

# The Link Between Self-esteem, Locus of Control and Development of Childhood Psychopathology Measured in School Settings

## Relações entre autoconceito, lócus de controle e o desenvolvimento da psicopatologia infantil no cenário escolar

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### RESUMO

NOVAES JJ e col. Relações entre autoconceito, lócus de controle e o desenvolvimento da psicopatologia infantil no cenário escolar

**OBJETIVO:** As relações entre autoconceito medido pelo “Self-Perception Profile for Children” (SPPC), locus de controle medido pelo “Nowicki-Strickland Locus of Control Scale for Children” (NSLC) e psicopatologia medida pelo “Child Behavior Checklist” (CBCL) foram estudadas, com o objetivo de avaliar a resiliência e a vulnerabilidade das crianças ao desenvolvimento de psicopatologia. **MATERIAIS E MÉTODOS:** Foram incluídos no estudo 245 estudantes do ensino público da 4ª série do fundamental. Estes estudantes foram avaliados através do CBCL preenchido por seus pais e também completaram o SPPC e o NSLC como medidas de auto-avaliação. **RESULTADOS:** Correlações significativas foram encontradas entre os escores de auto-conceito do SPPC, os escores de locus de controle do NSLC e os escores de problemas de comportamento do CBCL. O SPPC foi correlacionado consistentemente com o CBCL e com o NSLC ( $p < 0,05$ ). Entretanto, o CBCL correlacionou-se significativamente apenas com o Fator 1 do NSLC para gênero feminino e com o Fator 2 independente do gênero ( $p < 0,05$ ). **CONCLUSÕES:** O modelo de associações identificado através desta investigação fornece suporte para o critério de validade relacionada para o SPPC, o NSLC e o CBCL. Esta pesquisa também suscita questões de interesse relativas aos mecanismos de proteção contra o desenvolvimento de psicopatologia infantil, tais como a auto-estima elevada e o locus de controle interno em programas de prevenção em saúde mental.

**UNITERMOS:** Criança. Autoconceito. Locus de controle. Psicopatologia.

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## ABSTRACT

NOVAES JJ et al. The links between self-esteem, locus of control and development of childhood psychopathology measured in school settings.

**OBJECTIVE:** The relationship between self-esteem (SE) as measured by the Self-Perception Profile for Children (SPPC), locus of control measured by the Nowicki-Strickland Locus of Control Scale for Children (NSLC) and psychopathology measured by the Child Behavior Checklist (CBCL) was studied with the objective of analyzing the resilience and vulnerability of children to develop psychopathology. **MATERIALS AND METHODS:** The group included 245 public elementary school fourth grade students. The parents assessed their children using the CBCL and the SPPC and the NSLC were completed to measure their SE. **RESULTS:** Significant correlations were noted between the SE scores of the SPPC, the NSLC locus of control and the CBCL and behavioral problem scores. The SPPC consistently correlated with CBCL and the NSLC ( $p < 0.05$ ). However, the CBCL correlated significantly only with the NSLC Factor I for the female gender and with the NSLC Factor 2 independent of gender ( $p < 0.05$ ). **CONCLUSIONS:** The pattern of associations identified by this investigation supports the criteria of validity related to the SPPC, NSLC and CBCL. This study also raises some interesting questions about the protective mechanisms against development of childhood psychopathology, such as high SE and internal locus of control in mental health prevention programs.

**KEYWORDS:** Child. Self-esteem. Locus of control. Psychopathology.

## INTRODUCTION

The evaluation of students with emotional and behavioral problems in public schools has become increasingly more important within the current educational system. Some practical reasons for carrying out this assessment include early identification of the risk of developing mental disturbances and the establishment of prevalence ratings for planning appropriate interventions for each educational system. Within the broad context of behavioral and emotional assessment, the specific structures of interest for these studies and self-esteem (SE) and locus of control and their correlation within child psychopathology.

