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STUDY PROTOCOL

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The effectiveness of the Dutch juvenile diversion program Halt: study protocol for a randomized controlled trial

Benthe J. van Delft^{1,2*} , Kirti Zeijlmans² , Jessica J. Asscher³ , Ton Liefwaard¹ and André M. van der Laan^{1,2}

Abstract

Background Halt (acronym for 'The Alternative' in Dutch) is the most widely used youth justice diversion measure for juveniles (12 up to and including 17 year olds) in the Netherlands. Therefore, it fits well with international children's rights. Halt gives juveniles the opportunity to learn from their mistake and avoid a criminal record. The goal of Halt is to reduce recidivism by working on several subgoals. These subgoals consist of cognitive behavioral mechanisms, such as improving social skills and enhancing feelings of responsibility for (delinquent) behavior in order to enhance moral beliefs. However, to date, little is known about the effectiveness regarding recidivism and the subgoals of Halt. The aim of the current study is to determine the effectiveness of the Dutch diversion measure Halt.

Methods A Randomized Controlled Trial (RCT) is conducted among 1,300 juveniles who are referred to Halt after committing a minor offence. They are randomized into the Halt condition, or into the control group with no further intervention. Self-report data on primary (delinquency) and secondary goals (subgoals of Halt, e.g., social skills) are collected at three points in time: after referral to Halt (T0), 100 days later (T1) and one year after the referral to Halt (T2). At T1 experienced compliance with children's rights is also measured, given the importance of insight in the relation between compliance with children's rights and the effectiveness of this diversionary measure. Several scales are used to conceptualize children's rights aspects, such as the right to be heard and the right to legal assistance. To establish program integrity, Halt-employees fill out a questionnaire at T1. After two years, police and judiciary records are analyzed (T3). Characteristics of the participants, the employees and the execution of Halt are investigated as moderators.

Discussion The results contribute to the limited knowledge about the effectiveness of diversion programs in general and Dutch juvenile justice more specifically. This knowledge adds to an evidence-based practice of criminal justice diversion in the Netherlands.

Trial registration ClinicalTrials.gov #NCT06353204, retrospectively registered on April 4th, 2024.

Keywords Effectiveness, Randomized controlled trial, Recidivism, Diversion, Halt, Children's rights

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Background

The importance of diverting minors away from criminal proceedings has been stressed since several decades and States parties of the UN Convention of the Rights of the Child¹ (CRC) are legally bound to establish diversionary measures for children² (CRC, 1989, art. 40(3)). In the Netherlands, Halt is the diversion measure on police level (legally established since 1995) (Dutch Criminal Code, art. 77e). Juveniles aged 12 to 18 can be referred to Halt after committing certain (minor) offences, such as vandalism and shoplifting. Successfully completing Halt results in the disposal of the charges by the police and prevents further prosecution. This way, obtaining a criminal record is prevented (DCD, art. 77e) [1]. In 2022, over 9,500 juveniles were referred to Halt [2].

Halt aims to prevent recidivism by working on (1) social skills; (2) taking responsibility for (criminal) behavior; (3) correcting damages; (4) support from the social network; (5) insight in the consequences of (criminal) behavior and (6) parental involvement [3]. Furthermore, in its mission and vision, Halt emphasizes the importance of implementing and complying with the CRC. Halt is one of the partner organizations of the Dutch NGO Coalition for Children's Rights [3]. The program theory of Halt fits into the Risk-Need-Responsivity-model (RNR-model) [3, 4]. The general principle of this model is that interventions should align with the risk level, criminogenic needs and responsiveness of an individual in order to reduce recidivism [3, 4]. Furthermore, the intervention theory of Halt is based on theories of restorative justice, labeling, re-integrative shaming, social learning, cognitive behavioral therapy and parenting skills [3].

Meta-analyses on the effectiveness of diversion measures that take place before court processing or prior adjudication show conflicting results. Some studies show that diversion measures are more effective in reducing recidivism than traditional processing through the criminal justice system [5, 6], while others report that diversion has no overall effect on recidivism [7]. When broken down by type of diversion measure, studies also find different results. On the one hand, no differences in effectiveness are found between (police-led) diversion with (referral to) services or "diversion only" (e.g. caution only) in comparison to traditional processing [6], while others do find larger effects for diversion with services than "doing nothing" [5]. Important to note is that, in the majority of studies, diversion is compared with formal

processing instead of receiving no form of diversion or processing.

In the Netherlands, only one study on the effectiveness of Halt was carried out [8]. In this experimental study, published in 2006, the overall conclusion was that Halt (experimental condition) did not reduce recidivism more than when no intervention (control condition) was imposed. However, when analyzing factors associated with recidivism within the experimental group (the group that received Halt), results also showed apologizing to the victim was associated with less recidivism in comparison to participants of Halt who did not apologize. Moreover, this study showed that Halt works best for first offenders with no or minor problems who also show positive social behavior [8]. A process evaluation showed that parts of Halt were not always carried out according to procedure. For example, intended processing times were not always met [9]. A subsequent intervention theory and process evaluation showed that Halt was implemented as intended, except for processing times, which were still unobtained [10].

Since the last effectiveness study, Halt has undergone several alterations. The population and the content of Halt have changed and in 2024 some alternations are made with regard to the offences that are applicable for Halt [9, 11–13]. Consequently, there is no insight in the effectiveness of the current version of Halt. In addition, it is unclear what the mechanisms of behavioral change are underlying the effects of Halt and whether Halt is equally effective for all participants. Given that a referral to Halt is not completely voluntary, and that yearly over 9,500 juveniles are referred to Halt [2], a study on the effectiveness is urgently needed.

