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Specific learning difficulties, delinquency and mental disorders: (Dis)abilities and ghosts

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Abstract

Problem Statement: Learning disabilities constitute a continuity of complex disorders, which are associated with internalized and external behaviour problems.Purpose of the study: To compare the results of two surveys applied in Greece investigating the early role of learning difficulties in the onset of offending behaviours and mental disorders in adulthood. Methods: Through two retrospective studies: i. early problems of 117 Greek adult prisoners were evaluated and ii. 835 case histories of adults with mental disorders were analyzed. Findings and Results: With high statistical significance were observed: learning difficulties, family problems, behaviour, developmental, and psycho-emotional disorders. Conclusions and Recommendations: Both studies emphasized the importance of the complexity and the interrelatedness of learning difficulties, social and psycho-emotional disorders.

Keywords: Learning disabilities, mental disorders, delinquency, comorbidity.

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1. Main text

1. Introduction

Recent multilevel theoretical and research approaches of Learning Disabilities (LDs) (Dyson, 2003; Gadeyne, Chesquiere, & Onghena, 2004; Terras, Thompson, & Minnis, 2009; Maughan & Carroll, 2006) attempted to clarify the following main associations which characterize and compose the complex identity of LDs: a) LDs are related, as early as school age, with internalized (emotional) and external (executive) behavior disorders (BDs); b) LDs are associated with delinquent behavior and/or mental disorders (MDs) in adolescence and adulthood; c) the effect of affective disorders on individual's self-images with LDs, the configuration of incentives and role of family and educational environments are particularly important factors for the child with LDs to achieve targets and manage his/her difficulties; and d) LDs, BDs and MDs should be assessed and treated in combination, not individually, from school (even preschool) age onwards (Frisk, 1999).

Specifically, Simonoff and colleagues (2004) indicated that reading problems are a weak but long-term predictor of antisocial behavior and suggest that the link between cognitive problems and antisocial outcomes is strongest in relation to criminality.

Furthermore, a wide range of studies have reported that the coexistence between specific learning difficulties and emotional disorders is the rule rather than the exception: with regard to teenagers, learning difficulties impose strains on academic motivation and adolescents experience feelings of sadness, inadequacy, reduce happiness and self-esteem, anxiety, shyness and suicide (Arnold et al., 2005; Carroll et al., 2005; Grigorenko, 2001; Willcutt & Pennington, 2000).

Additional results of many studies report experiencing behavior problems with children during language development (Oehler-Stinnett, & Boykin, 2001; Hartas, 2011): through early and primary years (Benasich et al, 1993; Lindsay, Dockrell and Strand, 2007), into later childhood and adolescence up to adulthood (Beitchman et al, 2001; Conti-Ramsden and Botting, 2004).

1.2. Objectives

The main objective of the current study was to investigate the early onset and the role of learning difficulties as an underlying factor in the onset of offending behaviours and/or mental disorders in adolescence and adulthood.

Most specifically, the following crucial for the research, issues were examined: i) the onset and the strength of the association between learning, behavioral, emotional and social difficulties during the school age and adolescence;

ii) the continuity of the relationship between learning, behavioral, emotional and social difficulties from childhood to adulthood;

iii) the role of a poor or non-management of the above co-occurring difficulties by the family, educational or social environment

iv) the significance of the potential co morbidity patterns between LDs, BDs and MDs and the extent of the variability of this co morbidity in adolescence and adulthood.

To achieve these objectives, we compared the results obtained from two surveys applied in Greece (Zakopoulou et al., 2013; Zakopoulou et al., 2014).

2. Studies

2.1 1st study

Through the current survey (Zakopoulou et al., 2013), we aimed to specify the possible early role of LDs in prisoners' school age and adolescent lives, to investigate the interaction between LDs and other inhibitory factors during the school age and adolescence and to study their effects on the onset of offending behaviors in adulthood, such as criminal behavior.

2.1.1 Procedure

To analyze the degree of correlation between LDs and other factors in adult prisoners, we conducted a retrospective study using the method of a structured interview and questionnaire by which were interviewed Greek prisoners who, at the time of the survey, were imprisoned in the cities of Ioannina, Corfu, and Volos of Greece.

2.1.2 Sample

The sample included 117 Greek prisoners, 18 to 70-year-old who were accused of different types or degrees of offences: drug use, theft, homicide, illegal immigrants, financial and other (unclassified) offences.

