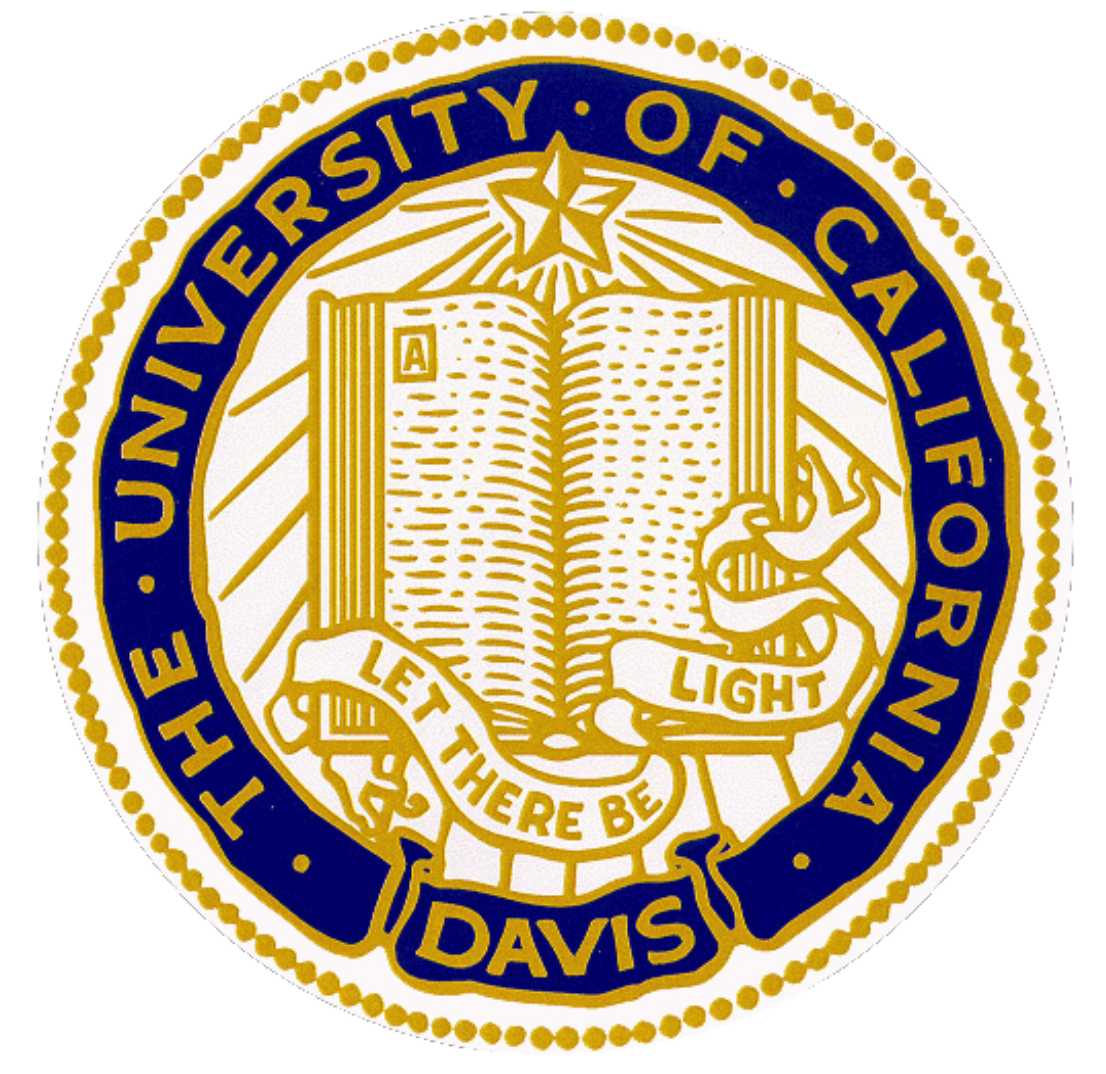# Predicting Mental Health (MH) Service Use After Parent-Child Interaction Therapy (PCIT).

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ABSTRACT

- The purpose of this study was to examine predictors and patterns of mental health (MH) services use during a 5-year period after children with and without histories of maltreatment were discharged from PCIT. Participants were 325 children referred to PCIT for treatment for disruptive behavior problems together with their biological mothers.
- Results showed that 1) maltreatment and associated trauma, as well as externalizing behavior scores at pre-treatment predict the number of months spent in MH treatment the first year after PCIT discharge; 2) the dose of exposure to PCIT does not predict MH service use during the first year; 3) the best predictor of months spent in treatment for years 2 through 5 was months spent in treatment the previous year. Additionally, the trend of MH use after PCIT discharge shows high stability: children who used MH services more months during year 1 were also more likely to use such services more during each consecutive year.

