REVIEW ARTICLE

Pilot Model of the Rehabilitating Treatment for Self-Esteem and Behavior in Adolescents with Dyslexia and Dysorthography by Improving their Literacy

Modelo piloto de estudio del tratamiento rehabilitador de autoestima y comportamiento en adolescentes con dislexia y disortografía mediante su mejora lectoescritora

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Summary

Clinical and educational research has shown the emotional and motivational factors involved in learning difficulties. The main objective of this research is to propose a way to assess the effects of a rehabilitating treatment for self-esteem and behavior through improving literacy in a group of patients diagnosed with dyslexia and dysorthography. Sixty students diagnosed with dyslexia will be given a test battery to assess the emotional and behavioral profile. Afterwards, they will be divided into a control group and experimental group, which will undergo a rehabilitating treatment to enhance reading and writing. In short, the results try to prove the hypothesis of research through an appropriate literacy treatment using appropriate instruments and programs. Patients with dyslexia can achieve greater self-esteem and not only a developed communication-writing competency.

Keywords: Self-esteem, anxiety, dyslexia, dysorthography, rehabilitation.

Resumen

La investigación clínica y educativa ha puesto en evidencia los factores emocionales y motivacionales que caracterizan las dificultades de aprendizaje. El objetivo principal de este artículo es proponer un modo de valorar los efectos de un tratamiento rehabilitador en lectoescritura sobre la autoestima y sobre el comportamiento en un grupo de pacientes con diagnóstico de dislexia y disortografía. A un grupo de 60 estudiantes con diagnóstico de dislexia, en un primer momento, será suministrada una batería de test para valorar el perfil emotivo y conductual. Después, se dividirán a mitades un grupo control y otro grupo experimental que será sometido a un tratamiento rehabilitador para potenciar la lectura y la escritura. En síntesis, los resultados pretenden comprobar la hipótesis de investigación de que tras un adecuado tratamiento lectoescritor, con soporte de instrumentos y programas adecuados, los pacientes disléxicos pueden conseguir una mayor confianza

en sí mismos y una consiguiente mayor autoestima, y no solo un desarrollo de la competencia comunicativa escrita.

Palabras clave: Autoestima, ansiedad, dislexia, disortografía, rehabilitación.

Introduction

In the last years, there has been an increase of the number of people with learning disabilities. The Specific Learning Disabilities (SLD) hinder the normal development of specific skills such as reading, writing and calculation and can be preceded by a delay in acquiring oral language skills. They are known as "specific" since they imply trouble with the specific knowledge of the skill, despite the intellectual quotient equal or higher than average. The European Dyslexia Association (EDA) states that an average of 8% of the European population has dyslexia (EDA, 2012). The percentage varies from country to country and depends on the transparency of the reference language orthography. The international scientific community considers dyslexia to be a neurobiological, congenital and genetic disorder determined by an alteration that blocks the cognitive development of the necessary functions for reading, such as memory, perception, attention and automation of functions (Baddeley, 2000). The characteristic problems of dyslexia are difficulty with phonological awareness, verbal memory and speed of accessing verbal material. Problem with reading occur frequently in comorbidity with other disorders such as dysorthography (Ferraboschi & Meini, 2005), dysgraphia, dyscalculia, problems with storing definitions of specific terms, attention deficit and psycho-affective problems (low self-esteem, anxiety, disorders of behavior, mutated learning object, etc.) (Nicolson & Fawcett, 2011).

Emotional-Behavioral Variables: Self-Esteem and Dyslexia

Dyslexia causes school failure regularly, and is usually accompanied by behavioral and emotional problems: instability, absence of discipline, resistance, passive or aggressive attitudes, school refusal, isolation and feeling of inferiority. Such characteristics, regularly underestimated, suppose an important role in the clinical condition evolution. The most common mistakes such as blaming the child for bad school performance or attributing the cause to psychological problems, regularly result in a bad image of