The most common age groups that prisoners committed offences were in the range of 31 to 40 years (39.3%) and 21 to 30 years old (24.8%) whereas the 18 to 20 years old (22.3%); the main types of occupations of the prisoners were private employees (63.2%) and professionals (freelancers) (17.9%); the educational level of the prisoners varied primarily in the amount of primary education (61.5%), whereas a lower percentage possessed a secondary education (32.5%), and higher education was attended by only 6.0% of the sample; the prisoners were indicted for the following main offences: drugs (38.5%), theft (25.6%), homicide (15.4%) and other unclassified offences (11.1%).

2.1.3 Variables

The following variables were defined:

1. Poor School Performance: Bad Academic Performance, Antisocial School Behavior, Drop out of School, Temporal School Attendance
2. Family Problems: Educational Level of Parents, Relationships with Parents, Living Conditions, Parents with Chronic Health Problems, Parents with Learning Difficulties, Parents Behavior, Parents Immigrants, Parents Alcoholism
3. Behavior Disorders: School Antisocial Behavior (aggressiveness, social isolation, delinquency, alcoholism), Adolescence Antisocial Behavior (aggressiveness, social isolation, delinquency, alcoholism), Adolescence Drug Use.
4. Developmental Disorders: Neurological Disorders, Specific Developmental Learning Difficulties, Specific Developmental Language Disorders
5. Psycho-emotional Disorders: Adolescence Anxiety, Adolescence Depression, Adolescence Low Self-Esteem, Adolescence Psycho-somatic Disorders, Adolescence Phobias, Adolescence Sexual Abuse
6. Self-rated item: the role that all the disorders played in the occurrence of the prisoners' delinquent behaviour

2.1.4 Results

Using statistical analysis, we examined which variables inter-correlated most significantly during school age and adolescence in the developmental profile of the prisoners to measure their degree of reliability as predictors of delinquent behavior during the prisoners' adult lives.

Most specifically, we tested the correspondence between: i) School Performance/Attendance and Offence (Tab. 1); ii) Family Problems and Offence (Tab. 2); iii) Behavior Disorders and Offence (Tab. 3); iv) Developmental Disorders / Psycho-emotional Disorders and Offence (Tab. 4).

Table 1. School Performance/Attendance and Offence

School Performance/Attendance	Theft	Drugs	Illegal Immigrants	Homicide	Financial Offences	Others (non classified)
Poor Performance in Primary School	,000	,000	,000	,000	,000	,000
Poor Performance in High School	,000	,000	,000	,000	,000	,000
Dropout of High School	,039	,039	,000	,000		
Dropout of Lychee	,000	,000		,000		,000
Temporal School Attendance			,000	,000		
School Antisocial Behavior					,000	

Table 2. Family Problems and Offence

Family Problems	Theft	Drugs	Illegal Immigrants	Homicide	Financial Offences	Others (non classified)
Primary Education Father	,012		,000	,000	,000	,000
Primary Education Mother	.005		,000	,000	,000	,000
Parents with Chronic Health Problems				,000	,000	,000
Relationships with Parents	,000	,000	,000	,000	,000	,000
Parents with Learning Difficulties	,024					
Parents Alcoholism				,000		
Parents Behaviour	,000	,000	,000	,000		,000
Parents Immigrants					,000	
Family Living Conditions	,000	,000	,000	,000	,000	,000

Table 3. Behavior Disorders and Offence

Behavior Disorders	Theft	Drugs	Illegal Immigrants	Homicide	Financial Offences	Others (non classified)
School Antisocial Behavior	,003			,000		,000
Adolescence Antisocial	,000	,001	,000	,000	,000	,000
Adolescence Drug Use	,003	,003	,000			

Table 4. Developmental Disorders (DDs) and Psycho-emotional Disorders (PsDs) and Offence

Developmental Disorders /Psycho-emotional Disorders	Theft	Drugs	Illegal Immigrants	Homicide	Financial Offences	Others (non classified)
Specific Developmental Learning Difficulties	,000			,000	,000	,000
Neurological Disorders	,007			,000	,000	,000
Specific Developmental Language Disorders					,000	
Adolescence Anxiety		,000	,000			
Adolescence Depression, Low Self-Esteem, Psycho-somatic, Phobias	,000	,001		,000	,000	,000
Adolescence Sexual Abuse	,001			,000	,000	,000
Self-rated Role	,000	,000	,000	,000	,000	,000

A high statistical significance (p< ,005) of correlation was observed between each type of the offences and the variables per factor: Theft, drugs, illegal immigrants, homicide, financial offences and others (non classified) offences and: i) School Performance, ii) Family Problems, iii) Behavior Disorders, iv) Developmental/Psycho-emotional Disorders; with high statistical significance (p= ,000) had recorded the variable of the self-rated role that all the disorders played in the occurrence of prisoners' delinquent behaviors.

