

## **Method section evaluation study Willem Kleine Schaars model**

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## Method evaluation WKS-model

### Research questions

A positive therapeutic alliance between patients and staff workers stimulates the engagement and is associated with treatment success. The following research questions were investigated in the evaluation of the WKS-model: (1) How do youngsters experience the therapeutic alliance with the key worker and process supporter and does the alliance change during the evaluation period? and (2) Do youngsters show a clinical relevant change in autonomy, self-confidence, behavioral and emotional problems during the evaluation period? These research questions were answered with a multiple N = 1 study design. For each patient, the same questionnaires - before and after the evaluation of the sessions with the key worker and process supporter - were used. See Figure 1 for a schematic overview of the evaluation.

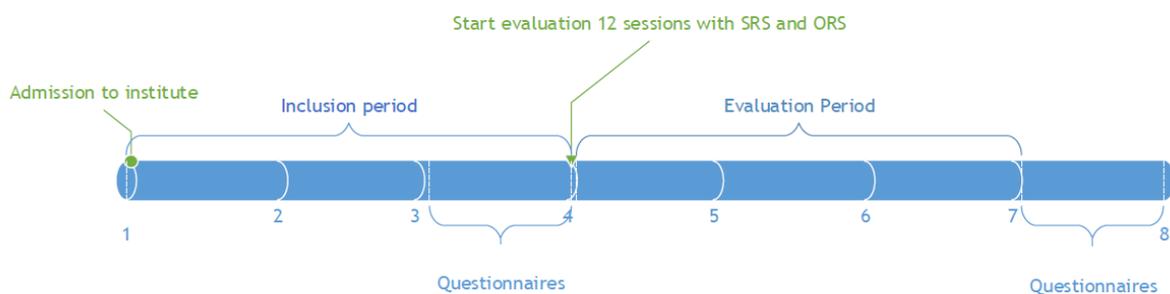


Figure 1 Overview N=1 Study evaluation WKS-model.

### Participants

All youngsters from whom it was expected that they were admitted at least six months could be included in the evaluation. Youngsters were included within three months after admission. In this period, a key worker was assigned to them and they had chosen a process supporter. The key workers and process supporters were trained in the WKS-model and worked for a minimum of six months with the WKS-model. A model fidelity checklist (see Appendix 1) was used to test whether the sessions were performed as intended by the WKS-model.

### Measurement instruments evaluation WKS-model

The Outcome Rating Scale (ORS) was scored by the youngster before each session with the key worker or process supporter. The Session Rating Scale (SRS) was filled out by the youngster and the key worker or process supporter at the end of the session. The questionnaires for the outcome measurements were filled out by the youngster, key worker and process supporter in the month before and the month after the evaluation of the sessions with the key worker and process supporter. See Table 1 for an overview of the instruments used.

### Session Evaluation questionnaires

#### Outcome Rating scale (ORS)

The ORS is a simple, four-item session-by-session measure designed to assess areas of life functioning known to change as a result of therapeutic interventions. These include symptom distress, interpersonal well-being, social role, and overall well-being (Hafkenscheid, 2010). The ORS

translates these four dimensions of functioning into four visual analogue scales, which are 10 cm lines. The four items can be added to a total score that describes the client's well-being and functioning (Janse, 2014). The internal consistency was determined over five sessions and the Cronbach's alpha ranged from .82 to .96 (Janse et al., 2014).

#### *Session Rating Scale (SRS)*

The Session Rating Scale (SRS) is a simple, four-item visual analogue scale designed to assess key dimensions of effective therapeutic relationships. The SRS is administered, scored and discussed at the end of each session to get real time alliance feedback from the youngsters so that alliance problems can be identified and addressed. The items refer to: Relationship (i.e., "Does the patient feel heard, understood, and respected?"), Goals and Topics (i.e., "Does the patient feel that the session focused on what he/she wanted to work on?"), Approach and Methods (i.e., "Was the therapist's approach a good fit?") and Overall "Was the session helpful [right] for the patient?". Internal consistency is high with a Cronbach's alpha of .85 and .95 over the first five sessions (Janse et al., 2014).

#### Outcome measurement questionnaires

##### *Kidscreen-27*

Autonomy was operationalized with the Kidscreen-27. The Kidscreen-27 assesses the quality of life of youngsters (Ravens-Sieberer et al., 2014). This includes physical well-being, psychological well-being, autonomy and relationships with parents, social support and relationship with friends, and school environment. For the evaluation of the WKS-model only the scale 'autonomy and relationship with parents' was used. The items are answered on a five-point's Likert scale from 'never' to 'always' or 'not at all' to 'completely'. The internal consistency of the Kidscreen-27 is good with Cronbach's alpha values between .80 and .84 (Ravens-Sieberer et al., 2014).

##### *Self-Perception Profile for Adolescents (SPPA)*

The SPPA is a self-perception rating scale that provides insight into the competence and self-esteem of young people from 12 to 18 years (Treffers et al., 2002; Harter, 1988). Items come together to form subscales related to self-perceptions of global self-worth, as well as eight other domains. For the evaluation of the WKS-model, the scale global sense of self-esteem was used. The internal consistency of this scale is good with a Cronbach's alpha of .80 (Treffers et al., 2002).

##### *Youth Self Report (YSR) and Child Behavior Checklist (CBCL).*

The YSR and CBCL measure the emotional and behavioral problems of young people (Achenbach & Rescorla, 2001). The YSR is filled out by the youngsters and the CBCL is filled out by the keyworker of the youngster. The instruments consist of 113 to 118 items, which are answered on a three-point Likert scale ranging from 'not at all' to 'often'. The items are subdivided into two broad band scales internalizing (emotional problems) and externalizing (behavioral problems) and eight narrow band scales. The broad band scales were used in the evaluation and have a good internal consistency with the Cronbach's alpha for the YSR and CBCL ranging between .72 and .95 (Verhulst et al., 1996 & 1997).

