



UNIVERSITÀ
DEGLI STUDI
DI PADOVA

Sede Amministrativa: Università degli Studi di Padova

Dipartimento di Filosofia, Sociologia, Pedagogia e Psicologia Applicata (FISPPA)
Sezione di Psicologia Applicata

CORSO DI DOTTORATO DI RICERCA IN SCIENZE PSICOLOGICHE
CICLO XXIX

**RELATIONS AND EMOTIONS IN FAMILIES OF ADOLESCENTS WITH ANOREXIA NERVOSA.
TOWARDS AN EFFECTIVE TREATMENT TAILORED TO THE ADOLESCENT AND THE FAMILY**

Coordinatore: Ch.ma Prof.ssa Francesca Peressotti

Supervisore: Ch.ma Prof.ssa Stefania Mannarini

Co-Supervisore: Ch.ma Prof.ssa Michela Gatta

Dottorando: Laura Balottin

**Relations and emotions in families of
adolescents with anorexia nervosa.**

Towards an effective treatment tailored to the
adolescent and the family

Famiglie di adolescenti con anoressia nervosa.

Studio del funzionamento emotivo e relazionale per un approccio terapeutico

efficace ai pazienti in età evolutiva

RIASSUNTO

L'anoressia, patologia eclatante nelle sue manifestazioni eppure sfuggente, paradossale ed inquietante, tentativo di redenzione e rischio di morte allo stesso tempo, pone ai suoi clinici e ai suoi teorici questioni di grande complessità, che si riflettono nella varietà delle teorie differenti e contraddittorie formulate nei diversi ambiti. Patologia di confine fra il somatico e lo psichico, l'anoressia ha da sempre suscitato il dibattito fra i sostenitori delle origini psicologiche della malattia e coloro che invece parteggiano per cause primariamente organiche.

L'anoressia nervosa, la più studiata e la più nota fra le forme di disturbo del comportamento alimentare, conserva anche nell'età evolutiva aspetti di prognosi molto grave con un'elevata percentuale di esito mortale. Nonostante l'età di esordio dell'anoressia nervosa sia sempre più precoce e la prevalenza del disturbo in età evolutiva in crescita, sono ancora carenti gli studi in letteratura che riguardano specificamente questa fascia d'età. Eppure ben il 40% dei nuovi casi di anoressia esordisce proprio fra i 15 e i 19 anni, età in cui si rilevano tuttavia anche i più elevati tassi di guarigione. Nelle prime fasi del suo esordio, che avviene di solito in adolescenza, appare perciò cruciale predisporre una presa in carico precoce e tempestiva di questo disturbo dagli esiti potenzialmente molto gravi.

L'insorgenza del disturbo, la cui eziologia appare complessa e multifattoriale, sembra precipitata dall'interazione di diversi fattori: biologici, psicologici, ambientali, culturali e sociali. Se i dati riguardanti le componenti genetiche e neurobiologiche sembrano offrire per ora limitate prospettive per un reale progresso nel trattamento di questa complessa patologia, più interessanti sul piano clinico e terapeutico appaiono attualmente i dati della letteratura che indicano il ruolo cardine delle

componenti familiari, sia per quanto riguarda l'evoluzione del disturbo sia per quanto riguarda gli indirizzi terapeutici valutati come più efficaci.

Se è noto che i trattamenti familiari si sono dimostrati molto efficaci nel trattamento di questa psicopatologia, i meccanismi di funzionamento di queste terapie e le peculiari dinamiche familiari cui indirizzare più fruttuosamente il trattamento restano campi potenzialmente fertili, da esplorare per la ricerca. E' convinzione generale che il complesso problema della eziopatogenesi rimanga al di fuori degli obiettivi degli studi volti ad analizzare e fotografare le dinamiche familiari presenti in un determinato momento nelle famiglie delle pazienti con anoressia. Tuttavia - obiettivo forse prioritario rispetto ad ogni altro - cogliere e descrivere il funzionamento delle pazienti con anoressia all'interno delle loro famiglie può essere utile e forse indispensabile per stabilire quali siano le misure terapeutiche più valide da attivare in ogni specifico caso. Una presa in carico tempestiva ed efficace di questa grave psicopatologia, potenzialmente mortale, può essere fondamentale e la ricerca in questo campo può arricchire in maniera sostanziale il ventaglio degli interventi disponibili e l'efficacia della loro applicazione alle diverse situazioni cliniche.

Questa tesi si propone di esplorare all'interno delle famiglie di adolescenti con anoressia alcune dinamiche relazionali ed emotive che potrebbero influenzare il decorso e le possibilità di cura delle giovani pazienti. Nella tesi sono presentati tre diversi lavori di ricerca, svolti tutti all'interno di famiglie di adolescenti con anoressia nervosa di tipo restrittivo, volti ad esaminare aspetti delle relazioni familiari, relativi in particolare ai legami genitoriali interiorizzati, alla regolazione emotiva e alle interazioni madre-padre-figlia.