2.1.5 Discussion

The findings of this study contributed to the interpretation of the complexity of all the tested factors, leading to the following observations:

1. The early formulation of following conditions in school and teenage age was seen to be particularly decisive in the emergence of all types of offences: the bad living conditions, the behavior problems in adolescence and the bad academic performance in primary and secondary education.
2. Offending behavior was occurred as an outcome of a continuity of factors during school age and adolescence and was maintained and reproduced by a disadvantaged model of family and the wider social environment, as they were recorded as vulnerable or inappropriate to tolerate and manipulate the complexity of the disorders upon their emergence.
3. LDs were one of the main problems associated with delinquent behavior in the entire sample and with a range of other attendant problems.
4. LDs were observed as the most decisive factor in the developmental progression of

the prisoners as LDs provoked bad self-image, low self-esteem, and in the frame of a weak or negative family and educational environment, they triggered executive disorders and antisocial behavior and psycho-emotional disorders even from adolescence, which continued into adulthood.

2.1.6 Conclusions

Through the current study we determined a strong and complex kind of interrelatedness between the learning disabilities and behavior problems during school age and adolescence, as follows:

i) the school age is a catalytic season as now, the expression of difficult events is particularly decisive for the further development of the individual; now, the role of the family becomes primarily important with regard to the management of the difficulties as well the activation of mechanisms as flexible as adequate, in order the individual to feel accepted by the family and school and be confident enough to ask for help and to follow a strict therapeutic programme contributing to overcome his/her difficulties

ii) the adolescence seems to be one of the last stages for the individual to outline their perspectives and representations for adult life; the adolescents facing a vast range of learning difficulties from the early school age, today seem traumatized, angry and disorganized in their behaviours, trying to forget their childhood but dispirited by their self-image, without dreams and perspectives for the future.

iii) the delinquency is co-formed through an evolutionary process of continuity and integration of inherent factors and external factors

2.2 2nd Study

The objectives of the current study (Zakopoulou et al., 2014) were to examine the dynamics of the co morbidity patterns between LDs and MDs, including the extent of the variability of these patterns and their continuity from childhood to adulthood.

2.2.1 Procedure

To achieve the above objectives, we conducted a retrospective study using 9.917 case histories of adults with MDs who were referred to the Psychiatric Clinic of the University Hospital in the city of Ioannina, Greece.

Two were the aspects on which the analysis was based on:

i. the identification of risk factors in childhood and adolescence and,
ii. the classification of MDs diagnosed in adulthood.

The following factors concerned as risk factors: a. conditions of schooling, b. individual disorders (psycho-emotional, specific developmental and behavior problems) and, c. family conditions.

ii. The psychiatric disorders in adulthood were identified and classified according to the ICD-10 diagnostic criteria (World Health Organisation, 1993) which most psychiatrists followed when recording the histories: 1. F10–F19: Mental and behavioral disorders due to psychoactive substance use. 2. F20–F29: Schizophrenia, schizotypal and delusional disorders. 3. F30–F39: Mood (affective) disorders. 4. F40–F48: Neurotic, stress-related and somatoform disorders. 5. F60–F69: Disorders of adult personality and behavior.

2.2.2 Sample

The final sample consisted of 835 cases of adults with MDs which contained information about diagnosed LDs (60.6% males; mean age: 36 years, *SD* = 13.2) and were included in the analysis; the main types of occupations were: freelancers (32%), homemakers (25%), private employees (19.5%), unemployed (16.5%), and some unskilled workers (6.0%); only 61% had received primary education, about a third had completed secondary education (28.5%), and only 0.5% had attended higher education; 91.2% of the patients had repeated one or two classes in school, 98.4% dropped out of school, 35.1% reported feelings of isolation at school and 83.6% reported poor academic performance.

In terms of MDs, 37.4% of the patients fell within the category of schizophrenia, schizotypal, and delusional disorders; 21.1% were diagnosed with mood (affective) disorders; and 18.7% with neurotic, stress-related, and somatoform disorders; mental and behavioral disorders due to psychoactive substance use were identified in 12% of the patients, and 10.9% had disorders of adult personality and behavior.

