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Author: Coskun, Begum  
Title: Time-out: an evaluation of rebound facilities  
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4. Out-of-school facilities in the Netherlands: do they influence cognitive distortions and externalizing behaviors?

Begüm Coşkun
Mitch Van Geel
Paul Vedder

Rebound is the name for time-out facilities in the Netherlands meant for students referred by regular schools. These facilities are for students with behavior problems who disturb classes. Rebounds use the EQUIP program designed to make antisocial youth think and act responsibly. The present study aimed to investigate the effects of Rebounds using a quasi-experimental pre-, and posttest design. The sample included 87 Rebound students and 77 at risk students recruited from junior vocational high schools (total $M_{age} = 13.92$, $SD = 1.11$). A two-way repeated measures ANOVA showed no improvements for cognitive distortions, antisocial, and externalizing behaviors for Rebound youths. This study shows that Rebound facilities in the Netherlands are not as effective as they intend to be.

SUBMITTED
After the heated public debate in response to the murder of a school deputy by a student in 2004, the Dutch government introduced Rebound facilities as an additional means to preserve school safety (Van der Hoeven, 2004). Students of secondary schools, who show maladaptive behavior but are not diagnosed with a psychiatric disorder and have no criminal record, may be referred to these facilities. Rebounds offer temporary (approximately three months) ‘shelter’ to students with behavioral and educational problems (Van Veen, Van der Steenhoven, & Kuijvenhoven, 2007) that are so highly disruptive and so difficult to handle that available in-school support services do not suffice for these students. By receiving these problematic students Rebounds help to restore or maintain a positive school climate for the students and the teachers of the referring school. A second goal of Rebound facilities is to prepare the referred students for a return to their school, or for placement in another school. This is what ‘Rebound’ stands for: providing students a second chance rather than removing them from school permanently. Most of the students are referred due to their externalizing behaviors, such as antisocial and aggressive behaviors, during classes. There is a yearly increase of about 8% in the number of students referred to Rebound facilities. Today the Netherlands has more than 4500 places available in Rebound facilities (Van der Steenhoven, Messing, & Van Veen, 2012). Rebound facilities use the EQUIP program to reduce students’ antisocial behavioral manners. Many comparable cognitive-behavioral interventions have been found successful in reducing problem behaviors (Hollin & Palmer, 2009; Landenberger & Lipsey, 2005; Pearson, Lipton, Cleland, & Yee, 2002). However, previous studies on the EQUIP program have shown contradictory outcomes (Helmond, Overbeek, & Brugman, 2012; Liau et al., 2004).

**Rebounds and EQUIP**

Rebounds function like regular schools. Students attend full days and are working on assignments they get from teachers of the referring schools. When working on their assignments they are supervised by Rebound staff. Working on school assignments is meant to make sure that students do not miss curricular contents covered in their regular classes, which could hamper their return to their regular class. Some Rebound students even may benefit from the individualized attention from the supervisors, allowing them to learn better than they would have in their regular class.

In addition to this attention for regular curricular contents, Rebounds offer EQUIP as a focused intervention. EQUIP aims to teach antisocial youth to think and act responsibly through peer-helping and skill-streaming methods (Gibbs, Potter, & Goldstein, 1995). The peer-helping method is based on the Positive Peer Culture (PPC) model (Vorrath & Brendtro, 1985) aiming to change the negative peer pressure into a positive peer culture through targeting mutual responsibility by helping and learning from each other (Gibbs et al., 1995). The skill-streaming method is based on the
Aggression Replacement Training (ART; Goldstein & Glick, 1987), with a strong component of restructuring behavior accompanying cognitions of antisocial youth.

