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Effectiveness of antibullying school programmes: A systematic review by evidence levels

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ABSTRACT

Increasingly more educational centres are, therefore, carrying out programmes aimed at preventing or reducing violence in schools.
This study seeks to examine the efficiency of such programmes in Primary and Secondary schools. The methodology used is the systematic search of electronic databases (Medline, Trip Database, Cochrane, Academy Search Premier, PsycINFO, ERIC and PsycARTICLES) for studies published after January 1, 2000, on the assessment of the effectiveness of school interventions to prevent or reduce violence and bullying. The study population comprises school-age (6–16 years) children and adolescents of both sexes. Initially, 299 articles were detected that met the inclusion criteria and that had been independently peer-reviewed. For the final evaluation, 32 studies were selected which met the previously established selection and quality criteria, and analysed by level of evidence. The review finds evidence of the efficiency of the programmes assessed, although serious limitations are also detected, which should be taken into consideration when designing future interventions. The likelihood of success is enhanced when all the disciplines of a centre are involved, and also the parents. It is also essential to adapt the diverse programmes to the social and cultural characteristics of the school population in which the programme is to be carried out. Finally, the findings indicate the need for continuity in the programmes if their long-term efficiency is to be guaranteed.

1. Introduction

School violence includes behaviours that cause physical and emotional harm, ranging from verbal aggression, humiliation, ostracism, physical harm and destruction of property (Benbenishty & Astor, 2005), and including various categories such as classroom disruption, disciplinary problems and maltreatment among classmates (Olweus, 1993).

We are facing a phenomenon that has probably always been present in schools, although it has become the subject of increasing attention and a social alarm in recent years. Several studies have analysed its prevalence finding that 20 to 30% of pupils have been involved in violent episodes, ranging from simple verbal intimidation to physical or sexual aggression (Currie et al., 2008; Department of Health and Human Services & Center for Disease Control and Prevention, 2006; Ruiz, Exposito, & Bonache, 2010).

The consequences it may have for children's mental health and future behaviour must also be considered (Abada, Hou, & Ram, 2008; Östberg, 2003). Some studies show that extended exposure to violence is linked to the development of: (a) emotional and psychosomatic problems in victims and bullies alike (Bond, Carlin, Thomas, Rubin, & Patton, 2001; Gini & Pozzoli, 2009); (b) low self-esteem, depression and suicidal tendency (Brunstein, Marrocco, Kleinman, Schonfeld, & Gould, 2007; McMahon, Reulbach, Keeley, Perry, & Arensman, 2010); and (c) antisocial behaviours, which lead to legal, economic and social problems (Cunningham & Henggeler, 2001).

All of this has led to a heightened awareness of this problem in recent years and the proliferation of prevention programmes (Farrell, Meyer, Kung, & Sullivan, 2001). Habitually, the main components of these interventions are: (a) globally focused policies emphasizing the democratic participation of all school members, which are generally the main part of any long-term interventions; (b) the improvement of the classroom atmosphere, based on pupil–pupil and teacher–pupil relations; (c) the introduction of peer support systems; (d) intervention in the recreational area or the school surroundings; (e) pro-social activities in the classroom, as part of the curriculum; and (f) specific work with bullied students or those at risk of being bullied (Cowie, 2000; Cunningham et al., 1998).

Despite efforts to establish them in schools, there is a notable lack of evaluation of these programmes, so the effectiveness of which was

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really unknown (Surgeon General, 2001). The United States' Agency for Healthcare Research and Quality (2010) indicates that meta-analyses of randomized clinical trials (RCTs) are the studies that offer the best scientific evidence of therapeutic interventions, followed by the RCTs themselves. Yet, given their scope and cost, RCTs are beyond the means of many organisations, which are obliged to rely on published reviews.

The aim of our study is to examine the effectiveness of the intervention and violence prevention programmes carried out in the last decade. It continues and updates earlier studies (Scheckner, Rollin, Kaiser-Ulrey, & Wagner, 2002; Wilson, 2000). Studies published since the beginning of 2000 up to the present were evaluated, selecting them on the basis of the quality of their methodological design and on their level of scientific evidence. This allows us to establish the degrees of recommendation of the various programmes (National Institute for Clinical Excellence (NICE), 2008).

2. Methods

2.1. Inclusion criteria

Studies were included in this review if they fulfilled the following criteria: (a) in empirical studies, the aim had to be the evaluation of the effectiveness of an intervention programme in reducing violence in the school environment; (b) in review studies, the main aim required was to examine the effect of school violence prevention or reduction programmes; (c) the evaluated interventions had to directly target the study population (Primary or Secondary school pupils), not the teachers and parents.