INTRODUCTION

- Previous research suggests that both, contextual and individual-specific risk factors affect child's developmental trajectory (Johnsona et al., 2002).
- Child maltreatment is a known risk factor in development of MH disorders, and in particular, externalizing behaviors (Gopalan et al, 2016). In turn, behavioral disorders affect child and family functioning.
- Parent-Child Interaction Therapy (PCIT) is a promising intervention for families with a history of abuse. An RCT study had demonstrated the effectiveness of PCIT with lowering instances of re-abuse, decreasing parenting stress and child's externalizing behaviors (Hood and Eyberg, 2003).
- While there is research on predictors of mental health problems in children, including history of childhood abuse, neglect, or witnessing domestic violence (Scott-Storey, 2011), as well as on effectiveness of PCIT in decreasing externalizing behaviors (Urquiza & McNeil, 1996), no study had previously examined mental health use after PCIT intervention.

HYPOTHESES

- **Hypothesis 1: M**altreatment and externalizing behaviors at pre-treatment will predict the use of MH services in the first five years following PCIT discharge.
- **Hypothesis 2: T**he dose of PCIT will predict fewer months in MH treatment during the first year following participation in PCIT.

METHOD

Participants

- Participants were 325 children between 2.0 and 6.8 years old (M=4.2), 44.6% females, referred to PCIT for treatment of their disruptive behavior problems.
- Of 325 children, 83 (25.5%) had no record of abuse, neglect, or maltreatment-related trauma, 111 (35.7%) had suspected or documented physical abuse, 192 (59.1%) had documented records for neglect, 27 child had history of sexual abuse (8.3%), 211 (64.9%) witnessed domestic violence, and 213 (61.5%) had been in foster care. 23.7 % (N=77) experienced more than one type of abuse or abuse-related trauma.
- 136 child-caregiver dyads completed PCIT treatment (41.8%), and 189 either never started or dropped out before treatment completion (58.2%).

Analytic Procedure

- Structural Equation Modeling (SEM) was carried out in R 3.4.1, package *lavaan 05.-23.1097*. The 3 latent predictors were child externalizing behaviors, history of maltreatment & trauma, and the dose of exposure to PCIT. All observed variables were found to be significantly correlated at the level p<.00. The outcome variables were observed variables of the frequency of MH service use 1, 2, 3, 4, and 5 years after PCIT discharge. The model fit well to the observed data: χ2 = .250, CFI=.976, RMSEA=.018, TLI=.971.
- To examine the overall trend, a growth-curve analysis was performed using SAS Studio 3.6. It was followed-up by the post-hoc RM ANOVA using SPSS 24 to detect any potential differences in the means of MH use across the 5-year period.

Measures

- Demographic information, child maltreatment risk history, the history of domestic violence in the family, and the history of foster care was gathered through review of clinical case files.
- Externalizing behaviors was measured by Child Behavior Checklist (CBCL) *aggression* and *disruption* subscales, Brief Parenting Index Inventory (BPSI-IV) *difficult child* subscale, and Eyberg Child Behavior Inventory (ECBI) *problem behaviors, intensity* subscale.
- The dose of exposure to PCIT was measured by the number of coaching sessions for *the child-directed interaction* module, the *parent-directed interaction* module, and the total number of days in PCIT treatment.
- The outcome variables were computed by adding the total number of months out of a given year the child used some form of MH services. This variable was calculated for each of the 5 years after PCIT discharge.

