



THE EXPLANATORY VALUE OF THE FACTORS INCLUDED IN A COMPLEX MODEL OF PREDICTING ADOLESCENTS' AND PRE-ADOLESCENTS' BEHAVIORAL DISORDERS

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Abstract

The study proposes the identification of the factors with predictive value for the development of a behavioural disorder and a set of antisocial behaviours included in the concept of juvenile delinquency. There were 231 teenagers and pre-teenager with ages between 11 and 18 years old. After the identification of the predictive factors for the development of behaviour disorder, a screening instrument for the teenagers prone to development of delinquent behaviours was realized in order to detect from time the juvenile delinquency.

Keywords: delinquency, conduct disorder, personality, psychopathology, prevention

Introduction

The juvenile delinquency concept has a juridical nature and consequently will be the first one we shall try to explore. From Brandt's perspective „...the *juvenile delinquent* term refers to any teenager who breaks

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the law” (Brandt, 2006, p. 2). Juvenile delinquency is defined by Siegel and Welsh (2011, p. 10) as being „the participation to an illegal behaviour from an underage person”. Shoemaker (2009) considers that „ ...the definition of delinquency involves the following: (1) any offence which is considered a crime in the legal codes of a community or state and which is committed by a young person under the major age (usually 18 years old); and (2) any offence included in the juvenile codes and done by a person under major age” (Shoemaker, 2009, pp. 4-5).

The psychological equivalent of the delinquency concept is the *behaviour disorder*. This concept was introduced in order to designate „any deviation from the psycho-moral norms, including neurological-somatic manifestations, character, psychosomatic and psychotic” (Marica, 2007, p. 20). In present, the behaviour disorder appears both in *Diagnostic and Statistical Manual of Mental Disorders* at American Psychiatric Association (1994), and in ICD 10 (1997, *The ICD-10 Classification of Mental and Behavioural Disorders: Clinical Descriptions and Diagnostic Guidelines*). For the first time in 1966, it was proposed the introduction of „Behaviour disorders” as a separate diagnosis category in DSM IV-TR (APA, 1994), and the taxonomy ICD (WHO, 1997) was introduced much later (Dobrescu, 2010).

Behaviour disorder becomes important by the profound perturbing effects on those affected and generally on the society. The young people who present behaviour disorders are responsible for more than half of the delinquency and violence acts, with disturbances maintained also during the adult period and which affect their social climate.

Objectives

The general objective of this study is the identification of the factors with predictive values for the development of behaviour disorder and consequently of some antisocial behaviour included in the juvenile delinquency concept. The identification of these factors shall help building a screening instrument for the teenagers prone to development of delinquent behaviours.

Within this study we follow:

1. The comparison of delinquent and non-delinquent teenagers and pre-teenagers from the perspective of hostility, aggression, self-esteem and the type of provenience family.

2. The identification of the factors with predictive values for a delinquent behaviour.
3. The development of a screening instrument for identifying the pre-teenagers having a high risk for developing future delinquent behaviours.

Method

Participants

During the implementation of the study took part 231 teenagers and pre-teenagers aged between 11 and 18 years old ($m=14,17$; $SD=1,41$) out of which 119 (51,51%) were girls and 112 (48,48%) were boys.

The contacted teenagers were included in the study by the means of five schools from Arad, both in urban and rural areas: Gymnasium School „Aron Cotrus” Arad, Middle School Dud, Middle School Tarnova, Middle School Chier and Middle School Sagu. They constituted a control group ($N=130$) of participants without delinquent behaviour antecedents. In the study there were also included 101 teenagers and pre-teenagers coming from the General Social Assistance Direction and Child Protection from Arad, from Oituz Placement Centre - Evaluation and Child Care Service for the Children who do Penal Dees but are not penal charged. The last ones constituted the group of participants having at least one delinquent behaviour. In the case of each participant included in the study the approval of one parent or legal representative was taken.

The instruments used

The Achenbach System of Empirically Based Assessment (ASEBA) realized by Thomas M. Achenbach and Leslie Rescorla, includes a set of questionnaires which evaluate the competences, the adaptive functioning and the problems of the children and teenagers (Achenbach, Becker, Döpfner, Heiervang, Roessner, Steinhausen, & Rothenberger, 2008). It was also adapted on Romanian population presenting a factorial structure and a similar validity with those of adaptations from other countries (Ivanova, Achenbach, Rescorla, Dumenci, Almqvist, Bathiche et al., 2007).