2.2.3 Variables

The following variables were defined:

1. Conditions of Schooling: a. Poor Quality Schooling. b. Class Repetition. c. Poor School Performance. d. Behavior Problems in School (with peers/teachers).
2. Individual Disorders: a. Psycho-emotional Disorders: Depression, Low Self-esteem, Isolation, Stress, Psychotic Indications. b. Language Disorders. c. Learning Disabilities. d. Behavior Disorders: Aggressive Behavior, Antisocial Behavior, Drug Use, Alcoholism, Running Away from Home.
3. Family Conditions: a. Loss of Parent. b. Parents' Chronic Health Problems. c. Parents' Alcoholism. d. Parents' MDs. e. Relatives' MDs. f. Parents' Problematic Behavior toward Children. g. Family Living Conditions.

2.2.3 Results

The data were analyzed using multiple correspondence analyses because of the binary nature of the data. A series of multiple correspondence analyses were conducted, taking into consideration the above mental disorders and all possible combinations of the variables of the individual disorders, conditions of schooling and the family conditions (Tab. 1, 2, 3).

Table 1. Correspondence between Family Conditions, School Performance and the occurrence of Mental Disorder

Family Conditions	s
Mental Disorder*Parents' Alcoholism	,005
Mental Disorder*Relatives' MDs	,002
Poor School Performance*Parents' MDs	,000
Poor School Performance*Parents' Problematic Behavior twds children	,004
Mental Disorder*Family Living Conditions	,000

Table 2. Correspondence between Individual Disorders and School Performance and Mental Disorder

Individual Disorders	**s**
Poor School Performance*Psycho-emotional Disorders	,000
Mental Disorder*Developmental Disorders	,000
Mental Disorder*Language Disorders	,019
Mental Disorder*Behavior Disorders	,000
Mental Disorder*Aggressive Behavior	,009

Table 3. Correspondence between Conditions of Schooling, School Performance and Mental Disorder

Conditions of Schooling	s
Poor School Performance*Class Repetition	,000
Poor School Performance*School Behavior	,050
Mental disorder*Poor School Performance	,013
Mental Disorder*Class Repetition	,008
Mental Disorder*Behavior Problems in School	,027

2.2.4 Discussion

According to patients' histories and the general information regarding their development, we can make the following assessments: LDs in childhood and adolescence have pervasive effects on later life (low self-image, failure to set up and reach goals, poor interpersonal relations, and mental illness, dropping out of higher or primary education, low-income jobs).

The family conditions were recorded as problematic, while the conditions of schooling (particularly in primary and secondary education) highlighted as inadequate in addressing LDs, and/or enhancing patients to improve their school performance as well to achieve high targets. In general, academic performance was strongly related with negative family patterns, psycho-emotional and behavioral disorders, and low patients' educational level. What is worth mentioning is that forms or programs dealing with LDs were not recorded in any of the analyzed patients' histories.

In our attempt to understand the interaction developed between LDs and MDs in a continuity from childhood and adolescence to adulthood, it became clear the following translational triptych: problems that were related to learning performance at school-age were reflected as patients' failures; failures which continuity played catalytic role in adolescences' personality: vulnerable adolescents with shaped self-image, no incentives to achieve goals, unable to manage their problems; continuous, constant patterns of weak family and school environment and vulnerability could reasonable lead to the onset of MDs in adulthood.

2.2.5 Conclusions

The findings of the current study outlined a significant early role of LDs in case histories of adults with MDs.

Most specifically, a strong interaction between individual disorders likely, psycho-emotional

and behavior disorders and negative family conditions and conditions of schooling was revealed.

In our attempt to understand the interaction developed between LDs and MDs in a continuity from childhood and adolescence to adulthood, it became clear the following translational triptych: problems that were related to learning performance at school-age were reflected as patients' failures; failures, the continuity of which played catalytic role in adolescents' personality: vulnerable adolescents, with low self-image, without incentives to achieve goals, unable to manage their problems; inadequate personality's characteristics, struggling in continuous, constant patterns of weak family and school environments reasonably led to the onset of MDs in adulthood.

All in all, the analysis of the data confirmed our hypothesis that there is a strong continuous and longitudinal interaction between the LDs from childhood to adulthood; a significant finding which improve the argument that understanding the LDs as a complex entity in childhood and studying all the patterns of this entity and their dynamic, we could estimate their longitudinal effects on the personality's development and provoke the possible occurrence of particular MDs in adulthood.

