

A Pilot Evaluation Study of an Intercultural Treatment Program for Stabilization and Arousal Modulation for Intensely Stressed Children and Adolescents and Minor Refugees, Called START (Stress-Traumasyntoms-Arousal-Regulation-Treatment)

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Abstract

Background: During or after periods of intense stress, such as traumatic migration or other experiences children and adolescents are in danger of developing psychiatric or physical symptoms. In these cases frequent barriers to treatment have recently been described for refugee minors, including language or cultural impediment. Therefore a short, very low threshold, playful program for emotion regulation and self soothing was developed, the Stress-Traumasyntoms-Arousal-Regulation-Treatment, START.

Methods: Adolescents in acute crisis at the age of 13 – 18 years participated in the START program for 5 weeks in multinational group settings, with two sessions per week. Compounds of START are derived from elements of dialectic behavioral therapy and trauma-focused cognitive behavioral therapy for children.

After informed consent, the first 22 adolescents completing the program were assessed for trauma (CATS, CPTCI), emotion regulation (FEEL-KJ), general mental and physical Health (RHS), experienced self-control (SCS) and perceived stress (PSS) immediately before and after treatment.

Results: Traumaspecific symptom load (CATS; CPTCI) was very high in the first 22 adolescents. A positive effect of START on emotion regulation (specifically the scale adaptive strategies), and self-control can be found as well as a negative effect (reduction) of perceived stress (PSS-10). Also, on a visual analogue scale adolescents scored better for general subjective well being in the refugee health screener after completing the START program.

Conclusion: The results are promising first data supporting the applicability and helpfulness of START in young refugee minors and other highly stressed adolescents underlining intercultural use with an additional advantage of integration and strengthening of resilience in several at risk populations. Small sample size is a limitation, as well as the lack of a treatment- as -usual control group. Future studies are warranted.

Keywords: Traumasymptoms, Intensely stressed adolescents, minor refugees, Early-intervention, Prevention, Stress-resilience-training

1. BACKGROUND

Prevalence of psychiatric disease in unaccompanied refugee minors is described to be about 80% [1]. In Germany about 60000 unaccompanied refugee minors were recorded by the Government in 2016 [2]. Varying numbers of psychiatric abnormalities in this population ranging from 20% - 81,5% [3]. Among others, refugee minors are identified as a highly vulnerable risk group, with the lack of psychosocial support increasing the risk for mental health problems in this population [4-7]

The short therapeutic program START was developed in clearing contexts for refugee minors [8, 9].

Originally conceived for the work with refugee minors only, an attraction and potential clinical use for domestic adolescents in stressful situations was discovered

[10]. The program consists of very playful elements for self- perception of inner tension. In the second step adolescents try out skills to reduce their tension in an equally playful way, requiring very little speech. The last step is the construction of an individual skills box and

practising and encouragement to discover own tools for self-regulation, with emphasis on individual strengths and resources.

The manual contains work sheets in english, arabic, dari/ farsi and german for each step/module of the treatment program as well as colourful illustrations.

START is not designed to work with trauma narratives or exposition-based as this would not be appropriate for adolescents in unstable psychosocial situations.

The basic concept is derived from dialectic behavioral therapy by Marsha Linehan [11]. Skills are tools for improving the mood and reducing negative emotions and tension

The ability to regulate one's own mood in a successful way contributes to higher self-effectiveness, a central element for identity development in adolescents [12]. Emotion regulation strategies as well as a sense of self-worth are fundamental elements of resilience [13, 14]. In the face of potential future adversity for refugee minors, it seemed mandatory to enhance emotional resilience

START therefore integrates elements of dialectic behavioral therapy [15-17] and relaxation as well as stabilization techniques of trauma-focused cognitive behavioral therapy [18], as well as strategies for dealing with nightmares- the most frequent complaint of adolescents in our clearing and clinic contexts based on the manual of Thünker and Pietrowsky [19]

In the clearing context START was developed and frequently modulated and adapted according to the varying needs of the participants and therefore performed less systematically due to the varying population of the center. For a systematic evaluation of a highly standardized setting however we introduced START in the clinical setting of a child psychiatric hospital.

