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# Relationship among Role Stress, Emotional Labor and Physical and Mental Health for Grassroots Police Officers in Northern Taiwan Government Police Stations

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## Abstract

Police duties involve highly complex and cumbersome tasks. Officers have to work night shifts, which may result in sleep displacement and circadian misalignment, and moreover, they must deal with the public on a daily basis. To fulfill their role as public servants and social security defenders, grassroots police officers are often under greater pressure than individuals working in general occupations are or at other administrative agencies are. Over time, the sustained pressure may have devastating impacts on their psychosomatic health. The present study, taking grassroots police officers at the police stations in the Northern Taiwan region as research subjects, aims to investigate the relationship between the role stress, emotional labor, and psychosomatic health of grassroots police officers. Through the investigation, this study seeks to contribute toward improving the physical and mental well-being of police officers. In this study, 453 valid questionnaires were recovered. The collected data were subjected to descriptive statistics, reliability and validity analysis, t-test, one-way analysis of variance, Scheffé's test, correlation analysis, and regression analysis, among other research methods, with the use of SPSS statistics software. The findings of this study are as follows. First, role conflict in role stress has a significant effect on the psychosomatic health of police officers. Second, role stress has a significant effect on emotional labor among police officers. Third, emotional labor has a significant effect on psychosomatic health among police officers.

**Keywords:** Role Stress, Emotional Labor, Psychosomatic Health

## I. Introduction

Police responsibilities involve miscellaneous onerous missions, including preserving public order in accordance with the law, safeguarding social security, preventing all hazards, and promoting the welfare of the people. Because police duties should be performed around the clock to ensure an uninterrupted work cycle, police

officers are often required to work night shifts, which might cause desynchronization of circadian rhythms. In addition to intervention, law enforcement, and administration undertakings, they need to provide citizen services constantly. Thus, police officers often feel psychosomatically drained due to stress from various sources, suffering unspeakable torment physically, mentally, and spiritually. Burdened with overwhelming emotional labor, police officers become less efficient in fulfilling their duties (assignments), which would, in turn, result in negative public perception. Moreover, such emotional labor adversely affects the psychosomatic well-being of police officers. Particularly in the present context, where social offenses are rampant and the public has an increasingly higher requirement for quality police services, police officers must perform their roles duly when addressing all sorts of cases. They constantly caution and remind themselves to control and manage their emotions properly and handle the sometimes-irrational citizens with a rational, peaceful attitude, hoping to exhibit a high level of professionalism and further earn the recognition, trust, and support of the people.

Hochschild (1983) and Adelman (1989) classify police work under the category of high emotional labor professions in respect of its occupational nature and job characteristics. Police officers, when providing services to the public, must display what their organization expects of them (including appropriate facial expressions, body gestures, and emotions) to achieve organizational goals. The roles that police officers serve in society are intimately associated with the lives of the people. Their dual roles in carrying out law enforcement and providing quality citizen services often create contradictions between public expectations of the roles of the police and real-life situations. In general, the greater the perceived role stress the greater the burden of emotional labor and the greater the negative effects on the psychosomatic health of police officers.

The present study, selecting grassroots police officers as the research subjects and taking role stress, emotional labor, and psychosomatic health as the topics of research, sets out to investigate the relationship between the role stress, emotional labor, and psychosomatic health of grassroots police officers. The empirical results of this study might serve as a reference point for the police system. The specific objectives of this study are as follows: (1) explore the influence of role stress on psychosomatic health among grassroots police officers; (2) discuss the influence of role stress on emotional labor among grassroots police officers; (3) analyze the influence of emotional labor on psychosomatic health among grassroots police officers.

With a focus on the role stress, emotional labor, and psychosomatic health of grassroots police officers, this study reviewed relevant domestic and international literature and further established the research framework and methodology. Based on the research objectives and framework, a questionnaire was designed and administered in a survey. After questionnaires were recovered and invalid samples were eliminated, the collected data were analyzed with the use of SPSS20.0 statistics software through multiple statistical methods, including descriptive statistics, reliability and validity analysis, t-test, one-way analysis of variance (ANOVA), Scheffé's test, correlation analysis, and regression analysis.

## **2. Literature Review**

### *2.1. Role Stress*

Role stress refers to internal and external stress arising from an individual's perception of whether the role they play fulfills their own or others' expectations (Hardy & Conway, 1978). As a part of work pressure, role stress has negative implications for an organization. When an individual perceives, in the face of the organizational requirement for the responsibilities of their position, that the role they perform fails to satisfy their own or others' expectations, the individual would produce corresponding perceptions and actions (Folkman & Lazarus, 1986). According to Hsu (2009), role stress occurs when a role-player in a social system perceives excessive or inconsistent role expectations because of the influence of their internal or external environment, leading to an imbalance in the structure of the system wherein the individual is situated. This ultimately hinders the individual from performing appropriate role behaviors or achieving the tasks the given role is responsible for. Yang (2010) defines role stress as a negative emotion perceived from within when an individual considers themselves unable to meet the requirement of their role, feels unsure whether they are able to achieve what is expected of a given role, or confronts conflicting role expectations simultaneously in an organization. Tsai (2020) describes role stress as

physiological and psychological distress or ambiguity perceived when a role-player feels uncertain about their role tasks and perceptions or as behavioral or psychological burden resulting from an individual's intrinsic factors or perceptions of inability to perform multiple roles properly.

Because "role ambiguity" and "role conflict" are among the most widely studied role stress variables in domestic studies (e.g., Lin, 2007; Hsiao, 2010; Ho, Chang, Lin, & Chen, 2014), this study selects these two as the dimensions of role stress in developing measurement items.

## 2.2. *Emotional Labor*

Diefendorff and Grosserand (2005) describe emotional labor as the situation wherein workers usually need to painstakingly fake required emotions in accordance with rules in order to make customers happy during their work. Li and Chen (2006) characterize emotional labor as the process whereby an individual makes efforts to control their inner thoughts and perceptions and to perform surface acting that modifies personal emotions according to emotional display rules on occasions that involve frequent contact with people, with a display of deep acting that meets professional requirements, such as expressing, controlling, and regulating mental efforts. Lin (2014) defines emotional labor as the need for individuals to conceal, control, and camouflage themselves in the workplace as and when appropriate in order to display proper emotions required by their organization, thereby making customers feel cared for and ultimately achieving benefits for the organization. Hong (2018) describes emotional labor as organizational behavior wherein individuals manage or alter their emotions, whereby the altered or managed emotions might conform to a particular situation, role, or expectation. This study primarily follows the definition proposed in the publication of American scholar Hochschild (1983), where emotional labor refers to the management or regulation of feeling to create a publicly observable facial and bodily display requiring one to suppress negative emotions or passive attitudes. This study adopts the views of Hochschild (1983), using surface acting and deep acting as the dimensions of emotional labor in developing measurement items. Lo and Juang (2021) indicated that solid communication and a sound system with standardized operation process for the police to follow will enhance the enthusiasm of the police, stabilize their emotions, and promote physical and mental health.