ASEBA evaluates the behaviour of children and teenagers between 6-18 years old and is made out of three questionnaires: a behavioural assessment questionnaire for children addressed to parents (CBCL 6-18), a self-assessment

questionnaire (YSR) and a behavioural assessment questionnaire for children addressed for teachers (TRF). Based on ASEBA scales we can evaluate the adaptive functioning of children aged between 6 and 18 years old and the following problems category: Anxiety / Depression (I), Loneliness / Depression (II), Somatic complaints (III), Social relationship issues (IV), Judgment issues (V), Attention issues (VI), Inattention, Hyperactivity / Impulsivity, Breaking rule behaviour (VII), Aggressive behaviour (VIII). In the terms of DSM criteria (APA, 1994) these problems cover the following disorders: affective disorders, anxious disorders, somatic disorders, disorder by attention deficit/hyperactivity, oppositional-defiant disorder, behaviour disorders.

In order to measure the fidelity of ASEBA scales, there were calculated Pearson test-retest correlation coefficients and the internal consistency coefficients. For most of the scales the fidelity was adequate, Pearson correlation coefficients were situated between .80-.90. In the study of Achenbach and collaborators (2008) it is underlined a good fidelity of the scales both regarding the internal consistency (alpha Cronbach coefficients) and the long and short term stability.

Content validity of the scales measures the competences, the adaptedness and the issues of the children and teenagers and is supported by the fact that all items have significantly discriminated ($p < .01$) between the children from the clinical sample and those from the non-clinical sample.

The construct validity of the scales was proved by many methods such as the dates regarding the significant associations with the corresponding scales and DSM IV-TR criteria, by inter-cultural replications of ASEBA syndromes and by genetic and biochemical data.

DECAS Personality Inventory was developed and validated on the Romanian population in order to evaluate the five dimensions of personality included in the Big-Five model proposed by Costa and McCrae (*apud* Sava, 2008). Consequently, the inventory measures the five dimensions of the personality: Opening (D), Extraversion (E), Scrupulosity (C), Agreeability (A) and Emotional Stability (S). Each dimension is evaluated by the answer to 18 items. DECAS also has three scales for protocol validity: Social desirability (SD), Chance answers (RD) and Approval (AP).

Validity studies indicate a good internal consistency, alpha Cronbach coefficients having values between .66 and .81. Also, the correlations with the

scales of other personality inventories make evident a good concurrent validity (Sava, 2008).

The Aggression Questionnaire (AQ; Buss & Perry, 1992) includes 29 items which are evaluated on a Likert scale with 5 points, by which it evaluates the agreement with the affirmations of the items. The scale includes four factors: physical aggression, verbal aggression, fury and hostility.

Internal consistency coefficients (alpha Cronbach .89) and the stability coefficients ($r=.80$), make evident a good fidelity if the instrument (Buss & Perry, 1992). Correlation studies with other measurements of aggression make evident a good validity of the instrument (Buss & Perry, 1992; Harris, 1997).

Self-Esteem Scale (SES; Rosenberg, 1965) allows a global, one-dimensional assessment of self-esteem. The scale contains 10 items evaluated on a Likert scale with 4 degrees. After reversing the scores of the negative items, the results obtained are added up to obtain a global score for self-esteem. The higher the score is, the higher the self-esteem is. Internal consistency coefficient of .71 highlights a good fidelity of the scale (Ang, Neubronner, Oh, & Leong, 2006).

Procedure

The clinical interview and the filling in of the questionnaire took part after obtaining the consent of the parents or of the representative of the Oituz Placement Center. After running through all the items of the questionnaires, the participants were asked if they still want to add other things which were not mentioned along the discussion.

The information received was confidential. In order to have a better accuracy we correlated the quantitative and the qualitative models with the information obtained from the specialty personnel and from the file of the participant. The first filled in questionnaire was DECAS, after which there were filled in YSR, SES and AQ. This order was respected for all the participants.

Presentation and interpretation of the results

By the corroboration of the information about the participants and the analysis of their results for each DECAS dimensions, at the scales of ASEBA, AQ and SES assessment system, the quantitative analysis of the data was realized.

The comparison of aggression, self-esteem and the provenience family according the presence or absence of delinquent behaviour

During the first phase we compared the results obtained by the participants from the two groups (with delinquent behaviour and without delinquent behaviour) for each of the AQ scales (Buss & Perry, 1992). The descriptive results obtained are synthetized for each group separately (Table 1).