The current study evaluates the effectiveness of Rebounds. Our design does not allow to focus on separate elements of Rebounds, like the EQUIP-intervention. Nevertheless, EQUIP is an important element of Rebounds. Studies on the effectiveness of the EQUIP program, mainly conducted on incarcerated youth, have so far shown inconsistent results (Helmond et al., 2012; Liau et al., 2004). Leeman, Gibbs, and Fuller (1993) reported increases in social skills and reduced recidivism among incarcerated youth. A study by Nas and colleagues (2005), again conducted in a youth prison, did not find any improvements for social skills and moral judgments, but cognitive distortions were found to decrease among the participants. A recent meta-analysis conducted on 18 studies on behavioral interventions for the reduction of cognitive distortions and externalizing behaviors, showed a small effect on cognitive distortions ($d = .27$). Moreover the relation between cognitive distortions and externalizing behaviors was found to be weaker for more severe forms of delinquent and aggressive behavior than for milder forms (Helmond, Brugman, Overbeek, & Gibbs, 2012). The authors suggest that interventions that aim to reduce cognitive distortions and subsequently externalizing behaviors, would be more effective for less severe forms of problem behavior. Because Rebound students are mostly referred due to their externalizing and disturbing behavior, which is supposedly less severe than the problems of incarcerated youth (Van Veen, Van der Steenhoven, & Kuijvenhoven, 2007), we expect Rebound facilities to be an effective intervention for referred youth.

**Current Study**

Externalizing behaviors are assumed to be based in or in any case accompanied by self-serving cognitive distortions (Barriga, Landau, Stinson, Liau, & Gibbs, 2000; Dodge, 1993; Maruna & Mann, 2006). These rationalizations are self-centered and do not or hardly reflect signs of worries about or care for others (Gibbs et al., 1995). The aim of the present study was to investigate the effects of Rebounds particularly with respect to externalizing and antisocial behaviors and cognitive distortions. We used a pre-posttest design and created a control group by selecting 77 students with severe externalizing behaviors from three mainstream schools. Based on mainly the study of Helmond et al. (2012) we hypothesize improvements on externalizing, antisocial behaviors and their cognitive distortions in the Rebound group, and no reductions for the control group.
Method

Sample

Experimental group. A total of 170 Rebound students recruited from three Rebound facilities were initially included in the study. Due to truancy, early transfers to (new or the same) mainstream schools, and referrals to external youth care services or juvenile youth centers, a total sample of 87 Rebound students remained in the program until we had completed the posttests. One-way ANOVA’s between Rebound students who stayed in the program and students who left the program early or could, for another reason, not partake in the posttest showed no significant differences on the dependent variables on the pretest (externalizing behavior: $F(1, 160) = 1.45, p = .23$, overt behavior: $F(1, 138) = .03, p = .86$, covert behavior: $F(1, 141) = 1.20, p = .28$). The ages of students in the experimental group ranged from 12 to 16 years. The mean age was 14.07 years ($SD = 1.13$). The sample consisted of 61 (70.1%) boys and 26 girls (29.9%). The sample included 77 percent students with an immigrant background ($N = 67$).

Control group. A total of 348 mainstream school students were recruited for the present study. The final control group contained 77 students who demonstrated levels of externalizing problem behavior comparable to those found in the Rebound students. The mean age of the control group was 13.75 years ($SD = 1.07$). The sample consisted of 37 boys (48.1%) and 39 girls (50.6%), and included 39 percent students with an immigrant background ($N = 30$).

Rebounds and the EQUIP Intervention

Rebound facilities offered the 10 week program EQUIP next to daily schoolwork supervision. Teachers in the Rebound facilities who administered the EQUIP intervention were all qualified to run the program. Students sent to Rebounds are required to stay at least six weeks before they can either return to their school or are sent to another institution. This means that part of the students cannot complete the EQUIP program. Another challenge is that Rebounds do not have a set starting or entrance day. In order to respond accurately to schools’ urgent needs to find an alternative setting for disruptive students, Rebounds offer continuous access. As a consequence students may enter the EQUIP program when it is underway already. The maximum capacity per EQUIP group is 12 students. Each week the EQUIP intervention contains three mutual help meetings and two other meetings (Gibbs et al., 1995). During mutual help meetings the students, with the help of each other, are enticed to identify and correct thinking errors. The other meetings focus on anger management, social skills training, and social decision making. Each meeting lasts up to 90 minutes.
Measures

**Socioeconomic status.** Socioeconomic status was measured with the Family Affluence Scale (FAS, Curry, Elton, Todd, & Platt, 1997). A sample item of this scale: ‘How many computers does your family own.’ The scale has different response categories for the separate items, therefore Cronbach’s alpha could not be computed, but the FAS has been found a valid indicator of socio-economic status (Boyce, Torsheim, Currie, & Zambon, 2006).