themselves, affect their confidence eir low self-esteem (Chica, 2017). In addition, concerns and frustrations of parents in view of the children´s problems may affect the emotional sphere of the child with dyslexia (Coltheart, 1998). These children have school failure stories regularly, which affects not only the school but also the development of their personality and social adjustment (Keltikangas, 1992). They present anxiety and frustration that sometimes cause real depression and difficulties to socialize. These matters become even more complex in the adolescence. In fact, the adolescence is a delicate phase of changes and insecurities that determines the personality of the future child (Rodríguez, Estévez & Palomares, 2015), in which self-esteem is the first element affected in case of school failure, which in turn affects the self-concept that influences motivation (Carranza & Apaza, 2015). In fact, self-esteem is built from the first phases of education, from comparing performance to what is expected in different learning environments and to other's performance. Young people with low self-esteem are very shy and insecure with respect to their skills, are afraid of making mistakes and being judged or not being understood by others. This leads to avoid confrontation or potential success. Therefore, it is important to develop greater confidence in themselves and in their own capacities, making them know that each one has their own value. If the child can achieve the academic success, "so their self-esteem at school will be positive." (Pope, McHale y Craighead, 1992, p. 16) As a result, the school would contribute to building self-esteem and high self-efficacy.

Previous Studies

Regarding these pyscho-effective problems, recent studies have shown that students with dyslexia have lower levels of self-esteem due to bad school performance and the influence teachers, parents and classmates have on the development of self-esteem in people with dyslexia, exacerbating the development/achievement profile (Humphrey & Mullins, 2002a; Riddick, 1996). Some researchers in this issue, such as Riddick (1996) and Humphrey

(2002), show that there is little research on self-concept and self-esteem for students with dyslexia and it is a topic that is necessary to be addressed.

The clinical experience and data of several research works show that SLDs are commonly associated with emotional and behavioral problems, which are considered risk factor for a future psychological disorder (Moè, De Beni & Cornoldi, 2007; Mugnaini, Chelazzi & Romagnoli, 2008).

Regarding students without SLD, people with dyslexia have a more negative concept of themselves, they feel less emotionally supported, show more anxiety (Riddick, Sterling, Farmer & Morgan, 1999), low self-esteem and tend to abandon the task when the first difficulties arise. There is a vicious circle as well as high levels of anxiety and low self-esteem during reading that interfere with task development causing direct impacts on the work memory (Eysenck, Derakshan, Santos & Calvo, 2007) and deterioration of the task execution. The clinical experience and the qualitative research works indicate that the presence of dyslexia can determine a greater probability of psychological discomfort not only because the education proposals can put the child at disadvantage and in a stressful position compared to their classmates (Ryan, 2006). In addition, if such difficulty persists on time and it is not addressed properly, it can influence future psychological adaptation.

The DSM V (APA, 2013), among the problems associated with reading, presents many dysfunctional conditions, many of them are of neuropsychological (deficit of visual perception), language, attention, memory and motor and psychopathological development types (Rodríguez, 2017), such as anxiety, commonly associated with depression, which is widely documented in people with SLD (Riddick, 1996). Several research works have shown that children with dyslexia have lower self-esteem at school (Polychroni, Koukoura & Anagnostou, 2006) and clinically significant levels of anxiety (Nelson y Harwood, 2013).

Particularly, anxiety is the most common emotional symptom in cases of dyslexia. Some studies (Nelson & Harwood, 2011) show the presence

of symptoms attributable to school anxiety in around 70% of children with learning disorders. Students with specific learning disorders can develop extreme ways of emotional discomfort turning into impotence apprehended (Seligman, 1975), responsible for the lack of motivation that induces the individual to blame himself/herself for their situation and to perceive himself/herself as unable to learn, emerging regularly features of depression. During the last years, a conspicuous literature has described the socio-emotional discomfort, which comes regularly with the SLD in all ages, confirming the use of early identification and multidimensional approach (Morris, Schraufnagel, Chudnow & Weinberg, 2009).

In most studies, the relationship between perception of oneself, confidence in one's skills and school success is linked to a positive correlation (KeltiKangas-Jarvinen, 1992); that is, it is believed that the increase of self-esteem increases school success and vice versa. Burden (2008) finds important aspects related to the image of oneself in people with dyslexia, and shows that they will have a lower self-esteem at school than normal readers. If children with dyslexia improve the ways to face and gradually get over their difficulties, their concept of themselves may improve.

Hypothesis and Objectives

Based on the theoretical assumptions described and on the hypothesis that establishes which low levels of self-esteem can result in SDL, it is recommended to investigate about the presence of a typical personality profile of young people diagnosed with dyslexia and to find out if self-esteem can be increased with a proper treatment for reading and writing skills, as long as the basic academic competencies determine the school development, that is, school success and school failure. In particular, it is expected that with an specific treatment to improve reading and writing skills and their related

cognitive skills, such as memory, the increase of self-esteem is stimulated. That is, that a comparison between control group and experimental group shows an improvement of self-esteem in students of the second group compared to the first one after treatment, and that represents the reading and writing optimization such as promotion and improvement of self-esteem.