## 2.3. *Psychosomatic Health*

Health, as defined by the World Health Organization (WHO) in 1948, is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity. In other words, a completely healthy person must attain well-being physically, mentally, and morally and achieve soundness social adjustment-wise. Chang (2006) defines mental health as a state in which an individual adapts well to all life situations, noting that mentally healthy people generally fit the following descriptions: (1) rarely experiencing psychological conflicts but instead displaying relatively stable emotions without suffering from chronic anxiety; (2) capable of giving full play to one's ability at work and taking delight in their jobs; (3) ready to interact with others and able to establish harmonious relationships with others; (4) having a proper understanding of oneself and the ability to accurately assess and accept oneself and to maintain an attitude of self-acceptance; (5) having sound knowledge of the living environment and the ability to confront and resolve problems effectively and practically instead of running away. Li (2016) argued that one can enjoy a healthy and happy life only by achieving complete well-being across both internal environments (i.e., physical and mental states) and external environments (e.g., family, society, and friends). Chen (2021) suggests that health involves multiple levels, including physical, psychological, social, and spiritual, among others, and that an individual can enjoy sound psychosomatic health only when these significant conditions for well-being perceptions are fulfilled and developed in a balanced manner. Lo and Juang (2021) pointed out that the less clear the content of police work, or the less adequate support, the greater the negative impact on physical and mental health.

Psychosomatic health referred to in this study includes (1) physical health: showing normal bodily functions without any disease occurring and (2) mental health: exhibiting a state of adaptation in the working environment. Among the multitude of relevant theories proposed by a group of scholars, this study drew on the physical and mental health scales introduced by Yang (2003), Su (2004), and Liang (2010) to develop the dimensions for

psychosomatic health. With some edits and revisions incorporated, the Questionnaire on the Relationship between Role Stress, Emotional labor, and psychosomatic health of grassroots police officers employed in this study was created, wherein physical health and mental health were chosen as the dimensions for expounding the state of psychosomatic health in police officers.

### 3. Research Methods and Design

#### 3.1. Research Framework

The research framework of this study mainly explores the relationship between role stress, emotional labor, and psychosomatic health, as shown in Figure 1.

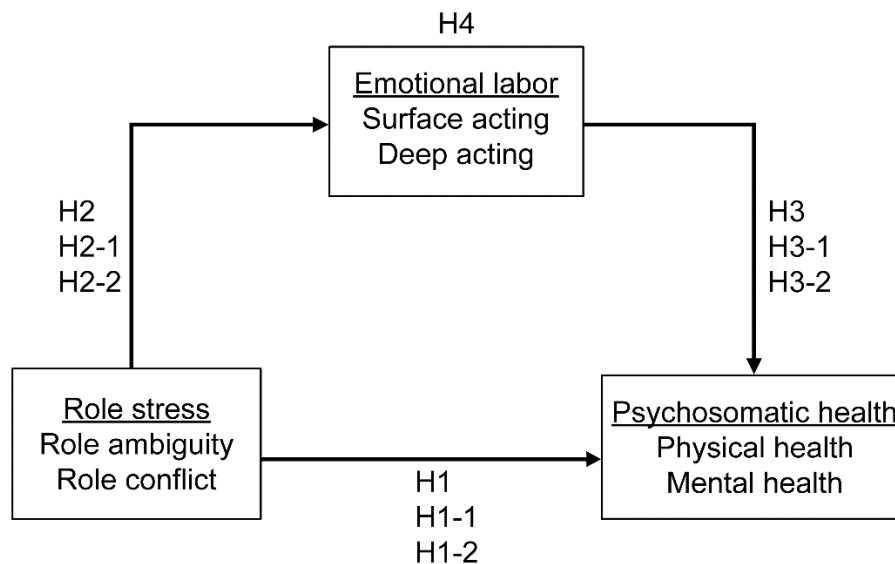


Figure 1: Research Framework

#### 3.2. Research Hypotheses

This study, taking police officers of each police station of the Hsinchu County Police Bureau as research subjects, investigated the following relationships: the effect of role stress on psychosomatic health among police officers; the effect of role stress on emotional labor among police officers; the effect of emotional labor on psychosomatic health among police officers; the presence of a mediation effect of emotional labor between role stress and psychosomatic health among police officers. The relevant research hypotheses are summarized as follows:

H1: Role stress has a significant positive effect on psychosomatic health among grassroots police officers.

H1-1: Role ambiguity in role stress has a significant positive effect on psychosomatic health among grassroots police officers.

H1-2: Role conflict in role stress has a significant positive effect on psychosomatic health among grassroots police officers.

H2: Role stress has a significant positive effect on emotional labor among grassroots police officers.

H2-1: Role ambiguity in role stress has a significant positive effect on emotional labor among grassroots police officers.

H2-2: Role conflict in role stress has a significant positive effect on emotional labor among grassroots police officers.

H3: Emotional labor has a significant positive effect on psychosomatic health among grassroots police officers.

H3-1: Surface acting in emotional labor has a significant positive effect on psychosomatic health among grassroots police officers.

H3-2: Deep acting in emotional labor has a significant positive effect on psychosomatic health among grassroots police officers.

H4: Emotional labor mediates the effect of role stress on psychosomatic health among grassroots police officers.

### 3.4. Research Variables and Measurements

This study employs three constructs (role stress, emotional labor, and psychosomatic health) and six dimensions (role ambiguity, role conflict, surface acting, deep acting, physical health, and mental health). The scale developed by this study adopted the 5-point Likert scale design as a means of measurement, with 5 points for Strongly Agree, 4 points for Agree, 3 points for Neutral, 2 points for Disagree, and 1 point for Strongly Disagree.