2. METHODS

A total of 22 patients participated in the five-week follow-up START study of the child and youth psychiatric clinic. The sample consisted of 6 male (27.3%) and 16 female (72.7%) patients aged between 13 – 18 years (Mean = 15.77). 2 of them were out-patient, 20 on an in-patient basis.

Three Afghan (13.6 %) and two Syrian refugees (9.1%), as well as 17 (77.3%) patients from Germany, were included. The majority of the diagnoses consisted of a complex combination

of a response to severe stress and adaptation disorder (F43.-) or post-traumatic stress disorder (F43.1) with depressive episodes (F.32.-) or a borderline disorder (F60.31). The inclusion criteria are therefore to be regarded as low-threshold. Criteria for exclusion were psychoses and acute suicidal behavior. Since all participants were able to go through the therapy and diagnostics, no drop-outs were recorded.

Adolescents participated twice a week for 5 weeks in 90 min each session.

Two therapists in training conducted the group after having received a three-hour schooling.

The program has been described in more detail in the START-manual and articles of the authors Dixius and Möhler [8, 10]

• Inclusion Criteria were

- age between 13 and 18
- crisis admission or out-patient emergency presentation in child and adolescent psychiatry for self-harm, aggression or suicidal behavior,
- voluntary participation

• Exclusion Criteria

- diagnosis of schizophrenia,
- acute intoxication

Before the First Session and After the Last Session the Following Measures were Taken:

CATS: Child and Adolescent Trauma Screening assesses the occurrence and impact of traumatic events with a 15-item event scale. In case of the existence of a potentially traumatic event the traumatic impact is assessed on a 20-item scale. A cut-off of 21 is presumed indicator of posttraumatic stress.

Reliability has been reported to range between .88 and .94. The convergent-discriminant validity pattern showed medium to strong correlations with measures of depression ($r = .62-.82$) and anxiety ($r = .40-.77$) and low to medium correlations with externalizing symptoms ($r = -.15-.43$) within informants in all language versions [20].

CPTCI-25: Child Post-Traumatic Cognitions Inventory - 25

This Inventory assesses posttraumatic cognitions on a 25-item scale

Clinical relevance is given at a score above 49, [21]

Internal consistency of the scale was Cronbachs Alpha: .86 - .93 and Retest-Reliability: .72 - .78.

BIS-15: Barrat Impulsiveness Scale- Short Version

Assessment of impulsiveness with 15 items, the total score is constructed by three subscales: motor impulsivity, non-planned impulsiveness and attention based impulsiveness. We implemented the German version of the Barratt Impulsiveness Scale - Kurzversion (BIS-15) [22]. Internal consistency of this scale was good (Cronbach alpha: = .81, also convergent validity has been shown by Spinella [23])

PSS-10: Perceived Stress-10

Perceived Stress Scale (PSS-10) [24] assesses in 10 items the stress and tension perceived during the last month. PSS is „a measure of the degree to which situations in one’s life are appraised as stressful. Items were designed to tap how unpredictable, uncontrollable, and overloaded respondents find their lives. The scale also includes a number of direct queries about current levels of experienced stress“ [24]. PSS scales show a consistency of Cronbachs alpha: .84 - .86; retest reliability: .85. [25].

RHS-15: The Refugee Health Screener-15

General mental and physical health was assessed by the refugee Health screener [26].

The Refugee Health Screener-15 (RHS-15) was empirically developed to be a valid, efficient and effective screener for common mental disorders in refugees: Post hoc analyses of the developed RHS-15 showed good sensitivity (range .81 to .95) and specificity (range .86 to .89) to DP’s in two of three ethnic groups.

SCS-13: Self Control was Assessed by the Self Control Scale

The self-control scale records the own self-control capacity by means of a five-fold step into the scale over 13 items. High values indicate strongly felt self-control and low values corresponding to lower self-control.

