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Factors affecting post-traumatic growth in South Korean police officers by age group

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Abstract

Introduction: Police officers are exposed to a variety of traumatic events, which can be physical or psychological. This study aimed to identify factors that influence Post-traumatic growth (PTG) in South Korean police officers, according to age group.

Methods: Data were collected from September 26 to October 9, 2017, for 269 police officers who are employed at 10 police offices in Seoul. PTG was assesed by age, marital status, monthly income, and police rank in pain perception and social support variables among general characteristics.

Results: Factors that affected PTG in the '20~29' age group were resilience and pain perception, but in the '30~39' age group, only Pain perception was significant, and in the 'over 50' age group, social support and pain perception were significant.

Conclusion: The development of mental health programs for police should consider the age group of the patients. Mental health care should also be continuous.

Key words: Age, growth, Korea, police, post-traumatic.

Introduction

Police officers are exposed to a variety of traumatic events, which can be physical or psychological. Post-Traumatic Growth (PTG) is a positive psychological change after a struggle associated with traumatic circumstances.[1] This is not just a recovery of physical and psychological functions that the person had before the traumatic experience, but also a change in life awareness.[2] In the process of experiencing and overcoming trauma, the adaptive aspect of the individual and the internal strength of the individual will lead to a change in a healthy life and will affect the recovery of the pre-trauma adaptation level. In recent years, research on PTG has begun, with a focus on personal aspects such as well-being, quality of life, and the therapeutic approach to psychological interventions.[3] Further studies should consider PTG by people who are in occupations that experience traumatic events in greater number and intensity than other occupations.

However, the demographic variables used have not been consistent. Some previous studies used gender as a demographic variable. For example, studies of PTG of police officers[4] and New Zealand Surf Lifesavers[5] have shown better PTG in females than in males. However, in this study, we group subjects according to demographic variables and identify how factors that affect PTG differ among the groups. Then we use the insights to guide the search for effective ways to help people to cope with stress, and to improve the job environment.

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The age at which the subject experienced the trauma was considered in the previous research, in which conflicts arising from various events lead to experiences such as peritraumatic distress, the impact of an event, and depression.[6] Among them, resilience affects PTG. Resilience is dynamic and persistent, so it interacts with various psychological and environmental factors while the subject overcomes and adapts to adversity.[7] People with high resilience are less likely to perceive pain because they have a better ability to cope with events than those who do not have high resilience.[8] Therefore, people with high resilience are less likely to experience psychological disturbances and recover better than people who have low resilience. The internal confusion state can be newly restructured in a balanced state. This process can accelerate the experience of growth through the turbulent situation created by the traumatic experience and subsequent rebuilding of schemas as resistant to traumas.[9] Social support can also help subjects to cope with stressful situations, and in psychological adjustment, through interaction with peers.[10] Positive feedback provided by others can help to overcome the trauma of a life-threatening attack.[11] The perception of pain also be regarded as an important variable that affects PTG. The degree of post-traumatic experience varies according to the degree of pain perception concerning trauma experience and pain perception.[12] The degree of perception of pain is fairly subjective, and a study of the extent to which individuals experience a traumatic perception of traumatic experiences and the degree of post-traumatic experience suggests that the experience of PTG increases with an increase in the perceived severity of the trauma.[12] Therefore, the goal of this study was to provide basic data for the development of a program that can confirm the clinical value by exploring various variables associated with the PTG of police officers.

