ASSESSMENT AND INTERVENTION IN MENTAL HEALTH SERVICES FOR CHILDREN AND ADOLESCENTS USING THE LAUSANNE TRILOGUE PLAY

Michela Gatta, Marina Miscioscia, Maria Elena Brianda, Alessandra Simonelli

Abstract

Objective: A great number of studies have confirmed the value of the Lausanne Trilogue Play (LTP) as a useful tool for identifying the features of triadic interactive competences in early infancy and in childhood. Despite the increase of knowledge in this field, few studies applied the LTP to clinical samples and in scholar age and adolescence, in order to investigate the possible link between the quality of family interactions and child's or adolescent's psychopathological functioning. Results from few researches in this domain are limited due to the small size of the studied samples and do not allow generalizations. For this reason, furthers studies need to be increase, with a larger number of participants, in order to contribute to a general reflection on the use of the LTP in the child or adolescent assessment. The aims of the research were: (i) to use the LTP with a clinical sample of families, with children in scholar age and adolescents, in order to increase knowledge on psychometric properties of the procedure, when used to observe family interactions in clinical groups; (ii) to explore the value of LTP as a discriminating tool for dysfunctional interactions, compared to Child Behavior Check List scores of children and adolescents; (iii) to investigate the LTP as a predictive tool for therapeutic indication in Infant Mental Health Services, compared to the indication of clinicians who have conducted the diagnostic assessment.

Method: The sample consisted of 102 children and adolescents (M=12,9 yrs; SD=3.25), with their parents referred to the Mental Health Public Service of Padua, Veneto, Italy) in which they turn for psychological problem of their child/adolescent.

Results: Globally the LTP instrument showed good internal validity, in line with previous studies. A negative correlation between CBCL scores and LTP total score has been found, suggesting that families, whose children showed higher levels of disease and particularly externalizing behavioral problems, are more likely to experience low quality of family interactions.

Conclusions: The literature on the LTP suggests the tool to be discriminant with respect to families with difficulties and families with severe psychopathology. This study confirms the possibility to use it as a valid support in the diagnostic assessment and it supports their application for therapeutic planning with clinical families.

Key words: Lausanne Trilogue Play, family interactions, diagnostic assessment, adolescent mental health, Children Behavior Check List (CBCL)

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1. Introduction

The Lausanne Trilogue Play (LTP - Fivaz-Depeursinge and Corboz-Warnery 1999) is an observational procedure, that has been construed in order to observe dynamic interactions, arising from the encounter of different theoretical cues: the interdependence statement of the System's Theory (Bateson 1972), the dynamic tradition about relationships and intersubjectivity (Stern 2005), and the construct of practicing family (Reiss 1989). Given these assumptions, Lausanne work group created a procedure (LTP, Fivaz-Depeursinge and Corboz-Warnery 1999) for the observation of a brief play session, engaging the mother-father-child triad toward a shared goal. Family is guided by few rules in order to follow four steps/phases, corresponding to all possible relational configurations, in the frame of a specific setting, which fosters the best performance.

This method increases the knowledge about triadic interactions, being used in a lot of studies in different countries. So far, literature provides different applications of LTP paradigm, focusing both on exploratory research and on clinical applications and

implications.

In the field of exploratory researches, studies tried to reveal a description of the typical development of interactions in "new born" families, focusing on co-parenting and family aspects implicated in child's outcomes. Altenburger et al. (2014) tested the quality of co-parenting relationship using LTP procedure in a large normative sample of 182 couples from U.S.A. Their longitudinal design allows the study of associations between co-parenting competencies in pregnancy and at 9 months of life of the first child. A significant predictive relation was revealed between co-parental performances assessed through the Prenatal LTP, and the observed co-parenting at 9 months postpartum: the higher was the quality of co-parenting during pregnancy, the less parents showed undermining co-parenting later. Assuming that co-parenting behaviors are strictly linked to child's development and family functioning (Teubert and Pinquart 2010), this study confirms the possibility to use LTP to monitor and help new families in cases of problematic co-parenting, even before child's birth.

Cigala et al. (2015) used LTP procedure with a normative sample of families with preschool age children in order to measure the role of triadic coordination in the double competence of the family to maintain his stability and be flexible to changes. LTP design is optimal for the observation of both these aspects: the division in four configurations for the first one, and the transitions between them for the second one. In their studies, coordination – in terms of attention, responsiveness, reformulation and reaction to other's signals – seems to be crucial in fostering family's interactions. Scarce coordination is related with the tendency to maintain configurations unvaried, which can argue family's competences, to be a safe base during transitions.

Another study used the LTP within a prospective method to check the presence of correlations between child's early contribution in family interactions and his social competences at the age of four (Hedenbro and Rydelius 2014). They found a linear significant relation, between child's interactive competences (in terms of communicative initiatives and turn-taking sequences) at 3, 9, and 18 months, and their social skills with peers and other people at 4 years old, identifying the step of 9 months as the most crucial and predictive. Simultaneously, within the Italian context, Simonelli et al. (2014c) examined 70 primiparous families recruited at childbirth courses, with a longitudinal design from pregnancy (Prenatal LTP) to 48 months of child's age (LTP). They confirmed the existence of child's early triadic competencies and showed a significant increase in LTP scores across 4th, 9th, 18th and 48th month of child's life due to the more active role of the child during interactions. Moreover, parents obtained higher scores in the capacity to understand their child and the whole system improved its level of coordination and co-regulation. In addition, using a multilevel approach, authors noticed that the quality of family interactions can be predicted or at least associated to other parental variables, like the quality of marital relationship and the extent of father's involvement in child's care (Simonelli et al. 2016). LTP was applied also to new familiar contexts, as the reality of homo-parental families (Miscioscia et al. 2017). A pilot investigation on 10 lesbo-parental families, revealed no significant differences in quality of family interactions in the comparison with heteroparental families. This similarity was found regarding both parental competences and the child's contribution (D'Amore et al. 2013).