Table 1: Definitions of dimensions, measurement items, and bibliographic references

Construct/ Dimension	Definition/ Reference	Measurement item
Role stress/ Role ambiguity	Employees have insufficient information to perform their jobs adequately.  Kahn <i>et al.</i> (1964)、 Lin (2007)、 Hsiao(2010)、 Ho, Chang, Lin, and Chen (2014)	1. I can handle all problems at my job as a police officer by following available standard operating procedures. 2. I know all my responsibilities at the agency I serve. 3. I have adequate time to carry out police duties(assignments). 4. I can access adequate facts and information to help me complete my work.
Role stress/ Role conflict	In the face of incompatible degrees of role expectations, employees are unable to fulfill all role expectations or have insufficient human/ material resources to complete the work tasks.  Kahn <i>et al.</i> (1964)、 Lin (2007)、 Hsiao(2010)、 Ho, Chang, Lin, and Chen (2014)	5. My workload at the agency I serve exceeds what I can take on. 6. The division I serve sets excessively high job performance standards. 7. I work under unclear instructions or orders from superiors or the division served. 8. I consider that there is insufficient police force to assist me in completing the work assigned to me by the division I serve.
Emotional labor Surface acting	The process whereby service workers regulate and modify their emotions to display the attitudes, facial expressions, or body gestures required by their organization. Due to discrepancies experienced between internal perceptions and external displays, employees are usually more prone to emotional dysregulation.  Hochschild (1983)	9. When handling case reports and interacting with the public, I have to hide my true feelings and pretend to be in a good mood. 10. Although feeling tired from performing my daily duties and assignments, I still need to cheer up and maintain positive emotions in dealing with the public. 11. When dealing with unhappy, irrational citizens, I need to hold back my anger and maintain stable emotions. 12. Due to the requirement of police duties, I fake a required attitude when dealing with the public.
Emotional labor Deep acting	The process whereby workers attempt to alter their internal perceptions in order to align their emotional displays with what their organization expects. This type of faking involves an effort of employees to change their inner perceptions with a view to aligning their true inner perceptions with their external emotional displays. As a result, employees can more	13. I will temporarily take my mind off unpleasant matters to put myself in a good mood at work. 14. When I feel uncomfortable with a request from a supervisor that is beneficial to the public, I will still accept it humbly. 15. When performing duties or assignments and dealing with the public, I will try to display my true emotions instead of deliberately faked ones.

	genuinely display the emotional state expected by their organization, and are less prone to emotional dysregulation.  Hochschild (1983)	16. I will try my best to clear myself of negative emotions, uphold enthusiasm for service, and interact with the public with an amicable and cordial attitude. 17. Despite knowing that some citizens are being unreasonable, I can still uphold a professional, serving-the-public position and provide services to the citizens earnestly.
Psychosomatic health/ Physical health	Showing normal bodily functions without any disease occurring.  Yang (2003)、 Su (2004)、 Liang (2010)	18. I frequently feel exhausted due to the current overwhelming workload. 19. I think that stress at work has exceeded what I can handle and needs to be relieved. 20. I feel concerned over my physical health because of the irregular duty hours (desynchronization of circadian rhythms) 21. I frequently experience stomachaches, indigestion, or diarrhea.
Psychosomatic health/ Mental health	Exhibiting a state of adaptation in the working environment.  Yang (2003)、 Su (2004)、 Liang (2010)	22. I feel fatigued from excessive working hours. 23. I need to stay fully focused when I am on duty, which puts my mind in a tense state constantly. 24. During patrols, I would feel stressed when I hear the sound from the buzzer of the 110 incident dispatching device M-Police. 25. I frequently feel frustrated by my failure to fulfill performance goals and the requirements of my superiors. 26. I frequently feel distressed over some trivial matters relating to my duties or assignments.

#### 4. Research Instruments

- (1) Research subjects and sampling methods: This study distributed questionnaires to police officers of and below the one-stripe four-star rank (inclusive) at the police stations of the Hsinchu County Police Bureau located in the Northern Taiwan region. The convenience sampling method was adopted for the pretest, conducted twice, with 30 questionnaires each administered. In the first survey, some dimensions of the questionnaire showed low levels of reliability (less than 0.7); in the second survey, all dimensions of the revised questionnaire reached the 0.7 criterion (with 30 valid samples recovered). The formal survey was conducted as a general survey, wherein 508 copies of the questionnaire were distributed and 489 samples were recovered. After 36 invalid samples were removed, 453 valid samples were collected, with a response rate of 89.2%.
- (2) Questionnaire design: Questionnaire items were developed based on the aforementioned literature in line with the research hypotheses and objective design. The formal questionnaire was created after pretest surveys were conducted and revisions were made accordingly. Each item was scored using a 5-point Likert scale, all statements positively worded. The questionnaire adopted in this study comprises three constructs, six dimensions, and 26 items, which were measured by means of the 5-point Likert scale. Respondents scored each item according to their degree of agreement: 1 point for Strongly Disagree, 2 points for Disagree, 3 points for Neutral, 4 points for Agree, and 5 points for Strongly Agree.
- (3) Data analysis methods: In this study, the collected data were processed and analyzed using SPSS statistics software 20.0. Statistical methods employed included sample data analysis, descriptive statistical analysis, reliability analysis, validity analysis, independent samples *t*-test, one-way ANOVA, Scheffé's post-hoc test, Pearson's correlation analysis, and regression analysis.

## 5. Research Results and Analysis

### 5.1. Sample Data Analysis

The research data showed the following: there were 381 male police officers, accounting for 84.1% of the total sample, and 72 female police officers, accounting for 15.9% of the total sample; in terms of age, 222 respondents were under the age of 25, forming the greatest number, followed by those aged between 26 and 35, numbering 148; in respect to education level, 292 respondents had a junior college degree, constituting the majority share, followed by those with a bachelor's degree, totaling 125; with regard to service seniority, 369 respondents reported having 5 or less years of service, accounting for the largest percentage, followed by those with 26 or more years, numbering 27; in terms of position title, 411 were officers, constituting the dominant proportion, followed by sergeants, totaling 42; regarding marriage, 376, a majority of the population were unmarried, followed by those married, numbering 75; as for the number of children, 392 indicated having no children, constituting the largest number of the population, followed by those with children, totaling 61.