Methods

Study Design and Subjects

This study uses a cross-sectional descriptive design. The subjects of this study were regular police officers who work at the department of life safety of 10 police stations out of 31 police stations in 25 districts of Seoul. This study used simple convenience sampling and 30 people per police station were sampled. This study selected male police officers who frequently encountered trauma dispatches. In addition, only police officers who were formally employed at their current place of employment and those who had worked for at least one year were included. However, part-time work system or police officers with little trauma experience within one year of joining the company were excluded from this study. The data were collected from September 26, 2017, to October 9, 2017. The researcher visited the police station and conducted the survey only with police officers who agreed to participate. This researcher excluded from this study 3 people who said they had no traumatic experience, 20 people who are currently receiving trauma treatment, and 8 people who answered the questionnaire insincerely from this study, and finally, 269 people were included in the study. The researchers explained that the results of the survey would be processed numerically. Before the subjects were asked to complete the questionnaire, the researcher explained the purpose of the research, and the method of the measurement. The questionnaire was completed after receiving the written consent of the subject.

Measures

Recovery resilience

Resilience measured recovery capability, using an analysis of 27 items.[13] Each item was graded on a 5-point Likert scale with a score of 1 for ‘not quite at all’ and a score of 5 for ‘strongly agree’. These items include three sub-factors: controllability (9 items), affirmative (9 items) and sociality (9 items). In the preliminary analysis, these results received Cronbach’s $\alpha = 0.90$.

Pain perception

The evaluation of pain perception was a modified version of the method in Eun et. al[16] which was derived from Weiss[14] and Horowitz[15]. The questionnaire consisted of five items that were rated on a 5-point Likert scale and 4 items from 0 (“not at all”) to 5 (“frequently”), (5 items), sleep disturbance and emotional paralysis, and dissociation symptoms (5 items). The assessed perception of pain increases with an increase in the score. The items had Cronbach’s $\alpha = 0.97$.

Social support

The assessment of social support is derived from the revised version of the Multidimensional Scale of Perceived Social Support (MSPSS), and the revised version was a modified version of Joo.[17,18] This assessment consists of 12 items that measure family support (four items), friend support (four items), and meaningful support of others (four items); the

assessments are rated on a 7-point Likert scale, from 1 = 'Absolutely not' to 7 = 'Absolutely agree'. The assessed degree of social support increases with an increase in the score. In this study, the items had Cronbach's α = 0.95.

PTG

For the PTG, the Korean version of the Posttraumatic Growth Inventory; K-PTGI was used, developed by Tedeschi and Calhoun and modified and supplemented by Song et al.[19,20] This scheme measures 16 sub-factors: self-perception change, new possibility change, interpersonal relationship change, spiritual change. Each item was rated on a 6-point Likert scale from 0 = "not experiencing these changes" to 5 = "very frequently experienced". Again, the assessed PTG increased with an increase in this score. In this study, the items had Cronbach's α = 0.95.

Data Analysis

In this study, the general characteristics and research variables of the subjects were analyzed using descriptive statistics. Multiple regression analysis was performed. In addition, a radial graph of the factors was used based to determine the extent to which the age of police officers affected the PTG. Analysis was conducted using the open source statistical software R 3.5.0; statistical significance was declared at $p < 0.05$.

Results

Marital status changed consistently with the increase in age of the subjects. The percentage who were married was 5.1% in subjects who were in their twenties, 50.0% in subjects who were in their thirties, 94.4% in subjects who were in their forties, and 98.1% in subjects who were in their fifties. Income also increased with age. Of the subjects who were in their 20s, 81.4% earned 2-3 million Won per month; of those in their 30s, 78.7% earned 2-3 million Won per month; of those in their 40s, 66.7% earned between 3 and 4 million Won per month, and of those over 50, 61.5% earned over 4 million Won per month. At the educational level, high school graduates were the most in their 20s and 50s and university graduates were in their 30s and 40s. Ranks also increased with age. Of subjects in their 20s and 30s, most were constables (84.7% and 45.1%, respectively); of subjects in their 40s, 47.2% were lieutenants and 47.2% were sergeants; of subjects over 50, 98.1% were lieutenants (Table 1).

The distributions differed among the major variables. Resilience had a minimum (min) = 75, maximum (max) = 135, mean = 103.32, standard deviation (SD) = 10.59. The pain perception had min = 0, max = 85, mean = 25.27, sd = 18.60. Social support had min = 35, max = 85, mean = 56.53, sd = 9.90. PTG had min = 10, maximum = 75, mean = 44.56, sd = 12.46 (Table 2).