The aim of this study is to examine the effectiveness of Halt in terms of delinquency and in terms of changes in the Halt subgoals (e.g., social skills and parental involvement). Additionally, the associations of receiving Halt with experienced compliance to children's rights is examined. Finally, moderating effects of program and participant characteristics, such as risk profile and offence characteristics, will be tested. As discussed, the intervention theory of Halt is based on multiple theoretical frameworks such as the RNR-model and theories of social learning [3]. In the literature, empirical support can be found for the different elements and assumptions of the intervention theory that underlie the Halt subgoals [10]. In the study on the evaluation of the intervention theory, carried out by Buysse et al., the scientific substantiation of the Halt subgoals has been assessed, based on a comprehensive literature review. This study shows that the Halt-intervention is substantiated theoretically and based on principles that can play a role in achieving the (sub)goals [10]. Given the empirical based assumptions of the intervention theory and the adjustments Halt has

¹ The Netherlands ratified the CRC in 1995 (Trb. 1995, 92).

² In this article the CRC-definition of child, "every human being below the age of eighteen years" (CRC, art. 1) is used. In the context of juvenile justice this in principle implies that human beings who are below the age of eighteen years of age at the time of the (alleged) offence fall within the scope of the CRC; see Committee on the Rights of the Child. General Comment no. 24 (2019) on children's rights in the child justice system, 2019, para. 20.

undergone in the past years [3, 10], it is hypothesized that juveniles who do receive Halt will recidivate less frequently than juveniles who do not receive any intervention during the follow-up period. Furthermore, it is hypothesized that juveniles who have participated in Halt will have more positive outcomes regarding the subgoals of Halt. This means that it is expected that they will have higher scores on social skills, taking responsibility for the consequences of (delinquent) behavior, repairing the damages made, having social support, having insight in the consequences of behavior and parental involvement. Moreover, the subgoals of Halt are believed to mediate the relationship between receiving Halt and delinquency. Furthermore, following the RNR-principles that interventions should be tailored to the risk factors, (criminogenic) needs and responsivity of individuals [4], it is

expected that different factors, such as risk profile and relationship with the Halt-employee, will moderate the relationship between Halt and delinquency. This article describes the study protocol of a randomized controlled trial on the effectiveness of the Dutch diversion measure Halt.

Method

Study design

Juveniles who are referred to Halt are randomly assigned to two groups. The experimental group receives Halt, while the control group receives no further intervention. Participants complete a questionnaire right after their referral to Halt (T0), 100 days after T0 (T1) and a year after the referral (T2) (see Fig. 1). The time between T0 and T1 is 100 days, since this is the maximum duration