In general, these results highlighted the predictive power of the prenatal LTP with respect to the quality of family interactions in the post-partum period (assessed by the post-natal LTP procedure), and to the child's outcomes, confirming the original studies of the authors (Favez et al. 2012, Tissot et al. 2015, Fivaz-Depeursinge et al. 2012, Favez 2013, Murphy et al. 2015, Brock and Kochanska 2015, Umemura et al. 2015, Favez et al. 2014).

These results confirm LTP as a valid tool for the assessment, but also for the intervention planning, due to its predictive power. Therefore, these evidences are limited to the early infancy and to non clinical populations of children and families, and also only few pilot studies about this domain in school-age, adolescence and in clinical groups of children and their families (Gatta et al. 2017).

In order to extend the knowledge of LTP paradigm and its potentiality, some studies focused on specific clinical contexts. Mazzoni and colleagues (2013) wanted to deepen the link between family interactions and child's competence of sharing experiences, applying LTP to children with an Autistic Spectrum Disorder (ASD). The sample consisted in a total of 141 families with pre-scholar and scholar-age children, divided in three groups: children with ASD, a comparative clinical group of children with Development Disorder and a control group of families whose children had a typical development. They found a significant difference in the level of family's coordination between the control group and the clinical ones: clinical families are less appropriate in collaborating for a shared goal, but no differences emerge due to the specific diagnosis. Furthermore, the severity of ASD is associated to a decline in the quality of family's coordination: the higher are levels of symptomatology, the more dysfunctional are family interactions, especially in terms of focal attention and affective contact. Anyway, authors demonstrated that also families whose children have a diagnosis of ASD are able to conduct a family task, showing functional levels of participation and inclusion of all members.

In this background, multidisciplinary seems to be the optimal approach for assessment and intervention with children: adopting different points of view to examine developmental psychopathology can give a clearer picture of the situation. In this direction, Gatta et al. (2014a, 2017a, 2016, 2017b) used some case reports of pre-adolescents and adolescents with cerebral palsy and mental disease and their families. They discovered that the evaluation obtained through LTP procedure, was perfectly in line with results of other instruments, like the Child Behaviour Checklist (CBCL, Achenbach and Rescorla 2001) and the Neuropsychomotor Observation Sheet. Moreover, the consideration of family functioning added many important cues about emotional and relational domains, which can be useful in the planning of the intervention. In fact, high levels of family coordination allow children to create a functional interactive style, even in presence of psychopathology (Gatta et al. 2009, Mazzoni et al. 2015).

Parental psychopathology is associated with an increased risk of a wide range of cognitive, social and behavioural problems in children (Kim et al. 2013). Becoming parent is a developmental challenge which could exacerbates a pre-existing mental illness, leading a maladaptive impact on the early parent-infant relationship, and consequently on child development (Keren and Tyano 2015). This link between parental psychopathology and child's well-being has been largely observed through different approaches (Gatta et al. 2011a, Ringoot et al. 2015) and in particular through the attachment theory (Weinfield et al. 2008). With respect

to that, researches have investigated the impact of parent's pathology on the style of child-care, on child's developmental outcomes, and on general adjustment (Parolin and Simonelli 2016).

Few studies have considered this aim from a triadic point of view. Favez et al. 2014 found that in post-partum depressiveness, higher levels of family coordination were revealed to be associated with greater risks for child's development, as if cohesiveness intensified symptoms' consequences on other members. This finding demonstrates the strict implication of triadic interactions within the links between child's development and several contextual aspects.

Certainly, the LTP's literature within clinical contexts enlarged the knowledge about the procedure in the field of scholar age and pre-adolescence, but results are often based on small samples and/or with a strict focus on a very specific diagnostic target. In addition, few early infancy services included the family approach in their assessment process, and it is difficult to find studies about the inclusion of LTP procedure in public mental health services.

Our work is trying to fill this gap, including LTP paradigm within psychodiagnostic assessment in a Public Mental Health Service for children and adolescents. Our purpose is to increase knowledge about LTP in its application to clinical populations, and clarify the link between child's or adolescent's psychopathology and family interactions. We support the perspective of Caviglia et al. (2010), about the need to integrate different methods for the assessment of childhood and adolescence psychopathology: i.e. self-report, evaluation assessment scales, projective methods for addition to clinical sessions and the analysis of the environment.

Our previous studies, examined the role of parental conflicts on children's symptom expression, especially regarding internalizing problems, somatic complains and attention difficulties (Simonelli et al. 2014a), but also the quality of family interactions in school-age children according to the severity and psychopathological areas of their symptoms (Simonelli et al. 2014b). In the same direction, we examined a group of 41 psychiatric adolescents with their families, finding correlations between somatic complaints, and the quality of the family interactions, specifically with respect to co-parental conflicts, parental scaffolding and adolescent's self-regulation, and also between adolescent's internalizing problems and the sharing of emotions in the family (Gatta et al. 2015). Recently, a pilot research on 23 adolescents investigated the effectiveness of the use of LTP within the assessment process but also during the therapy. Our analyses revealed that LTP procedure could be useful, not only during the assessment, but also for the intervention planning: it could help to identify families in which parental support - next to child/adolescent intervention - is needed (Gatta et al. 2016).

So far, our results confirm the idea of a consistent reciprocal influence, between family interactive level and child's or adolescent's psychopathological symptoms, claiming the importance to involve the whole family within the diagnostic assessment and during the treatment.

2. Aims

As observed in the introduction, the use of Lausanne Trilogue Play paradigm has been increased in a variety of both clinical and research contexts and with specific populations e.g. children with Autism spectrum disorder

(Mazzoni et al. 2013), families with preterm children (Gueron-Sela et al. 2015), families with maternal postpartum depression (Tissot et al. 2014). Despite this increase, few studies investigated the application of LTP in the assessment process and, more specifically, in the diagnostic assessment of school age children and adolescents. Nowadays, there are no studies considering the analysis of interactive family patterns in a consistent sample of clinical families and their child. This study takes place in this framework.

The general aim of this study is to increase knowledge about family interactive patterns in a clinical context, applying the Lausanne Trilogue Play paradigm to families with children and adolescents who turned out in a Mental Health Service for child's difficulties. The study of family interactions integrates the diagnostic assessment composed by clinical interviews and other psycho-diagnostic tools that will be exposed in the next paragraph.