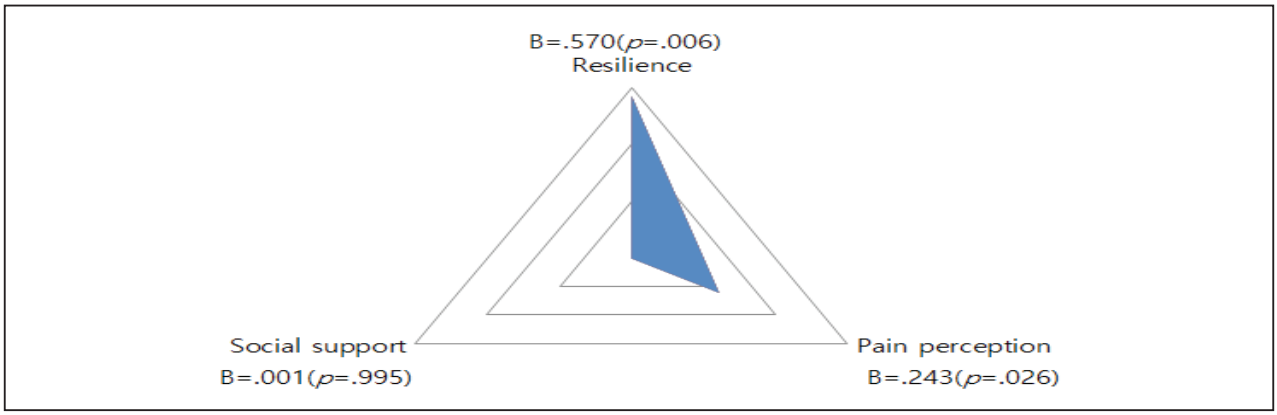
The score of pain perception increased with age, from 17.92 in the 20s age group, 23.51 in the 30s, 32.83 in the 40s and 32.52 in the 50s or older. The score was 20.84 for single subjects and 28.84 for married subjects. Monthly income also affected pain perception: it was highest (31.57) in those who earned 4 million won per month, and the score of pain perception was the highest, compared to 18.16 in the 2-3 million income group. The score of pain perception generally increased with the rank of the police officer and was highest among sergeants.

The score of social support decreased as age increased, from 60.83 in the 20s to 52.88 in the 50s or older. It was lower in married officers (55.33) than in single officers (58.03). The score of social support decreased as income increased. The rank was the highest in social support with 59.63 points in the lowest rank. The general characteristics had no significant differences in PTG (Table 3).

Resilience and pain perception were inversely correlated with the main variables, and social support and PTG were positively correlated with them (Table 4).