Il primo studio esamina il legame genitoriale percepito dalle adolescenti con anoressia e dei loro genitori, nell'intento di cogliere la possibile continuità e influenza degli stili di attaccamento tra le diverse generazioni (genitori verso i propri genitori – figli verso i genitori) all'interno delle famiglie dei pazienti. La ricerca sulla potenziale trasmissione trasgenerazionale dei legami parentali e dell'attaccamento è infatti ancora molto limitata e non vi è inoltre alcuna evidenza che riguardi le famiglie di pazienti adolescenti. Questo studio controllato ha visto la partecipazione di 168 partecipanti, adolescenti e genitori, cui è stato somministrato il Parental Bonding Instrument (PBI) per la valutazione dei legami genitoriali interiorizzati. L'analisi dei legami parentali dei membri della famiglia, svolta a livello latente (Latent Class Analysis), ha permesso di evidenziare alcune peculiarità a livello familiare. Se da una parte i risultati dello studio confermano che gli adolescenti con anoressia restrittiva riferiscono di percepire positivamente il rapporto con i propri genitori, dall'altra i genitori dei pazienti mostrano di ricordare i propri genitori come apprensivi e autoritari ma non particolarmente affettuosi. Tali specificità del legame parentale ricordate dai genitori dei pazienti rispetto ai propri genitori aprono la questione di quanto i modelli di attaccamento genitoriali possano influenzare la relazione stessa con i figli e dunque essere possibili target di un intervento volto a modificare in senso migliorativo le relazioni all'interno delle famiglie dei pazienti con anoressia. Ulteriori ricerche sui modelli di attaccamento nelle famiglie di pazienti con anoressia potrebbero chiarire l'eventuale ruolo di questi modelli come fattore di vulnerabilità rispetto ai disturbi alimentari e soprattutto la loro influenza rispetto al decorso della malattia.

D'altra parte il disegno trasversale dello studio non permette di chiarire se le percezioni genitoriali negative rispetto al legame con i propri genitori preesistano alla

malattia della figlia o se invece siano conseguenza di quest'ultima. Le relazioni in atto e le esperienze successive possono infatti influenzare i ricordi e le rappresentazioni del passato e ciò specialmente nel caso di esperienze fortemente traumatiche come può essere per i genitori delle pazienti la diagnosi di anoressia delle figlie con il concreto pericolo di vita che spesso essa comporta. Questa considerazione rende conto dell'importanza di studiare le percezioni interne dei genitori e delle figlie, superando la sterile e probabilmente insolubile controversia su quali siano le cause e quali le conseguenze. Dal punto di vista della cura considerare la reciproca e vicendevole connessione tra rappresentazioni interne (per esempio le rappresentazioni del legame con i genitori del passato) e le relazioni e le interazioni attuali offre infatti due importanti punti di accesso al lavoro terapeutico con le famiglie: se da una parte il lavoro sulle rappresentazioni può favorire la modificazione dei comportamenti genitoriali e delle interazioni reali fra genitori e figlie malate, dall'altro è altrettanto vero che lavorare direttamente sulle relazioni concrete in corso fra genitori e figli può giungere a modificare anche le rappresentazioni interne di questi rapporti.

Da qui l'interesse di studiare non solo le rappresentazioni interne dei legami familiari ma anche le interazioni in atto fra genitori e figlie (terzo studio di questa tesi) e la regolazione delle emozioni all'interno della famiglia (secondo studio), aspetto quest'ultimo che potrebbe collegare le due dimensioni del mondo interno delle rappresentazioni e della realtà esterna delle interazioni. Le rappresentazioni di sé e dell'altro (modelli operativi interni di attaccamento) sono infatti strettamente connesse alla regolazione, più o meno funzionale, degli affetti ed ai comportamenti parentali messi in atto nel concreto.