3. General conclusions

Both studies demonstrate dynamic interrelationships and complexity of the triptych of learning disabilities, behaviour disorders, mental disorders in a multi-dimensional continuity from the early stage of the development both of prisoners or psychiatric patients to the adulthood.

In both of the studies found out that the learning disabilities played a fundamental role in the individual learning process, behaviour and psycho-emotional development, carrying from childhood in adolescence/adulthood the "ghosts" of a "different", "wicked", but simultaneously, of a very clever child, of bad memories, severe rejection, emotional abuse and punishment.

However, it is difficult to certify whether learning disabilities caused the onset of behavior or mental disorders or vice versa.

That what we can assume is a complex and decisive influence of the learning disabilities in several patterns of both at earlier and later stages of individual's development, in a longitudinal progression (Fig. 1).

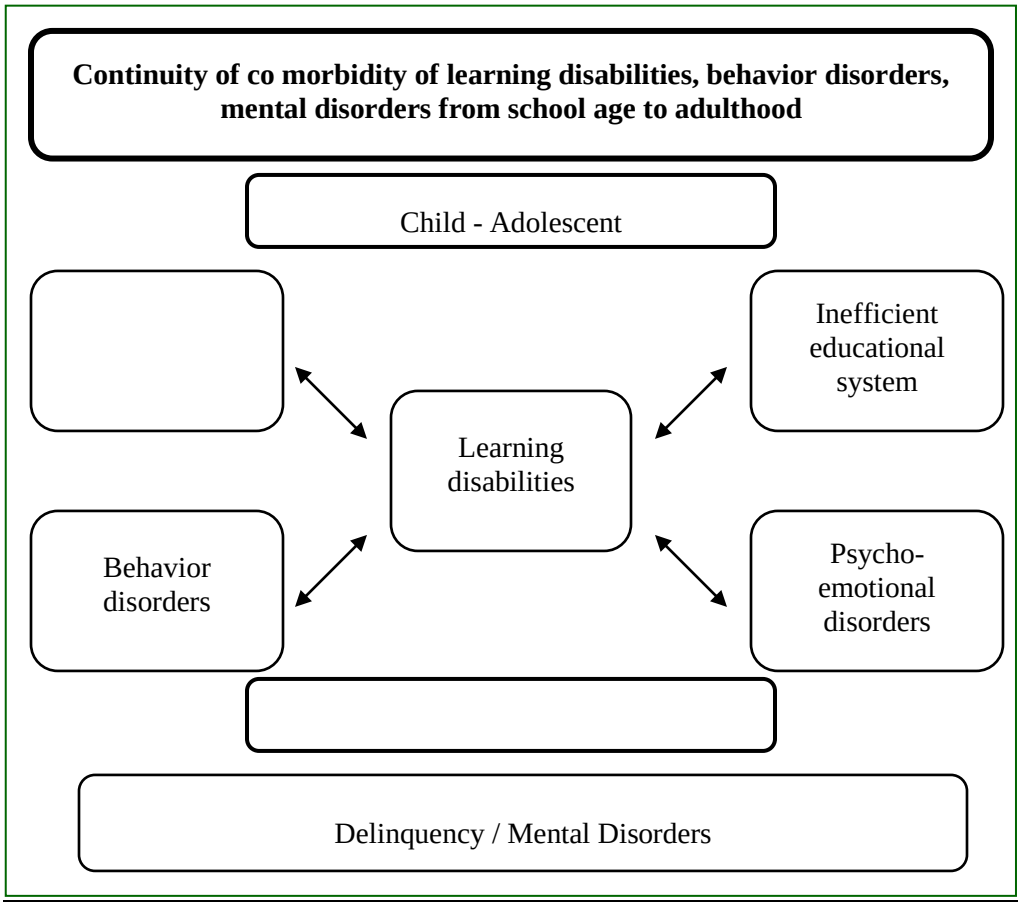

Figure 1. Longitudinal co morbidity of LDs, BDs, MDs

As a result, the necessity for the early implementation of appropriate multifactorial interventions should be provided focused on: i) the individual's learning, psycho-emotional and social needs; ii) the support of families to handle and resolve problems and, iii) the educational system to accept, manipulate and re-educate a wide range of difficulties.

Achieving the above, our societies will be "healthy" and "mature" enough to exorcize the "ghosts" of continuous failures (Newman & Stevenson, 2005) and recognize, improve and evolve the real abilities of children with learning disabilities.

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