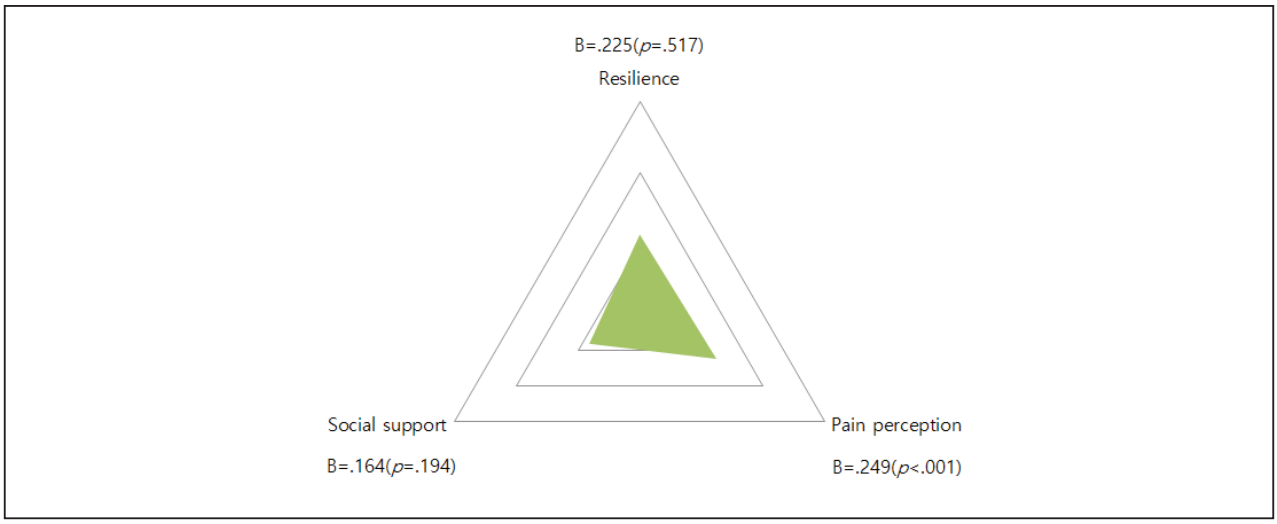
The effects of general characteristics and measured factors on PTG were analyzed using multiple regression analysis, and then expressed as radial graphs (Fig. 1-4).

The significant factors differed among the age groups. In subjects in their 20s, resilience was the largest factor that affected PTG (B = 0.570), followed by pain perception (B = 0.243); social support did not have a significant effect. In subjects in their 30s, only pain perception affected PTG (B = 0.249). In subjects in their 40s, none of the factors had a significant effect on PTG. In subjects over 50, social support was the most significant factor for PTG (B = 0.488), followed by pain perception (B = 0.252).



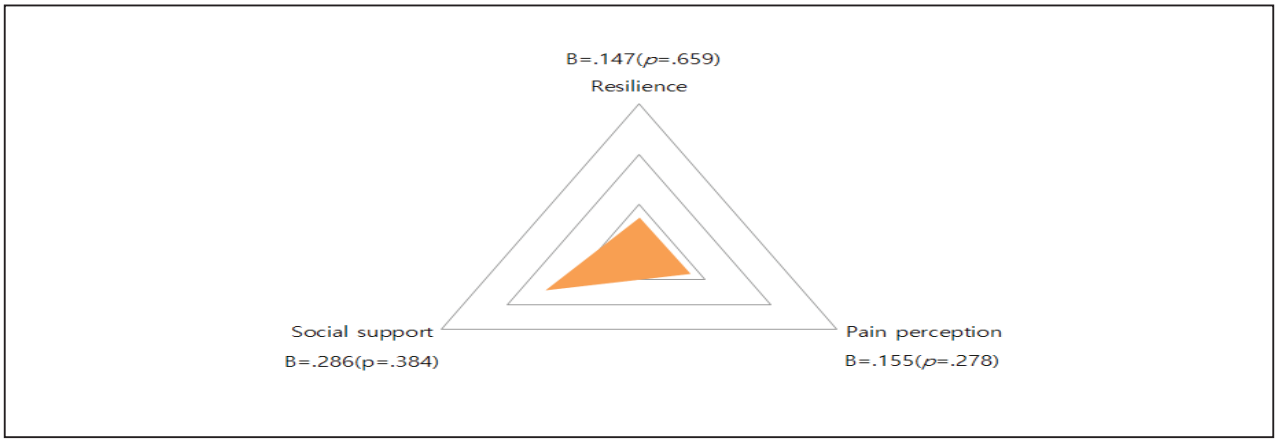
F=4.916, p=.004, R^2=.211, Adj R^2=.168

Figure 1: Resilience and pain perception were influential variables for police officers in their 20s.