Table 1. The descriptive results regarding the aggression for participants without delinquent behaviour

| | Physical Aggression | Verbal Aggression | Anger | Hostility |
|--------------------|---------------------|-------------------|-------|-----------|
| N | 130 | 130 | 130 | 130 |
| Mean | 14,90 | 14,10 | 16,90 | 19,06 |
| Standard Deviation | 6,68 | 4,20 | 5,64 | 6,71 |
| Minimum | 9 | 7 | 7 | 10 |
| Maximum | 33 | 22 | 27 | 40 |

After analysing the descriptive results obtained by the participants who manifested previous delinquent behaviour and those who did not have delinquent behaviour, we noticed that the level of aggression is higher in the case of the first group as compared to the control group (see Table 2).

Table 2. The descriptive results regarding the aggression for the participants with delinquent behaviour

| | Physical Aggression | Verbal Aggression | Anger | Hostility |
|--------------------|---------------------|-------------------|-------|-----------|
| N | 101 | 101 | 101 | 101 |
| Mean | 18,80 | 16,50 | 19,20 | 22,70 |
| Standard Deviation | 8,09 | 3,80 | 5,68 | 6,74 |
| Minimum | 9 | 9 | 11 | 10 |
| Maximum | 41 | 23 | 28 | 38 |

The differences noticed between the two groups are illustrated in Figure 1, which presents the average values for each dimension. Consequently, in the case of physical aggression, the participants from the experimental group have an increased average of scores ($m=18,8$) while the participants from the control group obtained a lower level of this aggression form ($m=14,9$). The same type of differences is also noticed for the other dimensions.

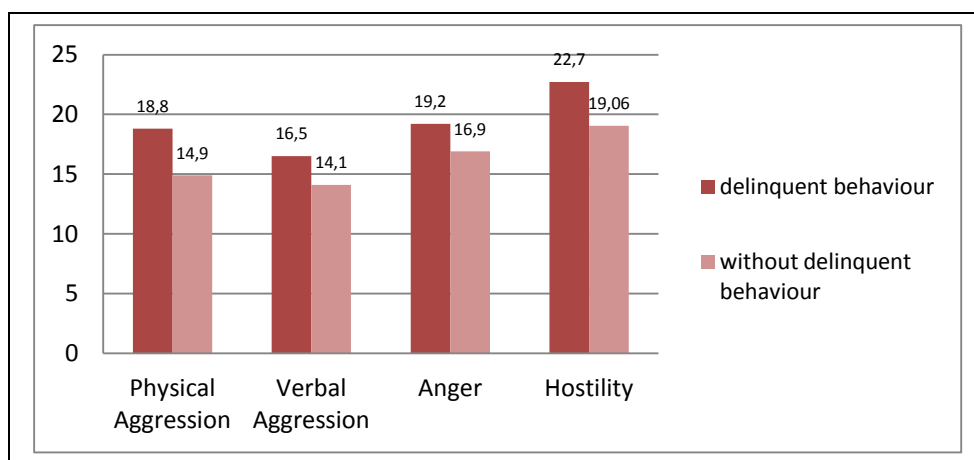


Figure 1. The comparison of the average dimensions for aggression dimensions in the case of the two groups included in the study

The results of inferential arrangements, realised with the non-parametric test of statistical significance U Mann-Whitney, presented in Table 3 indicates significant differences between the experimental group and the control group for all the dimensions of aggression. This means that the participants with delinquent behaviour are significantly more physically aggressive ($U=542,5$; $p<.001$) and verbally ($U=499,5$; $p<.001$), more hostile ($U=506,5$; $p<.001$) and that they have a higher fury level ($U=516$; $p<.001$) as compared to the participants without previous delinquent behaviour.

Table 3. The results of inferential results to the control and experimental group

| | Physical Aggression | Verbal Aggression | Anger | Hostility |
|----------------|---------------------|-------------------|--------|-----------|
| U Mann-Whitney | 542,50 | 499,50 | 506,50 | 516 |
| p | ,001 | ,001 | ,001 | ,001 |

For a better accuracy we also compared the level of self-esteem for the two groups. The participants with a delinquent behaviour have lower self-esteem level ($m=13,67$) as compared to the participants with no delinquent behaviour ($m=27,51$). The differences are statistically significant ($U=527$; $p<.001$); consequently, teenagers and pre-teenagers with no delinquent behaviour have a significantly higher level of self-esteem as compared to those who had delinquent behaviours (see Figure 2).