### 1. Self-Esteem

Self-esteem has been defined in many different ways, nevertheless, for this report, SE refers to the individual's global vision of himself, and how he functions in specific areas and within his limits. KAZKIN 1988<sup>16</sup> among others mentions the relationships between depression and SE, confirming that reduced SE often brings on symptoms of depression. Low SE is also related to other problems such as anxiety, social repression and poor academic achievement.

Assessing the functional role of SE leads to the conclusion that it is linked to children's behavior and

emotional development. It can be considered within a structure in which the number of SE domains and that can be linked differently and increase with the individual's development. Therefore, when SE is assessed eight-year-old elementary school children are capable of distinguishing between different areas, HARTER 1990<sup>2</sup>. He also states that the child's SE is based on results of self-assessment, i.e., on his own self-importance.

### 2. Locus of Control

The Locus of Control was established based on ROTTER's, 1954<sup>12</sup> theory of social learning that involves concepts of stimulus-response (idea of reinforcement) and cognitive perspective (ideas of perception and expectation), with reinforcement recognized as a major determining factor in behavioral assessment. ROTTER 1954<sup>25</sup>, stresses the role of expectations for understanding whether a behavior will or will not be manifested. ROTTER 1966<sup>24</sup>, noted that the effect of reinforcement is not a simple step in the process, but "it may or may not depend on the person's perception of the causal relationship between his own behavior and the reward".

If the person does not establish this cause and effect connection the expectation that his initiative will determine desired results will be minimal or non-existent. This can lead to inhibition of this expectation, so that external control

will predominate in these individuals. On the other hand, when the individual perceives that the event depends on his own behavior and with its own characteristics, this is termed belief in individual control, i.e., the subject establishes a cause and effect relationship between behavior and result. It is thought that the perceived Locus of Control is an important personality variable and in its multidimensional structure, is a specific predictor of behavior SANGER & WALKER, 1972<sup>27</sup>; MIRELS, 1970<sup>18</sup>.

### 3. Childhood Psychopathology

According to KAPLAN, 1999<sup>15</sup>, clinically significant child psychopathology can be defined as a disturbance in one of more of the following areas: manifested behavior, emotional states, interpersonal relationships and cognitive function. For this reason, these abnormalities must be so severe and long lasting as to cause functional impairment. Current studies point out that to recognize psychopathological cases one should focus not only on the presence or absence of a symptom, but also on its effect on the child's life and of his family, whether or not causing an effect on a psychosocial of SE impairment on the child. This data is presently considered essential in defining emotional and behavioral disturbances in children and adolescents.

Various studies show that emotionally disturbed children present more externalized scores for locus of control (perception of external control), as well as lower scores for SE (low SE), NUNN & PARISH, 1992<sup>23</sup>, SHEERIN, MACLEOD & KUSUMAKAR, 1995<sup>28</sup>, compared to the corresponding normal population that presents more internalized scores for locus of control and higher scores for SE. The literature has confirmed the important protecting action offered by an individual's well-established feeling of his own worth as a person (high SE) together with the assurance and conviction of his own ability to deal with changes or beliefs in his own effectiveness in controlling what happens to himself, (locus of internal control). The latter provides an increase in resilience or reduces the vulnerability to development of psychopathologies in the face of stressful events RUTTER, 1987<sup>26</sup>.

Several studies have also reported a significant correlation between the structures of locus of control and SE. Research indicates that in the presence of high SE scores

of internal control are also higher and higher scores of external control are accompanied by lower scores of SE, MULLIS & MULLIS, 1997<sup>20</sup>; MADONA et al., 1990<sup>17</sup>. The objective of this study was to correlate the structures of SE and locus of control with child psychopathology, besides submitting new confirmation of the validity of the Brazilian versions of the scales of Self Perception Profile for Children (SPPC), HARTER, 1985<sup>13</sup>, OF THE Norwicki-Strickland Locus of Control for Children (NSLC), NOWICK & STRICKLAND, 1973<sup>22</sup>, and the Child Behavior Checklist (CBCL), ACHENBACH, 1991<sup>2</sup>, which analyzes SE, locus of control and child psychopathology respectively.