Specific objectives of this research are: (i) to assess family interactions in a clinical sample of children and adolescents with their families, verifying the internal validity of the LTP to discriminate dysfunctional interactive patterns. We assume to observe a medium-low quality in clinical families, according to our previous studies (Gatta et al. 2016, 2017). Furthermore, we expect to confirm data about the validation of the LTP scoring system, the Family Alliance Assessment Scales – FAAS (Favez et al. 2011), and the validity evidences of the Italian application of the method to preschool aged children (Simonelli et al. 2013, 2016). (ii) To investigate the relationship between family functioning and child/adolescent behavioral symptoms, classified in internalizing and externalizing problems according to the Child Behavior Check List (Achenbach and Rescorla 2001). We expect to find a linear relation between LTP and CBCL scores, in line with previous literature which supports the association between internalizing and/or externalizing child symptoms and marital conflict and/or co-parental competitiveness (Fivaz-Depeursinge et al. 2012, Murphy et al. 2015).

As the last step in this work, (iii) we will try to observe the results of LTP scores, obtained with a blind coding, compared to the therapeutic indication of clinicians who have conducted the diagnostic assessment using interviews and tests. In the Service where the sample were recruited, the clinician could propose two different psychotherapeutic treatments depending on the diagnostic evaluation of the child/adolescent and his family: in the first instance, the clinician proposed to take charge the child/adolescent with psychodynamic psychotherapy weekly sessions (group 1,G1); in the second situation, the clinician proposed psychotherapy weekly sessions for the child/adolescent, and psychotherapy session bimonthly sessions for his parents conducted by colleague (group 2,G2). We expect to find an association between the low score obtained to LTP procedure, and the therapeutic indication to take in charges both parental couple and the child/adolescent.

3. Methods

3.1. Participants and Procedure

The sample consists of 102 children and adolescents[1], ranging from 6 to 18 years with their families. **Table 1** shows the sample's description.

[1] We excluded children and adolescents with QI<70, according to WISC-IV.

Table 1. *Sample Description*

	Range of ages		Mean	SD
Children and Adolescents	6	18	12,97	3,253
Fathers	38	63	48,76	5,422
Mothers	37	58	45,30	5,147

Educational level	**Mothers**	**Fathers**
Primary School	2,0%	3,9%
Secondary School – I level	29,4%	28,4%
Secondary School – II level	41,2%	45,1%
University Degree	27,5%	22,5%

All families referred to the Mental Health Public Service (SCIAF ULSS 16, Padua, Italy) in which they came for psychological problems of their child/adolescent. They have been recruited for this research project during the psychodiagnostic assessment, when the principal investigator explained them the protocol.

The research protocol involved the LTP procedure, three clinical interviews for children/adolescents and parents (conducted by a psychologist and a neuropsychologist from the service) and two sessions for tests' administration. The LTP procedure has been administered in a specific laboratory of the SC IAF Service provided of a videotape system. All participants signed an informed consent approved by the Ethical Committee (CEP 204 SC).

3.2. Materials

Lausanne Trilogue Play (Fivaz-Depeursinge and Corboz-Warnery 1999). The LTP procedure is a semi-standardized observational tool designed to examine family interactions. The administration involves the mother-father-child triad, invited to cooperate and work together in order to conduct an activity – a play session or the planning of a birthday party or a family trip. Detailed instructions invite the family to organize the activity as they usually do at home, just following four rules which reflect four relational configurations: (I) first, just one parent interacts with his child, while the other one stays simply present; (II) then, parents reverse their roles, so that the one who was simply present became the active partner, and vice versa; (III) parents and child play all together; (IV) parents interact while the child stays simply present. The session is videotaped and later examined using the Family Alliance Assessment Scale – FAAS 6.3 (Favez et al. 2011).

This coding system provides the evaluation of 15 variables, which compose the construct of Family Alliance: Posture and gazes, Inclusion of partners, Role implication, Structure, Co-construction, Parental scaffolding, Family warmth, Validation, Authenticity, Interactive mistakes during activities, Interactive mistakes during transitions, Support, Conflicts, Involvement and Self-regulation. Each scale provides an evaluation in a three points scoring system, from 1 ("inappropriate") to 3 ("appropriate"), taking into account both the four separate parts (part rates ranging from 1x15 to 3x15; sum of each variables ranging from 1x4 to 3x4; and LTP total score ranging from 1x15x4 to 3x15x4). Scoring shall be assigned by two independents coders who were specifically trained to the LTP procedure and blind to the families' story.

Child Behavior Check List – CBCL/6-18 (Achenbach and Rescorla 2001). It is one of the most commonly used self-report for rating juvenile behavior. In this research the CBCL is completed by parents, and it refers to the last six months of their child's life. The first part of the CBCL includes 20 items relating to the quality of the child's participation in various activities (sports, at home, and at school), and their relationships with brothers, parents and peers. The second part, consists of 118 items that are answered on a three-tiered scale (0= not true; 1= sometimes true; 2= very true). The scores attributed to each item generate two types of profile, one for competences and the other for syndromes. In this research, we use the syndrome scales classification, in which problems are grouped into: internalizing problems (anxiety, depression and withdrawal, somatization); externalizing problems (aggressive and role-breaking behavior); and total problems (externalizing, internalizing and social problems, thought-related problems, attention problems). There are also six scales DSM-oriented (Ebesutani et al. 2010).

4. Results

4.1. Preliminary Analyses

Figure 1 shows the distribution of children/adolescents diagnoses reported by CBCL with respect to Externalizing, Internalizing and Total Problems categories.

Before testing our hypotheses, a preliminary analysis has been performed with the aim to exclude the influence of age and marital status on LTP total scores. Multivariate analysis has shown no significant differences for age Λ=.979, $F(2,97)$=1.106, p=.366; and marital status Λ=.998, $F(2,97)$=.103, p=.903. Observing these results, we consider our sample homogeneous for these aspects.