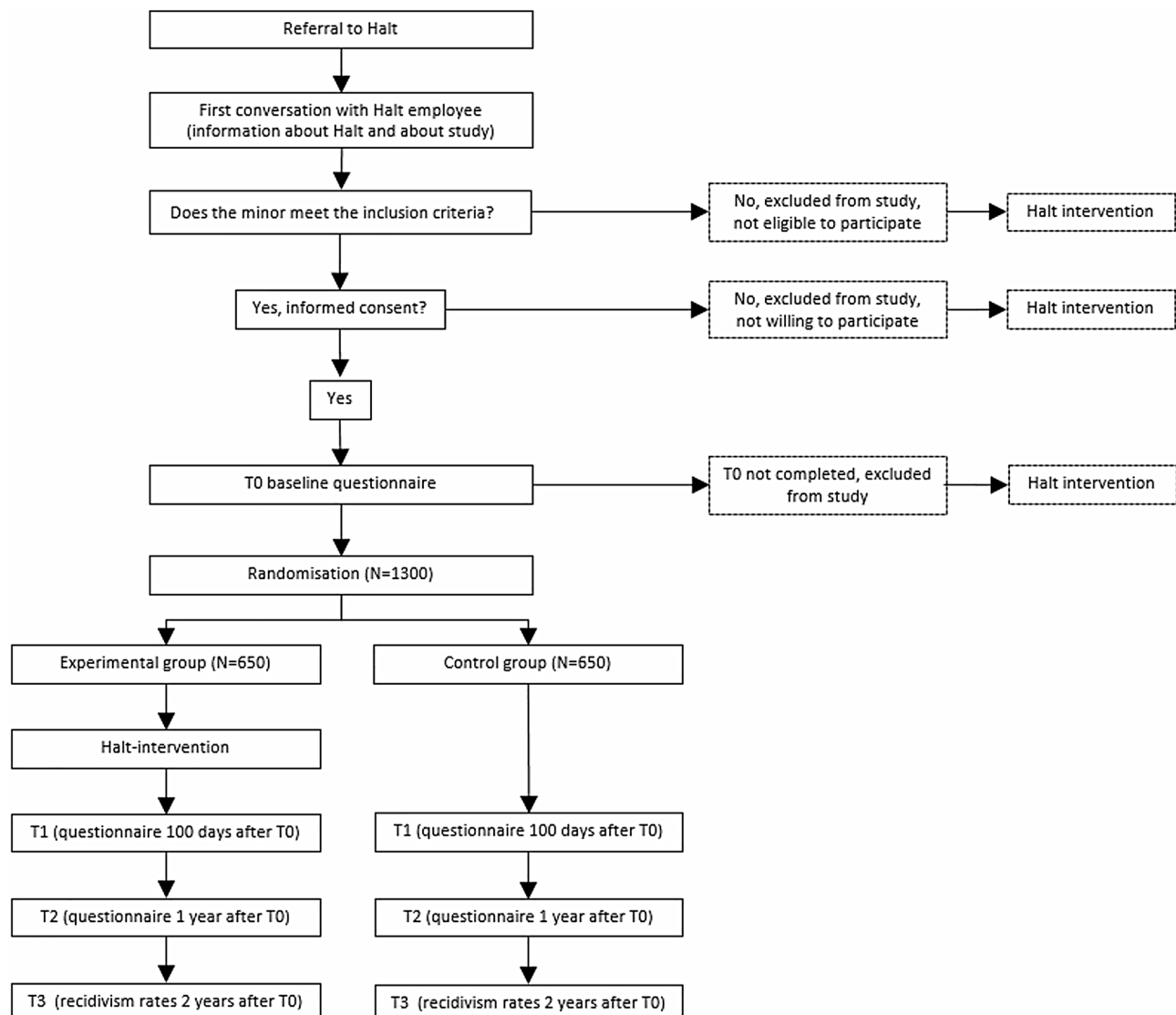


Fig. 1 Flow chart effect study

of Halt [3]. This way it is ensured that the participants receive T1 only after they completed Halt. Furthermore, T2 takes place one year after T0 in order to align with reference periods of the Dutch Youth Delinquency Survey [14]. Additionally, Halt-employees that handle cases of the participants in the experimental group fill out questionnaires about these cases at T1. Furthermore, police and judicial records are analyzed two years after the first contact with Halt (T3). This reference period aligns with the Dutch Recidivism Monitor [15].

Study setting

There are nine Halt-teams in the Netherlands. The current RCT is carried out in a sample of five teams in rural as well as urban areas. Four teams are randomly selected using stratified sampling in order to ensure geographical distribution. In 2024, new types of offences are included for referral to Halt, such as driving without a license [2, 16]. The fifth team is non-randomly selected because, at the time of sampling, it was the only team with referrals to Halt for these kinds of offences already. The participating teams are located in The Hague, North-Holland, Zeeland-West-Brabant, Northern Netherlands and Central Netherlands.

Study sample

The sample consists of juveniles who are referred to Halt by a police officer, a public prosecution officer, a special investigation officer or a truancy officer. Juveniles participate voluntarily in the study. However, there are exclusion criteria. Someone cannot participate when they do not speak Dutch, since the questionnaires are in Dutch. Furthermore, 'Hack_right', 'Respect Online' or 'Sport en Gedrag' (Sports and behavior) cases are not eligible, since these forms of Halt differ from the regular Halt-trajectory and have their own intervention manuals. Lastly, in the exceptional cases when serious concerns regarding the safety of a minor are suspected, someone can be excluded after consultation with the designated policy officer at Halt and the researchers. Additionally, juveniles who already participated in the study, recidivate and are referred to Halt for a second time cannot participate in the study again.

Study conditions

Experimental group: Halt

Halt consists of one to several conversations with a Halt employee, completing learning or work assignments and, if applicable, apologizing to the victim and/or financially compensating the (immaterial) damages [3]. Each trajectory starts with a screening of underlying problems and risk factors and includes a conversation about the offence. Based on the needs of the minor and the offence, assignments are chosen for the participant to complete,

focusing for example on substance abuse or social skills. The maximum duration is twenty hours [3].

Control group: no intervention

Participants in the control group receive no further formal response to their behavior. This design has been chosen in consultation with the Ministry of Justice and Security [17]. Receiving no formal response is the only way in which the control group is able to avoid a formal criminal record, as is the case in the experimental group. Because the effectiveness of other sanctions, such as community sanctions, is unknown, this study compares Halt with not receiving Halt. This will lead to the most adequate conclusions about the effectiveness of Halt in comparison to a response limited to the initial contact with the police, special investigation officer, public prosecutor or truancy officer.

Recruitment and randomization

The recruitment of the participants takes place via the Halt-employees. The employees contact the juvenile and/or parent with the obliged invitation for the first appointment at Halt, by phone or by sending a letter [3]. At this point, information about the study is given. The juveniles and/or parents are asked to share their contact information with the researchers. If they do not approve, Halt is carried out as usual. If they do approve, an information letter and informed consent form are sent by the researchers. The juvenile, and parents when the juvenile is below 16, have until the first appointment at Halt to fill out the informed consent form and the first questionnaire. Reminders are frequently given, starting with an automatic reminder through text of email after two days. Subsequently, researchers try to contact the juvenile and/or parent once every workday by phone.

The randomization takes place after informed consent has been given. For every Halt-team, strings of 2,000 digits have been generated (0 = control group, 1 = experimental group) using standard pseudo-random number generator, the Mersenne-Twister, in R 4.1.2 [18, 19]. This way equal distribution of the control and experimental groups is ensured between the teams. For the randomization process, a 1:1 ratio is used, except for group cases. All juveniles who are referred to Halt for an offence committed as a group, are placed in the same condition if they decide to participate in the study.

After informed consent is obtained, the first questionnaire (T0) is automatically sent out to the juvenile. When the T0 questionnaire is completed, the juvenile officially participates in the study and is informed about the randomization outcome. When the first questionnaire is not (completely) filled out before the first appointment with the Halt-employee, the juvenile does not participate in the study and Halt will be carried out as usual.

In order to facilitate the recruitment of participants, several measures are taken. To begin with, all Halt-employees in the participating teams are informed about the study and data collection. In addition, they receive a detailed written instruction about the data collection to ensure that the recruitment procedure is standardized for all Halt employees. During meetings with the Halt employees the instructions are explained in detail and the recruitment procedure is practiced. Additionally, contact with the Halt teams is maintained during the recruitment phase and the recruitment by employees is monitored. Moreover, reminders to participants are scheduled in advance and are provided both electronically (via SMS, email and WhatsApp) and via the phone, by the research team. Possible participants receive multiple reminders via different methods. Additionally, the research team is available during working hours to assist with questions and (technical) problems. Lastly, a 10-euro gift voucher is given to all participants per filled-out questionnaire as an incentive for participation. Moreover, measures are taken to facilitate participation. The information letter for parents is, next to Dutch, available in English, German, Arabic and French. The questionnaires are on the level of B1 Dutch and a reading function is included, enabling recitation of the questions.