The intervention is aimed at the fact that a treatment for the previous basic academic skills, with the support of tools and proper programs, can:

- Increase self-esteem of students with dyslexia of the experimental group;

- Reduce any anxiety behavior produced by the lack of reading and writing competencies or their low levels of development compared to the group-class;

- Improve reading comprehension that predictably is below the average;

- Develop and recover orthography skills, whether they have not been learnt or they have been forgotten or confused.

Potential Method or Methodological Approach of the Study

It is explained the possible path for this assessment and rehabilitation experience of self-esteem and anxiety to be successful through specific instruments, and their improvement through indirect rehabilitation of reading and writing skills in the classroom by using programs also stated and described.

Participants

The experimental group proposed should consist of 30 adolescents diagnosed with dyslexia that will receive rehabilitation treatment. The control group should consist of 30 adolescents diagnosed with dyslexia, not subject to any

treatment. Students are selected from the record in the psyquiatry unit of a hopsital that collaborates with the research, diagnosed with several years of dyslexia and other characteristics like the ones detailed below in order to obtain, as far as possible, homogenous groups or groups equivalent to such criteria. The rigorous selection of participants has been made according to the following inclusion criteria: certificate of SLD diagnosis and absence of genetic syndromes, metabolic disorders, neurosensory deficit, brain damages, etc. The age of the participants diagnosed with dyslexia, dysorthography is between 10 and 14, gender matched, who attend basic compulsory education. To form the control and experimental groups, the selection was made randomly from students with clear and definitive diagnosis of dyslexia, and according to the pretests and parameters. In this way, the equivalence of the groups has been guaranteed as required by the research according to the type of design selected. The proportionality of the sample was determined with the same number of students and proportionality of sex, ages and time of diagnosis.

Quasi-Experimental Design

To carry out the research recommended, a quantitative, quasi-experimental design should be used with control and experimental group, as well as repeated pretest-posttest measures (Teddlie & Tashakkori, 2009) that allow studying individual cases and knowing in detail the emotional and behavioral profiles of participants with dyslexia. Taking into account the proposal of McNulty (2003), the objective is to define a common line of analysis between qualitative research and quantitative research of emotional and affective-behavioral aspects in SLDs, suggesting an analysis that can be used in the clinical and education field. The research will allow observing directly the participants, collecting data using forms and participant observation sheets and, then through a quantitative approach, display in diagrams and graphs the outcomes collected, so that they can be easily seen.

To that end, the form will be a nexus between data collection and later data analyses, with specific statistics. In fact, it has identical questions for all subjects involved, so that information collected are comparable between them and the only variables are the experienced subjects and personal experiences that provide different points of views. In addition, the form, since it is not tied to any specific theory, allows assessing and analyzing the outcomes based on different theories and objectives and can be used along with other instruments. Therefore, it is a good starting point for a first global assessment.

Procedure

This work will be divided in three phases lasting 12 months. At the beginning, participants will be placed in the two groups: experimental and control, diagnosed with dyslexia and dysorthography.

- Phase1. This phase is directed towards experimental and control groups, and entails a preliminary assessment of the self-esteem and other eventual psychopathological manifestations. It lasts around 3 months. It uses the following instruments:

  - The Bracken's Multidimensional Self-Esteem Assessment Test (TMA, by its Italian initials) (1993) is based on the assumption that self-esteem is a behavioral and cognitive scheme that is developed according to learning principles. Self-esteem is the concept that an individual has about him or herself based on continuous environmental feedback, on the successes and failures and the relationships established with others.

According to the author, self-esteem can be considered to be a response mechanism learnt on time that reflects the self-efficacy of the individual with a predictive value with respect to future behaviors. The TMA is based on the hierarchical self-esteem model, and it is assumed that its several dimensions associated with the multiple contexts where the individual acts, are equally important in building self-esteem, in general. The instrument, consisted in 150 items assessed based on Likert 4 point scale[1], consists of positive statements and rejects. The items of positive value are assessed in descending order[2]; items of negative value are assessed in ascending order[3]. The test is structured in six scales that coincide with the dimensions that are constituent elements of self-esteem, plus a total scale that provides information on the general opinion participants with dyslexia have on themselves, namely:

- Interpersonal relationships;

- Emotiveness;

- Competency/control over the environment;

- School success;

- Family life;

- Corporal experience;

- Total scale.