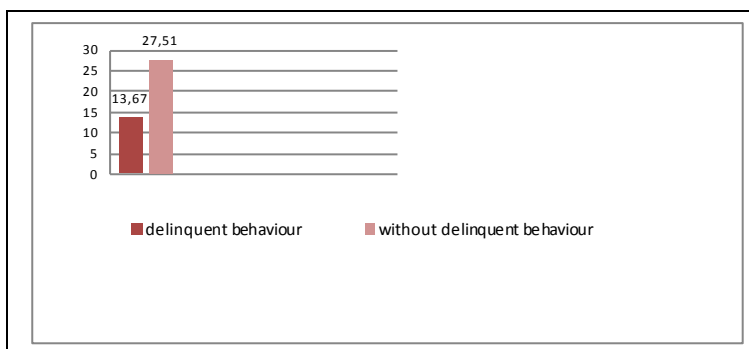


Figure 2. Comparison of average values for self-esteem in the case of the two groups included in the study

Another aspect taken into consideration refers to the family type: organised or disorganised. Theoretically it is considered that the rate of the delinquency is higher in the case of disorganised families. Consequently, we wanted to investigate how many participants within the study come from disorganised families (mono-parental, divorced, separated etc.).

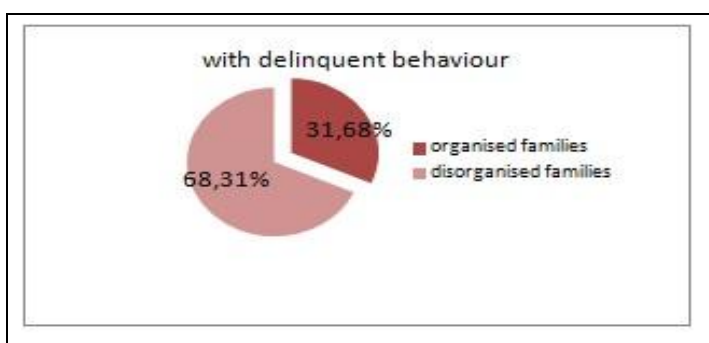


Figure 3. Distribution of family type in the case of the participants with delinquent behaviour

In the case of the participants with delinquent behaviour, out of 101 teenagers and pre-teenagers, a percent of 68,31% come from disorganised families and only 31,68% come from organised families (Figure 3). Statistically, the differences of frequencies distribution are significant $\chi^2=13,55$ ($p<.001$). Consequently, significantly more young persons with delinquent behaviour come rather from disorganised families than organised ones.

The comparison was realised also in the case of the participants without delinquent behaviour (Figure 4). Consequently, a larger percent of teenagers and pre-teenagers come from organised families (73,84%). The percent of the participants without delinquent behaviour who come from disorganized families is significantly lower ($\chi^2=29,56$; $p<.001$), as compared to those coming from disorganised families.

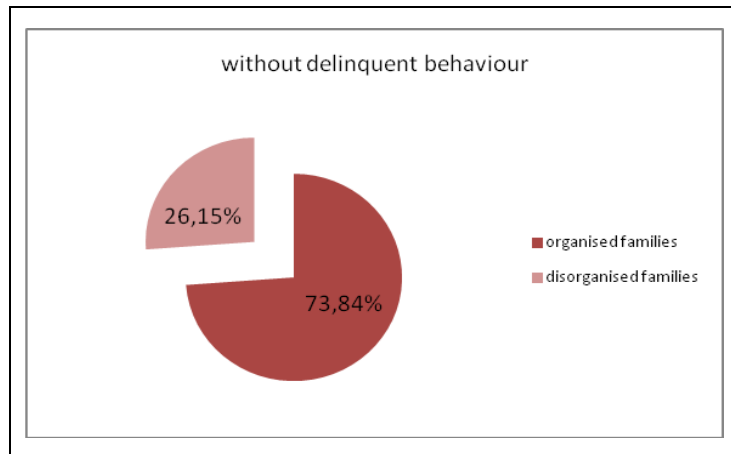


Figure 4. Distribution of family type in the case of participants without delinquent behaviour

Finally we tested if there is an interaction effect of the interaction between the presence or the absence of delinquent behaviour and family type. The values $\chi^2=40,89$; $p<.001$ show us that the frequency distributions are different both according to family type and according to the presence of delinquent behaviour.

During the last phase of the study we tested by multiple linear regression analysis, which of the factors included in the study have predictive value for the apparition of behaviour disorders in the case of teenagers and pre-teenagers from Romanian cultural context.