## MATERIAL AND METHODS

The study population included all the fourth grade students of Integrated Teaching and Training Center (CIEP - Centro Integrado de Ensino Profissionalizante) Zanaga and CIEP Cidade Jardim schools that meet the inclusion and exclusion standards. Based on the HOLLINGSHEAD 1975<sup>14</sup> occupational scale, these students belong to a low social economic level. The sample size corresponded to about 8% of the referential population, 245 students selected of 249 (2 not included and 2 excluded). This number of students represents about 8% of the total of 3053 students that were enrolled in the fourth grade public schools in the city of Americana, Sao Paulo, Brazil in 2003. Student's ages ranged from 9 to 12 years with 121 females and 124 males.

### 1. Inclusion criteria

The students who agreed to participate were examined to see whether they met the pre-established criteria. They were enrolled in the fourth grade of the Americana city schools, CIEP Zanaga and CIEP Cidade Jardim in 2003 and were within 9 to 12 years of age. Two male students were excluded because they were 14 and 15 years old respectively.

### 2. Exclusion criteria

Exclusion from the study included moderate to severe intellectual deficit, deafness or blindness, prior or present psychotherapy, and psychiatric or weight loss treatment but no student met these criteria.

Another reason for exclusion was failure to sign

Informed Consent form properly filled out and signed by the parents of responsible adult and those who refused to participate spontaneously and of their own free will. Two students were excluded both because their parents refused to participate of their own free will (1 male and 1 female). Exclusion rate =  $245/247 = 0.9909$ .

### 3. Instruments

#### The Self Perception Profile for Children (SPPC)

The SPPC is a self-reported form used to measure SE of perceived ability in children, differing from the other scales measuring SE or self-concept, because it measures the child's sense of competence through various specific domains such as his perception of general self-value instead of a vision of ability perceived as a single concept. HARTER, 1985<sup>13</sup>, determined a specific structure for the SPPC that includes six sub-scales: Scholastic Competence, Social Acceptance, Athletic Competence, Physical Appearance, Behavior and Global SE that takes into account the extent in which a child likes himself as a person.

For the trans-cultural validation of a Brazilian version of HARTER'S, 1985<sup>13</sup> SE scale NOVAES, 2003<sup>21</sup> utilized, an adaptation for trans-cultural textual and contextual correspondence, obtaining equivalence in five areas: semantics, content, technique, criterion and concept. The results permitted us to conclude that the Brazilian version of HARTER'S 1985<sup>13</sup> SE scale presented good validity and textual and contextual reciprocity, due to its simple vocabulary and its formulation of questions, simplifying reading and understanding for students with limited vocabulary and low educational status. The Brazilian version use was authorized by NOVAES.

#### Children's Nowicki-Strickland Locus of Control Scales (NSLC)

The NSLC has been mentioned in several studies as permitting excellent diagnosis of behavior, SANGER & ALKER, 1972<sup>27</sup>; MIRELS, 1970<sup>18</sup>. Nowicki & Strickland developed the NSLC<sup>14</sup> and verified that the answers became more internal with increasing SE. Validation of the NSLC verified that in Factor 1 the items concern a general feeling of capacity for controlling or directing things, in Factor 2 the items referred to realization and resilience and in Factor 3 luck appeared as a general component for different ages. For the trans-

cultural validation of the Brazilian scale of the Nowicki-Strickland Locus of Control, NOVAES 2003<sup>21</sup> utilized an adapted model for trans-cultural textual and contextual correspondence, and obtained equivalence in five areas: semantics, content, technique, criteria and concept. The Brazilian version of the Locus of Control Scale exhibited 25 items with significant factorial load for the age range studied, compared to 19 items in the original scale for the same age level. The Brazilian version use was authorized by NOVAES, RIVOREDO & GUIMARÃES.

