

Introduction

STEEP™ - Steps Toward Effective, Enjoyable Parenting (Erickson & Egeland 2009) is an attachment based intervention program for young high risk mothers and their infants. It contains home visits with video intervention and parent child groups, usually starts in pregnancy and ends at the child's second birthday. The main goal, besides keeping the baby safe, is to support the development of secure infant-parent attachment by enhancing maternal sensitivity, addressing maternal attachment representations and promoting the development of effective social support. The effectiveness of STEEP has been evaluated first 1987 in Minneapolis/USA (Egeland & Erickson, 2004) and later in Germany (Suess, Bohlen, Carlson, Spangler, & Frumentia Maier, 2016).



We report data regarding the German evaluation of the effectiveness of STEEP, focusing on effects of intervention on attachment after one and two years of intervention and on children's behavior problems in preschool years.

Design and Sample

The German STEEP-effectiveness study compared within a quasi-experimental design 112 young mothers receiving STEEP with 29 mother-infant pairs who received standard services of the German child welfare system (GCWS). All mothers were at risk for abuse and neglect, eligible for child welfare support, under 25 years, on average 18.78 years old and low educated (44.8% had not graduated from school). The single mother rate was 77.8%, and more than one fifth of mothers reported having mental health problems. Nearly one third had spent a significant part of childhood in out of home settings. STEEP mothers scored significantly higher on a risk measure as compared to GCWS mothers.

47.4% of infants were male. All children were full term newborns and healthy.

Complex data with regard to attachment and children's behavior problems were collected at four time points: the beginning of intervention (T_0), when children were born, in the middle of intervention (T_1), when children were 1 year of age, at the end of intervention (T_2), when infants were 2 years old and in a follow up 3 years after completing the STEEP intervention (T_3), when children were at the age of 5 to 6 years.

78 mother-infant pairs of STEEP group, 22 of GCWS group participated in the assessment at T_1 . 38 respective 18 pairs at T_2 . At T_3 we managed to contact 35 families of intervention group and 8 families of GCWS group. Detailed information for missing data and dropout is reported by Suess et al. (2016).

Measures

At infants age of 12 and 24 month quality of attachment has been assessed in Ainsworth's **Strange Situation Procedure (SSP)**. At 24 month attachment security additionally was measured by Water's **Attachment Q Sort (AQS)** as well as in the follow up (T_3).

The children's behavior problems were assessed by the German version of Child Behavior Checklist (**CBCL**) only at T_3 .