**Externalizing behavior.** Externalizing behavior was assessed using the sum of the two subscales ‘hyperactivity/inattention’ and ‘conduct problems’ of the Dutch version of the self-report screening measure Strengths and Difficulties Questionnaire (SDQ, Goodman, 1997). Scale items (in total five) for hyperactivity/inattention are e.g., ‘I am restless, I cannot stay still for long’, and for the subscale conduct problems (in total five items), ‘I get very angry and often lose my temper’). Cronbach’s alpha’s were .76 (pretest) and .67 (posttest). The Dutch version of the SDQ showed good convergent and discriminant validity, also in ethnically diverse groups (Goodman, Lamping, & Ploubidis, 2010; Muris, Meesters, & Van den Berg, 2003; Widenfelt, Goedhart, Treffers, & Goodman, 2003).

**Self-serving cognitive distortions and antisocial behaviors.** Cognitive distortions and antisocial behaviors were measured with the Dutch version of the How-I-Think Questionnaire (HIT-Q, Nas, Brugman, & Koops, 2008). The HIT-Q originally was developed to measure self-serving cognitive distortions with 39 items covering four categories: self-centered; blaming others; minimizing/mislabeling; and assuming the worst (Barriga et al., 2001). A sample item is “If someone is careless enough to lose a wallet, they deserve to have it stolen.” The items also cover four types of antisocial behavior: opposition defiance, physical aggression, lying, and stealing. The Dutch version of the HIT-Q showed good construct validity and reliability (Nas et al., 2008; Van der Velden, Brugman, Boom, & Koops, 2010). Cronbach’s alphas for cognitive distortions and antisocial behaviors in the current study varied between .74 (pretest) and .81 (posttest).

**Fidelity.** To assess the fidelity of the EQUIP program, we used five items from a list of 66 criteria originally used for evaluating the fidelity of EQUIP for residential care (EQUIP Netherlands, 2009), which closely followed the EQUIP curriculum and manual (Gibbs et al., 1995; Potter, Gibbs, & Goldstein, 2001). The five items used measured: (1) students’ language proficiency, (2) students’ ability to function in groups (3) the severity of students’ problem behavior, (4) the frequency of lessons, and (5) the structure (contents) and order of the EQUIP lessons.
Procedure and Statistical Analyses

Data for the experimental as well as the control group was collected in the highly urbanized western part of the Netherlands. In the experimental group questionnaires were administered in students’ first week in the Rebound, before starting the EQUIP program. The post-test was completed at the end of students’ Rebound stay. Data for the control condition were collected on regular schools in the months September and October, at the start of the school year, by researchers and research-assistants. Letters of informed consent were given by teachers to parents of students on mainstream schools. On Rebound facilities, teachers were asked to inform and ask parents for their consent. To assure anonymity only first names were used to link data from pre- and posttest. Furthermore, participants were assured confidentiality of their data. The participating EQUIP trainers were invited to complete an EQUIP fidelity questionnaire. All trainers (N=6) completed the list.

To analyze whether the effect of EQUIP statistically differs from that for the control group, we used a repeated measures ANOVA with a between subjects factor (Rebound/ control) (Nieuwenhuis, Forstmann, & Wagenmakers, 2011).

Results

Fidelity

Most Rebound students have an immigrant background. The fidelity questionnaires completed by six trainers showed that only three of them were the opinion that the Dutch language proficiency of the students was sufficient to warrant good understanding. Moreover, four trainers doubted whether students in their EQUIP groups were sufficiently competent to function in a group, which is a prerequisite for participation. Also, four trainers suggested that students have problems that warrant psychiatric intervention (an exclusion criterion for Rebound). Three trainers indicated that not all planned EQUIP meetings actually took place. Five trainers evaluated that both the order of meetings and the frequency were not as planned. The order and structure of specific meetings, like the introduction, equipping meetings, mutual help meetings and meetings to learn how to cope with anger, were changed according to at least four trainers. Together the trainers provided a worrying picture of the program fidelity.
Preliminary Analyses

Table 1 showed SES not to be related to cognitive distortions, externalizing and antisocial behaviors. Antisocial behaviors were highly correlated with cognitive distortions. Externalizing behaviors showed a strong positive relation with cognitive distortions and antisocial behaviors.