#### Child Behavior Checklist (CBCL)

The CBCL is a questionnaire that analyzes psychosocial function through social competence and behavior problem profiles in individuals from four to eighteen years, based on information provided by the parents. The CBCL supplies broad coverage of psychopathologic symptoms found in childhood, and is a tool capable of differentiating individuals at low risk and those at high risk for developing psychopathology, GOODMAN & SCOTT, 1999<sup>11</sup>, BERG, LUCAS & MCGUIRE 1992<sup>3</sup>. The validity of the criteria was demonstrated by the degree with which each scale of the social and behavioral profile was capable of identifying or not identifying such cases, ACHENBACH, 1991<sup>2</sup>; FOMBONNE, 1989<sup>10</sup>. BORDIN et al. 1995<sup>4</sup> translated the CBCL into Portuguese adapting it to the Brazilian culture, keeping the semantic equivalence and the content of the original questionnaire. In addition to maintaining a strong similarity with ACHENBACH's, 1991<sup>2</sup> studies, the Brazilian version attained a sensibility of 80% and a specificity of 67% and also a good applicability in a population with low socio-economic level, confirming its suitability for this study. The Brazilian version use was authorized by BORDIN.

### 4. Procedures

A prior meeting was held with the Secretary of Education and culture of the City of Americana, (Sao Paulo state, Brazil) and teachers were trained for applying the instruments. The students filled out the SPPC and NSLC questionnaires in groups corresponding in size and number of students in each class. The questionnaires were administered in two consecutive Art Education classes. The parents or responsible adults were invited to their child's

school to fill out the CBCL, within a maximum interval of 15 days, in February of 2003.

In order to analyze the pattern of association between SE, locus of control and child psychopathology Pearson's<sup>30</sup> linear correlation was utilized among the items of the six raw sub-scales of SE (SPPC), the three factors of locus of control (NSLC) and the sub-scale of behavioral problems of the CBCL total Behavior Problem Scale.

## RESULTS

Figure 1 shows the correlation ( $r$ ) between the SPPC and the NSLC scores with their minimal levels of significance ( $p$ ) and the dispersal by type among the scores of these two scales by gender. All the correlations found are significant ( $p < 0.05$ ). The higher scores of SPPC (high SE) correspond to higher scores of NSLC (internal control) and inversely the lower SPPC scores (low SE) correspond to lower NSLC scores (external control).

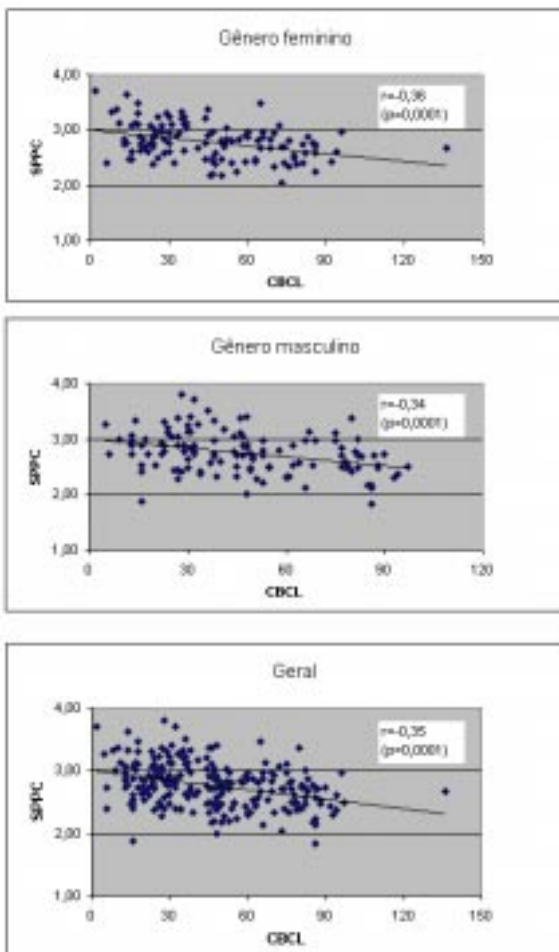


FIGURE 1. CORRELATION BETWEEN SPPC AND CBCL.