Sample size

The current study aims to include 1,300 participants; 650 participants assigned to each condition. Based on estimations of the yearly referrals to Halt in 2024, it is expected that 7,762 youth will be referred to Halt in the five participating teams in 2024 (Personal communication, December 19, 2023). The number of referrals differ strongly between the teams and over the months. Given the number of cases referred to Halt on a yearly basis, it is expected to reach inclusion within one year.

Power analysis

In order to establish the number of participants, a power analysis has been conducted using Strata 15.1. Effect sizes of judicial intervention are usually between 5% and 10% [20]. No assumptions about the effect sizes can be made since no overall significant differences have been found in the last study and since Halt has changed since 2006 [8]. Research shows that 17% of youth referred to Halt come into contact with the police and 2,6% with the public prosecution office again within two years [11]. Assuming an alpha of 0.05 and a power of 0.8 (one-sided testing), 818 participants per condition are needed in order to find a 5% difference regarding police recidivism and 277 participants per condition regarding new contacts with the public prosecution office. Based on previous research, attrition between 13% and 23% is assumed [8]. Therefore, and because of the practical feasibility of the sample size,

650 participants per condition (control and experimental) are recruited in order to retain 500 participants per condition after follow-up. With this sample size an effect size of 6,3% can be detected regarding police recidivism and an effect size of 3,1% regarding new contacts with the public prosecution office. Moderator analysis will be conducted with the variables for which ad hoc power analysis show that the samples are large enough to detect an effect and for variables for which there is theoretical evidence that a moderator effect is to be expected.

Ethical considerations

Informed consent

Participation in the study is voluntary. In order to ensure that participants are well informed about the study, informed consent is obtained. Minors aged sixteen or seventeen can give informed consent on their own, below that age informed consent is obtained from both the minor and the parent or guardian.

Other ethical considerations

The Committee Ethics and Data of the Faculty of Law of the University of Leiden approved the study design as described (no. 2023-013).

Instruments

Primary outcome measures

The primary outcome measures are (self-reported) delinquency and truancy (see Table 1). Self-reported delinquency is assessed at T0, T1 and T2 using the Youth Delinquency Survey. Responses can be categorized into aggression, violent offences, property offences, vandalism, possession of arms, drug offences and cyber- and digital offences [14, 21, 22]. In T1 the 'during the last twelve months' option is left out to ensure there is no overlap in time periods between T0 and T1. Furthermore, expected delinquency is measured by asking Halt-employees (T1), whether or not they think that the participant will conduct another offence. Additionally, delinquency is measured using official data from (1) Dutch police and (2) judiciary records two years after T0 (T3). Truancy is measured at T0, T1 and T2 by asking participants whether they have skipped school in the last three months, and, if so, how many hours they have skipped school on average per week [21].

Mediators/secondary outcomes

The subgoals of Halt are investigated as mediators and as secondary outcomes. All subgoals are derived from the Halt Manual [3]. An overview of the instruments used, including the scales and example items, in both the juvenile and the Halt-employee questionnaires can be found in Tables 2 and 3 respectively.

Table 1 Concepts, instruments and sources at different assessments

Outcomes	Assessment				Source*			Condition		Instruments**		
	T0	T1	T2	T3	J ^a	H ^b	O ^c	Halt	Cont.	J ^a	H ^b	O ^c
Primary outcomes												
Delinquency - public prosecution				x			x	x	x			OBID
Delinquency - police				x			x	x	x			SSB
Delinquency - self-report	x	x	x		x			x	x	YDS		
Mediators/secondary outcomes												
Insight in consequences behavior	x	x	x		x	x		x	x	ATDS	Self-developed	
										HIT	Self-developed	
Increasing social skills/alternative behaviors	x	x	x		x	x		x	x	PPS	Self-developed	
Taking responsibility	x	x	x		x	x		x	x	HIT	Self-developed	
Correct wrongdoing	x	x	x		x	x		x	x	Self-developed	Self-developed	
Enhancing social support from network	x	x	x		x	x		x	x	MSPSS	Self-developed	
Parental involvement	x	x	x		x	x		x	x	PMQ	Self-developed	
Moderators												
Compliance children's rights	x	x	x		x	x		x		Self-developed	Self-developed	
										PJS	PJS	
										SRSS	SRSS	
	x				x				x	Self-developed	Self-developed	
										PJS	PJS	
										SRSS	SRSS	
Characteristics Halt	x	x				x	x	x			TER	
Program integrity		x				x	x	x			Self-developed	JOIN
Characteristics Halt-employee		x				x	x	x			Self-developed	JOIN
Perceived relationship Halt-employee		x			x	x		x		WAI-12	WAI-12	JOIN
Characteristics of participants												
Demographical characteristics	x	x	x				x	x	x			JOIN
Risk profile (dynamic risk factors)	x		x		x	x		x		SDQ	YDS	JOIN
									x	SDQ	YDS	JOIN
Characteristics offence	x						x	x	x			JOIN
												SSB
Characteristics referral	x						x	x	x			JOIN