Table 1
Correlations between the main study variables

<table>
<thead>
<tr>
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<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<tbody>
<tr>
<td>1.SES</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.Cognitive distortions</td>
<td>-.116</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.Cover antisocial behavior</td>
<td>-0.076</td>
<td>.931**</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>4.Overt antisocial behavior</td>
<td>-0.111</td>
<td>.942**</td>
<td>.762**</td>
<td>-</td>
</tr>
<tr>
<td>5.Externalizing behavior</td>
<td>0.080</td>
<td>0.544**</td>
<td>0.500**</td>
<td>0.518**</td>
</tr>
</tbody>
</table>

* p < .05; ** p < .01.

The experimental and control group differed in gender ratios, with proportionally more boys present in the Rebound group (F(1, 63) = 4.072, p = .07). Furthermore, the control group scored significantly higher on socio-economic status (control group: M = 10.73, SD = 1.81, Rebound group: M = 9.32, SD = 1.85, F(1, 159) = 23.26, p < .01, Cohen’s d = .79). In addition, proportionally more immigrant students were present in the Rebound group than in the control group students (χ²(1,164) = 24.475, p < .01). No significant age differences between the experimental and control group (F(1, 63) = 4.072, p = .07) were found. Since gender and SES differed significantly between the experimental and control group, following analyses were corrected for these background variables.

One-way ANOVA’s on pretest scores for externalizing behavior (F(1, 161) = .139, p = .71) and covert behavior (F(1, 145) = 1.871, p = .17) yielded no statistically significant differences between the experimental and control group at the pretest/baseline. Table 2 presents means and standard deviations. For cognitive distortions (F(1, 135) = 5.667, p < .05, Cohen’s d = .42), and overt behavior (F(1, 139) = 6.607, p < .05, Cohen’s d = .44), however, the analyses yielded significant differences with the Rebound group reporting more cognitive distortions and overt behaviors than the control group. A multiple regression analysis, controlling for gender and SES, showed cognitive distortions for both groups to be a predictor for externalizing behaviors with a medium effect size (β = 2.614, p < .01, R²= .341).

Effects of Rebound

Using a two-way repeated measures ANOVA comparing Rebound students and control students, and controlling for gender and socio-economic status we found no significant differences between pre- and posttest scores on externalizing (F(1,157) = 2.061, p = .153, η²=.02), cognitive distortions (F(1,125) = .064, p = .800, η²=.01), overt (F(1,129) = .003, p = .954, η²=.00), and covert
antisocial behavior \((F(1,133) = 0.068, p = .794, \eta^2 = .00)\), meaning that Rebound students did not change more than non-referred students between pre- and posttest for externalizing, overt, and covert antisocial behaviors, and cognitive distortions.

Table 2  
Effects of Rebound on externalizing, cognitive distortions, overt, and covert behavior

<table>
<thead>
<tr>
<th></th>
<th>Experimental group</th>
<th></th>
<th>Control group</th>
<th></th>
<th></th>
<th>η²</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Pre-test</td>
<td>Post-test</td>
<td>Pre-test</td>
<td>Post-test</td>
<td>(F)</td>
<td></td>
</tr>
<tr>
<td>Externalizing behavior</td>
<td>8.05</td>
<td>3.81</td>
<td>7.23</td>
<td>3.35</td>
<td>8.24</td>
<td>2.59</td>
</tr>
<tr>
<td>Cognitive distortions</td>
<td>2.86</td>
<td>.77</td>
<td>2.52</td>
<td>.69</td>
<td>2.57</td>
<td>.61</td>
</tr>
<tr>
<td>Overt antisocial behavior</td>
<td>3.02</td>
<td>.78</td>
<td>2.69</td>
<td>.76</td>
<td>2.68</td>
<td>.77</td>
</tr>
<tr>
<td>Covert antisocial behavior</td>
<td>2.65</td>
<td>.82</td>
<td>2.38</td>
<td>.72</td>
<td>2.49</td>
<td>.57</td>
</tr>
</tbody>
</table>