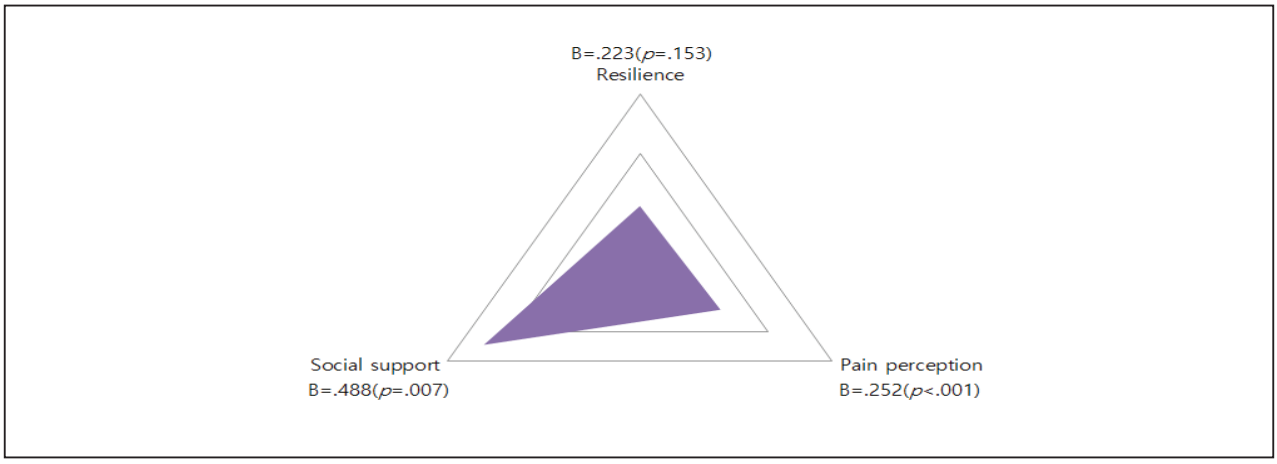
F=7.527 p<.001, R^2=.161, Adj R^2=.139

Figure 2: Pain perception was an influential variable for police officers in their 30s.



F=.792 p=.507, R^2=.069, Adj R^2=.018

Figure 3: No variables were significantly influential for police officers in their 40s.



F=9.070 p=<.001, R^2=.362, Adj R^2=.322

Figure 4: Social support and pain perception were influential variables for police officers in their 50s and older.

Table 1: General Characteristics of Subjects

Variable	20-29yrs	30-39yrs	40-49yrs	≥50yrs
Marital state				
Married	3(5.1)	61(50.0)	34(94.4)	51(98.1)
Single	56(94.9)	61(50.0)	2(5.6)	1(1.9)
Monthly income				
≥4 million won	0(0.0)	1(0.8)	9(25.0)	32(61.5)
3-4 million won	0(0.0)	17(13.9)	24(66.7)	19(36.5)
2-3 million won	48(81.4)	96(78.7)	3(8.3)	1(2.0)
<2 million won	11(18.6)	8(6.6)	0(0.0)	0(0.0)
Education level				
University	23(39.0)	76(62.3)	21(58.4)	17(32.7)
College	3(5.1)	16(13.1)	8(22.2)	12(23.1)
High school	33(55.9)	30(24.6)	7(19.4)	23(44.2)
Police rank				
Lieutenant	1(1.7)	5(4.1)	17(47.2)	51(98.1)
Sergeant	1(1.7)	15(12.3)	17(47.2)	1(1.9)
Corporal	7(11.9)	14(38.5)	1(2.8)	0(0.0)
Constable	50(84.7)	55(45.1)	1(2.8)	0(0.0)
Total	**59(100.0)**	**122(100.0)**	**36(100.0)**	**52(100.0)**

Table 2: Level of Descriptive statistics for Study Variables

Variable	Min	Max	M	SD
Resilience	75	135	103.32	10.59
Pain perception	0	85	25.27	18.60
Social support	35	72	56.53	9.90
Post-traumatic Growth	10	75	44.56	12.46