### 5.2. Descriptive Statistics

- (1) Role stress comprises two dimensions: role ambiguity and role conflict (with four items for each dimension and a total of eight items). The table of descriptive statistics presents the level of role stress among grassroots police officers at the Hsinchu County Police Bureau. A higher mean score indicates a higher level of role stress in the police officers; on the contrary, a lower mean score represents a lower level of role stress in the police officers. The analysis is as follows (see Table 1 for the content of each item):
  - a. Role ambiguity: The respondents' mean scores on the items of the dimension "role ambiguity" ranged between 3.14 and 3.95. The top two mean scores were respectively observed in Item 2, with the highest mean of 3.95, and Item 1, with the second highest mean of 3.79. At the opposite end of the score range, Item 3 obtained the lowest mean, 3.14.
  - b. Role conflict: The respondents' mean scores on the items of the dimension "role conflict" ranged between 2.92 and 3.42. The top two mean scores were respectively observed in Item 8, with the highest mean of 3.42, and Item 5, with the second highest mean of 3.35. At the opposite end of the score range, Item 7 attained the lowest mean, 2.92.
- (2) Emotional labor (surface acting and deep acting): Through this scale, the level of emotional labor in the research subjects was understood, and the mean scores for each item were obtained. A higher score indicates a higher level of emotional labor in the police officers, whereas a lower score represents a lower level of emotional labor in the police officers. This construct (emotional labor) comprises two dimensions: surface acting and deep acting, with four items for the former and five for the latter. The results are analyzed as follows.
  - a. Surface acting: The respondents' mean scores on the items of the dimension "surface acting" ranged between 3.77 and 3.86. The top two highest scores were observed respectively in Item 11, with the highest mean of 3.86, and Item 10, with the second highest mean of 3.83. On the other hand, Item 9 achieved the lowest mean, 3.77.
  - b. Deep acting: The respondents' mean scores on the items of the dimension "deep acting" ranged between 3.13 and 3.54. The top two highest scores were respectively observed in Item 13, with the highest mean of 3.54, and Item 16, with the second highest score of 3.51. On the other hand, Item 15 obtained the lowest mean, 3.13.
- (3) Psychosomatic health (physical health and mental health): Through this scale, the level of psychological health in the research subjects was understood and the mean scores for each item were obtained. A higher score indicates a worse psychosomatic health condition in the police officers, whereas a lower score represents a better psychosomatic health condition in the police officers. This construct (psychosomatic health) comprises two dimensions: physical health and psychological health, with four items for the former and five for the latter. The analysis is detailed as follows:
  - a. Physical health: The respondents' mean scores on the items of the dimension "physical health" ranged between 3.27 and 3.91. The top two highest scores were observed respectively in Item 20,



with the highest mean of 3.91, and Items 19 and 18, both achieving the second highest mean of 3.40. On the other hand, Item 21 showed the lowest mean, 3.27.

- b. Mental health: The respondents' mean scores on the items of the dimension "mental health" ranged between 3.23 and 3.74. The top two highest scores were respectively observed in Item 22, with the highest mean of 3.74, and Item 24, with the second highest mean of 3.69. On the other hand, Item 25 achieved the lowest mean, 3.23.

### 5.3. Reliability and Validity Analysis

- (1) Reliability analysis: This study used Cronbach's alpha as a measure to assess the reliability of the scale. The higher the reliability the higher the stability and internal consistency; the alpha values of each dimension discussed in this study ranged between .770 and .844, and the overall reliability was .834, as shown in Table 2. The results indicated that all dimensions fell within the range of good reliability, meaning that the scale used in this study had good internal consistency.

Table 2: Reliability analysis

Measurement dimensions	Number of items	Alpha value
Role ambiguity	4	.770
Role conflict	4	.833
Surface acting	4	.841
Deep acting	5	.802
Physical health	4	.806
Mental health	5	.844
Overall reliability	26	.834

Note:  $0.5 < \text{Alpha} \leq 0.7$  indicates "good reliability";  $0.7 < \text{Alpha}$  indicates "excellent reliability" (Nunnally, 1978; Hsu, 2004).

- (2) Validity test: The items of the questionnaire in this study were designed largely based on the discussions of extant literature and the questionnaires developed by related domestic and international research, with further revisions incorporated. These questionnaires, having been cited by multiple studies, have a solid theoretical foundation and fairly high representativeness. In addition, this study conducted pretests and revised less appropriate content according to the test results before the formal questionnaire was administered; as such, all the measurement items fulfilled the requirements of content validity.

Kaiser–Meyer–Olkin (KMO) and Bartlett's test of sphericity were also performed in this study. The test results are presented in Table 3. All dimensions reached a KMO value above 0.7 and a significance level for Bartlett's test of sphericity below 0.05, satisfying the criterion for factor analysis established by Kaiser (1974). The results indicated that all dimensions of this study had a desirable level of validity.

Table 3: Dimension validity test

	Role stress	Emotional labor	Psychosomatic health
Kaiser–Meyer–Olkin (KMO)	.730	.828	.882
Approximation of chi-square distribution	1403.182	1650.013	2063.767
Bartlett's test of sphericity	28	36	36
Significance	.000***	.000***	.000***

Note: A KMO > 0.8 is meritorious, KMO > 0.7, middling, KMO > 0.6, mediocre, and KMO < 0.5, unacceptable.

### 5.4. Analysis of Variance

- (1) T-test by gender: According to the results presented in Table 4, no significant difference was observed between genders in all dimensions, except for "role conflict." The means (M) for "role conflict" in police

officers of different genders showed that male police officers ( $M = 3.27$ ) perceived significantly higher stress in terms of role conflict than female police officers ( $M = 2.98$ ) did.

- (2) *T*-test by position title: According to the results presented in Table 4, no significant difference was observed among different position titles in all dimensions, except for “role ambiguity” and “deep acting.” The means ( $M$ ) for “role ambiguity” in police officers with different position titles showed that sergeants ( $M=3.83$ ) perceived significantly higher stress in terms of role ambiguity than officers did, and the means ( $M$ ) for “deep acting” in police officers with different position titles revealed that sergeants ( $M = 3.75$ ) perceived a significantly greater burden of emotional labor than officers ( $M = 3.34$ ) did.

*T*-test by with or without children: According to the results presented in Table 4, no significant difference was observed between police officers with and without children in all dimensions, except for “deep acting.” The means ( $M$ ) for “deep acting” in police officers with or without children showed that the former ( $M = 3.67$ ) perceived a significantly greater burden of emotional labor than the latter ( $M = 3.33$ ) did.