Discussion

In this study we compared Rebound students with a selected group of at risk students recruited from junior vocational high schools to analyze whether or not Rebounds influence cognitive distortions and externalizing behaviors. Results suggest that Rebound is not more effective for Rebound students than the regular school program is for non-referred at risk students: Rebound did not change students’ cognitive distortions, externalizing behavior and overt and covert problem behaviors. We had expected that the EQUIP program, as an important building block of Rebound programs, would have had a stronger impact, but is as is our non-significant results corroborate the findings of a recent study on the effects of the EQUIP program with incarcerated, antisocial youth in the Netherlands (cf. Brugman & Bink, 2011; Helmond, Overbeek, & Brugman, 2012).

An easy explanation for the disappointing findings can be found in the fidelity information; EQUIP was not implemented as intended, and in many cases referred students did not receive the full program. This is partly due to Rebound specific processing of students; students may start whenever the need in referring schools is insupportable and may leave when better needs adapted support is required and available from other institutions. Indeed, fidelity and program implementation are likely candidates to explain the findings, however, the study conducted by Helmond, Overbeek, and Brugman (2012), found no moderating role of program fidelity in the reduction of cognitive distortions and recidivism, not even when a program fidelity booster was used.

Fidelity and implementation of EQUIP might not be the only explanation. Another possible explanation has to do with the fact that studies that report positive findings for EQUIP have been conducted mainly in the USA and studies that we reported being less or non-effective were mainly conducted in the Netherlands. This suggests that an intervention like EQUIP is not as easily
transferable between contexts as developers and institutes that use the program may have hoped for. The program and the participants’ susceptibility to it may be culture or country specific. This possibility was analyzed by Hopman, De Winter and Koops (2012) in a study with the provocative title “The hidden curriculum of youth care interventions”. They analyzed the EQUIP program and concluded that the American and Dutch way of defining and presenting moral behavior is distinct in the country specific versions of the program. In addition they suggest a difference in value perspective or value preferences between the two countries. Hence, the fit between country specific versions with respect to value representations and the circumstances for implementation, including the value climate, may differ and impact on the effects.

A third explanation leads away from EQUIP, and focusses on the fact that Rebounds bring together adolescents who mostly are characterized by serious externalizing problems. This concentration comes with a risk of contagion, modelling and mimicking as pointed out by Dishion and colleagues (Dishion & Dodge, 2005; Dishion & Tipsord, 2011). This is particularly the case when activities for adolescents are not well structured and unsupervised. We saw that parts of the program are not well-structured, moreover, Rebound students, have breaks and transitions between activities; hence, there is ample opportunity for contagion. Simple dialogue between the students may cause more varied and more intensive problem behavior, and thus for these students being together in Rebounds may produce even negative effects. In addition, being referred to a Rebound, is not just a second chance, it also is, or at least may be experienced as a punishment. This experience may produce frustration and aggression, making it likely that the students’ problematic behaviors will intensify (Gershoff, 2002).

**Limitations and Implications**

Firstly, a randomized control treatment design would have been preferable to the quasi-experiment that we could conduct. We traded better control of possible confounders for larger external validity. Given the nature of referrals, a fully randomized design would have been difficult to implement. An important implication of our finding is that students sent to Rebound, while not benefiting in terms of reducing their problematic behavior, run a high risk of losing learning time and hence are put at educational disadvantage (School Inspectorate, 2007). Further studies should clarify whether Rebounds add to educational disadvantage or that students’ lack of academic engagement irrespective the school setting, causes these youths to have a problematic school career.

As indicated in the preceding subsection about possible explanations for our findings, the results we reported could have been worse due to possible contagion between students and possible negative reactions to the experience of being punished. The positive news is that we found no
evidence for such negative effects. It is possible, however, that the really problematic students, or the students who were affected most by contagion or reactions to their experience of Rebound being a punishment, were amongst the “drop-outs”. We lost track of these students. A future study might anticipate this possibility and arrange good contacts with other institutions that possibly cater for the needs of these students (e.g., psychiatric wards, youth prisons, special schools for aggressive adolescents, etc.).
References