Multiple regression analysis regarding predictive factors for behaviour disorders and delinquent behaviour

In order to identify the factors with predictive value for the intensity of behaviour disorders we realised a multiple linear regression analysis, having as a dependent variable the score obtained at ASEBA for behaviour disorder.

The value $R^2=.873$, indicates that the model analysed by regression explains 87,3% out of the variation of results. ANOVA test is $F=103,671$; $p<.001$ which means that the model obtained by regression analysis is efficient.

In Table 4 we can identify the personality features and the psychopathological disorders which are statistically significant for predicting the behaviour disorder and implicitly the delinquent behaviour.

Table 4. Regression coefficients regarding the predictive factors for behaviour disorders and delinquent behaviour

| | Unstandardized Coefficients | | Standardized Coefficients | t | p |
|--------------------------|-----------------------------|----------|---------------------------|--------|------|
| | B | Std. Er. | Beta | | |
| (Constant) | 94,021 | 5,102 | | 16,760 | .001 |
| Opening | ,005 | ,008 | ,047 | ,263 | .29 |
| Extraversion | ,110 | ,221 | ,156 | ,482 | .67 |
| Conscientiousness | -,548 | ,174 | -,541 | -2,677 | .008 |
| Agreeableness | -,031 | ,024 | -,315 | -,842 | .35 |
| Emotional stability | -,532 | ,167 | -,468 | -2,749 | .01 |
| Anxiety-depression | -,255 | ,373 | -,157 | -,644 | .54 |
| Loneliness-depression | -,192 | ,378 | -,091 | -,523 | .62 |
| Somatic complaints | ,217 | ,322 | ,098 | ,671 | .53 |
| Social problems | ,232 | ,107 | ,125 | 2,162 | .03 |
| Thinking problems | ,128 | ,051 | ,076 | 2,369 | .01 |
| Attention problems | ,030 | ,007 | ,018 | ,415 | .69 |
| Behavior rules violation | 1,437 | ,354 | 1,052 | 3,731 | .001 |
| Aggressive behavior | 1,102 | ,324 | 1,077 | 3,001 | .001 |
| Physical Aggression | ,739 | ,245 | 0,701 | 2,989 | .001 |
| Verbal Aggression | -,194 | ,382 | -,094 | -,507 | .61 |
| Self-Esteem | -,675 | ,247 | -0,545 | 2,263 | .01 |
| Family Type | 1,028 | ,014 | ,095 | 2,763 | .003 |
| Subjects like | ,007 | ,010 | ,015 | ,663 | .26 |
| Backgrounds | ,019 | ,021 | ,008 | ,342 | .65 |
| School performance | 1,072 | ,342 | 1,065 | 2,978 | .001 |

The results obtained for the sample included in the study support the predictors (significant for a level lower than .05): scrupulosity ($\beta=-.541$), emotional stability ($\beta=-.468$), social issues ($\beta=.125$), thinking problems ($\beta=.076$), rules breaking ($\beta=1,025$) and aggressive behaviour ($\beta=1,077$), physical aggression (.701), self-esteem ($\beta=-.545$), family type ($\beta=.095$) and performance at school ($\beta=1,065$).

Conclusions

The participants with delinquent behaviour have a significantly higher level than the participants without delinquent behaviours for all dimensions of aggression: physical aggression, verbal aggression, fury and hostility. Also, the participants with delinquent behaviour have a significantly reduced self-esteem as compared to the participants with no delinquent behaviours.

Analysing the type of the provenience family, we observe that there are also applied on Romanian population the results of previous studies who make evident the fact that teenagers and pre-teenagers who come from disorganised families have a bigger probability to commit delinquent behaviours.

Within this study we realised a multiple linear regression analysis with the purpose to identify the factors with predictive value for the development of behaviour disorders, respectively the delinquent behaviour. The predictive factors included in this study were varied, they were connected both to personal level and to socio-demographic level.

After performing the regression analysis, the results obtained indicate us that the significant predictors are: scrupulosity, emotional stability, social issues, thinking problems, rules breaking and aggressive behaviour, physical aggression, self-esteem, family type and performance at school.

A great part of the factors identified as being significant predictors are related to the personal level. Out of the social and regulatory nature factors, we only identified the family type to have significant predictive value for behaviour disorder.