Il secondo studio, presentato nella tesi, si occupa quindi di esaminare le potenziali peculiarità del funzionamento psichico dei membri delle famiglie di pazienti con anoressia in relazione alla qualità della percezione e del contatto col mondo emozionale interno, utilizzando il costrutto di alessitimia. Molti studi sull'anoressia nervosa si sono concentrati sulla regolazione emotiva, ed in particolare sull'alessitimia, a livello individuale, mentre ci sono solo pochi e contrastanti dati sull'alessitimia a livello familiare, nonostante le evidenze più recenti segnalino l'importanza delle dinamiche familiari rispetto all'evoluzione del disturbo anoressico, soprattutto nei pazienti adolescenti. Si è ritenuto opportuno in questo secondo studio non limitarsi all'indagine delle percezioni interne di pazienti e genitori rispetto alla qualità dei propri vissuti emotivi attraverso questionari autovalutativi, ricorrendo in aggiunta ad una valutazione clinica svolta attraverso un'intervista strutturata specificamente studiata per valutare l'alessitimia. L'alessitimia rappresenta infatti uno specifico deficit nella regolazione degli affetti che implica proprio una difficoltà nell'identificare, elaborare e descrivere verbalmente le emozioni, che si accompagna di solito ad una limitata capacità immaginativa e fantasmatica. Lo scopo dello studio è stato dunque quello di valutare l'alessitimia nelle pazienti adolescenti anoressiche e nei loro genitori, utilizzando una misurazione multi-metodo al fine di acquisire una conoscenza più diretta e approfondita del problema.

A 46 partecipanti, pazienti adolescenti con anoressia e genitori, è stata proposto il noto questionario self-report Toronto Alexithymia Scale (TAS-20), accanto all'intervista strutturata Toronto Structured Interview for Alexithymia (TSIA), che rappresenta la prima intervista clinica strutturata completa per la valutazione dell'alessitimia. L'uso del modello a tratti latenti di Rasch ha permesso di confrontare la sensibilità dei due diversi strumenti, evidenziando una significativa discordanza fra

i due: l'intervista clinica infatti permette di riscontrare un grado di alessitimia maggiore sia nei genitori sia nelle figlie con anoressia. Inoltre all'interno delle famiglie ed in particolare della coppia genitoriale è emerso un significativo divario nei livelli di alessitimia. Grazie all'utilizzo dell'intervista clinica, che si è dimostrata in grado di minimizzare le tendenze alla negazione, si è rilevato che i padri delle pazienti si trovano molto più in difficoltà nell'identificare, elaborare e descrivere verbalmente i propri sentimenti rispetto alle madri. Queste ultime si collocano piuttosto su una polarità opposta di grande recettività e capacità di comprendere e analizzare i sentimenti, che potrebbero all'opposto coinvolgerle eccessivamente fino talvolta a travolgerle. I risultati aprono la via a dare maggior spazio, accanto alle caratteristiche individuali di pazienti e genitori, anche all'impatto del funzionamento emotivo familiare (per esempio le antitetiche modalità materne e paterne di gestire e vivere le emozioni all'interno della coppia genitoriale), come aspetto fondamentale rispetto alla possibilità di stabilire un'alleanza terapeutica con paziente e genitori e dunque influenzare in senso positivo l'outcome.

Gli studi più recenti e le linee guida per il trattamento di pazienti adolescenti con anoressia nervosa concordano infatti nel sottolineare il ruolo chiave svolto dai genitori per quanto riguarda gli esiti dei trattamenti per le giovani pazienti. Tuttavia il funzionamento familiare è stato per ora studiato quasi esclusivamente con metodi autovalutativi. Eppure, come è emerso nel secondo studio presentato, proprio nelle difficili circostanze vissute dalle famiglie che si trovano ad affrontare la malattia, spesso grave e pericolosa, della figlia che soffre di anoressia, le valutazioni cliniche e i metodi osservativi possono aiutare a riconoscere in maggior misura aspetti delle relazioni familiari e del funzionamento psichico dei membri della famiglia, che essi stessi non sono sempre in grado di cogliere appieno.

Il terzo studio, che compone questa tesi, mira infatti ad indagare le interazioni triadiche all'interno delle famiglie di adolescenti con anoressia nervosa attraverso una procedura osservativa semistandardizzata. 120 genitori e figlie adolescenti, consecutivamente giunti all'attenzione di servizi neuropsichiatrici per l'età evolutiva, hanno partecipato allo studio e hanno preso parte ad una seduta di gioco videoregistrata, secondo la procedura del Lausanne Trilogue Play (LTP). In questa innovativa applicazione alle famiglie di pazienti con anoressia restrittiva, il Lausanne Trilogue Play segnala alcune peculiarità nell'interazione, che differenziano queste ultime famiglie da un altro gruppo di famiglie con figlie diagnosticate come sofferenti di disturbi psichiatrici differenti (disturbi dell'umore di tipo depressivo o disturbi d'ansia), le quali hanno preso parte allo studio come gruppo di controllo con altra psicopatologia. I risultati mostrano che nelle famiglie delle pazienti con anoressia i ruoli all'interno della triade madre-padre-figlia non sono sempre chiari e definiti e ciò soprattutto quando è richiesta una rilevante capacità di triangolazione e di coinvolgimento di tutti e tre i protagonisti nell'interazione. Il rapporto sembra infatti più spesso mantenuto a livello diadico attraverso la creazione di coalizioni familiari. I genitori mostrano una notevole difficoltà a ritagliarsi uno spazio relazionale di coppia da cui la figlia malata possa essere momentaneamente esclusa. Il padre è posto o tende a porsi lui stesso ai margini dell'interazione fra madre e figlia, rimanendone spesso escluso. Padre e figlia si collocano inoltre su una polarità di maggior autocontrollo e distacco emotivo, aliena alle madri che mostrano invece una maggiore reattività e un più marcato coinvolgimento.