Table 4: *T*-test by different attributes of the sample

Construct	Dimension	Sample		Number	Mean (M)	Standard deviation	<i>T</i> -value	<i>P</i> -value	Comparison					
Role stress	Role ambiguity	Gender	a.	Male	381	3.59	.724	-.075	.941	---				
			b.	Femal	72	3.60	.587							
	Title	a.	Sergeant	a.	Serge	42	3.83	.641	2.337	.020*	a>b			
				b.	Office	411	3.57	.706						
			Children	a.	Yes	61	3.75	.699				1.910	.057	---
				b.	No	392	3.57	.702						
	Role conflict	Gender	a.	a.	Male	381	3.27	.793	3.340	.001**	a>b			
				b.	Femal	72	2.98	.629						
		Title	a.	Sergeant	a.	Serge	42	3.24	.835	.140	.888	---		
					b.	Office	411	3.22	.771					
Children				a.	Yes	61	3.30	.791	.808				.420	---
				b.	No	392	3.21	.774						
Emotional labor	Surface acting	Gender	a.	Male	381	3.85	.804	.854	.394	---				
			b.	Femal	72	3.76	.767							
		Title	a.	Sergeant	a.	Serge	42	3.85	.774	.113	.910	---		
			b.	Office	411	3.83	.801							
	Children	a.	Yes	61	3.90	.711	.767	.444	---					
		b.	No	392	3.82	.811								
	Deep acting	Gender	a.	Male	381	3.40	.736	1.483	.139	---				
			b.	Female	72	3.26	.622							
		Title	a.	Sergeant	a.	Serge	42	3.75	.508	4.711	.000***	a>b		
			b.	Office	411	3.34	.729							
Children	a.	Yes	61	3.67	.617	3.375	.001**	a>b						
	b.	No	392	3.33	.726									
Psychosomatic health	Physical health	Gender	a.	Male	381	3.51	.784	.008	.993	---				
			b.	Femal	72	3.51	.682							
		Title	a.	Sergeant	a.	Serge	42	3.47	.795	-.424	.672	---		

		b.	Office	411	3.52	.766			
			r						
Mental health	Children	a.	Yes	61	3.66	.730	1.600	.110	---
		b.	No	392	3.49	.772			
	Gender	a.	Male	381	3.55	.756	.904	.366	---
		b.	Femal	72	3.46	.702			
	Title	a.	Serge	42	3.58	.875	.425	.671	---
		b.	Office	411	3.53	.735			
	Children	a.	Yes	61	3.70	.799	1.922	.055	---
		b.	No	392	3.51	.737			

Note: --- indicates no significant difference, \*p<.05, \*\*p<.01, \*\*\*p<.001

(3) One-way ANOVA by age: According to Table 5, no significant difference was observed between different ages in all dimensions except for “role ambiguity” and “deep acting.” Further, Scheffé’s post-hoc test was conducted on these two dimensions (i.e., role ambiguity and deep acting), and the results revealed significant differences in the means of both dimensions. In “role ambiguity,” police officers aged between 46 and 55 had a significantly higher stress level than those under the age of 25 did; in “deep acting,” police officers aged between 46 and 55 had a significantly greater burden of emotional labor than those over the age of 25 did and those aged between 26 and 35 did.

Table 5: One-way ANOVA for each dimension by “age”

Construct	Dimension	Age	Number	Mean	Standard deviation	F-value	P-value	Scheffé	
Role stress	Role ambiguity	a.	Under 25 (inclusive)	222	3.52	.755	3.108	.026*	d>a
		b.	26–35	148	3.60	.620			
		c.	36–45	31	3.68	.692			
		d.	46–55	52	3.84	.661			
	Role conflict	a.	Under 25 (inclusive)	222	3.23	.793	.264	.851	
		b.	26–35	148	3.24	.720			
		c.	36–45	31	3.26	.825			
		d.	46–55	52	3.13	.840			
Emotional labor	Surface acting	a.	Under 25 (inclusive)	222	3.82	.778	1.744	.157	
		b.	26–35	148	3.79	.859			
		c.	36–45	31	4.14	.632			
		d.	46–55	52	3.82	.771			
	Deep acting	a.	Under 25 (inclusive)	222	3.28	.694	7.507	.000***	d>a d>b
		b.	26–35	148	3.34	.726			
		c.	36–45	31	3.63	.883			
		d.	46–55	52	3.75	.563			
Psychosomatic health	Physical health	a.	Under 25 (inclusive)	222	3.50	.742	.105	.957	---
		b.	26–35	148	3.54	.786			
		c.	36–45	31	3.53	.847			
		d.	46–55	52	3.48	.798			

	a. Under 25 (inclusive)	222	3.50	.688			
Mental health	b. 26–35	148	3.57	.753	.324	.808	---
	c. 36–45	31	3.54	.940			
	d. 46–55	52	3.57	.862			

Note: --- indicates no significant difference, \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

- (4) One-way ANOVA by education level: According to Table 6, the *F*-test showed no significant difference in all dimensions, indicating that no significant difference was observed among police officers of different education levels in all six dimensions in respect of “role ambiguity.”

Table 6: One-way ANOVA for each dimension by “education level”

Construct Dimension	Education level	Number	Mean	Standard deviation	<i>F</i> -value	<i>P</i> -value	Scheffé
Role ambiguity	a. High (or vocational) school	29	3.67	.622	1.861	.135	---
	c. Junior college	292	3.54	.703			
	d. University	125	3.69	.696			
Role stress	d. Graduate school or above	7	3.86	1.013	.998	.394	---
	a. High (or vocational) school	29	3.27	.810			
	b. Junior college	292	3.25	.781			
Role conflict	e. University	125	3.13	.756	.720	.540	---
	d. Graduate school or above	7	3.44	.737			
	a. High (or vocational) school	29	3.67	.856			
Surface acting	b. Junior college	292	3.84	.792	1.888	.131	---
	c. University	125	3.83	.805			
	d. Graduate school or above	7	4.13	.725			
Emotional labor	a. High (or vocational) school	29	3.40	.731	.850	.467	---
	b. Junior college	292	3.33	.714			
	c. University	125	3.46	.712			
Deep acting	d. Graduate school or above	7	3.83	.976	.850	.467	---
	a. High (or vocational) school	29	3.53	.626			
	Psychosomatic health						

health	school							
	b. Junior college	292	3.54	.750				
	c. University	125	3.44	.845				
	d. Graduate school or above	7	3.83	.582				
	a. High (or vocational) school	29	3.64	.739				
Mental health	b. Junior college	292	3.56	.716	1.168	.321	---	
	c. University	125	3.44	.820				
	d. Graduate school or above	7	3.77	.706				

Note: --- indicates no significant difference, \*p<.05, \*\*p<.01, \*\*\*p<.001

(5) One-way ANOVA by service seniority: According to Table 7, no significant difference was observed in police officers with different lengths of service years in any dimension except for “deep acting.” Furthermore, Scheffé’s post-hoc test was conducted on the dimension “deep acting,” and the results showed a significant difference in the mean values; that is to say, police officers with 26 or more years of service had a significantly greater burden of emotional labor than those with 5 or fewer years of service did in respect of deep acting.

