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Compensatory and protective factors against violent delinquency in late adolescence: Results from the Montreal longitudinal and experimental study

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ABSTRACT

Purpose: To identify compensatory/protective factors in pre-adolescence and in mid-adolescence against late adolescence violent delinquency in a sample of kindergarten males from low socioeconomic environments. The selected factors concerned modifiable elements of their family (parental supervision), school (school engagement), and personal life (perceived legitimacy of legal authorities).
Methods: Participants were from the Montreal Longitudinal and Experimental Study, a prospective longitudinal study of 1037 kindergarten boys from disadvantaged neighborhoods. We used latent profile analysis to identify at-risk and non-at-risk behavioral profiles in kindergarten and regression analyses to test the putative compensatory/protective factors against late adolescence violent delinquency.
Results: We identified three at-risk behavioral profiles in kindergarten (i.e., Low, Moderate, and High aggressive–disruptive). Perceived legitimacy of legal authorities, parental supervision and school engagement were identified as compensatory and/or protective factors in pre-adolescence and mid-adolescence against violent delinquency in late adolescence. The relative influence and the specific role of these factors depended, however, on the developmental period examined (pre-adolescence vs. mid-adolescence).
Conclusions: Interventions for high risk kindergarten children that aim to foster positive social bonds with the community (including legal authorities), family and school probably need to start early in elementary school and continue until late adolescence to prevent violent delinquency during adolescence.

Introduction

Childhood physical aggression is the single most important personal risk factor for early-onset and persistent violent delinquency for boys (Nagin & Tremblay, 1999; Patterson, Forgatch, Yoerger, & Stoolmiller, 1998; Pingault, Côté, Lacourse, et al., 2013; Tremblay & LeMarquand, 2001). This is especially true for physically aggressive boys who are also hyperactive, oppositional and non-prosocial and who come from a disadvantaged neighborhood (Hawkins, Herrenkohl, Farrington, et al., 1998; Tremblay, Pihl, Vitaro, & Dobkin, 1994). However, not all aggressive-oppositional-non-prosocial poor males become violent delinquents, suggesting the presence of compensatory or protective factors that counterbalance or mitigate, respectively, the risk associated with their behavioral and socio-demographic profile. Some of these factors have been well documented but they may be difficult to influence (for example, IQ at the individual level or neighborhood composition at the community level). There are, however, other possible compensatory/protective factors that are amenable to change and thus interesting from a prevention perspective. These compensatory/protective factors need to be based on sound empirical or theoretical grounds. In this study, we focused on putative compensatory/protective factors that could be modified and that can trigger one or more of the processes identified by Rutter (1987) in regard to protective/compensatory factors: (1) reduce risk, (2) reduce negative chain reactions such as affiliation with deviant peers, (3) establish competence, and (4) open new opportunities.

With this in mind, we selected the three following factors reflecting the self, the family, and the school domains: perceived legitimacy of legal authorities, parental supervision, and school engagement. Ideally, we expected each of these factors to operate both as a compensatory factor and as a protective factor, in order to maximize their individual impact. Protective factors (also known as buffering or resiliency factors) moderate the link between risk factors and negative outcomes through an *interaction effect*. Compensatory factors (also known as resource

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factors, beneficial factors, or direct/risk-based protective factors) have *main effects* that are opposite to risk factors and they cancel out risk factors through an additive mode (Fergusson, Vitaro, Wanner, & Brendgen, 2007; Rose, Holmbeck, Coakley, & Franks, 2004; Ttofi, Bowes, Farrington, & Lösel, 2014). Importantly, the same factor can operate as a compensatory factor and a protective factor (Lösel & Farrington, 2012).

In addition to their possible protective (i.e., moderating) effect or compensatory (i.e., main) effect, the three factors selected in this study were also expected to have three additional qualities: (1) they have the potential to operate as protective/compensatory factors at different developmental periods (i.e., pre-adolescence and/or mid-adolescence), (2) they have the potential to operate additively and/or multiplicatively, and (3) they are relatively independent of the risk factor (i.e., they should not mediate the effect of the risk factor on the outcome) (Kraemer, Stice, Kazdin, Offord, & Kupfer, 2001). These selection criteria were expected to increase the salience of the chosen protective/compensatory factors as relevant targets for prevention across different developmental periods as well as to help clarify their role at the theoretical level. Therefore, the *first goal* of the present study was to examine whether or not, controlling for socio-demographic characteristics, specific behavioral profiles identified during childhood would convey differing risks for violent delinquency during late adolescence. The *second goal* was to determine whether a series of self-related, family-related, and school-related factors could operate as compensatory or protective factors in this context. The *third goal* was to test whether these compensatory or protective factors operate cumulatively or multiplicatively, both during pre-adolescence and mid-adolescence. Each of the selected factors represents one important and modifiable element of their family, school, or personal life. These factors can indeed be improved through sustained interventions, as shown by a number of prevention programs, such as *Communities That Care* (Hawkins, Catalano, Arthur, et al., 2008) to foster internalization of healthy values and norms and willingness to comply with them via bonding to prosocial groups and individuals, *Strengthening Family Ties* (Lee & Pyfer, 2000) to improve parental practices and attachment to parents, and *Check and Connect* (Sinclair, Christenson, Lehr, & Anderson, 2003) to build school engagement.