RESULTS

### Main Model Predicting MH Services Use For a 5-Year Period After PCIT Discharge
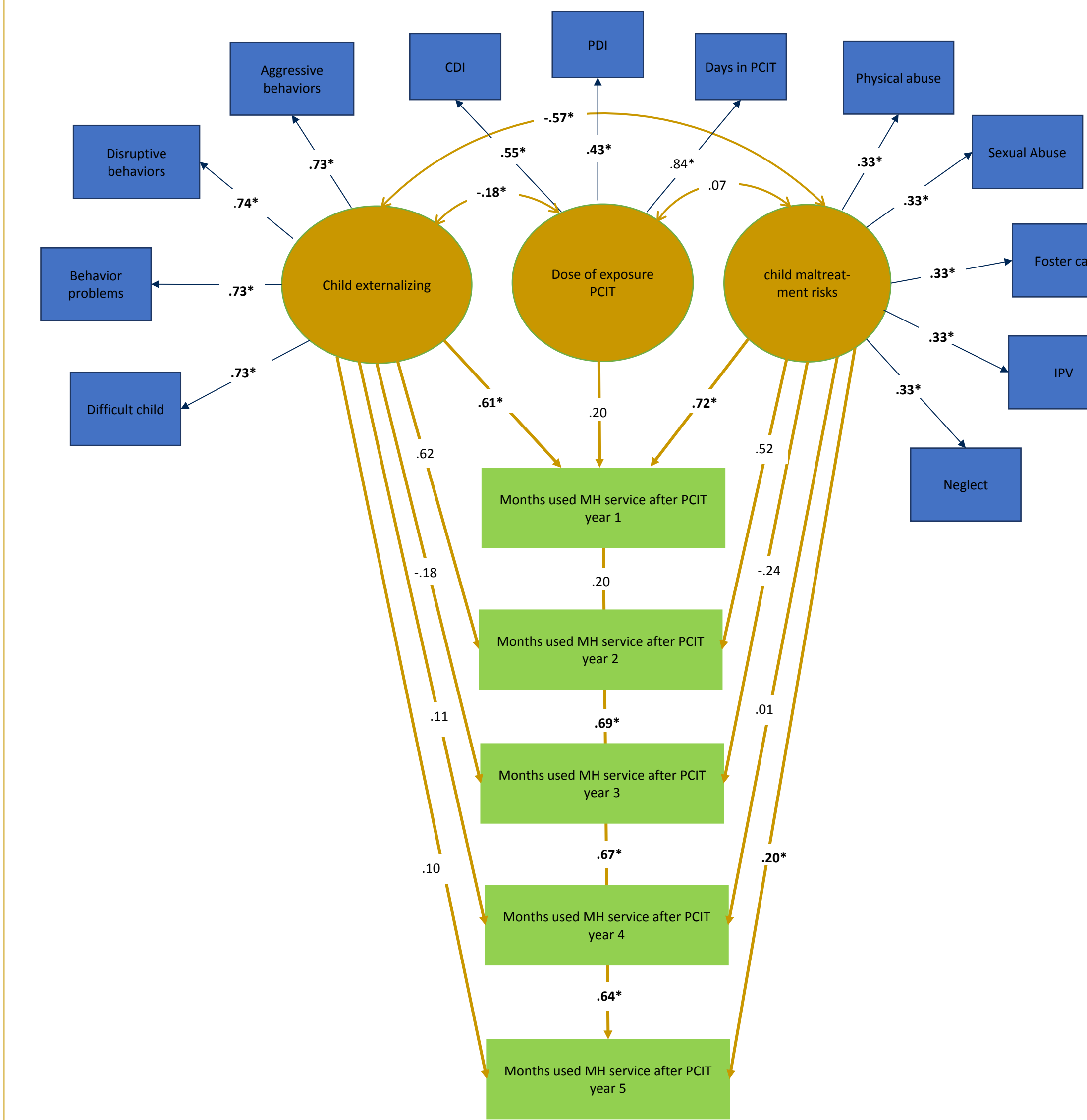
- CDI = Child-Directed Interactions
- PDI = Parent-Directed Interactions
- PCIT = Parent-Child Interaction Therapy
- MH = Mental Health

SUMMARY OF RESULTS

- Results supported our **first hypothesis**: both, maltreatment risks (β=.72, *p*<.05) and externalizing behaviors (β=.61, *p*<.05) were predictive of how many months the child used MH services during the first year post PCIT. Additionally, maltreatment risks predicted MH service use in the 5th year post PCIT (β=.20, *p*<.05). However, the single best predictor of MH services use after PCIT completion for years 3 through 5 is the length of MH services use during each preceding year. The coefficients were moderate to large: β₃=.69, *p*<.01 in year 3, β₄=.67, *p*<.01 for year 4 and β₅=.64, *p*<.01 in year 5.
- Year 2 was not predicted by the use of treatment in year 1 (*p*>.01) in this sample.

- Contrary to our **second hypothesis**, the dose of exposure to PCIT was not a significant predictor of MH services use after PCIT, (*p*>.05), however, it significantly and negatively covaried with externalizing behaviors (β= -.18, *p*<.05). A curious finding that needs further consideration is the negative covariance between externalizing behaviors and maltreatment risks (β= -.57, *p*<.05).

RESULTS Cont.