- The Multi-dimensional Anxiety Scale for Children (MASC) of March, Parker, Sullivan, Stallings and Conner (1997) is a useful form to investigate the anxious symptoms in participants of age 8 and 19. It consists of 39 multiple response questions and allows determining if the child has a pathological anxiety condition (according to the

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1 Values of scale: absolutely true; true; not true; not true at all.

2 Assessments: AV=4; V=3; NV=2; NAV=1.

3 Assessments: AV=1; V=2; NV=3; NAV=4.

DSM criteria). The form induce the child to provide information about their thoughts, feelings and behaviors. The subject answers the questions, making a circle in the number that shows how true the statement is for him4. The data obtained provide six types of information:

- Physical symptoms;

- Avoidance;

- Social anxiety;

- Separation anxiety;

- Total score;

- Anxiety Disorder Index (ADI). This ADI indicates what will be the tendency of the child towards anxiety. A high score has a predictive value with respect to the possibility to develop anxiety symptoms in the future.

- The Child Behavior CheckList (CBCL) for children of age 6 and 18, of Achenbach (2001), is one of the behavior assessment scales used worldwide in the medical field and in search research. The scale allows investigating about social competencies and emotional-behavioral problems of children and adolescents. The CBCL is a form filled by parents, and it is divided in two parts. The first part collects information on several areas of personal and social functioning through questions about participation in sport, groups, associations, on friends, performance in small tasks, relationships with other family members and school performance. It also has open questions on eventual diseases, disorders of the people assessed, and concern on any aspect of the child´s growth and on the positive aspects of the child. The second part has 113 items shown as statements related to behaviors in several fields and relationship problems. Parents answer each item and give a score of frequency

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4 0=Never true; 1=Rarely true; 2=Sometimes true; 3=Often true.

related to the behavior shown5. Based on the scores compared with the normative values, two total scores are obtained: one for competencies, activity, sociability, school performance and the other one for emotional-behavioral problems. Thus, it provides two different profiles: profile of competencies and psychological and/ or psychopathological profile. The authenticity indexes of this form are excellent (range = 0.85 - 0.88) (Dedrick, Greenbaum, Friedman, Wetherington & Knoff, 1997). It is one of the most used instrument in the field of research and it has more than 4000 publications, whose validity and reliability are proven. Many studies have shown how the CBCL represents a valid and reliable instrument for the assessment of emotional-behavioral problems of children and adolescents, also in the Italian context (Frigerio, Cozzi, Pastore, Molteni, Borgatti & Montirosso, 2006).

- Phase 2. This phase of research is directed towards the experimental group (20 students diagnosed with dyslexia and dysorthography) and entails a six-month rehabilitating treatment divided in 3 steps of 2 months each aimed at improving reading and writing performance as well as reading comprehension by taking the following steps:

  - Step 1. Sublexical Treatment: Software "Dylexia and Sublexical Treatment" (Cazzaniga, Re, Cornoldi, Poli & Tressoldi, 2005) designed to develop and improve reading skills by applying the sublexical method. This treatment consists in the presentation of items in the computer for reading, providing facilities to show syllables. The software also includes the Cloze program, that is, a quick and timed reading of words for participants with specific problems in reading visual route.

  - Step 2. Phonological recovery through the software "Recovery Activity of Phonological Analysis, Phonetic Synthesis and Lexical Access" of Savelli and Pulga (2006). This program facilitates the

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5 Scores: 0= Rarely/never; 1=Sometimes; 2= Often/always.

processes of reading comprehension, exceeds the classic system of multiple response question and it is based on the new technique of gaps.

- Step 3. Orthography Recovery through the software " Orthography Recovery, route through the conscious control of the mistake" (Ferraboshi & Meini, 2005). It consists in a recovery program of orthographic skills through gradual activities that include the mistake awareness acquisition and provide strategies to control the writing processes.

- Phase 3. The assessment of the emotional-behavioral profile by TMA, MASC and CBCL will be applied, before and after, to all the participants diagnosed with dyslexia (60 in total) with the collaboration of child neuro-psychiatrists and psychopedagogists specialized in SLD. Therefore, the research process concludes with the phase of reassessment of the dimensions concerned, and with the tests described above as well.