Fig. 2 shows the correlation ( $r$ ) between SPPC and CBCL raw scores with their minimal levels of significance ( $p$ ) and dispersion by type among the scores of these two scales. All the correlations found are significant ( $p < 0.05$ ). The higher SPPC scores (elevated SE) correspond to lower CBCL scores and inversely, the lower SPPC scores (low SE) correspond to higher CBCL scores.

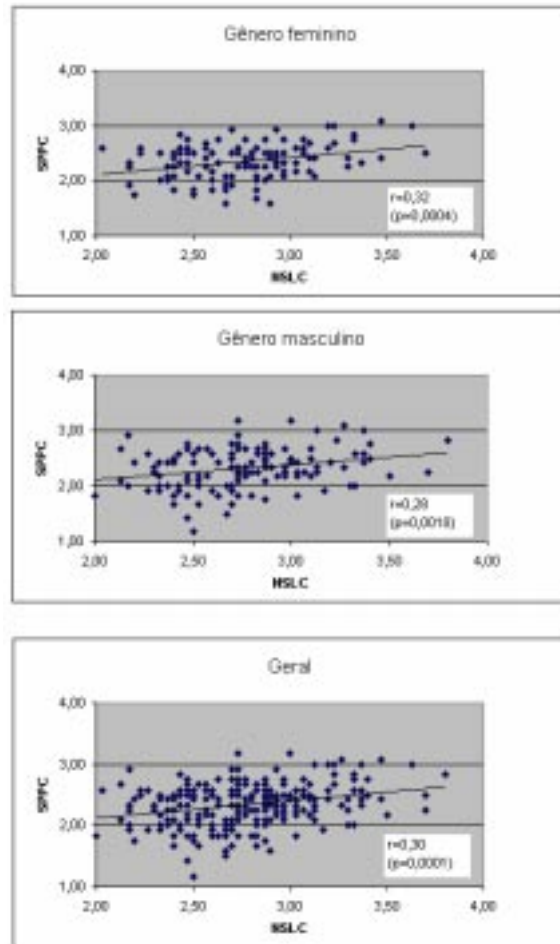


FIGURE 2. CORRELATION BETWEEN SPPC AND NSLC .

Table 1 displays the correlations of the SPPC sub-scales with the total of the raw CBCL sub-scale of Behavioral Problems Scale. The SPPC sub-scales, Scholastic Competence, Physical Appearance and Behavior show significant correlation with the CBCL, for the both genders. This verified that higher scores in

**TABLE 1. CORRELATION BETWEEN CBCL AND SPPC SUB-SCALES.**


r = PEARSON linear correlation  
 p = minimal value or significance of correlation under Ho: r = 0.  
 A bold **p** indicates a significant correlation at the level of probability 5%.

Table 2 displays the correlations between NSLC scores of Factors 1, 2, and 3 with the total scores of the CBCL sub-scale of behavioral problems. The scores were calculated taking into account factor loads found in the validation of the Brazilian version of NSLC. For NSLC Factor 1 a significant negative correlation with CBCL was noted for the female gender ( $r = -0.24, p = 0.01$ ). Higher score for belief in personal ability and realization (internal control) correspond to lower CBCL scores for females. The NSLC Factor 2 indicated a significant negative correlation with the CBCL independently of gender ( $r = -0.12, p = 0.05$ ). Therefore, independently of gender, while the belief in social success increases (internal control), the lower the CBCL scores were. Regarding Factor 3, significant correlations were not noted for CBCL.