4.2. Quality of Family Interactions

The first aim of the study was to apply the Lausanne Trilogue Play Paradigm in the clinical assessment to observe the quality of family interactions in a clinical population. To test this first aim, we evaluated the internal validity of LTP. The unidimensionality of the construct measured with the LTP procedure is confirmed by a high internal consistency of the LTP global scoring (Cronbach α= .966). Pearson's correlation analyses (**table 2**) show moderate and strong positive linear relations between total scores of the four parts of the LTP procedure (Part 1, Part 2, Part 3, Part 4). **Table 3** shows Pearson's correlations between all 15 LTP

Figure 1. *Child/adolescent CBCL Diagnosis*
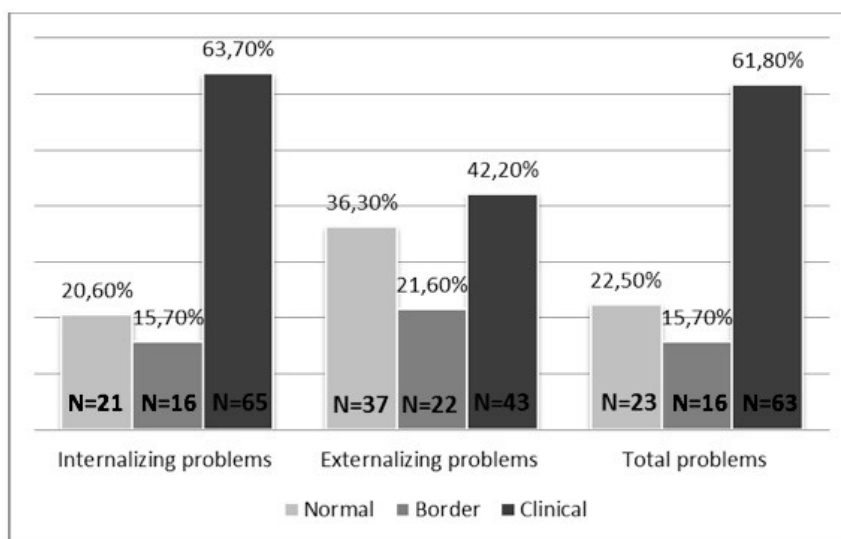
variables (sum of the scores of each part), with general strong positive linear relationships.

A Repeated Measure Anova (GLM), with a Greenhouse-Geisser correction, highlights that the mean of LTP total scores differed significantly between each parts $F(2.42, 157.61)=2.995$, p=.044. Post hoc test using the Bonferroni corrections revealed a slight reduction in LTP total scores between part 1 and part 4, which was

psychopathological symptoms. To assess child's psychopathology, we used CBCL scales: internalizing problems; externalizing problems and total problems. **Table 5** shows the mean and the standard deviation for each scale.

Pearson's correlations between CBCL and LTP scores (see **table 6**) show a significant relationship between child's psychopathology and the quality of

Table 2. *Pearson's correlations: LTP four parts total scores*

		Part 1	Part 2	Part 3	Part 4
Part 1	Pearson's correlation	1	.629**	.596**	.434**
	Sig. (2-tailed)		.001	.001	.001
Part 2	Pearson's correlation	.629**	1	.726**	.555**
	Sig. (2-tailed)	.001		.001	.001
Part 3	Pearson's correlation	.596**	.726**	1	.746**
	Sig. (2-tailed)	.001	.001		.001
Part 4	Pearson's correlation	.434**	.555**	.746**	1
	Sig. (2-tailed)	.001	.001	.001	

**p<.001

not statistically significant (p=.111). Furthermore, in **figure 2** it is possible to observe the trend of LTP scores in each part of the procedure.

With respect to the quality of family interactions in the present sample, **table 4** shows means of LTP variables which are all positioned in a moderate level of scoring (scores range: 5-9), except for the Authenticity variable, which is higher (M=9.74).

4.3. Child's psychopathology and Family Interactions

The second aim of the study consisted in the investigation of the relationship between the quality of family interactions and child/adolescent's

family interactions.

Despite these correlations, the Multivariate ANOVA did not reveal a direct effect of internalizing, externalizing and total problems on the quality of family interactions (for internalizing Wilks $\lambda=6.98$; $F(30,136)=.891$, $p=.631$; for externalizing Wilks $\lambda=6.41$; $F(30, 136)=1.127$, $p=.314$; for total problems Wilks $\lambda=6.35$; $F(30, 136)=1.154$, $p=.285$).

The effect between subjects shows a meaningful effect of the Internalizing problems scale on the LTP variable named "Authenticity" ($F=5.037$, $p=.009$). At the same time Externalizing problems scale seems to have an effect on the following LTP variables: Support ($F=3.291$ $p=.042$) and Validation ($F=3.323$, $p=.041$). Also Total problems scale seems to have an effect on the variable Authenticity ($F=4.079$, $p=.020$).