We consider that it is imposed the development of interdisciplinary studies which include more complex assessments than the ones realised within our study. Projecting these studies would involve a significant bigger number of human and material resources, but the benefices of identifying many predictive factors for juvenile delinquency would be significant, to the extent that it would allow an early identification of young persons who present a risk for developing behaviour disorders.

Starting from the results of this study we propose a screening instrument for early identification of risk factors for behaviour disorders and delinquent behaviour; this instrument must be tested and filled in within a multidisciplinary research.

Screening instrument for early identification of juvenile delinquency

| |
|---------------------|
| Date of evaluation: |
|---------------------|

| | |
|----------------|--------|
| Personal data: | |
| Name: | |
| Age: | Genus: |
| School: | Class: |

| | |
|---|--------------------------------------|
| Data about family and socio-economic factors | |
| Mother: | Father: |
| Legal issues of the mother: | Legal issues of the father: |
| The number of brothers: | How many child's sibling: |
| Family Type: a. Biparental b. Monoparental | Emotional relationship with parents: |
| Mother's discipline methods: | Father's discipline methods: |
| Family cohesion: | |
| The relationship between the parents: a. Harmonious b. The Conflict | |

| | |
|---|---------------------------|
| Data on personality traits and mental characteristics and other psychopathological: | |
| Traits of personality | Conscientiousness: |
| | Emotional stability: |
| | Extraversion: |
| | Agreeableness: |
| | Opening: |
| Psychopathological aspects | Depression: |
| | Anxiety: |
| | Social problems: |
| | Problems thinking: |
| | Behavior rules violation: |
| | Aggression: |
| | Somatic complaints: |

| | |
|------------------|--|
| Deviant History | Theft: |
| | The lie: |
| School Situation | Overall average of the last year of study: |
| | Number of absences: |
| | Number of absences solve certain cases: |
| Self-Esteem: | Intelligence quotient: |

In the screening instrument we included information regarding most of the components of the integrative model realised after Shoemaker (2010). The model proposed by the author makes evident the direct and indirect ways by which one can get to delinquent behaviour. The main elements of the model are: individual factors (biological or physical), environment factors the control level of social institutions, the influence of the friends` group and self-esteem. Solid arrows represent more solid connections made evident by researches, while the arrows made by discontinuous lines represent poor associations.

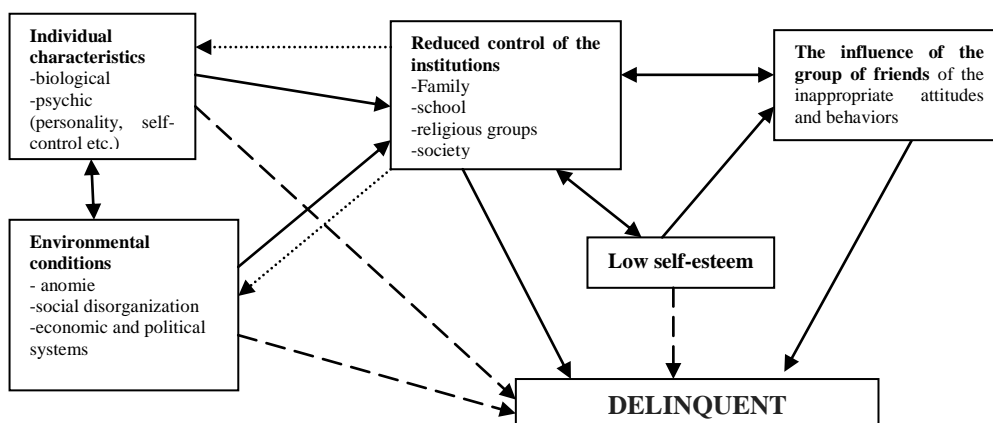


Figure 5. An integrative model regarding the causes and the factors for maintaining the juvenile delinquent behaviour (*apud* Shoemaker, 2010, p. 353)

Besides introducing the elements of this model, we also considered other prevention studies or programs proposed by the researchers. Consequently, one of the largest studies was meta-analysed by Loeber and Dishion (1983), who analysed 60 studies regarding the juvenile delinquency. These authors identified as significant predictors based on which one can build prevention programs, the following aspects:

- A complex evaluation of the family management techniques used by the parents;
- Aggressive behaviour during the childhood;
- Delinquent behaviour in the family members during the past;
- Poor educational results.

We underline again the idea that in order to create early identification and prevention programs of the juvenile delinquency, it is important to work within an interdisciplinary team which includes: psychologist, teacher, psychiatrist, jurist, and social assistant.

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