**TABLE 2. CORRELATION BETWEEN CBCL AND THE THREE NSLC FACTORS.**


r = PEARSON linear correlation.  
 p = minimum level of significance of correlation under Ho: r = 0.  
 A bold **p** indicates significant correlations at the level of probability 5%.

## DISCUSSION

Correlation between the SPPC and CBCL scale was negative and significant, with observation of higher SPPC scores (elevates SE) in children with lower scores for behavioral problems or low CBCL scores and inversely, lower SPPC scores (low SE) in children with higher CBCL scores. Taking into account the SPPC sub-scales of competence or adequacies, the sub-scales of Behavior, Physical Appearance and Scholastic Competence indicated correlation ( $p < 0.05$ ) with child psychopathology in both genders. The Social Acceptance sub-scale merely showed a correlation independent of gender. The sub-scale of Athletic Competence did not indicate a significant correlation with CBCL ( $p < 0.05$ ).

Similarly, SHEERIN, MACLEOD & KUSUMAR, 1995<sup>28</sup>, obtained a more significant correlation between SPPC and CBCL ( $p < 0.05$ ) for seven to sixteen year old children, in the same three SPPC sub-scales as in this study: self-reported low Scholastic Competence on SPPC correlated with attention span deficit and internalization problems on CBCL, self-reported inadequacies in Physical Appearance on SPPC correlated with problems of externalization and inadequate Behavior on CBCL and self-reported improper behavior on SPPC correlated with problems of externalization and aggressive behavior on CBCL.

Several studies indicate that SE is directly related to psychopathology, NUNN & PARISH, 1992<sup>23</sup>; SHEERIN et al., 1995<sup>28</sup>. Since the SPPC Global SE sub-scale directly indicates SE, the correlations between the specific SPPC sub-scales with the Global SE sub-scale indicate the degree of influence of these values and abilities on SE and indirectly on psycho-pathology. Hence, these correlations demonstrate the importance of these domains on psychopathologic development or on psychological function in these children. Both for HARTER 1985<sup>13</sup>, and for SHEERIN et al. 1995<sup>28</sup>, Physical Appearance was the only specific sub-scale indicating a correlation with the Global SE sub-scale. In all the school grades studied, NOVAES 2003<sup>21</sup>, found a significant correlation between Physical Appearance and Global SE between Scholastic Competence and Global SE except for the sixth grade and between Behavior and Global SE except for the fourth grade. No significant correlation was found between Athletic Competence and Global SE

for the fourth grade. These findings are consistent with the results obtained and provide support for this study.

A positive and significant correlation ( $p < 0.05$ ) was observed between the versions of the SPPC and NSLC scales, in the sense that the higher SE scores (SPPC) correspond to higher scores for internal control (NSLC) and inversely, lower scores SE (SPPC) correspond to higher scores for external control (NSLC). Several studies report a significant correlation between locus of control and SE, also supporting the findings in this study, MULLIS & MULLIS 1997<sup>20</sup>, MADONA et al. 1990<sup>17</sup>. In the validation study of the NSLC and SPPC scales for Brazil, a significant correlation ( $p < 0.05$ ) was also encountered between these scales so that the SPPC sub-scales Scholastic Competence, Behavioral, Physical Appearance and Global SE, correlated significantly with the NSLC scale in all the school grades studied, with the exception of Physical Appearance in the fifth grade, NOVAES, 2003<sup>21</sup>.

