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### **Original Article**

## Validation of the Sasang Personality Questionnaire in high school students

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#### ABSTRACT

*Background*: The Sasang Personality Questionnaire (SPQ) is an objective measure of Yin–Yang temperament of Sasang typology with proven clinical and structural validity; however, it has not been validated in people younger than 20 years. The purpose of this study was to examine the biopsychological structure of the SPQ in high school students.

Methods: A total of 670 Korean high school students (365 boys and 305 girls) completed the SPQ, Junior version of Temperament and Character Inventory (JTCI), and weight and height measures. The correlation between the SPQ and JTCI subscales was investigated, and the differences of these subscales, body mass index, and Pondera Index between the high (30%), middle (40%), and low (30%) SPQ total score groups were examined with analysis of variance. The profile analysis was also performed to compare JTCI subscale profiles of the three SPQ total score groups.

Results: The SPQ total score significantly correlated positively with JTCI novelty seeking (r=0.548 and r=0.540) and negatively with JTCI harm avoidance (r=-0.393 and r=-0.395) in boys and girls, respectively. The JTCI novelty-seeking score is significantly higher in the high SPQ total score group ( $24.12 \pm 5.27$  and  $24.15 \pm 5.17$  for boys and girls, respectively) than in the low SPQ total score group ( $16.49 \pm 5.08$  and  $17.24 \pm 4.83$ , respectively), and the JTCI harm-avoidance score is significantly higher in the low SPQ total score group ( $16.49 \pm 5.08$  and  $17.24 \pm 4.83$ , respectively), and the JTCI harm-avoidance score is significantly higher in the low SPQ total score group ( $25.34 \pm 6.08$  and  $26.64 \pm 5.77$  for boys and girls, respectively) than in the high SPQ total score group ( $19.27 \pm 6.62$  and  $19.23 \pm 6.00$ , respectively). The JTCI subscale profiles for the three SPQ total score groups were significantly different for boys (degrees of freedom = 3.416, F = 292.16, p < 0.001) and girls (degrees of freedom = 3.4, F = 230.51, p < 0.001). There were no significant correlations or differences in body mass index and Pondera Index among the SPQ total score groups.

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*Conclusion*: The results showed that the biopsychological structure of the SPQ in adolescents is robust, similar to that in the adult population. The SPQ might be useful for the application of Sasang typology in pediatrics.

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#### 1. Introduction

The Sasang typology is a traditional Korean personalized medicine that divides people into four Sasang types (Tae-Yang, So-Yang, Tae-Eum, and So-Eum), and explains disease susceptibility and clinical response to medicinal herbs and acupuncture from the standpoint of their native pathophysiological basis.<sup>1,2</sup> As for the objective pathophysiological,<sup>3</sup> genetic,<sup>4</sup> and physical<sup>2</sup> characteristics of each Sasang type, there have been many studies on their fundamental mechanisms.<sup>5,6</sup> For example, a previous systematic review on Sasang typology suggested that the individuality of autonomic reactivity could explain the pathophysiological characteristics of the Tae-Eum and So-Eum types,<sup>7,8</sup> and the behavioral activation and behavioral inhibition systems could explain the psychobiological traits of the So-Yang and So-Eum types.<sup>9–11</sup>

The Sasang Personality Questionnaire (SPQ) is a recently developed self-report assessment tool for measuring temperament characteristics from the perspective of Sasang typology.<sup>12</sup> The SPQ consists of 14 items. Higher scores of the SPQ are associated with the So-Yang type and lower scores with the So-Eum type. The three subscale structures of the SPQ, such as SPQ-Behavior (SPQ-B; e.g., passive vs. active), SPQ-Cognition (SPQ-C; e.g., meticulous vs. easy going), and SPQ-Emotionality (SPQ-E; e.g., static vs. dynamic), were found to be robust with path analysis and factor analysis<sup>13</sup> repeatedly, and their acceptable clinical validity for distinguishing between the So-Eum, Tae-Eum, and So-Yang types was also reported.<sup>12,14,15</sup>

Studies have explored the validity of SPQ from different perspectives. Until now, psychological features have been examined with the Temperament and Character Inventory (TCI), NEO Personality Inventory,<sup>12</sup> and Myers-Briggs Type Indicator<sup>16</sup>; physical traits with the Ponderal Index (PI) and body mass index (BMI)<sup>8,14,17</sup>; health status with Short Form-12<sup>18</sup>; and Sasang type-specific clinical symptoms with the Sasang Digestive Function Inventory.<sup>3</sup> The psychobiological structure of SPQ was in accordance with previous clinical studies on Sasang typology.<sup>16</sup> That is, the SPQ total score correlates positively with TCI novelty seeking (NS) score and negatively with TCI harm-avoidance (HA) score, while the SPQ and physical traits, such as BMI or PI, were found to be independent.<sup>8</sup> The high (30%) and low (30%) SPQ score groups, corresponding the So-Yang and So-Eum Sasang types, showed high NS and HA scores, respectively.<sup>12,16</sup>

Although the SPQ has showed its clinical usefulness and adequate validity in adults in the age range of 20–70 years,<sup>17</sup> there has been a lack of validation studies in children or adolescents. Since adolescence is a period of dramatic growth into adulthood with vast biopsychosocial changes, adolescents need proper management and guide for the balanced development of the body and mind, which would be useful for integrative and person-centered approaches in pediatrics. However, there are no proper diagnostic tools for children or adolescents except for the SPQ. In contrast, Questionnaire for Sasang Constitution Classification and its variations,<sup>19–21</sup> Phonetic System for Sasang Constitution,<sup>22</sup> Sasang Constitution Questionnaire,<sup>23</sup> Sasang Constitutional Analytic Tool,<sup>24</sup> and other tools were developed and validated only for adults, which might cause limitations of clinical use in pediatrics.<sup>25</sup>

Therefore, the aim of the current study was to examine the psychobiological structure of the SPQ in Korean high school students with the Junior version of TCI (JTCI), BMI, and PI, which have been investigated in adults.<sup>12</sup> That is, the SPQ would correlate positively with JTCI NS and negatively with JTCI HA, and not correlate with physical characteristics of BMI and PI. The high SPQ score group would have higher JTCI NS and lower JTCI HA scores than the low SPQ score group, and the low SPQ score group would have higher JTCI HA and lower JTCI NS<sup>26</sup> scores than the high SPQ score group. This study would provide a foundation for the utilization of the SPQ as an objective clinical tool for screening and measuring Sasang types along with BMI, PI, and type-specific clinical symptoms in school-age boys and girls.

#### 2. Materials and methods

#### 2.1. Participants

A total of 670 students from various high schools in the Daegu metropolitan area completed the SPQ and JTCI, which measure the Sasang personality and Cloninger's temperament characteristics, respectively. The procedures were approved by the Internal Review Board of Kyungil University (2014/11/26-001). All participants provided written informed consent for this study.

#### 2.2. Methods

#### 2.2.1. Sasang Personality Questionnaire

The SPQ<sup>12</sup> is a 14-item self-report questionnaire measuring temperament characteristics of Sasang typology. The SPQ was shown to have acceptable clinical validity and reliable psychometric properties.<sup>12,14,16</sup> Each item is composed of two opposite words describing a specific personality trait, and the participants are asked to choose one of three responses on a three-point Likert scale (1 = delicate, 2 = average or middle, and 3 = tough).

The SPQ is based on the concepts of Yin-Yang and Confucianism, and has three subscales of behavioral (SPQ-B), Download English Version:

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