*a J = Juvenile; b H = Halt-professional; c O = official data

** OBID Onderzoek- en Beleidsdatabase Justitiële Documentatie (Research and Policy Database for Judicial Documentation); SSB Stelsel van Sociaal-statistische Bestanden (System of social Statistical Datasets); YDS Youth Delinquency Survey; ATDS Attitudes Towards Deviance Scale; PPS Peer Pressure Scale; HIT How I Think questionnaire; MSPSS Multidimensional Scale of Perceived Social Support; SDQ Strength and Difficulties Questionnaire; Halt-SI Halt Signaling Instrument; PMQ Parental Monitoring Questionnaire; TER Treatment Engagement Rating Scale; SRSS Shaming and re-integrative Shaming Scale; PJS Procedural Justice Scale; JOIN Halt registration system; WAI-12 Work Alliance Inventory- short version; Self-developed instruments or items that are developed for this study

Table 2 Instruments– Juvenile questionnaire

Instruments	Items	α	Scale	Example item	Ref.
Youth Delinquency Survey					
Delinquency	31	-. ^a	<i>Yes, in the last three months– no, never</i>	Have you ever threatened someone to scare them?	[14, 21, 22]
Truancy	2	-. ^a	<i>Yes– no; less than 1 h per week– more than 5 h per week</i>	Have you skipped school in the last three months?	
Attitudes Towards Deviance Scale	6	0.88	<i>Not wrong at all– very wrong</i>	What do you think when someone of your age steals something worth less than 5 euros?	[22, 27, 28]
How I Think Questionnaire					
Minimizing/Mislabeling subscale	9	0.78	<i>Strongly disagree– strongly agree</i>	Only cowards walk away from a fight	[24, 25]
Blaming Others subscale	10	0.77		I make mistakes because I hang out with the wrong people	
Peer Pressure Scale	10	-. ^b	<i>Never– very often</i>	My friends challenge me to use drugs	[23]
Multidimensional Scale of Perceived Social Support	12	0.88	<i>Totally disagree– totally agree</i>		[26]
Family	4	0.87		My family really tries to help me	
Friends	4	0.85		I can talk about my problems with my friends	
Significant others	4	0.91		There is a special person who is around when I am in need	
Parental Monitoring Questionnaire	15		<i>Never– (almost) always</i>		[28–31]
Parental solicitation	5	0.5		Do you have secrets for your parents about what you do in your free time?	
Parental disclosure	5	0.61		Do you hide from your parents what you do during nights and weekends?	
Parental control	5	0.77		Do your parents require that you tell them how you spend your money?	
Procedural Justice Scale					
Treatment scale	7	0.94	<i>Definitely not right– definitely right</i>	Do you think that the Halt-employee treated you with respect?	[34]
Outcome scale	4	0.81	<i>Totally disagree– totally agree</i>	In comparison to others, I find that I was punished more severely	
Shaming and Re-integrative Shaming Scale	9		<i>Totally disagree– totally agree</i>		[36–38]
Shaming scale	4	0.97		During the Halt-intervention I was treated as a criminal	
Re-integrative shaming scale	5	0.81		At the end of Halt people told me that they have forgiven me	
Work Alliance Inventory 12 (Bond Scale)	4	0.82	<i>Never– always</i>	My Halt-employee and I respect each other	[42]
Strength and Difficulties Questionnaire	20	0.70	<i>Not true– certainly true</i>	I am restless, I cannot stay still for long	[43–45]
Youth Delinquency Survey					
Problems	9	-. ^a	<i>Problems at home– none of these</i>	In the last six months, have you have one or more of the following problems? Problems at school.	[14, 21, 22]
Professional help	1	-. ^a	<i>Yes– no</i>	Did you receive professional help for these problems?	
Delinquent friends	6	0.73	<i>None– all</i>	Do you have friends that in the last twelve months, threatened someone online or on social media?	[21, 22, 28]
Self-developed instruments^c					
Correct wrongdoing	4	-	<i>Yes, not, not applicable</i>	Did you apologize to the victim?	[3]
Compliance children's rights	18	-	<i>Definitely not right– definitely right</i>	Do you think that you got enough time to tell your story?	

^a Alpha's are not reported for these instruments, since these variables are binary^b In the current study multiple items have been added to the original scale. Therefore the alpha is unknown^c Instruments or items that are developed for this study

Table 3 Instruments– Halt-employee questionnaire

Instruments	Items	α	Scale	Example item	Ref.
Procedural Justice Scale					
Treatment scale	7	-. ^a	<i>Definitely not right– definitely right</i>	During Halt I created space to ask for explanations	[34]
Outcome scale	4	-. ^a	<i>Totally disagree– totally agree</i>	During Halt I listened to the juvenile	[34]
Treatment Engagement Rating Scale		0.93			[39–41]
Openness	2	-	<i>Stays superficial usually. Even when asked specific questions, he often conceals important matters or even lies to avoid an unfavorable impression.– Conceals sensitive information usually on his own.</i>	The openness of the juvenile regarding their own behavior and events in the present and the past	
Constructive use of therapy sessions	3	-	<i>Regularly rejects feedback and thinking frameworks or disregards them - often asks for feedback, advise or visions. Actively tries to get out as much as possible</i>	The degree to which relevant subjects were discussed	
Global assessment of commitment to intervention	1	-	<i>Low commitment– great commitment</i>	A global assessment of the commitment of this juvenile	
Work Alliance Inventory-12	8	-. ^a	<i>Never– always</i>	The juvenile and I respect each other	[42]
Youth Delinquency Survey					
Problems	9	-. ^a	<i>Problems at home– none of these</i>	Do you have the impression that the juvenile had one or more of these problems in the last three months? Problems at school.	[14, 21, 22]
Self-developed items^b					
Halt– subgoals	7	-	<i>Most likely no– most likely yes</i>	Did the juvenile gain more insight in the negative consequences of their behavior for others during Halt?	[3]
Compliance children's rights	4	-	<i>Definitely not right– definitely right</i>	During Halt I created space to ask for explanations	
Characteristics Halt	21	-	-. ^c	At what parts of the intervention where parents involved?	[3]
Program integrity	4	-	<i>Totally disagree– totally agree</i>	During this intervention, it was needed to provide customization	