Table 3. *Pearson's correlations: LTP variables sum scores*

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Posture and gazes (1)	Pearson's correlation	1	.725**	.565**	.473**	.749**	.698**	.675**	.665**	.644**	.654**	.728**	.612**	.749**	.716**	.570**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Inclusion (2)	Pearson's correlation	.725**	1	.630**	.542**	.715**	.710**	.644**	.666**	.703**	.638**	.670**	.587**	.716**	.680**	.705**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Role implication (3)	Pearson's correlation	.565**	.630**	1	.478**	.625**	.699**	.755**	.800**	.570**	.501**	.641**	.748**	.491**	.539**	.625**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Structure (4)	Pearson's correlation	.473**	.542**	.478**	1	.537**	.455**	.411**	.467**	.602**	.489**	.472**	.401**	.396**	.392**	.575**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Co-construction (5)	Pearson's correlation	.749**	.715**	.625**	.537**	1	.821**	.735**	.711**	.796**	.693**	.827**	.603**	.786**	.776**	.600**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Scaffolding (6)	Pearson's correlation	.698**	.710**	.699**	.455**	.821**	1	.768**	.765**	.757**	.682**	.838**	.704**	.752**	.840**	.687**
	Sig. (2-tailed)	.000	.000	.000	.000	.000		.000	.000	.000	.000	.000	.000	.000	.000	.000
Support (7)	Pearson's correlation	.675**	.644**	.755**	.411**	.735**	.768**	1	.835**	.626**	.535**	.736**	.701**	.707**	.707**	.663**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000		.000	.000	.000	.000	.000	.000	.000	.000
Conflicts (8)	Pearson's correlation	.665**	.666**	.800**	.467**	.711**	.765**	.835**	1	.671**	.665**	.768**	.785**	.666**	.688**	.741**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000		.000	.000	.000	.000	.000	.000	.000
Involvement (9)	Pearson's correlation	.644**	.703**	.570**	.602**	.796**	.757**	.626**	.671**	1	.732**	.773**	.572**	.712**	.740**	.662**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000		.000	.000	.000	.000	.000	.000
Self-regulation (10)	Pearson's correlation	.654**	.638**	.501**	.489**	.693**	.682**	.535**	.665**	.732**	1	.718**	.565**	.724**	.676**	.555**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000		.000	.000	.000	.000	.000
Mistakes during Activities (11)	Pearson's correlation	.728**	.670**	.641**	.472**	.827**	.838**	.736**	.768**	.773**	.718**	1	.634**	.836**	.820**	.606**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000		.000	.000	.000	.000
Mistakes during transitions (12)	Pearson's correlation	.612**	.587**	.748**	.401**	.603**	.704**	.701**	.785**	.572**	.565**	.634**	1	.569**	.616**	.677**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000		.000	.000	.000
Family warmth (13)	Pearson's correlation	.749**	.716**	.491**	.396**	.786**	.752**	.707**	.666**	.712**	.724**	.836**	.569**	1	.867**	.547**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000		.000	.000
Validation (14)	Pearson's correlation	.716**	.680**	.539**	.392**	.776**	.840**	.707**	.688**	.740**	.676**	.820**	.616**	.867**	1	.636**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000		.000
Authenticity (15)	Pearson's correlation	.570**	.705**	.625**	.575**	.600**	.687**	.663**	.741**	.662**	.555**	.606**	.677**	.547**	.636**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	

Figure 2. *Trend of LTP total score of each part (range: 15-45)*
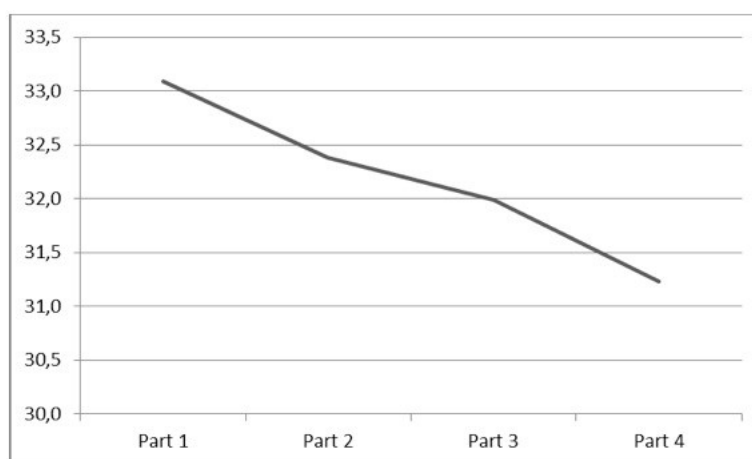
Table 4. *Means of LTP variables (sum scores)*

	Mean	**SD**
Posture and gazes	7.33	2.57
Inclusion of partners	8.84	2.77
Role implication	7.95	2.59
Structure	5.82	2.23
Co-construction	6.32	2.55
Parental scaffolding	6.71	2.63
Support	8.25	2.55
Conflicts	8.67	2.59
Involvement	7.31	2.90
Self-regulation	7.54	2.76
Interactive mistakes during activities	6.08	2.27
Interactive mistakes during transitions	7.85	2.64
Family warmth	6.49	2.93
Validation	6.75	2.80
Authenticity	9.74	2.59

4.4. The Lausanne Trilogue Play as a predictive tool for treatment

As a final research step, we observed results of LTP scores, obtained with a blind coding, compared to the treatment indication of clinicians who have conducted the diagnostic assessment with interviews and tests (G1 represents the indication of taking in charge the child/adolescent; G2 represents the indication of taking in charge both child/adolescent and parental couple).

One-way ANOVA found a significant difference between two groups (G1 and G2) in terms of quality of family interactions (F= 4.253, p=.042). Descriptive analysis shows that G2 scores are lower than G1 scores (G2 mean =107 vs G1 mean =120). Specifically, we can observe a significant difference in four LTP variables: Postures and Gazes (F=6.456, p=.013), Involvement (F=8.139, p=.005), Self-regulation (F=4.585, p=.035) and Family Warmth (F=3.994, p=.049).

5. Discussion

The present study represents the first consistent research relating the assessment of the quality of family interactions observed through LTP paradigm during the psychodiagnostic assessment in an Infancy and Adolescence Family local service. Our sample consists of 102 patients, ranging from 6 to 18 years old, and their families, turned out at the Service for psychological/psychiatric problems of their child/adolescent.

Our purpose was to investigate the relation between children/adolescent's psychopathological symptoms – levels of internalizing, externalizing and total problems assessed by CBCL – and the quality of family interactions. First aim, was the examination of LTP internal validity to discriminate dysfunctional interactive patterns. Correlation analyses, showed a good internal reliability and demonstrated the unidimensionality of the construct, confirming results from previous studies (Simonelli et al. 2013, Favez et al.