##### *Forensic Inpatient Observation Scale (FIOS)*

The FIOS is an observation scale. The FIOS is used to observe the behavior of the youngsters on the ward (Van Nieuwenhuizen & Bongers, 2011). The behavior is observed on six scales, in the

evaluation we used the oppositional behavior scale. The internal consistency of the FIOS is good with a Cronbach's alpha of .85.

**Table 1: Overview of the instruments used in the evaluation study**

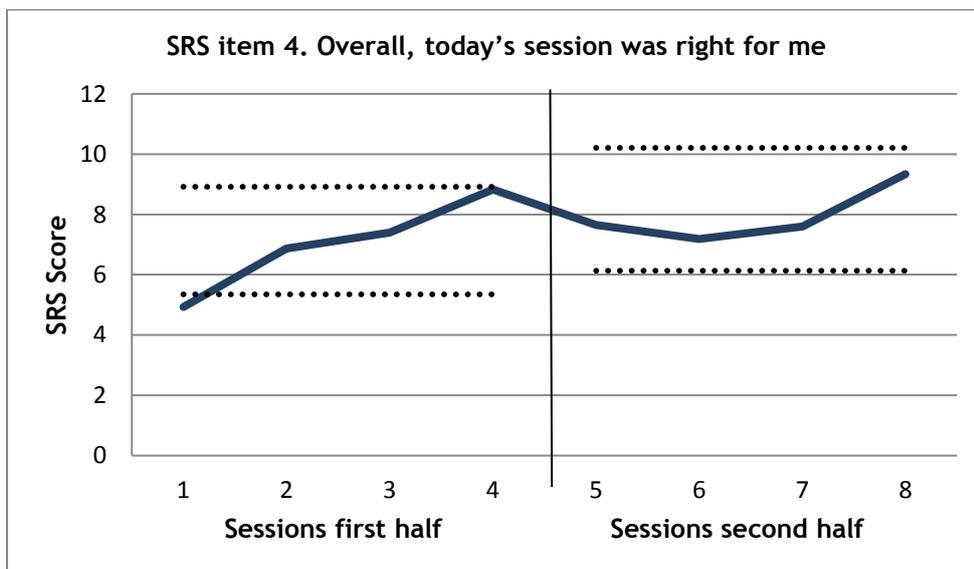
	Youngster	Key worker	Process supporter
Evaluation Sessions	ORS & SRS	SRS	SRS
Outcome measurement questionnaires	SPPA, YSR & Kidscreen	CBCL & FIOS	CBCL & FIOS

*Procedure*

The youngsters were informed about the pilot study by their key workers. The Kidscreen-27, CBSA, YSR, CBCL and FIOS questionnaires were filled out before the start of the evaluation of the sessions. The ORS and SRS were filled out, for instance, by using the Therapeutic Outcome Monitoring System (TOMS) app on an iPad. Research staff gave instructions to the key worker and process supporter about the use and feedback to the youngster based on the ORS/SRS. With the ORS and SRS, at least 12 sessions between the youngster and the key worker and process supporter were assessed, for approximately three months.

*Analysis plan*

The research questions were answered using information from the SRS and the outcome measurement questionnaires. For the first research question, the observations from the SRS were plotted in a graphic display (see Figure 2). A structured step by step visual analysis was conducted. Using a visual analysis the stability and the pattern of the therapeutic alliance was investigated. The steps of the visual analysis were based on Lane and Gast (2014). Within each evaluation period, the following steps were calculated for the SRS. Step 1 counting the number of sessions and step 2 calculating the mean, median, range, and stability envelope of data for the first half and second half of the sessions. The stability envelope was based on 25% of the median. Scores outside the stability envelope indicate that the alliance was not stable across the sessions. In Step 3, the median of the first half and the second half were compared to establish the direction of the pattern of alliance.



**Figure 2: Example of a graphic display of the visual analysis**

For the second research question, the Reliable Change Index (RCI) was calculated. The RCI indicates a clinically relevant change in scores on the outcome measurement questionnaires in this case: autonomy, self-confidence, emotional problems, behavioral problems and opposition behavior. In the Reliable Change Index formula, the change in scores on the questionnaire was corrected for the unreliability of the instrument. A reliable change means that this change was greater than (-) 1.96; indicating a clinically relevant improvement or deterioration.

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## Appendix 1

### Checklist model fidelity key worker

+ = present

- = absent

x = present, but not correct executed

	+/-/x	Remark
1. Uses an agenda according to the WKS-model		
2. Uses confronting I-messages		
3. Gives the youngster the assignment to come with a solution		
4. Checks the solutions of the youngster		
5. Formulates the solution in an agreement		
6. Mentions the process supporter		

### Checklist model fidelity process supporter

+ = present

- = absent

x = present, but not correct executed

	+/-/X	Remarks
1. Stimulates the youngster to contact the key worker and supports the youngster		
2. Gives no opinion about the assignment or other affairs		
3. Use at least 2 of the 6 skills within active listening <ul style="list-style-type: none"><li>• Uses open questions;</li><li>• summaries;</li><li>• uses silences;</li><li>• observes and labels non-verbal behavior and reacts to feelings;</li><li>• Listen to the complete messages;</li><li>• Not only listen to the positive remarks but also listen to the negative messages.</li></ul>		