, thoughts, and concepts so the introvert people liked the tranquil atmosphere to be alone or to think and move, it means a person with introvert personality will focus on thinking to settle the problem.

## IV. CONCLUSION

This study was able to answer the question and the aim that there is a significant effect of problem-solving - focused coping skills towards the stress of nurses with extrovert and introvert personality. The influences are shown by the results of the statistical test that simultaneously on both extrovert and introvert personality that there are differences of stress score decrease ( $p 0.000$ ) and cortisol levels decrease ( $p 0.005$ ) between before and after an intervention. Separately, on introvert personality showed the decreasing levels of stress and cortisol levels were statistically significant, while the extrovert respondents showed dramatic decline only in the stress score but there are only a mean reduction but did not decline significantly with p-value  $0.161$ . Thus, it is not discouraging the meaning of this study as the different tests of total stress score decrease and total cortisol levels decrease on introvert and extrovert are not showing differences. It means that problem-solving- focused coping skill is giving the same effect towards the stress of nurses on both personalities.

## 1. For Health Care Institutions

Through this research, it seems that institutions have to pay attention to the psychological wellbeing of employees, especially nurses, to hold a periodic refreshing to reduce stress, one of them is training on problem-solving - focused coping skills for improving the ability of nurses to deal with stress in their life and work.

## 2. For The Next Researchers

To the next researchers who will examine the similar issues, need to pay attention and control for confounding variables that could affect the results, given that the social phenomenon is very complex and can affect the outcome. Besides, it can be developed with a larger and representative sample.

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