Table 5. *Means and SD of CBCL scales*

CBCL Scales	Min	Max	Mean	SD
Internalizing Problems	39	85	65.99	8.94
Externalizing Problems	40	83	62.26	9.17
Total Problems	38	83	65.71	8.49

Table 6. *Pearson's correlations between CBCL three scales and LTP variables*

		Part 3	Inclusion	Role implication	Scaffolding	Support	Conflicts	Mistakes during Activities	Mistakes during Transition	Family Warmh	Validation	Authenticity	LTP total score
Internalizing Problems	Pearson's correlation	-.065	-.205*	-.103	-.099	-.156	-.071	-.070	-.163	-.134	-.150	-.158	-.127
	Sig. (2-tailed)	.538	.039	.304	.320	.117	.476	.482	.103	.179	.132	.113	.205
Externalizing Problems	Pearson's correlation	-.224*	-.289**	-.236*	-.197*	-.224*	-.213*	-.242*	-.274**	-.226*	-.239*	-.248*	-.247*
	Sig. (2-tailed)	.031	.003	.017	.047	.023	.031	.014	.005	.023	.015	.012	.012
Total Problems	Pearson's correlation	-.134	-.296**	-.210*	-.164	-.215*	-.173	-.162	-.273**	-.191	-.225*	-.295**	-.218*
	Sig. (2-tailed)	.200	.003	.034	.100	.030	.082	.103	.006	.055	.023	.003	.028

*p<.005; **p<.001

2011). Reliability is confirmed also in the application to families with adolescents, observing that the construct is valid also when a verbal organizational task is used. Therefore, we can suppose that asking families to organize a birthday party or a family trip allows the evaluation of the quality of family interactions, as well as a play task. Positive and significant correlations were found between all the phases of the procedure (p<.01) and between all the variables sum scores, as Favez et al. (2011) found in their validation study of the coding system. We observed stronger relations between the third and the fourth part, and a tendency of decrease between the first part and the fourth, suggesting a decline during the performance confirmed through the analysis of the "part effect". The similarity between the part in which the whole family is involved, and the one in which only parents interact, leaving the child/adolescent simply present, puts light on co-parental competencies, suggesting low levels of cooperation and negotiation between parents. In fact, cooperation, mutual validation and support are basic components not only in marital relationship, but also on the co-parental level (Minuchin 1974).

As a second step, we expected to observe a link between the quality of family interactions, and the type of child/adolescent symptomatology measured by CBCL. Using correlation analyses, we found significant negative relations between LTP scores and CBCL externalizing and total problem scores. Externalizing problems are significantly related to all LTP scales instead total problems are significantly related to Inclusion, Role implication, Support, Mistake during transition, Validation, Authenticity and LTP total score. It suggests that the more the child/adolescent shows externalizing symptomatology or social problems, thought disturbances or attention difficulties, the worst the quality of family interactions appears. This result is coherent with the literature supporting the presence of a relation – and sometimes a predictive relation – between child's symptomatic domains and family functioning or quality of marital relationship (Cummings et al. 2000, Fivaz-Depeursinge et al. 2012): competitive co-parenting seems to be predictive of externalizing difficulties, while excluding co-parenting predicts

internalizing problems. These evidences, support our previous studies pointing out the importance to work with parents in the developmental age (Gatta et al. 2009) and in particular during the adolescence (Gatta et al. 2011b).

At the same time, we can besides add a consideration: individuals with social, externalizing problems, and problems related to the thought or attention, are more difficult to scaffold. This is due to their tendency to not follow schemes and rules, for their coordination's difficulties and their failure to heed high level of concentration during the play.

At this point, we need to deepen the LTP variable "Inclusion", which seems strongly related to CBCL scales: externalizing, internalizing and total problems. This relation suggests that the ability of these families to implicate actively all members during the shared activity changes if we move among different levels of gravity of the psychopathology.

This variable seems to stand out and emerge among all others LTP variables; it remembers its fundamental position in the hierarchy of the interactive functions. The capacity to include all members of the family system, and also for the members to include themselves in the activity can be an important variable to consider and to deepen in the assessment process, and also in the follow up. Further research should observe if, improving patient's competences and decreasing externalizing problems through different kind of therapeutic approaches such behavioral, psychodynamic or art therapy (Gatta et al. 2010, 2014b; Ollendick et al. 2006), the quality of family interactions would be improved. Moreover, research should move towards the adolescence age to better understanding the role of working with parents, with regards to therapeutic alliance with patient alongside with family's members' interactions.

As a last step, we observed the LTP as an assessment tool able to discriminate among more dysfunctional situations and then to be predictive with regard to treatment. Results, obtained comparing blind coding of LTP with the assessment process conduct with tests and interviews by a psychologist and a neuropsychiatric, showed that the LTP is reliable and comparable to the

therapeutic indication. Moreover, the LTP scales related to the evaluation of child/adolescent involvement and self-regulation, differ significantly between two groups, suggesting that the paradigm could be reliable not only to detect the general quality of family interactions, but also the observation and assessment of its subsystems including the patient himself.

Conclusions

The present study represents an attempt to fill the lack of studies about family's domain in clinical samples, with a particular attention to families assisted in a neuropsychiatric center for childhood and adolescence. The increasing number of studies, focused on quality of family interactions put light on a wide range of influences, between different aspects of family's functioning, but scarce evidences have described the weight of children/adolescent's psychopathology on family's interactive balances. These data, on the one hand, demonstrates the reliability of Lausanne Trilogue Play and its detailed coding system (Family Alliance Assessment Scales) in a clinical sample of children and adolescent from 6 to 18 years old. On the other hand, the empirical evidence of an inverse correlation between quality of family interactions and the severity of externalizing problems, social difficulties and thought/attention disturbances, demonstrates the existence of a specific relation between family functioning and children/adolescent's psychopathological areas.

The insertion of family interactions contribution in the assessment process of developmental age seems to make more complex a process already complicated. Actually, it is a complexity, which makes it easier. The Lausanne Trilogue Play could be an expensive procedure, in terms of the need of experts trained for the administration and the scoring system, but on the other hand, it simplifies the assessment, since it offers to clinicians a clear picture of a variety of patient's familial aspects in a just-15-minutes observation.

This work proposes an empirical basis through which look at the importance of family's interactive dynamics in the psychological assessment of a child or adolescent. In light of results presented, the inclusion of this paradigm within the developmental age assessment brings multiple profits. First of all, the evaluation of family's system has an active role in the context of assessment (Gatta et al. 2009). Alongside this point, the scientific evidence of a relation between children/adolescents' psychopathology and the functioning of their family context could be the beginning of a larger and more grounded demonstration of this connection.

Acknowledgments

References

Achenbach TM, Rescorla LA (2001). *Manual for The ASEBA School-Age Forms & Profiles*. University of Vermont, Research Center for Children, Youth, and Families, Burlington.