M=Mean value, (SD) =Standard Deviation

Table 3: Variables related to General Characteristics

Variable	Resilience		Pain perception		Social support		Post-traumatic Growth	
	M(SD)	t or F(*p*)	M(SD)	t or F(*p*)	M(SD)	t or F(*p*)	M(SD)	t or F(*p*)
Age group								
20-29yrs	105.86 (9.90)	2.070 (.105)	17.92 (15.45)	8.760 (<.001)	60.83 (8.93)	7.566 (<.001)	44.10 (13.51)	.374 (.772)
30-39yrs	103.43 (10.98)		23.51 (17.74)		56.83 (9.83)		43.95 (12.00)	
40-49yrs	101.28 (10.23)		32.83 (19.83)		53.75 (10.37)		45.58 (14.03)	
≥50yrs	101.60 (10.31)		32.52 (19.11)		52.88 (8.99)		45.80 (11.34)	
Marital state								
Married	102.79 (10.20)	929 (.354)	28.84 (19.47)	3.583 (<.001)	55.33 (9.94)	2.237 (.026)	45.66 (12.23)	1.620 (.106)
Single	103.99 (11.06)		20.84 (16.49)		58.03 (9.68)		43.19 (12.66)	
Monthly income								
≥4million won	101.33 (9.18)	.641 (.589)	31.57 (15.44)	6.323 (<.001)	52.67 (8.62)	3.663 (.013)	45.12 (11.98)	1.173 (.321)
3-4million won	103.30 (10.75)		31.07 (21.23)		55.33 (10.33)		46.75 (12.78)	
2-3million won	103.26 (10.58)		18.16 (19.50)		58.32 (11.48)		41.46 (11.12)	
<2 million won	103.91 (10.92)		22.05 (17.16)		57.89 (9.58)		43.91 (12.60)	
Education level								
University	102.28 (9.84)	1.067 (.346)	28.46 (20.95)	.670 (.513)	54.44 (10.79)	1.028 (.359)	45.36 (12.88)	.578 (.562)
College	104.25 (10.97)		24.71 (18.37)		56.94 (9.99)		45.09 (11.89)	
High school	102.40 (10.31)		24.76 (17.95)		56.81 (9.36)		43.44 (13.16)	
Police rank								
Lieutenant	102.29 (11.02)	17.768 (.154)	30.59(21.55)	12.331 (<.001)	55.47 (11.13)	6.723 (<.001)	46.29 (13.98)	.993 (.397)
Sergeant	101.53 (9.79)		33.41(18.11)		53.38 (8.99)		45.74 (11.66)	
Corporal	103.07 (11.49)		24.91(18.48)		55.45 (9.40)		42.43 (11.70)	
Constable	105.04 (10.38)		18.08(15.01)		59.63 (9.58)		44.28 (12.87)	

Table 4: Correlations among Variables

Variable	Resilience r (*p*)	Pain Perception r (*p*)	Social Support r (*p*)	Post-traumatic Growth r (*p*)
Resilience	1			
Pain perception	-.318(<.001)	1		
Social support	.586(<.001)	-.280(<.001)	1	
Post-traumatic Growth	.223(<.001)	.239(<.001)	.200(<.001)	1

Discussion

The purpose of this study is to investigate the effects of resilience, pain perception, and social support on PTG in police officers in the life-safety field, who work at the front line of crime prevention and social safety in the community. The present study detected that in subjects who were in their 20s, resilience and pain perception affected PTG, but social support was not a factor. The strong effect of resilience on PTG in the 20s is consistent with an earlier study by Schaefer et al that showed that resilience influenced PTG promotion variables in college students in their 20s.[21] This agreement in conclusions suggests that people who experience traumatic events at this relatively young age can positively cope with them.[22] The likelihood of recovering to the pre-trauma adaptation level increases with an increase in resilience, and the experience of traumatic events can be a positive factor in adapting and overcoming difficulties in life. Therefore, police officers must consider resilience as a predictor of various crisis interventions.