Table 7: One-way ANOVA for each dimension by “service seniority”

Construct	Dimension	Service seniority	Number	Mean	Standard deviation	F-value	P-value	Scheffé
Role stress	Role ambiguity	a. Under 5 years (inclusive)	369	3.57	.710	1.339	.255	---
		b. 6–10 years	22	3.48	.607			
		c. 11–15 years	8	3.64	.901			
		d. 21–25 years	6	3.47	.327			
		e. Over 26 years (inclusive)	48	3.80	.676			
Role stress	Role conflict	a. Under 5 years (inclusive)	369	3.21	.771	2.290	.059	---
		b. 6–10 years	22	3.46	.691			
		c. 11–15 years	8	3.85	.899			
		d. 21–25 years	6	2.93	.686			
		e. Over 26 years (inclusive)	48	3.12	.800			
Emotional labor	Surface acting	a. Under 5 years (inclusive)	369	3.82	.806	1.421	.226	---
		b. 6–10 years	22	3.82	.755			

		c.11–15 years	8	4.11	.694			
		d.21–25 years	6	4.52	.515			
		e. Over 26 years (inclusive)	48	3.78	.779			
		a. Under 5 years (inclusive)	369	3.31	.720			
		b.6–10 years	22	3.56	.664			
	Deep acting	c.11–15 years	8	3.60	.882	4.518	.001**	d>a
		d.21–25 years	6	3.70	1.064			
		e. Over 26 years (inclusive)	48	3.73	.551			
		a. Under 5 years (inclusive)	369	3.50	.779			
	Physical health	b.6–10 years	22	3.62	.597			
		c.11–15 years	8	3.89	.467	1.798	.128	---
		d.21–25 years	6	4.13	.455			
		e. Over 26 years (inclusive)	48	3.41	.784			
Psychosomatic health		a. Under 5 years (inclusive)	369	3.51	.738			
		b.6-10 years	22	3.61	.660			
	Mental health	c.11-15 years	8	3.93	.523	1.770	.134	---
		d.21-25 years	6	4.17	.543			
		e. Over 26 years (inclusive)	48	3.53	.873			

Note: --- indicates no significant difference, \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

- (6) One-way ANOVA by marital status: According to Table 8, no significant difference was observed among police officers in different marital statuses across all dimensions except for “deep acting.” Further, Scheffé’s post-hoc test was conducted on the dimension “deep acting.” The results showed a significant difference in the mean values, indicating that married police officers had a significantly greater burden of emotional labor than their unmarried counterparts did.

Table 8: One-way ANOVA for each dimension by “marital status”

Construct	Dimension	Marital status	Number	Mean	Standard deviation	F-value	P-value	Scheffé
Role stress	Role ambiguity	a. Married	75	3.72	.690	2.898	.056	---
		b. Unmarried	376	3.56	.703			
		c. Others	2	4.40	.141			
	Role conflict	a. Married	75	3.21	.813	1.011	.365	---
		b. Unmarried	376	3.22	.768			
		c. Others	2	4.00	.707			
Emotional labor	Surface acting	a. Married	75	3.87	.752	1.153	.317	---
		b. Unmarried	376	3.82	.807			
		c. Others	2	4.65	.495			
	Deep acting	a. Married	75	3.66	.681	7.227	.001**	a>b
		b. Unmarried	376	3.32	.717			
		c. Others	2	3.70	.424			
Psychosomatic health	Physical health	a. Married	75	3.55	.763	1.453	.235	---
		b. Unmarried	376	3.50	.768			
		c. Others	2	4.40	.566			
	Mental health	a. Married	75	3.61	.830	3.493	.031	---

health	b. Unmarried	376	3.51	.726
	c. Others	2	4.80	.283

Note: --- indicates no significant difference, \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

### 5.5. Correlation Analysis

- (1) Analysis of interconstruct correlations between role stress, emotional labor, and psychosomatic health: According to Table 9, the correlation coefficients between role stress and emotional labor, between role stress and psychosomatic health, and between emotional labor and psychosomatic health were .302, .387, and .103, respectively. The results showed that the  $P$ -values for all three interconstruct correlations were less than .05; therefore, all the correlation coefficients indicated significant positive correlations.

Table 9: Correlation coefficients between role stress, emotional labor, and psychosomatic health

	Role stress	Emotional labor	Psychosomatic health
Role stress	1		
Emotional labor	.302*** P = .000	1	
Psychosomatic health	.387*** P = .000	.103* P = .028	1

Note: \* $p < .05$  \*\* $p < .01$  \*\*\* $p < .001$

- (2) Analysis of interdimension correlations between role stress, emotional labor, and psychosomatic health, as shown in Table 10:
- According to the analysis, the correlations of role stress with role ambiguity, role conflict, surface acting, deep acting, physical health, and mental health, all, showed a  $P$ -value of .000, indicating significant positive correlations.
  - Emotional labor was shown to be significantly positively correlated with role ambiguity, role conflict, surface acting, deep acting, and mental health but not significantly correlated with physical health.
  - According to the analysis, the correlations of psychosomatic health with role conflict, surface acting, physical health, and mental health showed a  $P$ -value of .000, indicating significant positive correlations; on the other hand, psychosomatic health was found to have significant negative correlations with role ambiguity and deep acting.
  - Role ambiguity was found to have a significant positive correlation with deep acting, and significant negative correlations with role conflict, physical health, and mental health but no significant correlations with surface acting.
  - The analysis obtained a  $P$ -value of .000 for the correlations of role conflict with surface acting, physical health, and mental health, indicating the presence of significant positive correlations, but showed no significant correlations between role conflict and deep acting.
  - The analysis deducted a  $P$ -value of .000 for the correlations of surface acting with deep acting, physical health, and mental health, and the correlation between physical health and mental health, indicating the presence of significant positive correlations; on the other hand, deep acting was shown to be negatively correlated with physical health and mental health.
  - The aforementioned analysis reveals significant positive or negative correlations among all dimensions except between emotional labor and physical health, between role ambiguity and surface acting, and between role conflict and deep acting, the correlation coefficients of which indicated no significance.