SCS was highly reliable: Cronbachs Alpha: .83 - .85 and retest-reliability: .87 [27]. The German version has been published by Bertrams and Dickhäuser, 2009. On a 5point Likert Scale this Questionnaire assesses a total score of perceived self-control [28].

FEEL-KJ: Questionnaire For The Assessment of Emotion Regulation in Children and Adolescents.[29]

The Questionnaire quantifies 15 strategies for emotion regulation of emotions: anxiety, sadness, and anger. This instrument identifies 7 adaptive and 5 maladaptive emotion regulation strategies.

Internal Consistency of the 15 scales ranges between $\alpha = .69$ and $\alpha = .91$. Secondary scales show a consistency of $\alpha = .93$ (adaptive strategies) and $\alpha = .82$ (maladaptive strategies). Retest-Reliability (6-weeks-stability) ranges between $r_{tt} = .62$ and $r_{tt} = .81$ and for the secondary scales between $r_{tt} = .81$ (adaptive strategies) and $r_{tt} = .73$ (maladaptive strategies) [31].

3. DATA ANALYSIS AND STATISTICS

All of the analyses were performed with IBM Statistics SPSS, version 21.0. Wilcoxon Rank test was applied for comparison of pre – versus posttreatment raw scores.

The mean value comparison of the Feel-KJ was performed on the basis of normalized T-values, taking into account the prerequisites by means of a T-test for dependent samples.

4. RESULTS

• CATS: Child and Adolescent Trauma Screen

Posttraumatic stress disorder is indicated above a cut-off of 21, The results are presented in (see fig. 1). The PTSD symptoms range in our sample from 10 to 49 with a mean of 34.09 (SD= 12.54. 18 Patients (81.82) of the sample scored above the cut off of 21, as shown by figure 1.

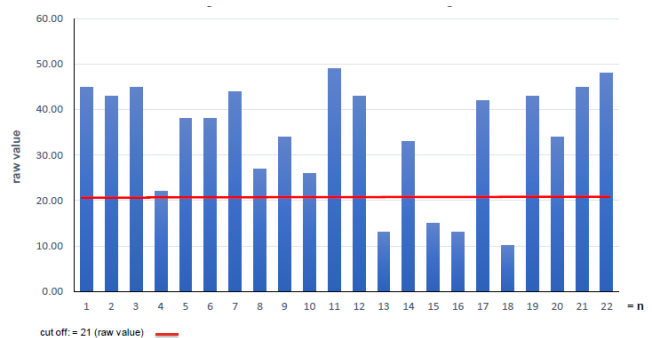


Figure1: CATS - Child and Adolescent Trauma Screen

• **CPTCI: CPTCI-25 Child Post-Traumatic Cognitions Inventory**

Our sample had results ranging from 34 to 95 with a mean of 68.36 (SD= 16.93). Based on the cut off between 46 and 48 19 Patientes (83.36%) scored above the threshold of posttraumatic stress disorder. On average, 82.5. % of the participants scored positive for clinically relevant PTSD as shown by figure 2

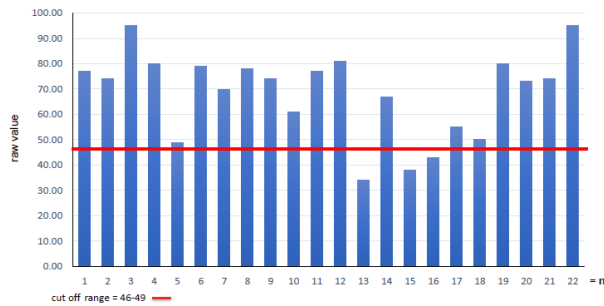


Figure2: CPTCI-25 Child Post-Traumatic Cognitions Inventory

• **RHS-15: The Refugee Health Screener-15**

The authors determine a Cut-off of 12 for clinically relevant mental health problems. Based on this cut-off, all 22 probands showed mental health problems, as expected Post intervention 20 cases still scored positive for mental health problems on the RHS However, regarding the ‚symptom load thermometer‘ (Cut-Off >5) 20 cases (90.91%) scored in the range of severe mental problem load before the START-Intervention. After the intervention only 16 cases scored in this range (72.73%).