Prototypical Curve and Predicted Individual Scores for MH Services Use 5 Years After PCIT Discharge
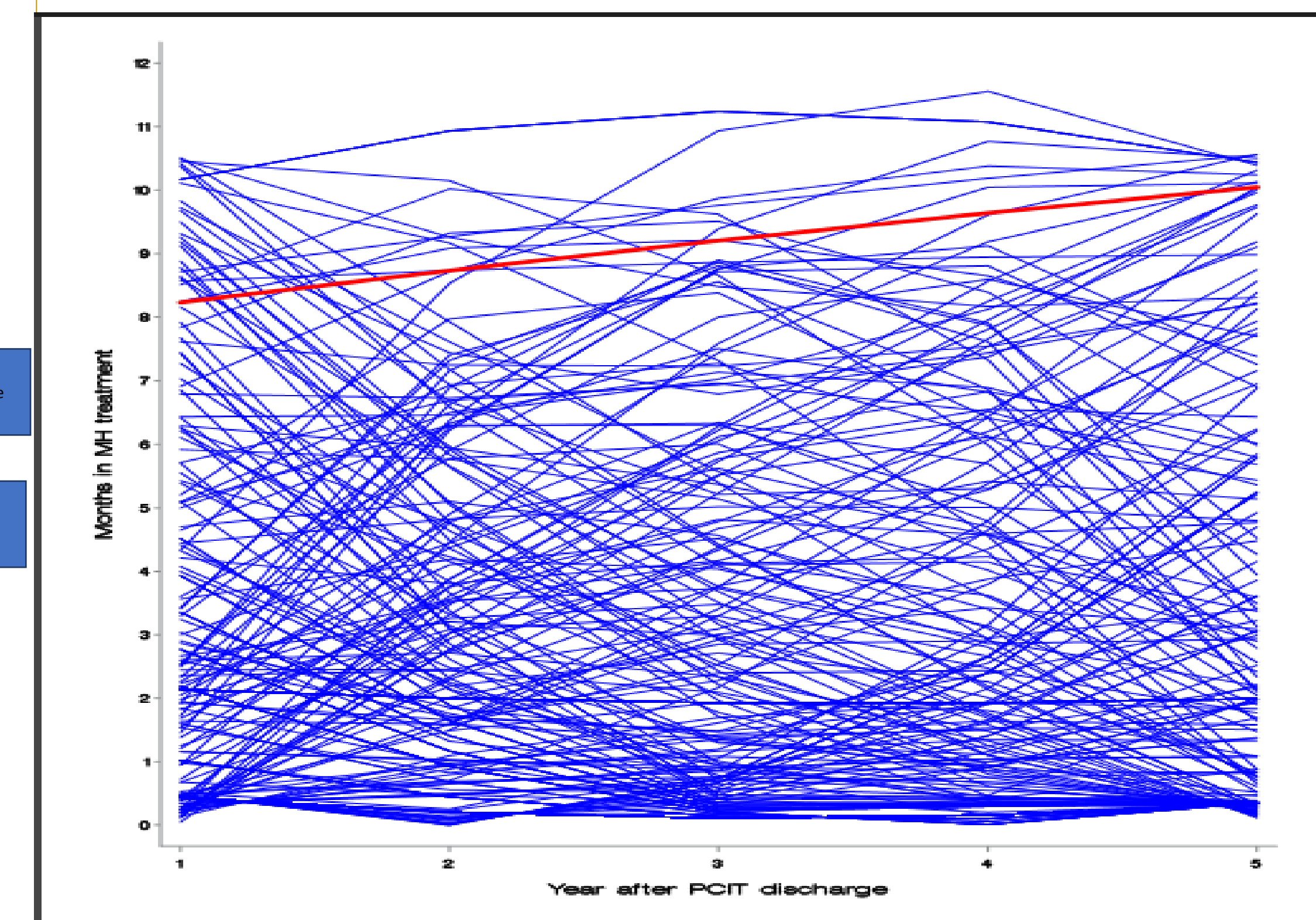
Contrary to our expectations, results of the growth curve analysis showed that neither the linear (β= -.03, *p* >.05), nor quadratic (β= .04, *p* >.05) trends were significant. Post-hoc RM ANOVA also failed to detect any differences in means between any of the 5 years after PCIT discharge, $F(4,1252) = 1.01$, *p* >.05. Assumption of sphericity had not been violated (χ2(9) 190.23, *p* > .05).

DISCUSSION

- Results of our analyses underscore the well-established connection between childhood abuse, externalizing behaviors, and MH service use. As seen from the model, both, risks associated with maltreatment, and externalizing behaviors lose their predictive power with more exposure to MH treatment, but the risks re-surface as a significant predictor in year 5. We speculate that as the children age, new challenges might get through the "buffer" of cumulative MH treatment effects.
- Contrary to the expectations, the dose of exposure to PCIT failed to predict MH services use after PCIT discharge. It was also interesting that in this sample, mothers rating children with higher externalizing behaviors tended to have lower doses of PCIT. This combination has been found to occur when mothers had high levels of stress and her own mental health problems (Eslinger et al., 2012).
- We found that MH service use in years 3 through 5 was best predicted by the frequency of use in the previous year. This trend for MH service use showed remarkable stability: children who have used such services more frequently during the 2nd year after discharge from PCIT, tended to continue this pattern, whereas children who used MH services infrequently (or not at all) during the 2nd year, maintained little or no engagement with such services through year 5. Further investigation is needed to understand types of outpatient MH services most likely to be used by children with high MH services utilization.

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