Considering the total NSLC scores and the total sub-scale scores of the CBCL Total Behavior problem scale, this study did not demonstrate a significant correlation between higher scores for internal control (NSLC) and lower scores for behavioral problems (CBCL) or elevated scores for external control (NSLC) with elevated scores for behavioral problems (CBCL). On the other hand, evaluating the loaded items (significant factorial load) for the three factors constituting the NSLC, we verified that for Factor 1 the female gender presented a correlation with the CBCL ( $p = 0.01$ ). A significant correlation for NSLC Factor 2 was observed independent of gender ( $p = 0.05$ ). For the NSLC Factor 3 no significant correlation with CBCL was noted. On the other hand, Factor 3 presents only four loaded items compared to a total of 25 in the Brazilian version of NSLC. Considering that Factor 1 and Factor 2 contain 21 loaded items compared to a total of 25 loaded items of the scale, we can consider that a moderate correlation occurred in this study between the NSLC and CBCL scales.

The correlation between NSLC and CBCL in this study was restricted to the age range evaluated (9-12 years). Despite this, several studies report that the multidimensional locus of control scales are more predictive for analysis of behavior studies that present specific objectives or in intervention studies, than in generalized evaluation of internal and external control in a population (i.e., COOMBS

& SCHROEDER, 1987<sup>8</sup>, ABBOTT 1984<sup>1</sup>). The correlation between the Brazilian versions of the NSLC and CBCL scales were more significant than those observed in some correlation studies of the original NSLC and CBCL scales, ELLIOTT 1996<sup>9</sup>; MOFFATT, KATO & PLESS 1987<sup>19</sup>. This probably occurred because the Brazilian version of the NSLC was not dichotomized as in the original version (the answer to the items is a choice between yes and no), when the statistical unreliability of the factorial analysis of the dichotomized scales is verified (COMREY, 1978<sup>6</sup>). Additionally, the original NSLC scale contains a defect that is often encountered in psychometric scales that the Brazilian version does not present, that is, the presence of complex negative forms in some items leading to induction of answers, SHERMAN 1976<sup>29</sup>. Another factor that probably contributes to the more significant results obtained in this study than in others, perhaps occurs from the existence of a greater number of items with significant factorial load in the Brazilian NSLC version (25 items) compared to the original NSLC version (19 items) for the age range studied.

The above studies were developed in western countries, considering this cultural socio-economic context, the specific domains of SE that correlate more with child psychopathology and with locus of control were: Scholastic Competence, Physical Appearance and Behavior. According to COOLEY 1902<sup>7</sup>, in which the individual's abilities are constructed by his decisive image in the social mirror, incorporating other significant opinions as part of the "self", we can state that a lesser importance exist in this context of SE domains, Social Acceptance and Athletic Competence.

Considering that the age range was restricted to represent the population studied (9-12 years), and the small geographical area involved (city of Americana, Sao Paulo state), generalization of these results is limited. In future, similar studies should include a larger age range and distinct geographical areas.

Although the concept of locus of control, SE, and child psychopathology are individually unique, they show a considerable degree of common variation. This study attempted to demonstrate that the positive self-perception of Behavior, Scholastic Competence, Physical Appearance and high SE and a positive belief in personal ability in relation and social success (perception of internal control) results in lower psychopathology rate. Thus, the presence

of a protective mechanism related to high SE and perception of internal control is evident, providing additional support for the concept and correlation of the Brazilian SPPC versions of NSLC and CBCL, demonstrating their usefulness in research and other clinical applications.

The professionals involved in application of SE scales of self-evaluation of personality traits (SPPC and NSLC) should consider the possibility of high development of psychopathology indices in children with low SE scores or in locus of external control. Therefore, these two domains should be utilized in investigations of mental health or epidemiological studies, instead of merely considering the psychopathological analysis. SE and locus of control provide greater evidence for effectivity of the results obtained, demonstrating the increase or decrease of resilience or vulnerability of individuals for development of psychopathology. Thus these instruments are relevant tools for evaluation of results whose objective is to provide preventional effects in determined populations.

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**Note:** This study is part of the PhD. Thesis of the lead author (NOVAES JJ) and was presented and approved by the Children and Adolescent Health Department, Campinas University Medical School (UNICAMP). Oriented by the second author and coordinated by the third one.