In subjects in their 20s, pain perception also affected PTG. The effects of pain on individuals are psychologically and physically subjective. In previous studies, the degree of perception of pain provided an opportunity for emotional growth.[23] The perception of suffering after the trauma event may drive attempts by the sufferer to reconstruct his or her inner beliefs and values and to pursue the discovery of a new life path to positively understand the experience of suffering.[24] These results are consistent with the previous study the relationship between pain perception and PTG in college students in their 20s.[21]

The experience of pain perception helps to maintain and promote PTG. The experience of suffering in the 20s is a continual review of the meaning of the event and may yield an attempt to overcome the negative emotions more positively, rather than developing the perception of pain as post-traumatic stress. Few studies have considered the effects of pain perception on PTG according to age, so this possibility cannot yet be generalized. However, a study of PTG in adults in their 20s showed a significant correlation between PTG and aggressive coping strategies. A young person may be more likely than an old person to positively sublimate the perception of pain according to the trauma event. The results of this study suggest the variables that affect PTG should be identified using a multi-dimensional approach that considers various demographic variables such as age and sex.

In subjects who were in their 30s, pain perception affected PTG, but the resilience and social support did not. This result suggests that the level of growth depends on subjective perception level. Police officers in their 30s are as likely to experience pain perception as they did in their 20s. The individuals may not be trying to overcome the pain by returning to the trauma experience but rather to seek the meaning and help obtained from the pain perception, and control the pain, and pursue a positive level of change.[25]

In this study, social support and pain perception affected the PTG, with social support having the greatest effect. A previous study found that PTG was better perceived by those who had experienced trauma and good social support; i.e., that active interaction with the outside world may help a person to develop psychological strategies to cope with the trauma, and thereby overcome the painful situation and develop their life positively.[26,27,28] Therefore, social support can be regarded as a significant factor in PTG. There is also a necessity of specific strategies for supporting the post-traumatic stress caused by accidents, disasters and crimes.[29]

Finally, in subjects who were 50 or older, pain perception affected PTG, as it did for subjects in their 20s and 30s. This result may occur is because the perception of pain caused by traumatic experiences is not overcome with time, but rather promotes an improved level of growth by seeking new meanings and positive thinking about traumatic events.[30] Therefore, pain perception can be regarded as an important parameter for PTG.

This study has detected that resilience and pain perception have important effects on PTG in police officers in their 20s and that pain perception has effects in their 30s. In officers who were in their 40s, none of the factors tested influenced PTG.

This study suggests that study of PTG should consider a wide range of variables. For example, such a study might reveal factors other than resilience, pain perception, and social support that affect PTG in subjects who are in their 40s. The approach should be multifaceted and consider the demographic characteristics, occupational, and environmental characteristics of each age group. Recently, in Korea, studies on post-traumatic stress disorder have been

active in professional groups that experience a lot of traumatic events, such as fire officials, police officials, and correctional officials. However, it was an important opportunity to learn that humans can also change positively and healthily through unfamiliar research such as post-traumatic growth. Through this opportunity, future research will need to approach research more substantially and diversely by applying various variables to post-traumatic growth. This study was conducted on police officials present in Seoul, and there is a limitation in that it is not a large-scale investigation across the country. These points will need to be supplemented in future research. In addition, this study collected only male police officers, and further research could include female police officers to produce more meaningful results. However, in Korea, female police officers were very limited in number and were very difficult to apply to the study.

Conclusion

The Commission selected male police officer from the life safety department of 10 police stations in Seoul and analyzed 269 data out of a total of 300. Resilience, pain perception, and social support were selected as independent variables and PTG as a dependent variable. The results of this study showed that resilience in the 20s, pain perception in the 30s, and social support in the 50s have the greatest effect on PTG, and none of the factors tested affected PTG in the 40s.

The results of this study show the necessity of considering the factors that affect the PTG of police officers and considering various demographic characteristics. The development of various intervention programs and counseling and customized case management for high-risk could reduce the negative stress response of police officers, and improve PTG.

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