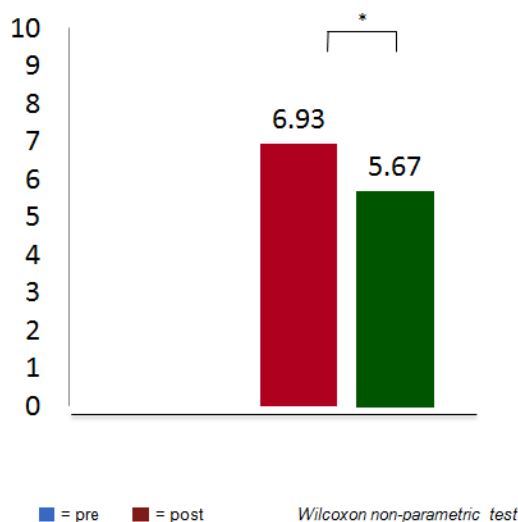


Figure3: The Refugee Health Screener-15

The total raw score of mental problem load was reduced from 36.2 (*Median* = 36.00 *SD* = 10.98) to 31.91 (*Median* = 36.00 *SD* = 13.67), thereby showing no significant change. However the reduction of problem load on the thermometer we could show a significant reduction from a mean of 7.07 (*Median* = 7.00 *SD* = 1.97) to a mean of 5.67 (*Median* = 6.00 *SD* = 2.48) (Asymptotischer Wilcoxon-Test: $z = -2.34, p < .05, n = 22$). as presented in figure 3.

• **PSS-10: Perceived Stress Scale**

Die PSS-10 defines a score of 12-14 for normal stress. All 22 patients scored above this with a mean of 35.76 (*Median* = 37.00 *SD* = 7.65). However general stress was reduced after the intervention to a mean of 32.05 (*Median* = 32.00 *SD* = 11.74), missing significance, with $p = .14$ a positive trend can be described, however.

• **SCS-13: Self-Control-Scale**

A significant improvement was found after the intervention in the self-control scale with a mean of 2.71 (*Median* = 2.54 *SD* = 0.93) before and a mean of 2.92 (*Median* = 2.76 *SD* = 0.98) after the intervention. (Asymptotic Wilcoxon-Test: $z = 1.76, p = .040, n = 22$).

• **Barratt Impulsiveness Scale – Short version (BIS-15)**

Non-planning Impulsiveness showed a mean of 13.10 (*Median* = 13.50 *SD* = 3.28) before the intervention, which was reduced to 11.68 (*Median* = 12.00 *SD* = 3.46) after the intervention, a positive trend, however not significant ($p = 0.75$). Also no significant differences were found for the other 2 scales.

• **FEEL-KJ**

A significant improvement for adaptive strategies from a total 35.95 (*SD* = 10.40) to 41.93 (*SD* = 11.05) was found ($t = -2.29, p = .018, n = 17$). The subscales revealed significant improvements for ‚distraction‘ ‚mood improvement‘ and ‚containment of anger and sadness‘ significant improvements (see table 1).

All results are presented in figure 1.

The results of the additional scales social support and emotional control - showing significant improvement- are presented in figure 4.

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Table1: FEEL-KJ: Adaptive Strategies

| | MEAN T1 | MEAN T2 | SD T1 | SD T2 | T | N | Sig. |
|-----------------------------|---------|---------|-------|-------|-------|----|--------|
| Adaptive Strategies – total | 34.29 | 40.65 | 10.40 | 11.05 | -2.29 | 17 | 0.02* |
| Distraction | 35.53 | 40.12 | 9.67 | 10.96 | -2.33 | 17 | 0.02* |
| Mood improvement | 35.53 | 41.89 | 8.58 | 10.05 | -3.80 | 17 | 0.001* |
| Forgetting | 36.35 | 45.76 | 11.43 | 12.19 | -4.20 | 17 | 0.001* |
| Containment of Anger | 36.35 | 43.53 | 9.30 | 10.15 | -3.21 | 17 | 0.003* |
| Containment of grief | 35.24 | 42.53 | 10.50 | 9.30 | -2.85 | 17 | 0.005* |

