



## PSYCHOPHYSIOLOGIC ASPECTS OF FUNCTIONAL INTERHEMISPHERIC ASYMMETRY

I. Sekoyan

Yerevan State Medical University after Mkhitar Heratsi,  
Scientific Research Institute of Spa Treatment and Physical Medicine of the Health Ministry of the  
Republic of Armenia

### Abstract

The aim of the research was to study association of latent left-handedness signs and emotional-personal sphere characteristics and analyze their transformation in age and gender aspects. Four hundred and eight respondents participated in the project: 157 men (38.5%) and 251 women (61.5%) distributed in three groups according to age: Group I – 234 respondents averagely aged ( $M \pm SD$ )  $22.7 \pm 2.8$ , Group II – 81 respondents ( $38.7 \pm 6.2$ ), Group III – 93 respondents ( $57.4 \pm 4.4$ ). Psychometric examination was carried out by standardized tests. Signs of latent left-handedness were revealed in 82.4% of respondents. Persons with one sign formed 26.0%, those with two signs – 30.4%, three signs – 14.0%, four signs – 12.0%. In the general sample and gender aspect the number of persons both without signs of latent left-handedness and with a single sign tended to progressively increase with age. A progressing reduction in the number of respondents with two and more signs of latent left-handedness was observed. Seventy eight percent of respondents of the general sample passed the test of sincerity according to Eysenck Personality Inventory (EPI-1 scale), the remaining 87 persons were not further examined. According to test results (EPI-2 scale), an increase in the number of introverts and reduction in the number of extraverts was evident with age, meanwhile the emotional stability index (EPI-3 scale) did not practically change in age and gender aspects. With the increase in age, the number of choleric was reduced, the number of phlegmatics and melancholics increased. The number of sanguinics among men did not change with age, but was progressively reduced among women. The examination of respondents with Rotter test showed that the number of persons with external personal type increased and the number of those with internal personal type was reduced with age. The associated triad – alexithymia (on Toronto Alexithymia Scale)  $\Leftrightarrow$  anxiety (on State-Trait Anxiety Inventory)  $\Leftrightarrow$  depression (on Beck Depression Inventory) – was in most cases revealed in introverts and externals. With the help of the multiple linear regression model, Spearman and Kendall Tau nonparametric criteria, as well as with cluster and factor analyses it was revealed that positive correlation and the character of association between investigated psychometric parameters altered with age. Thus, it was established, that in age dynamics alongside with the increase of motor interhemispheric asymmetry there occurred an original transformation of respondents' emotional-personal characteristics, which could be considered as an indicator of left-hemispheric lateralization.

**Keywords:** psychophysiology, interhemispheric asymmetry, psychometrics, emotional-personal sphere, alexithymia, anxiety, depression

\*Address for correspondence: Scientific Research Institute of Spa Treatment and Physical Medicine; 41 Orbeli Brothers Str., 0028 Yerevan, Armenia Tel./Fax: (37410) 266 040, 274 940; E-mail: spamed@netsys.am