^a Items (partly) match the items used in the juvenile questionnaires, but have been altered to fit the Halt-employee questionnaire. Consequently, α is not known

^b Instruments or items that are developed for this study

^c The possible answers differ per item and do not consist of Likert-scales

Improvement of social skills is measured as changes in experienced pressure from peers to commit offences in the last twelve months using the Peer Pressure Scale [23]. In T1 a reference period of three months is used in order to ensure there is no overlap between T0 and T1. A higher score on the scale indicates more experienced peer pressure from friends to demonstrate deviant behavior [23].

Taking responsibility for the consequences of behaviors is measured as changes in sense of guilt and responsibility regarding the consequences of delinquent behavior with the 'Blaming Others' subscale of the 'How I Think questionnaire' (HIT). A higher score on the scale indicates a lower sense of responsibility [24, 25].

Correcting the damages is measured as whether the damages made are corrected by asking respondents whether or not they have had (1) a conversation with the victim; (2) apologized to the victim; (3) paid the damages made to the victim and; (4) repaired the damage.

Support from social network is assessed using the Multidimensional Scale of Perceived Social Support [26]. The scale measures experienced social support from family, friends and significant others. A higher score indicates higher support [26].

Insight in the consequences of (delinquent) behavior is measured as *changes in social norms* and *belief in conventional norms*, using the Attitudes Towards Deviance Scale (ATDS) [22, 27, 28] and the Minimizing/Mis-labeling scale of the HIT [24, 25]. The ATDS measures *the attitudes towards delinquent behavior* and the HIT subscale assesses in what degree someone *minimizes the consequences of behaviors*. Higher scores indicate a higher belief in conventional norms (ATDS) and a lower understanding of consequences (HIT).

Parental involvement is measured using the Parental Monitoring Questionnaire. With this scale parental solicitation, parental disclosure and parental control are measured. A higher score indicates higher monitoring [28–31].

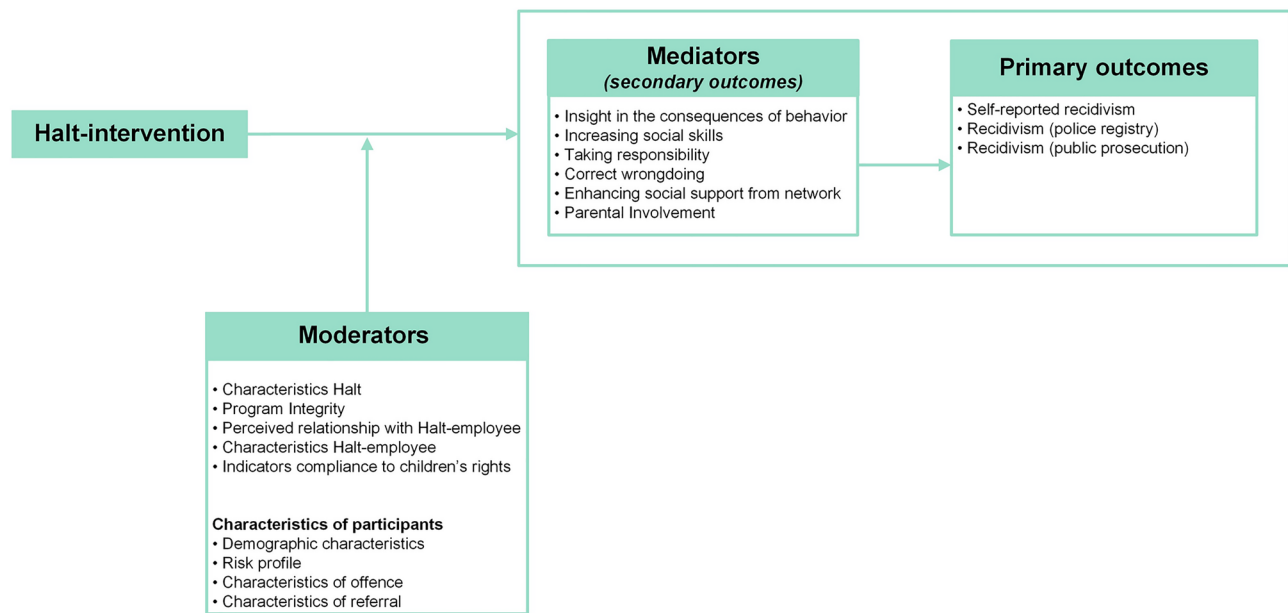


Fig. 2 Conceptual model of study design

Halt subgoal measures in employee questionnaire (T1)

In order to assess the degree to which the Halt-employee thinks that the juvenile participant has made improvements on the different subgoals during Halt, one question for each subgoal is included in the employee questionnaire (see Table 3). For example, in order to assess the subgoal *support from social network*, the question “Does the juvenile now know who to turn to for advice or help within his or her social network better than before?” is presented.

Moderators

Different moderators are taken into account in order to investigate whether or not these factors influence the relationship between Halt and the outcome measures (Fig. 2). Dependent of the research question, these variables can also be analyzed as outcome measures.

Perceived compliance with indicators of children's rights. Multiple scales are included in order to measure the *perceived alignment with compliance to children's rights* in the practice of Halt. A number of the items is also included in the T1 Halt-employee questionnaire (Tables 2 and 3).