dependent T-Test - adaptive Strategies

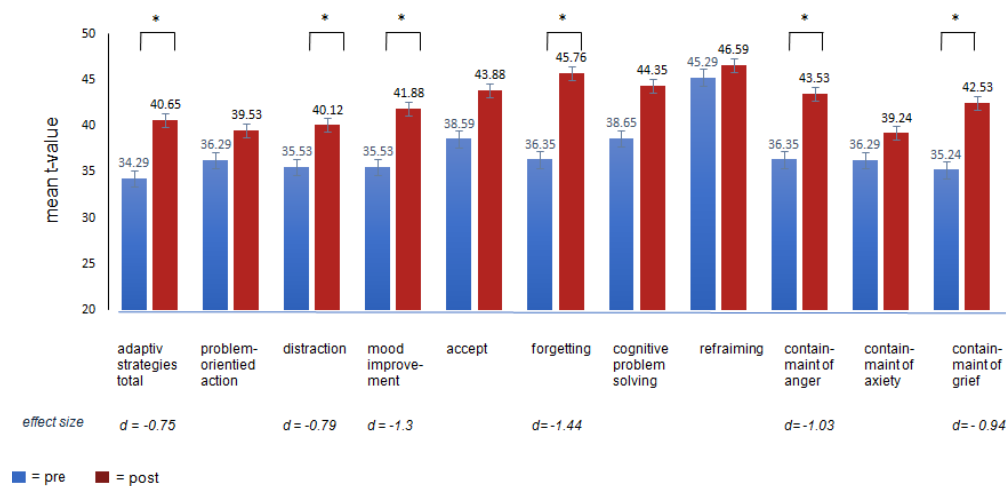


Figure4: Questionnaire for the assesment of emotion regulation in children and adolescents – adaptive scales

In the area of *other strategies*, a significant improvement was shown on the basis of *social support*. With regard to the *control of*

emotions, however, there was a reduction within the standard. (See Table 2)

Table2: FEEL-KJ: Additional Scales

| | MEAN T1 | MEAN T2 | SD T1 | SD T2 | T | N | Sig. |
|-----------------|---------|---------|-------|-------|-------|----|--------|
| Social support | 39.18 | 46.27 | 9.96 | 8.81 | -3.47 | 21 | 0.001* |
| Emotion control | 60.73 | 54.27 | 9.93 | 7.45 | 3.66 | 21 | 0.001* |

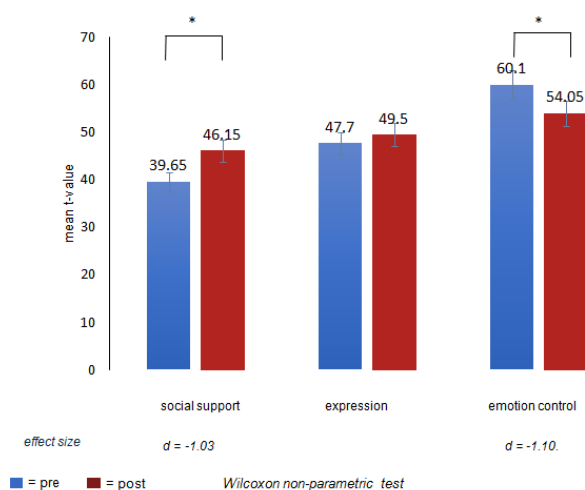


Figure5: FEEL-KJ- Questionnaire for the assesment of emotion regulation in children and adolescents – additional scales

5. DISCUSSION

This pilot evaluation indicates a usefulness and applicability of START for highly stressed children and adolescents in acute crisis of different nationalities. The largest proportion of our sample (80%) showed posttraumatic stress disorder. All 22 adolescents completed the program, showing good adherence and compliance, once started. The results are limited clearly by small sample size and the lack of a treatment as usual control group.

