

## **FACTORS INFLUENCING THE MEMORY OF PREVIOUS PAIN EXPERIENCES**

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### **Introduction**

The assumption that individuals are capable of accurately recalling past pain experiences has been a fundamental principle of a number of cognitive-behavioral theories of pain. Pain is a subjective experience with significant affective, cognitive, and behavioral as well as sensory components. It is observed that influences of development, environment, and genetics are there on pain components. Literature supports a direct relationship between experience of pain and depressive symptoms and anxiety among various patient populations (Turk and Gatchel, 1999).

Clinicians have to rely on the description of pain by patients and clinical decisions often depend on the patients' recalling ability of past pain experiences. The memory for pain is variable, and there is a need to identify the factors that contribute to this variability of memory of previous pain experiences (Pearce et al., 1990).

The aim of the present research was to study the influence of personality traits and the presence of a recent experience of pain on the ability of young adults to recall previous pain experiences.

### **Materials and methods**

Participants between 19 to 26 years of age were recruited as a convenient sample from the Sinhala-speaking university student community. They were requested to volunteer and give informed consent before being recruited. Individuals undergoing acute pain conditions and suffering from or under treatment for psychological disorders were not included in the sample.

### *Measurements*

A pre-tested questionnaire, in three steps, was used for data collection. In the first step, the questionnaire collected the demographic data and information related to pain if they were suffering from any pain condition (P1) during

past three days. If they had such a pain experience, they were asked to evaluate its intensity on a 100mm Visual Analogue Scale (VAS). In the second step, the subjects were requested to recollect the memory of the severe-most-pain they have experienced in the life and were asked to record information including the intensity of pain (P2) in the questionnaire accordingly. In the third step, the same questionnaire was administered after a period of one week to the same group of subjects and they were asked to record details including the intensity of pain (P3) in relation to the same pain experience that they recollected in the second step. At the end of every step, several masking VAS were used to eliminate any memory of the previous recording.

The validated Sinhala version of Eysenck Personality Inventory (Hans Eysenck's P-E-N model: psychoticism, extroversion and neuroticism) was employed to evaluate the personality traits of subjects (Perera and Eysenck, 1984).

Data were examined using explorative statistics and descriptive statistics were calculated. The association of personality traits and pain intensities (predictor variables) with the variation in recalling the previous pain experience (outcome variables) was examined using multiple linear regression analysis.

### **Results**

Hundred and thirty subjects (males 41, females 89) with a mean ( $\pm$ SD) age of  $22.5 \pm 0.872$  years took part in the study. Among them, 78.4% of males and 79.5 % of females (79.2% of total) reported the experience of some kind of pain during the past three days. Among the reported pain conditions were: headache, 33.33%, back ache, 7.07%, cervical pain, 2.02%, joint pain, 15.15%, muscle pain, 31.31%, facial pain, 3.03%, menstrual pain, 6.06%, pain following trauma, 5.05% and other, 12.12%.

In the second step, only 121 (96.67%) subjects reported the presence of memory of previous pain experience and only 86 of them were available after a period of one week for the third step of the study. Among them, 61 individuals had reported presence of a pain condition within past three days. Mean ( $\pm$ SD) values of the pain intensities recorded at the three steps were: P1, 35.07  $\pm$ 19.22mm; P2, 74.73  $\pm$  15.51mm; P3 76.62  $\pm$  15.69mm.

The results revealed a high correlation of P2 with P3 ( $\gamma=0.69$ ,  $P=0.001$ ) and moderate correlation of P1 with P2 ( $\gamma=0.3$ ,  $P=0.02$ ). The difference between P2 and P3 (P4) was considered as the variation in recalling pain intensities between the steps 2 and 3 (recalling ability of the previous pain). The mean ( $\pm$ SD) P4 was 8.35  $\pm$  9.19 mm.

A multiple linear regression analysis to predict the P4 by P1, P2 and personality traits (extroversion, neuroticism and psychoticism) as predictor variables revealed that only extroversion had a significant coefficient ( $\beta=0.471$ ,  $P=0.03$ ) with a model having  $R^2=0.178$ ,  $F=1.77$  and  $P=0.14$ . An independent sample t-test revealed that sex and the presence of a recent experience of pain did not have any significant effect on the P4.

### Discussion

The results revealed that the prevalence of pain conditions is quite high in the sample of subjects studied and head ache was the most prevalent pain condition. A large proportion

of the subjects reported that they remember the previous pain experiences and rated very high mean levels for the same. Within the limitations of the present study, the results revealed that recalling ability of previous pain experiences is consistent through a period of one week, although it is influenced by the presence of a recent pain condition. Results suggest that the personality traits may play a role in the recalling behavior of past pain experiences.

### Conclusion

Observations suggest that the memory of past pain experience may be influenced by factors such as personality traits and presence of recent pain experiences. More controlled studies are proposed for corroboration of these observations.

### References

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