Table 10: Correlation coefficients among the dimensions of role stress, emotional labor, and psychosomatic health

	Role ambiguity	Role conflict	Surface acting	Deep acting	Physical health	Mental health
Role stress	.586*** P = .000	.679*** P = .000	.183*** P = .000	.304*** P = .000	.358*** P = .000	.357*** P = .000
Emotional labor	.227*** P = .000	.169*** P = .000	.810*** P = .000	.766*** P = .000	.069 P = .140	.120** P = .011
Psychosomatic health	-.155** P = .001	.615*** P = .000	.282*** P = .000	-.138** P = .003	.925*** P = .000	.923*** P = .000
Role ambiguity	1	-.193*** P = .000	-.028 P = .551	.410*** P = .000	-.160** P = .001	-.130** P = .006
Role conflict		1	.252*** P = .000	.002 P = .958	.584*** P = .000	.554*** P = .000
Surface acting			1	.245*** P = .000	.223*** P = .000	.296*** P = .000
Deep acting				1	-.130** P = .006	-.125** P = .008
Physical health					1	.710*** P = .000
Mental health						1

Note: \*p < .05, \*\*p < .01, \*\*\*p < .001

### 5.6. Regression Analysis

Before regression analysis was performed, the presence or absence of collinearity was first determined by examining whether the tolerance value was higher than 0.1 and whether Variance Inflation Factor (VIF) was lower than 10, to avoid the situation in which statistical results could not be interpreted by regression coefficients. The results are shown in Table 11.

Table 11: Summary of regression analysis between independent and dependent variables

Independent variable	Dependent variable	$\beta$ -value	Collinearity		R <sup>2</sup>	F-value	P-value
			Tolerance	VIF			
Role stress	Psychosomatic health	→ .387	-	-	.150	79.297	.000***
Role ambiguity	Psychosomatic health	→ -.155	.963	1.039	.024	11.120	.001**
Role conflict	Psychosomatic health	→ .615	.963	1.039	.378	273.872	.000***
Role stress	Emotional labor	→ .302	-	-	.091	45.422	.000***
Role ambiguity	Emotional labor	→ .227	.963	1.039	.051	24.478	.000***
Role conflict	Emotional labor	→ .169	.963	1.039	.028	13.188	.000***



Emotional labor →Psychosomatic health	.103	-	-	.011	4.868	.028*
Surface acting →Psychosomatic health	.282	.940	1.064	.079	38.868	.000***
Deep acting →Psychosomatic health	-.138	.940	1.064	.019	8.769	.003**

Note: \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

(1) Linear regression analysis between role stress and psychosomatic health: Independent variable role stress showed  $P$ -value  $< .000$  and  $\beta$ -value = .387, indicating that role stress had a significant positive effect on psychosomatic health. Therefore, the verification of Hypothesis 1 revealed the following result:

H1: Role stress has a significant positive effect on psychosomatic health among grassroots police officers—proven valid.

(2) Linear regression analysis between role ambiguity and psychosomatic health: Independent variable role ambiguity showed a tolerance value greater than 0.1 and VIF less than 10, which ascertained an absence of collinearity with other independent variables. Further, its  $P$ -value fell between .01 and .001 and  $\beta$ -value was  $-.155$ , indicating that role ambiguity had a significant negative effect on psychosomatic health. Therefore, the verification of Hypothesis 1-1 reached the following result:

H1-1: Role ambiguity in role stress has a significant positive effect on psychosomatic health among grassroots police officers—proven invalid.

(3) Linear regression analysis between role conflict and psychosomatic health: Independent variable role conflict showed a tolerance value greater than 0.1 and VIF less than 10, which ascertained an absence of collinearity with other independent variables. Further, its  $P$ -value fell between .01 and .001, and the  $\beta$ -value was .615, signifying that role conflict had a significant positive effect on psychosomatic health. Therefore, the verification of Hypothesis 1-2 obtained the following result:

H1-2: Role conflict in role stress has a significant positive effect on psychosomatic health among grassroots police officers—proven valid.

(4) Linear regression analysis between role stress and emotional labor: Independent variable role stress showed  $P$ -value  $< .000$  and  $\beta$ -value = .302, indicating that role stress had a significant positive effect on emotional labor. Therefore, the verification of Hypothesis 2 achieved the following result:

H2: Role stress has a significant positive effect on emotional labor among grassroots police officers—proven valid.

(5) Linear regression analysis between role ambiguity and emotional labor: Independent variable role ambiguity showed a tolerance value greater than 0.1 and VIF less than 10, which ascertained the absence of collinearity with other independent variables. Further, the analysis showed  $P$ -value  $< .000$  and  $\beta$ -value = .227, signifying that role ambiguity had a significant positive effect on emotional labor. Therefore, the verification of Hypothesis 2-1 concluded with the following result:

H2-1: Role ambiguity in role stress has a significant positive effect on emotional labor among grassroots police officers—proven valid.

(6) Linear regression analysis between role conflict and emotional labor: Independent variable role stress showed a tolerance value greater than 0.1 and VIF less than 10, which ascertained an absence of collinearity with other independent variables. Further, the analysis found  $P$ -value  $< .000$  and  $\beta$ -value = .169, indicating that role conflict had a significant positive effect on emotional labor. Therefore, the verification of Hypothesis 2-2 attained the following result:

H2-2: Role conflict in role stress has a significant positive effect on emotional labor among grassroots police officers—proven valid.

(7) Linear regression analysis between emotional labor and psychosomatic health: Independent variable emotional labor showed  $.05 < P$ -value  $< .01$  and  $\beta$ -value = .103, indicating that emotional labor had a significant positive effect on psychosomatic health. Therefore, the verification of Hypothesis 3 revealed the following result:

H3: Emotional labor has a significant positive effect on psychosomatic health among grassroots police officers—proven valid.

- (8) Linear regression analysis between surface acting and psychosomatic health: Independent variable surface acting showed a tolerance value greater than 0.1 and VIF less than 10, which ascertained the absence of collinearity with other independent variables. Further, the analysis found  $P$ -value  $< .000$  and  $\beta$ -value  $= .282$ , signifying that surface acting had a significant positive effect on psychosomatic health. Therefore, the verification of Hypothesis 3-1 concluded with the following result:

H3-1: Surface acting in emotional labor has a significant positive effect on psychosomatic health among grassroots police officers—proven valid.