Altenburger LE, Schoppe-Sullivan SJ, Lang SN, Bower DJ, Kamp Dush CM (2014). Associations Between Prenatal Coparenting Behavior and Observed Coparenting Behavior at 9 Months Postpartum. *Journal of Family Psychology* 28, 4, 495-504.

Bateson G (1972). *Steps to an ecology of mind: Collected essays in anthropology, psychiatry, evolution, and epistemology*. University of Chicago Press, Chicago.

Brock RL, Kochanska G (2015). Decline in the Quality of Family Relationships Predicts Escalation in Children's Internalizing Symptoms from Middle to Late Childhood. *Journal of Abnormal Psychology* 43, 7, 1295-1308.

Caviglia G, Perrella R, Sapuppo W, Del Villano N (2010). La ricerca in psicoterapia: il contributo del Gruppo di lavoro della Cattedra di Psicologia Dinamica della Seconda Università di Napoli. *Research in Psychotherapy* 2, 13, 32-52.

Cigala A, Fruggeri L, Venturelli E (2015). Configurazioni e microtransizioni familiari: cambiamento e ricostruzione della stabilità nelle interazioni triadiche. *Psicologia Clinica dello Sviluppo* 19, 1, 125-144.

Cummings EM, Davies P, Campbell S (2000). *Developmental psychopathology and family process*. Guilford, New York.

D'Amore S, Simonelli A, Miscioscia M (2013). La qualità delle interazioni triadiche nelle famiglie lesbo-genitoriali: uno studio pilota con la procedura del Lausanne Trilogue Play. *Infanzia e Adolescenza* 12, 2, 113-127.

Ebesutani C, Bernstein A, Nakamura BJ, Chorpita BF, Higa-McMillan CK, Weisz JR (2010). Concurrent Validity of the Child Behavior Checklist DSM-Oriented Scales: Correspondence with DSM Diagnoses and Comparison to Syndrome Scales. *Journal of Psychopathology and Behavioral Assessment* 32, 3, 373-384.

Favez N (2013). L'évaluation du contexte familial dans l'examen psychologique de l'enfant. *Neuropsychiatrie de l'Enfance et de l'Adolescence* 61, 3, 176-182.

Favez N, Lavanchy Scaiola C, Tissot H, Darwiche J, Frascarolo F (2011). The Family Alliance Assessment Scales: Steps Toward Validity and Reliability of an Observational Assessment Tool for Early Family Interactions. *Journal of Child and Family Studies* 20, 1, 23-37.

Favez N, Lopes F, Bernard M, Frascarolo F, Lavanchy Scaiola C, Corboz-Warnery A, Fivaz-Depeursinge E (2012). The development of family alliance from pregnancy to toddlerhood and child outcomes at 5 years. *Family Process* 51, 4, 542-556.

Favez N, Tissot H, Frascarolo F, Fivaz-Depeursinge E (2014). Dépressivité maternelle au post-partum et symptomatologie du bébé à trois mois: l'effet modérateur de l'alliance familiale et de la satisfaction conjugale. *Neuropsychiatrie de l'Enfance et de l'Adolescence* 62, 4, 203-211.

Fivaz-Depeursinge E, Corboz-Warnery A (1999). *Il triangolo primario. Le prime interazioni triadiche tra padre, madre e bambino*. Raffaello Cortina, Milano.

Fivaz-Depeursinge E, Cairo S, Lavanchy Scaiola C, Favez N (2012). Nine-month olds' triangular interactive strategies with their parents' couple in low-coordination families: A descriptive study. *Infant Mental Health Journal* 33, 1, 10-21.

Gatta M, Dal Zotto L, Nequinio G, Del Col L, Sorgato R, Ceranto G, Testa CP, Pertile R, Battistella PA (2011b). Parents of adolescents with mental disorders: Improving their caregiving experience. *Journal of Child and Family Studies* 20, 4, 478-490.

Gatta M, Ramaglioni E, Lai J, Svanellini L, Toldo I, Del Col L, Salviato C, Spoto A, Battistella PA (2009). Psychological and behavioral disease during developmental age: the importance of the alliance with parents. *Neuropsychiatric Disease and Treatment* 5, 541-546.

Gatta M, Simonelli A, Sudati L, Sisti M, Svanellini L, Stucchi M, Spoto A, Battistella PA (2015). Emotional Difficulties

in Adolescence: Psychopathology and Family Interactions. *International Neuropsychiatric Disease Journal* 4, 1, 47-54.

Gatta M, Sisti M, Brunello G, Sale E, Simonelli A, Battistella PA (2014a). Evaluation of family relationships in psychomotor intervention with pre-teens suffering from cerebral palsy. *Giornale di Neuropsichiatria dell'Età Evolutiva* 34, 73-81.

Gatta M, Sisti M, Sudati L, Miscioscia M, Simonelli A (2016). The Lausanne Trilogue Play within the outcome evaluation in infant mental health: a preliminary report. *Research in Psychotherapy: Psychopathology, Process and Outcome* 19, 1, 19-30.

Gatta M, Miscioscia M, Simonelli A, Sudati L, Sisti M, Comis I, Battistella BA (2017a). Contribution of Analyses on Triadic Relationships to Diagnostics and Treatment Planning in Developmental Psychopathology. *Psychological Reports* 120, 2, 290-304.

Gatta M, Canetta E, Zordan M, Spoto A, Ferruzza E, Manco I, Addis A, Battistella PA (2011a). Alexithymia in juvenile primary headache sufferers: A pilot study. *Journal of Headache and Pain* 12, 1, 71-80.

Gatta M, Gallo C, Vianello M (2014b). Art therapy groups for adolescents with personality disorders. *The Arts in Psychotherapy* 41, 1, 1-6.

Gatta M, Dal Zotto L, Del Col L, Spoto A, Testa CP, Ceranto G, Sorgato R, Bonafede C, Battistella PA (2010). Analytical psychodrama with adolescents suffering from psycho-behavioral disorder: Short-term effects on psychiatric symptoms. *The Arts in Psychotherapy* 37, 3, 240-247.

Gatta M, Miscioscia M, Sisti M, Comis I, Battistella PA (2017b) Interactive family dynamics and Non-Suicidal Self-Injury in psychiatric adolescent patients: a single case study. *Frontiers in Psychology* 8, 46, 1-5.