Selected putative protective and compensatory factors

Perceived legitimacy of legal authorities (which reflects an internalized obligation to defer to the rules and decisions of legal authorities; Fagan & Tyler, 2005), adequate family practices such as parental supervision, and school commitment (i.e., school engagement) are three facets that reflect or foster bonding with social institutions (Hirschi, 1969). Research suggests that perceived legitimacy of those who make and enforce rules, good parental supervision, and commitment to school could 'protect' adolescents from violent and nonviolent delinquency (Fagan & Tyler, 2005; Herrenkohl, Lee, & Hawkins, 2012; Pardini, Loeber, Farrington, & Stouthamer-Loeber, 2012). However, the tests often used to demonstrate the protective role of these factors do not match the current definition of a protective factor as a moderator, but rather that of a compensatory factor. In addition, most extant studies were based on a cross-sectional framework, which prevented the examination of the protective/compensatory role of the protection factors at different developmental periods, in addition to obscuring the directionality of effect between variables. Therefore, the evidence behind these factors as being true moderators or compensatory factors at different developmental periods for children who are at risk for violent delinquency remains scarce and mostly speculative.

Methods

Participants

Participants were drawn from the Montreal Longitudinal and Experimental Study (Tremblay, Vitaro, Nagin, Pagani, & Séguin, 2003), a sample of White French-speaking males from disadvantaged neighborhoods in Montreal, Quebec, Canada ($n = 1037$). The participants were followed longitudinally from kindergarten (i.e., age 6) onwards. Informed consent was obtained from all of the families. The University of Montreal Ethics Committee approved this research.

Measures

Main predictor: grouping variables used to identify the behavioral profiles

Teachers assessed physical aggression (3 items; e.g., 'fights with other children'), opposition (5 items; e.g., 'is disobedient'), hyperactivity (2 items; e.g., 'squirmy, fidgety child'), inattention (4 items; e.g., 'has poor concentration or short attention span') and helpfulness (10 items; e.g., 'will try to help someone who has been hurt') with the Social Behavior Questionnaire (Tremblay, Loeber, Gagnon, et al., 1991) when the participants were in kindergarten (i.e., age 6). Each item was rated on a 3-point scale ranging from does not apply (0) to frequently applies (2). Cronbach's α were .87, .84, .89, .81, and .92 for physical aggression, opposition, hyperactivity, inattention and helpfulness, respectively.

Compensatory/protective factors

We identified putative compensatory/protective factors reflecting the individual, family and school domain, respectively, that were assessed through participants' self-reports in pre-adolescence (i.e., ages 11 and/or 12 years) and again in mid-adolescence (i.e., ages 14 and/or 15 years).

Individual factor — perceived legitimacy of legal authorities. Perceived legitimacy of legal authorities was assessed at ages 11 and 14 years using 9 true-false items adapted from the Jesness Inventory (Jesness, 1983; Le Blanc, 1997), an instrument designed to measure self-reported behaviors related to personal functioning (e.g., 'policemen and judges will tell you one thing and do another'; 'if the police don't like you, they will try to get you for anything'). The negative items were reverse scored, such that higher scores reflected greater perceived legitimacy of legal authorities. Cronbach's α were .64 and .75 at ages 11 and 14 years, respectively.

Family factor — parental supervision. Parental supervision was assessed at ages 11, 12, 14 and 15 years using two items: 'your parents know where you are when you are outside the house?' and 'your parents know with whom you are when you are outside the house?'. Items were rated from never (0) to always (3). Cronbach's α were .72, .73, .82, and .81 at ages 11, 12, 14 and 15 years, respectively. The pre-adolescence parental supervision scale was created using the mean of the scores at ages 11 and 12 years, and the mid-adolescence parental supervision scale was created using the mean of the scores at ages 14 and 15 years. The correlation between the scores at ages 11 and at 12 years was $r = .49$, and the correlation between the scores at ages 14 and 15 years was $r = .52$.

School factor — school engagement. School engagement was assessed at ages 11, 12, 14 and 15 years using 6 items, including 'do you feel that you do your best at school?', 'have you replied to your teacher without being polite?'. Negative items were reverse scored. Items were rated on a 4-point scale ranging from never (0) to often or always (3). Cronbach's α were .67, .66, .77, and .77 at ages 11, 12, 14, and 15 years, respectively. The pre-adolescence school engagement scale was created using the mean of the scores at ages 11 and 12 years, and the mid-adolescence school engagement was created using the mean of the scores at ages 14 and 15 years. The correlation between the scores at ages 11 and at 12 years was $r = .55$, and the correlation between the scores at ages 14 and 15 years was $r = .69$.

Compensatory/protective factor indexes. In addition to the aforementioned compensatory/protective factors, we considered two cumulative