- (9) Linear regression between deep acting and psychosomatic health: Independent variable deep acting showed a tolerance value greater than 0.1 and VIF less than 10, which ascertained no collinearity with other independent variables. Further, the analysis found  $.01 < P$ -value  $< .001$  and  $\beta$ -value  $= -.138$ , indicating that deep acting had a significant negative effect on psychosomatic health. Therefore, Hypothesis 3-2 verification arrived at the following conclusion:

H3-2: Deep acting in emotional labor has a significant positive effect on psychosomatic health among grassroots police officers—proven invalid.

- (10) The regression analysis of the mediation effect of emotional labor between role stress and psychosomatic health is presented in Table 2:

The viewpoints of Baron and Kenny (1986) were adopted to verify the research hypothesis regarding the mediation effect of emotional labor on the relationship between role stress and psychosomatic health among police officers. Specifically, the following conditions were examined to determine whether the mediation effect existed. First, the independent variable has a significant positive relationship with the mediator variable. Second, the mediator variable has a significant positive relationship with the dependent variable. Third, the independent variable has a significant positive relationship with the dependent variable. Fourth, when both independent and mediator variables are subjected to regression analysis, the relationship between the independent variable and dependent variable becomes “insignificant” or “weakened.” The mediator variable is deemed to achieve complete mediation in the former case and partial mediation in the latter.

According to the results of Analysis I, role stress had a significant positive predictive effect on emotional labor; thus, the first condition was fulfilled. The results of Analysis II showed that both role stress and emotional labor had significant positive effects on psychosomatic health; thus, the second and third conditions were satisfied. Finally, according to the results of analysis III, when the mediator variable emotional labor was included, the  $\beta$ -value of the independent variable role stress increased from .387 to .391 although statistical significance ( $p < .001$ ) was achieved with  $P$ -value  $= .000$ ; accordingly, the requirement of the fourth condition was not met. Based on the above rationale, the verification of Hypothesis 4 reached the following result:

H4: Emotional labor mediates the effect of role stress on psychosomatic health among grassroots police officers—proven invalid.

Table 12: Regression analysis of the mediation effect of emotional labor between role stress and psychosomatic health

Analysis I					
Mediator variable	Emotional labor				
Independent variable	$R^2$	$F$ -value	$\beta$ -value	$t$ -value	$P$ -value
Role stress	.091	45.422	.302	6.740	.000***
Analysis II					
Dependent variable	Psychosomatic health				
Independent variable	$R^2$	$F$ -value	$\beta$ -value	$t$ -value	$P$ -value
Role stress	.150	79.297	.387	8.905	.000***
Emotional labor	.011	4.868	.103	2.206	.028*

Analysis III		Psychosomatic health				
Dependent variable		R <sup>2</sup>	F-value	$\beta$ -value	t-value	P-value
Model I	Role stress	.150	79.297	.387	8.905	.000***
	Role stress			.391	8.579	.000***
Model II	Emotional labor	.150	39.624	-.015	-.329	.742

Note: \*p < .05, \*\*p < .01, \*\*\*p < .001

### 5.7. Results of Hypothesis Testing

The research hypotheses and results of hypothesis testing in this study are summarized in Table 13.

Table 13: Results of research hypothesis testing

Research hypotheses	Results of testing
H1: Role stress has a significant positive effect on psychosomatic health among grassroots police officers.	Valid
H1-1: Role ambiguity in role stress has a significant positive effect on psychosomatic health among grassroots police officers.	Invalid
H1-2: Role conflict in role stress has a significant positive effect on psychosomatic health among grassroots police officers.	Valid
H2: Role stress has a significant positive effect on emotional labor among grassroots police officers.	Valid
H2-1: Role ambiguity in role stress has a significant positive effect on emotional labor among grassroots police officers.	Valid
H2-2: Role conflict in role stress has a significant positive effect on emotional labor among grassroots police officers.	Valid
H3: Emotional labor has a significant positive effect on psychological health among grassroots police officers.	Valid
H3-1: Surface acting in emotional labor has a significant positive effect on psychosomatic health among grassroots police officers.	Valid
H3-2: Deep acting in emotional labor has a significant positive effect on psychosomatic health among grassroots police officers.	Invalid
H4: Emotional labor mediates the effect of role stress on psychosomatic health among grassroots police officers.	Invalid

## 6. Research Conclusions and Recommendations

### 6.1. Conclusions

- (1) Significant positive effects were indicated by the regression coefficients between role stress and psychosomatic health, between role stress and emotional labor, between role ambiguity and emotional labor, and between emotional labor and psychosomatic health. The results demonstrate that by instituting complete, well-defined systems and job responsibilities; establishing standard operating procedures for police duties (assignment), which can be uniformly practiced by police officers; and communicating with police officers duly, the organization will effectively enhance health awareness among police officers, enable them to manage their emotions properly, and increase their enthusiasm for work.
- (2) The regression coefficient between role ambiguity and psychosomatic health revealed a negative effect, indicating that in the face of more obscure job content or insufficient support, police officers will suffer greater negative effects on psychosomatic health.
- (3) The results of this study demonstrate that emotional labor does not mediate the effect of role stress on psychosomatic health among police officers, indicating that the burden of emotional labor does not affect the relationship between role stress and psychosomatic health among police officers.

## 6.2. Research Limitations and Recommendations

### (1) Research Limitations

- a. Differences in the subjective perceptions of police officers or failure to provide truthful information in the survey might lead to research bias.
- b. Because of limited human power and time, this study confined the scope of research subjects to the grassroots police officers below the second-stripe two-star rank at the police stations of Hsinchu County Police Bureau in the Northern Taiwan region. The research results cannot be generalized to other regions.

### (2) Research Recommendations

- a. It is advised that chiefs of police stations receive more training on leadership concepts. It is hoped that, through their efforts to set an admirable benchmark themselves, the chiefs can establish shared visions and goals for their teams and strengthen communication with police officers; thus, stress levels may be effectively reduced and psychosomatic health improved among police officers.
- b. Interviews with grassroots police officers working at each police station should be conducted on a regular basis. The results of the interviews might provide references for the chiefs of police stations in improving their leadership, adjusting duties or assignments, and implementing work objectives, whereby grassroots police officers may better understand and uniformly follow their instructions.

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