Gueron-Sela N, Atzaba-Poria N, Meiri G, Marks K (2015). The Caregiving Environment and Developmental Outcomes of Preterm Infants: Diathesis Stress or Differential Susceptibility Effects? *Child Development* 86, 4, 1014-1030.

Hedenbro M, Rydelius PA (2014). Early interaction between infants and their parents predicts social competence at the age of four. *Acta Paediatrica* 103, 3, 268-274.

Keren M, Tyano S (2015). Psychopathology and its early impact on parenting behaviors in mothers: The interface between adult and infant psychiatry. *Israel Journal of Psychiatry and Related Sciences* 52, 2, 92-99.

Kim SR, Szigethy E, Meltzer-Brody S, Pilowsky DJ, Verhulst F (2013). Supporting the mental health of children by treating mental illness in parents. *Psychiatric Annal*s 43, 12, 534-537.

Mazzoni S, Lubrano Lavadera A, Di Benedetto R, Criscuolo M, Mangano C (2015). Le coalizioni genitoriali: lo stile interattivo del bambino a fronte degli stili cogenitoriali. *Psicologia Clinica dello Sviluppo* 19, 1, 79-100.

Mazzoni S, Veronesi C, Vismara L (2013). Coordinare la genitorialità nelle famiglie con un bambino con Disturbo dello Spettro Autistico. *Psichiatria dell'Infanzia e dell'Adolescenza* 80, 1, 39-60.

Minuchin S (1974). *Families and family therapy.* Harvard University Press, Cambridge.

Miscioscia M, Blavier A, Pagone PR, Simonelli A (2017). The Desire of Parenthood: Intuitive Co-Parental Behaviors and Quality of Couple's Relationship among Italian and Belgian Same-Sex and Opposite-sex Couples. *Frontiers in Psychology* 8, 110, 1-9.

Murphy SE, Jacobvitz DB, Hazen NL (2015). What's so Bad About Competitive Coparenting? Family-Level Predictors of Children's Externalizing Symptoms. *Journal of Child and Family Studies* 25, 5, 1684-1690.

Ollendick TH, King NJ, Chorpita BF (2006). Empirically

Supported Treatments for Children and Adolescents. In Kendall PC (ed) *Child and adolescent therapy: Cognitive-behavioral procedures*, pp. 492-520. The Guilford Press, New York, London.

Parolin M, Simonelli A (2016). Attachment Theory and Maternal Drug Addiction: The Contribution to Parenting Interventions. *Frontiers in Psychiatry* 7, 152, 1-14. doi: 10.3389/fpsyt.2016.00152

Reiss, D. (1989). La famiglia rappresentata e la famiglia reale. In Sameroff AJ, Emde RN (Eds.) *I disturbi delle relazioni nella prima infanzia*, pp. 200-230. Bollati Boringhieri, Torino.

Ringoot AP, Tiemeier H, Jaddoe VW, So P, Hofman A, Verhulst FC, (2015). Jansen PW. Parental depression and child well-being: young children's self-reports helped addressing biases in parent reports. *Journal of Clinical Epidemiology* 68, 8, 928-38.

Simonelli A, Bighin M, De Palo F (2013). L'évolution de l'alliance familiale et son impact sur l'enfant à l'âge de 4 ans: une étude longitudinale en Italie. In Favez N, Frascarolo F, Tissot H (eds) *Naitre et grandir au sein de la triade: Le developement de l'alliance familiale*, pp. 159-173. De Boeck, Louvain-la-Neuve.

Simonelli A, De Palo F, Bighin M (2014c). From pregnancy to the 9th month: the development of early interactive-relational competencies of the child in the family context. *Interdisciplinary Journal of Family Studies* 19, 1, 110-130.

Simonelli A, Parolin M, Sacchi C, De Palo F, Vieno A (2016). The Role of Father Involvement and Marital Satisfaction in the Development of Family Interactive Abilities: A Multilevel Approach. *Frontiers in Psychology* 7, 1725, 1-11.

Simonelli A, Sisti M, Svanellini L, Sudati L, Fregna R, Vellon L, Stucchi M, Spoto A, Gatta M (2014b). Is there any relationship between children psychopathology and interactive family pattern?. *Infant Mental Health Journal, Suppl A,* 35, 3, 243-244.

Simonelli A, Sudati L, Sisti M, Calloni V, Spoto A, Svanellini L, Battistella PA, Gatta M (2014a). Alexithymia, psychopathology vulnerability and family dynamics in adolescence. *Infant Mental Health Journal, Suppl A*, 35, 3, 241-242.

Stern DN (2005). Intersubjectivity. In Person ES, Cooper AM, Gabbard GO (eds) *The American psychiatric publishing textbook of psychoanalysis*, pp. 77-92. American Psychiatric Publishing, Washington.

Teubert D, Pinquart M (2010). The Association Between Coparenting and Child Adjustment: A Meta-Analysis. *Parenting: Science and Practice* 10, 4, 286-307.

Tissot H, Favez N, Udry-Jorgensen L, Frascarolo F, Despland JN (2015). Mothers' and Fathers' Sensitive Parenting and Mother-Father-Child Family Alliance During Triadic Interactions. *The Family Journal* 23, 4, 374-380. doi : 10.1177/1066480715601110

Tissot H, Lavanchy Scaiola C, Frascarolo F, Despland JN, Stiefel F, Favez N (2014). Family alliance as a moderator of the link between maternal postpartum depression and child symptoms assessed by both parents. *Journal of Family Issues* 35, 11, 1520-1542.

Umemura T, Christopher C, Mann T, Jacobvitz D, Hazen N (2015). Coparenting Problems with Toddlers Predict Children's Symptoms of Psychological Problems at Age 7. *Child Psychiatry & Human Development* 46, 6, 981-996.

Weinfield NS, Sroufe AL, Egeland B, Carlson E (2008). Individual differences in attachment. 2nded ed. In Cassidy J, Shaver PR (eds) *Handbook of Attachment: Theory, Research, and Clinical Applications*, pp. 78-101. Guilford Press, New York.