2.2. Search strategy

A systematic search was made through the following electronic databases: Medline, Trip Database, Cochrane, Academy Search Premier, PsycINFO, ERIC and PsycARTICLES. The keywords and terms used were: "bullying", "school violence", "attitudes toward violence and adolescents", "intervention or prevention program and self-esteem or empathy", among others. In order to guarantee the currency of the findings, the search was restricted to works published after January 1, 2000. The titles were examined, as were the abstracts when available, and those that did not meet the criteria were rejected.

2.3. Selection criteria

The complete texts of the accepted articles were carefully read, and the lists of references were studied to identify possible relevant articles not detected by our initial search. The selection of studies was made by two independent reviewers following two stages:

1) Level of evidence: We used the categories proposed by the Agency for Healthcare Research and Quality (2010) in order to limit the review to articles that offered a high level of scientific evidence: (1A) meta-analysis of randomized, controlled clinical trials; (1B) randomized controlled clinical trials; (2A) suitably designed, non-randomized controlled studies; and (2B) uncontrolled studies, such as pre-post studies and cohort studies.
2) Methodological quality: Two independent reviewers assessed the methodological quality of the studies selected with a high inter-rater reliability (Pearson correlation coefficient, $r = 0.83$), using the following evaluation criteria:
   - For studies of 1A level of evidence (reviews), the criteria used were those described by Jadad, Moher, and Klassen (1998) for systematic reviews, which assign a quality score from 0 to 8. Studies that scored below 4 were rejected. Meta-analyses of randomized clinical trials were included at this level, as were other meta-analyses of prospective studies or systematic reviews of special importance, provided they reached the required score on this scale.
   - For studies of 1B level of evidence (RCTs), studies were included if they fulfilled at least one of the following conditions:
     (a) A score of 6 or above on an ad hoc scale of methodological quality based on the guide published by the University of York in 2001 for the preparation of systematic reviews (NHS Centre for Reviews and Dissemination, 2001). The scale comprised 10 items: (1) operative definition of the constructs and terms used in the study; (2) appropriate method for sample selection; (3) appropriate sample size; (4) a priori distinction of sub-groups or use of suitable clustering techniques; (5) validity of the evaluation (direct collection of information by the researchers); (6) reliability of the evaluation (use of a validated tool and/or a high level of internal consistency to evaluate the intervention); (7) follow-up of the results; (8) use of outcome measures that match the aim of the study; (9) appropriate statistical analysis; and (10) suitable presentation of the findings through graphs or similar.
     (b) A score of 3 or above on the scale of Jadad et al. (1996), for randomized clinical tests.
   - For the evaluation of the quality of the quasi-experimental studies (2A and 2B levels of evidence) the ad hoc quality scale was used. Articles scoring 6 or above were included in the review.

2.4. Tabulation and analysis of the information

The studies selected were grouped according to their level of scientific evidence (1A, 1B, 2A and 2B) and methodological design.

The data from each study were arranged according to the following categories: date and country of study; quality of the methodological design; research aim; name of the prevention or intervention programme evaluated; sample size and age of the study population.

The analysis of the studies selected was descriptive, as meta-analysis was not possible due to the heterogeneity of the results.

3. Results

The electronic search initially returned 9386 publications. After reviewing the titles, abstracts and references, 299 potential articles were identified. Of these, 245 were excluded due to not having a methodological design at the levels of evidence 1A, 1B, 2A or 2B. Of the remaining 54 studies, 32 were finally selected that fulfilled the criteria required. Of these, there were 2 meta-analyses of RCTs (1A level of evidence), 2 meta-analyses of prospective studies, 1 systematic review, 12 RCTs (1B level of evidence), 11 non-randomized controlled studies (2A level of evidence), and 4 pre-post uncontrolled studies or studies of cohorts (2B level of evidence) (see Fig. 1).

3.1. Level of evidence 1A: meta-analysis of RCT and systematic reviews

3.1.1. Description of the studies

We found 5 studies that fulfilled the inclusion criteria for this category. Of these, two are meta-analyses of RCTs, which constitute the maximum level of evidence (Mytton, DiGuiseppi, Gough, Taylor, & Logan, 2006; Park-Higgerson, Perumean-Chaney, Bartolucci, Grimley, & Singh, 2008). Due to their interest and their relation to the aim of the study, we also include two meta-analyses of prospective studies (Merrel, Gueldner, Ross, & Isava, 2008; Ttofi & Farrington, 2011) and one systematic review of prospective studies (Vreeman & Carroll, 2007). Details are shown in Table 1.

The 2 meta-analyses of RCTs (Mytton et al., 2006; Park-Higgerson et al., 2008) included 82 randomized clinical trials that assess the efficiency of violence prevention programmes in schools. The meta-analysis by Merrel et al. (2008) and the systematic review by Vreeman and Carroll (2007) attempt to assess school interventions aimed at decreasing