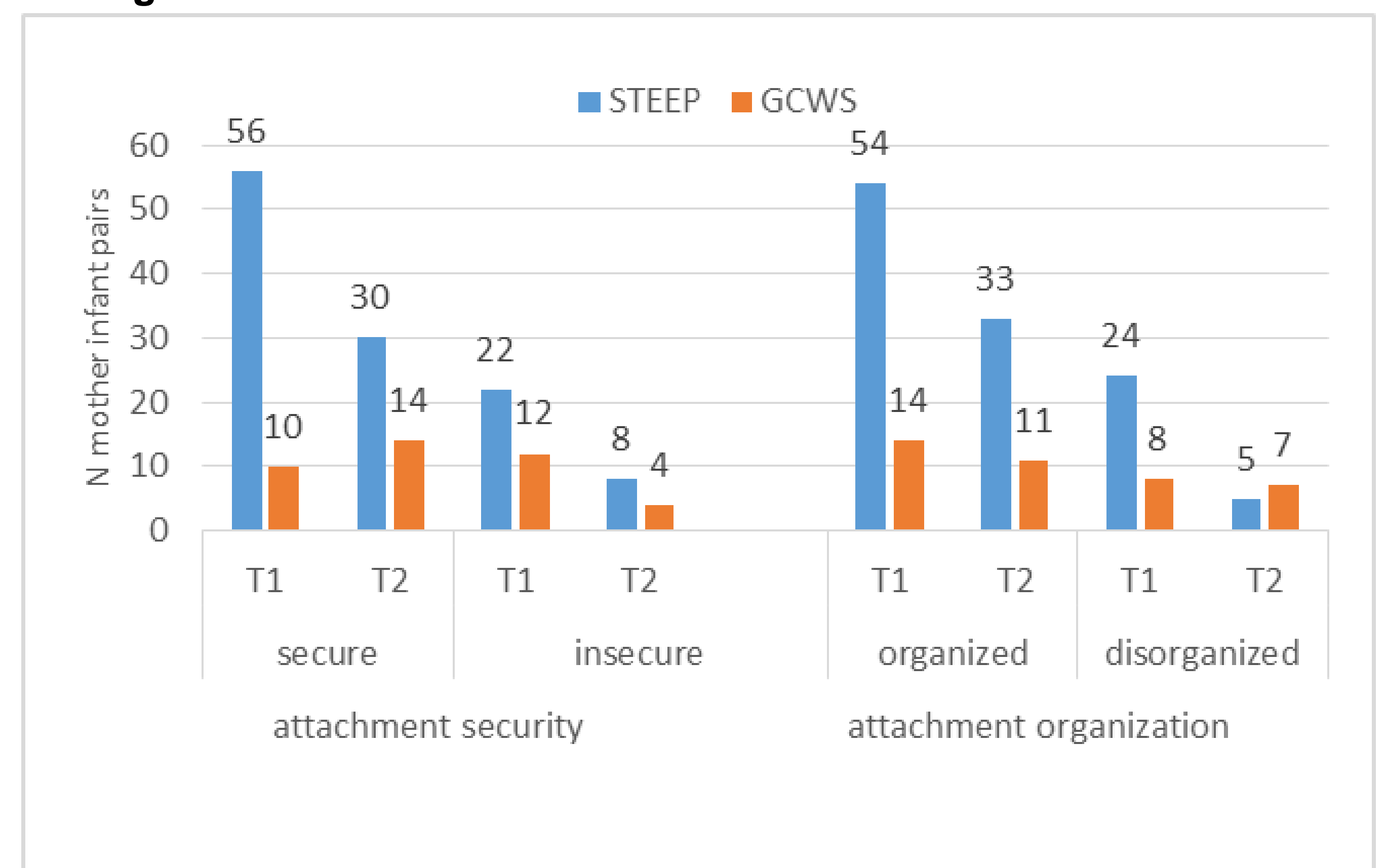
Results

As shown in **Fig. 1** at T_1 significant more mother-infant pairs of STEEP group showed secure attachment patterns in SSP 12 month compared to the GCWS group ($p < .05$; Odds Ratio 3.1). At the end of intervention (T_2) children of STEEP mothers showed in tendency higher attachment security scores in the AQS than children of the GCWS group ($p = .08$; $d = .42$).

Relating to attachment disorganization mother-infant pairs of STEEP group showed significant less signs in SSP at T_1 ($p = .03$; $d = .49$) and T_2 ($p < .05$; Odds Ratio 4.2) compared to GCWS group (see **Fig. 1**).