Data Analysis

Regarding analytical procedures, the first statistical operation will be descriptive to analyze the data processing. This allows making a summary of the data of the experimental and control groups, displaying them in frequency distribution and thereby calculating the average and standard deviation. Then we will use the function of statistics called inferential that allows draw inferences with respect to the probability that the data obtained are due to the case and not to our hypothesis or vice versa. For that reason, we would have our null hypothesis H_0 referring to the causality of the outcomes obtained, that is, the data observed would not be significantly different from those that would have been obtained if the groups belonged to a single population, and contrary to the alternative hypothesis H_1 referring to no causality of outcomes, that is, the data observed would be significantly different from those that would have been obtained by causality. Ad hoc statistical tools

such as Systat, SPSS, PSPP, EZanalyze, R or similar will be employed in order to obtain data that are more realistic to the reality investigated. It will be supported, in this methodological phase, by a painstaking bibliographic search that will be helpful for the selection of statistical techniques that will be executed and that will best match with the subject matter of the research. Particularly, based on previous experiences, the desirable statistic for this type of data is "t of Student" for independent samples, analyses of Pearson's correlations; and as a conclusion, the linear regression through the potential determination or prediction and, if notable, the resulting regression equation.

Conclusion by way of SWOT and Possible Discussion

A preliminary assessment of the project as such is carried out according to the SWOT technique (Strengthens, Weaknesses, Opportunities and Threats) known in the Ibero-American context as FODA. Along these lines, since school is considered to be the fundamental environment where children with dyslexia show greater difficulties, it is necessary that students can improve performances and competencies in order to experience success and for them to not feel different from their contemporaries. This argument is an evident and unquestionable strength of the project.

Scott (2004) says that the best way to deal with low self-esteem is to improve learning capacity of a student, and at the same time, to increase motivation (Carranza & Apaza, 2015). Consequently, the increase of confidence and self-esteem of a child with dyslexia will have a positive effect on their performance, social behavior and attitude towards tests of life, successes and failures. This project is aimed at understanding if a rehabilitating treatment for a group of patients diagnosed with dyslexia and disorthography can have positive effects on self-esteem and behavior of adolescents, not only at school but also in many areas of life. Therefore, we want to make a comparison between self-esteem values and emotional-behavioral profile, highlighted by the tests (TMA, CBCL and MASC) of the control group and experimental group, before and after the treatment, to evaluate their evolution. However, there are several threats around the objective assessment of the progress such as the application of the

treatment, since it is not an experimental project but quasi-experimental, in which the control of strange variables becomes more difficult.

The treatment also includes the participation of the family that must be constantly informed and involved in the collection of the form on child behavior (CBCL), having efficient collaboration between parents and specialized professionals. This dimension is also understood as a project weakness since we do not have the necessary evidences that families are willing to and are prepared for the appropriate treatment, such as the necessary guidance to achieve the objectives and everything related to learning and education of students, as a basic assumption of the development of the student with dyslexia.

In short, it is intended to say that a complete and proper treatment applied to subjects with dyslexia leads not only to the optimization of reading, writing skills and reading comprehension, but also of the general self-esteem of young people and eventual anxious and maladaptive behaviors in relation to the school and learning processes. The guidance on how this work is to be developed and its sounds achievements deserve to be undertaken, and overcoming threatens and controlling weaknesses. We do not have the final results since they are in the program application period to improve the reading and writing skills in order to discover if this has a positive influence on self-esteem, responding the hypothesis of alternative or convenient research for this research after rejecting the null hypothesis.

No studies like the current one have been conducted according to the review made in several international search engines. However, everything suggests that the starting hypothesis formulating that self-esteem increases due to the improvement of reading and writing competencies and consequently, the school performance optimization is viable, judging by the convenience of these reading and writing competencies in students without specific disorders (Gallego & Rodríguez, 2015; Rodríguez & Gallego, 2017), such as in this study: dyslexia or dysorthography, and even in students with disorders (Gallego & Rodríguez, 2016) and disabilities (Gallego & Rodríguez, 2011) or with special education needs, in general (García, Salvador & Rodríguez, 2010). The experience can be used in other contexts and with other students, employing instruments adapted to the environment where research is developed. This

opportunity is the justification for the presentation of the structure of the assessment-research process shown in this opportunity.

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