Experienced procedural justice, the degree to which people feel treated fairly [32, 33], is measured using two subscales. *Participants views of treatment by the Halt-employee* (7 items) is measured as whether or not juveniles experienced that Halt-employees listened to them and treated them with respect. A higher score indicates a more positive view [34]. *Experienced outcome satisfaction* (4 items) is measured using four statements regarding the

outcome of the case. A higher scores indicates a lower sense of satisfaction [34].

Furthermore, several self-developed items are included regarding three areas of children's rights. *The right to be informed*, meaning the right to receive information before and during judicial proceedings [35], is measured using items about the information given about Halt and the adequacy and comprehensibility of this information (e.g. “Do you think that you could ask for explanations?”). A higher score indicates a more positive experience. At T1, two additional questions on this right are added into the questionnaire for the experimental group. These questions relate to the knowledge of the duration of Halt and the kind of assignments that had to be completed during Halt.

Experienced voluntariness to partake in Halt is measured using items about feelings of being forced to confess to the crime and having made the choice to participate in Halt independently. *The right to legal assistance* is measured using items about the chance to speak to a lawyer regarding the offence and the referral to Halt. Furthermore, one item is included about the *knowledge of not obtaining a criminal record* after successfully completing Halt.

Lastly, in T1, eight items are added about *feelings of stigmatization* and *re-integration* after Halt. With reintegrative shaming delinquent behavior is rejected, without rejecting the perpetrator, while with shaming by stigmatization the delinquent behavior and the perpetrator are rejected [36–38].

Characteristics of Halt are analyzed using questions from the T1 Halt-employee questionnaire and data from

JOIN. All items in the questionnaire are derived from the Halt manual [3]. The items regard (1) the *content of Halt*, for example the number of conversations and the assignments used; (2) whether *professional help* has been called in and; (3) the *commitment of the juvenile* during Halt. The commitment is analyzed using three subscales (Openness, Constructive use of therapy sessions and Global assessment of commitment to intervention) of the Treatment Engagement Rating Scale (TER) [39–41]. A higher score indicates a higher commitment [39].

Program integrity is analyzed using questions from the T1 Halt-employee questionnaire and data from JOIN. In the T1 Halt-employee questionnaire employees are asked to give a reflection on the case. Examples are “In this case I was able to follow the steps as described in the Halt manual” and “In this case it was needed to use customization”. Furthermore, JOIN contains information, for example about the procedure times, the presence of parents during Halt and whether or not a SCIL-screening has been used, that is used to study program integrity.

Characteristics Halt-employee. In the T1 Halt-employee questionnaire, questions are included about the *characteristics of the Halt-employee*, namely, the year of birth, gender, employment years and educational attainment.

Relationship with the Halt-employee. The relationship with the employee is measured using the Bond-scale of the Work Alliance Inventory-12 (WAI-12). A higher score indicates a better relationship. The same questions are included in the T1 Halt-employee questionnaire for both the participant and the parent [42].

Characteristics of participants

Demographic characteristics The demographics of participants regard family composition, type of school, educational attainment, gender and age.

Risk profile The criminogenic needs and risk factors of participants on the domains of school, work, free time, family, mental health, attitudes and skills and substance abuse and gambling are measured using the Halt Signaling Instrument (Halt-SI) [3].

Furthermore, to assess *psychosocial problems* (last six months at T0 and the last three months in T1), the Strength and Difficulties Questionnaire (SDQ) (prosocial behavior scale excluded) is used [43–45]. Additionally, *experienced problems in different life domains* is analyzed by asking participants if they experienced one or more problems on different life domains, such as school, drugs, and if so, if there has been professional help for these problems [14, 21, 22]. This question is also included in the Halt-employee questionnaire (T1).

The last risk factor studied is the *presence of delinquent friends* in the last year. The scale assesses whether the participants have friends that committed a range of

offences, such as threatening someone through social media or stealing something from a store. A higher score indicates more delinquent friends [14, 21, 22].

Characteristics of offence and referral Lastly, in the Halt-registration system JOIN, information is collected about the characteristics of the offence, the referral, and, for the experimental group, about the content of Halt, the types of modules used and if parts of Halt were conducted as a group- or solo-intervention. For example, apologizing to the victim or paying the damages to the victim can be carried out within the group context.

Data management

All members of the research team signed a confidentiality statement. The data will be stored at the WODC network on secured servers and is only accessible to the researchers on this project via two-step authentication passwords. While the research data are stored for at least twenty years, personal information (name and contact information) will be deleted five years after publication of the study. Furthermore, information is provided in the consent form that consent can be withdrawn at any moment and that deletion of data is possible within fourteen days after completion of the questionnaire. The contact information of the participants is stored separately from the rest of the data.

Statistical analysis

Prior to data analysis, different steps will be taken. To begin with, randomization success will be tested. Participants in the experimental and control group will be compared on relevant factors, such as demographics, offence and level of education, in order to establish whether or not there are factors on which groups differ significantly. Furthermore, a comparison will be made between the study population and the Halt-population, using Halt system data, in order to analyze the representativeness of the study population. Groups will be compared on characteristics such as age, gender, type of offense, moment of referral and region in order to uncover possible occurrences of biases and selection-effects. Moreover, the data will be checked for missings and attrition bias. Missing data for participants that did not complete all three surveys will be imputed if possible. Differences in attrition will be tested on demographic characteristics and T0 outcomes in order to test whether or not there are differences between participants who complete all surveys and participants who drop out over the course of the study and also to test whether or not there are differences between participants in the experimental group who completed Halt and participants who did not. Lastly, all scales used in the current study are selected based on theoretical arguments and the construct validity in prior research. However, the construct validity of all scales,

including checking for items that increase the validity when removed from the scale, will be tested, using Cronbach's Alpha, before further analysis.