The most prominent results were as expected can be found for emotion regulation and self control- being the primary target of the 5- weeks program. The expected reduction of perceived stress however was not significant neither was

the general mental health improved on a highly significant basis.

Regarding the fact however, that START is a 5 weeks group program in a highly playful and low threshold manner without narrative elements or trauma exposition it might be concluded that for a strong and significant lasting improvement in general mental health a more profound and individualized therapeutic setting could be necessary. However, more complex and structured approaches such as DBT and TF-CBT require more behavioral stability than adolescents in acute crisis or transition situations can display or are willing to develop.

In our sample, in 9 cases TF-CBT or DBT was begun AFTER completion of START, as the patients were found to display enough behavioral stability and therapeutic motivation only after achieving fast success with emotion regulation and self control.

The primary motivation of START was to enable unaccompanied refugee minors in acute stages of desperation or tension to regulate their emotions in a way that do not imply harm to self or others. This capability seems to be of utmost importance for a successful integration and for sustaining the strain of separation, loss and a completely unsecure future. The capability to handle extreme stress without additional necessity for hospitalization, or involuntary constraint, involving potential re-traumatization is regarded as a major advantage of START.

Future studies should investigate a presumed improvement of self-confidence potentially accompanying the reduction of non-adaptive behavior with subsequent negative labeling by the immediate environment.

More perceived self-control could be an important attribute of a positive identity development. A more positive self-conception is expected if integration in schools or youth care settings can be mastered without behavioral disintegration.

However, due to the need for standardized settings, this study presents data gathered in a clinical setting. Originally START was designed to be applied by professionals within the youth welfare system or even in schools. Future studies should focus these settings and include broader assessment tools.

This article shows that START achieves his primary goal: a fast behavioral and emotional stabilization for acutely stressed adolescents with a high load of traumatic experiences.

6. CLINICAL RELEVANCE

A short and uncomplicated, low threshold program like START appears to become more and more necessary in the light of increasing numbers of behaviorally dysregulated children and adolescents with or without a history of migration. Due to the simple but structured construction of the manual with work sheets for each step in different languages it can be applied by child care professionals without intense psychotherapeutic background. The need for improvement of resilience in a world of intense stress and stimulation seems mandatory for adolescents, specifically refugee minors and potentially be promoted by START as emotion regulation can be regarded as one central aspect of resilience. This study shows that START can significantly contribute to improve emotion regulation and therefore potentially stress resilience in adolescents. Future studies in different settings, different age groups and with larger sample sizes are underway.

7. ABBREVIATIONS

START: Stress-Traumasyptoms-Arousal-Regulation-Treatment; **BIS-15:** Barrat Impulsiveness Scale – Kurzversion; **RHS-15:** Refugee Health Screener; **CATS:** Child and Adolescent Trauma Screen; **CPTCI:** Child Post-Traumatic Cognitions Inventory; **FEEL-KJ:** Fragebogen zur Erhebung der Emotionsregulation bei Kindern und Jugendlichen; **PSS-10:** Perceived Stress Scale; **SCS-13:** Self-Control-Scale

8. DECLARATIONS

Ethics Approval and Consent to Participate

The study was performed in accordance with ethical standards laid down in the Declaration of Helsinki and its later amendments. All legal guardians gave their informed consent, and children and adolescents provided their informed assent prior to their inclusion in the study.

9. ACKNOWLEDGEMENT

The authors would like to thank the children and adolescents for their participation in the study.

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Citation: Andrea Dixius, Adrian Stevens, Eva Moehler. A Pilot Evaluation Study of an Intercultural Treatment Program for Stabilization and Arousal Modulation for Intensely Stressed Children and Adolescents and Minor Refugees, Called START (Stress-Traumasyptoms-Arousal-Regulation-Treatment). *ARC Journal of Psychiatry*. 2017; 2(2): 7-14.

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