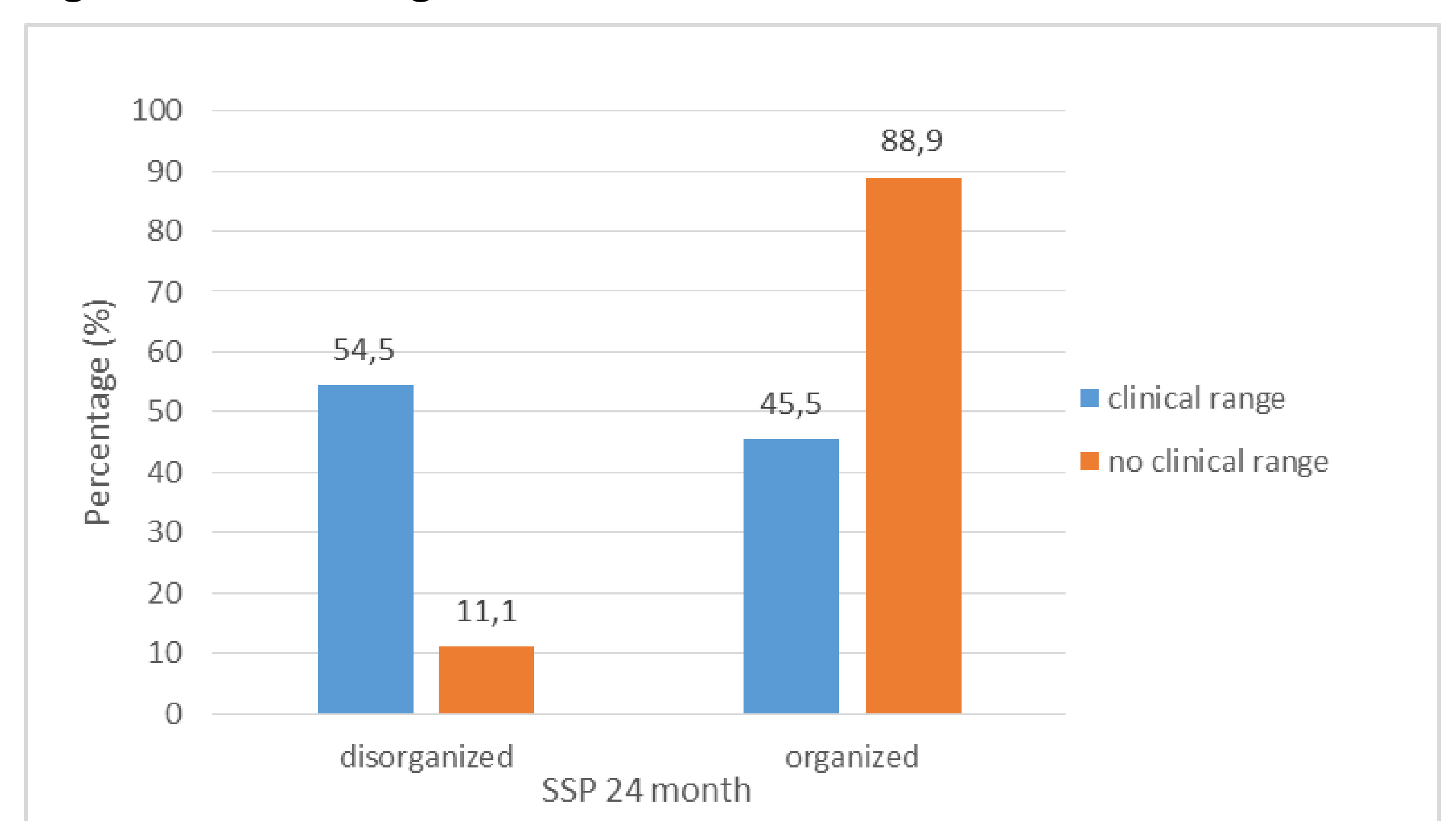
Because of the small sample size of the GCWS group we could not provide evidence for the long term effectiveness of STEEP intervention.

Fig. 1: Distribution of attachment security and attachment disorganization



Regarding children's behavior problems (see **Fig. 2**) we found that disorganized children scored in tendency higher on CBCL total score ($p = .08$) and significantly more children disorganized in SSP 24 showed behavior problems at preschool age ($p = .03$, Fisher's Exact) at T_3 .

Fig. 2: Percentage of behavior problems at T_3 of children classified organized vs. disorganized in SSP 24 month



Discussion and Conclusions

Our results indicate the effectiveness of STEEP intervention after one respective two years. We were successful in supporting secure attachment and especially in preventing and reducing attachment disorganization in young high risk mothers and their children.

Even if our follow up did not succeed in showing sustained long-term effectiveness of STEEP, the follow up results are of particular importance. They underscore the relevance of early attachment for later development – in particular the meaning of attachment disorganization for later developmental problems.

Therefore one major topic in early intervention programs should be addressing attachment disorganization.

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