Thereafter, the effectiveness of Halt on the primary and secondary outcomes will be investigated. The independent variable is the condition and the dependent variables are delinquency and Halt subgoals. For categorical outcome measures (e.g. 0 = no delinquency, 1 = delinquency) logistic regression analyses will be used and for continuous outcomes ANCOVA will be used (e.g. number of offences in the past twelve months). Moderator variables will be included as covariates in order to analyze interaction effects.

Furthermore, using the official data on delinquency (T3), survival analysis will be conducted in order to investigate possible differences in the time to recidivism. Since a comparison between two groups is made (experimental and control), Kaplan Meyer and Cox Survival analysis tests will be used [46].

Discussion

This article describes the study protocol of an RCT on the effectiveness of the Dutch diversion measure Halt. The effectiveness of Halt has not been studied since the study of Ferwerda et al. [8]. Access to diversion is an important right of children (CRC, 1989, art. 40(3)). Being able to ensure that diversion measures are effective in reducing recidivism and enhancing different behavioral outcomes, such as social skills, is therefore imperative.

This study has several strengths. By conducting an RCT, conclusions can be drawn about the causality of recidivism after completing Halt in comparison to only being apprehended [47]. Furthermore, by studying the subgoals of Halt and indicators of perceived compliance to children's rights, the effect of Halt on other behavioral outcomes is studied as well. Another strength is the combination of official and self-reported data from both juveniles and Halt-employees. Research shows a discrepancy between self-reported and official data on recidivism, especially when looking at less serious offences. Police registrations reflect a proportion of all offences committed; these registrations contain only up to 14% of offences reported in self-reports [48]. Therefore, it is expected that the prevalence in the questionnaires will be higher than the prevalence in police registration and judicial registration, with the lowest prevalence in judicial registration. Combining different sources will give a more complete picture of the outcome measures.

This study is not without challenges. To begin with, the occurrence of selection-effects can be a hurdle. This can influence the degree to which the population studied represents the population of Halt (i.e. the generalizability). To start with, selection can occur at the recruitment phase. To a certain degree, there is a dependence on the

collaboration of the Halt-employees, since they initially inform possible participants about the study. How the information is given, could influence the decision to participate in the study. In order to minimize this bias, all Halt-employees are given verbal and written instructions about the study and recruitment of participants and the research team is easily reachable for questions in order to facilitate the recruitment. Moreover, self-selection of participants during recruitment (non-response), as well as during the follow-up period (attrition) can cause bias. Since incentive payments can improve response rates in RCT's [49], participants receive a 10-euro gift voucher for every completed questionnaire in order to lower non-response and attrition. Moreover, considerable time is invested in the recruitment and retention of participants by giving digital and telephonic reminders to participants. Lastly, occurrences of biases and selection-effects can be investigated by comparing the study population and the Halt-population, using the Halt system data. Next to this, occurrences of biases will be taken into account, when possible, by imputation. Another threat to take into consideration is recidivism of participants in the control group during the follow-up period, since these participants can be referred to Halt again. In these cases, participants in the control group do still receive an intervention. It is important to take this into account during the analysis of the data.

Conclusion

With this RCT, the effectiveness of the Dutch diversion measure Halt regarding delinquency and other Halt-goals is studied. The study gives insights in factors that possibly explain or affect the (absence of) effectiveness of Halt on the outcomes. The results of this study will contribute to the knowledge about the effectiveness of diversion measures and can, thus, contribute to a more evidence-based practice of criminal justice diversion.

Abbreviations

Halt	'Het Alternatief' (The Alternative)
WODC	Wetenschappelijk Onderzoek- en Datacentrum
RCT	Randomized Controlled Trial
CRC	Convention of the Rights of the Child
DCC	Dutch Criminal Code
RNR-model	Risk-Need-Responsivity-model
OBJD	Onderzoek- en Beleidsdatabase Justitiële Documentatie (Research and Policy Database for Judicial Documentation)
SSB	Stelsel van Sociaal-statistische Bestanden (System of social Statistical Datasets)
YDS	Youth Delinquency Survey
ATDS	Attitudes Towards Deviance Scale
PPS	Peer Pressure Scale
HIT	How I Think questionnaire
MSPSS	Multidimensional Scale of Perceived Social Support
SDQ	Strength and Difficulties Questionnaire
Halt-SI	Halt Signaling Instrument
PMQ	Parental Monitoring Questionnaire
TER	Treatment Engagement Rating Scale
SRRS	Shaming and re-integrative Shaming Scale

PJS Procedural Justice Scale
JOIN Halt registration system
WAI-12 Work Alliance Inventory– short version
ANCOVA Analysis of Covariance

Supplementary Information

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Supplementary Material 1

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Author contributions

BJvD contributed to writing of the draft of the manuscript and the methodology. KZ contributed to the funding acquisition, project administration, the methodology, conceptualization of the study supervision and the revision of the manuscript. JJA contributed to the supervision and revision of the manuscript and the methodology. TL contributed to the supervision and revision of the manuscript. AMvdL contributed to the funding acquisition, project administration, the methodology, the conceptualization of the study, the supervision and revision of the manuscript. All authors read and approved the final manuscript.

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Data availability

No datasets were generated or analysed during the current study.

Declarations

Ethics approval and consent to participate

Ethical approval for conducting this Randomized Controlled Trial is obtained from The Committee Ethics and Data of the Faculty of Law of the University of Leiden (no. 2023-013). From all participants in the study, informed consent is obtained. Informed consent is also obtained from parents or guardians of participants under the age of 16.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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