Il presente lavoro, essendo controllato, fornisce indicazioni in linea con la medicina dell'evidenza, anche se con un grado di evidenza inferiore a quello fornito da un trial controllato randomizzato. Ad esempio si dimostra la presenza di

caratteristiche di funzionamento familiare in cui il padre acquisisce un ruolo di primo piano, suggerendo dunque l'opportunità di spostare l'attenzione dall'indagine dalla relazione esclusiva madre-figlia al coinvolgimento del padre, della coppia dei genitori e della famiglia nel suo complesso. Dal momento che proprio il funzionamento familiare può rivelarsi un fattore di rischio o viceversa un fattore di facilitazione del processo di cura, l'utilizzo della metodica LTP può consentire l'osservazione diretta delle dinamiche familiari, aprendo la via ad un eventuale lavoro terapeutico mirato su queste ultime. Lavorare sugli elementi disfunzionali delle interazioni attuali, che siano acquisiti dopo l'esordio della malattia oppure antecedenti, può infatti mobilitare le relazioni familiari, favorendo un outcome positivo per la giovane paziente.

Con la consapevolezza del rischio di operare un'indebita trasformazione dei risultati dell'osservazione diretta in dati di fatto assoluti, interpretati poi a vantaggio di letture eziopatogenetiche dell'anoressia, diviene necessario sottolineare che in un campo di studio così complesso e articolato, come quello della psicopatologia dell'anoressia nervosa e delle relazioni familiari, la ricerca scientifica, e così i dati presentati in questa tesi, non possono che offrire risultati sempre limitati e destinati a ulteriori arricchimenti, conferme e disconferme.

I tre studi presentati in questa tesi rappresentano un tentativo di cogliere e analizzare, con metodologie diverse e complementari, alcuni aspetti del funzionamento familiare pressochè inesplorati per quanto riguarda i pazienti adolescenti. I tre studi convergono nell'indicare che la coppia genitoriale e l'ambiente familiare nel suo complesso possono avere un ruolo chiave rispetto alle possibilità evolutive e di cura delle giovani con anoressia. Non a caso il trattamento familiare, trattamento di prima linea raccomandato dalle linee guida internazionali, è

particolarmente efficace proprio per le pazienti nella fascia di età adolescenziale e con recente esordio di malattia. Una miglior comprensione delle dinamiche familiari può essere prioritaria proprio per la cura di pazienti che non hanno ancora concluso il proprio sviluppo, anche dal punto di vista psicologico, e che vivono inoltre ancora all'interno della propria famiglia di origine. In adolescenza infatti il gioco di rimandi fra realtà esterna e realtà interna, fra genitori reali e imago parentali interiorizzate è ancora fluido e aperto. Il processo di soggettivazione stesso, l'evolversi del mondo interno dell'adolescente si gioca in questa complessa articolazione di relazioni ed emozioni, attuali e interiorizzate (Jeammet, 2010).

Abstract

Anorexia nervosa is an eating disorder whose onset emerges at an increasingly early age and whose prognosis, even among adolescents, can be grave. Current scientific literature and practice guidelines on the treatment of adolescent patients with anorexia point to the key role that is played by parents and family in influencing the therapeutic possibilities and the outcomes of young patients.

The aims of the thesis are to explore the relational and emotional dynamics in families of adolescents with anorexia that may influence the treatment possibilities and the outcome of the young patients. Three different research studies are presented in the thesis, all examined families of adolescents with restricting type anorexia nervosa, and explored aspects of family relations, relating in particular to the internalized parental bonding, emotion regulation and triadic mother-father-daughter interactions.

The first study aims to identify any specific pattern of parental bonding and address the intergenerational transmission of these patterns in families of newly diagnosed adolescents with restricting type anorexia. The second study instead deals with emotion regulation in families with an adolescent with anorexia, exploring alexithymia in the daughter, mother and father based on clinical versus self-assessment. Whereas in the third study, a direct observational procedure based on a videotaped play section was used to explore triadic interactions.

The results of the studies seem to suggest that both in the research, as well as in treatment of patients with anorexia nervosa, attention needs to be shifted from the exclusive mother-daughter relation to the involvement of the father, of the

parental couple and of the family as a whole. Since family functioning is well established as a maintaining factor of anorexia nervosa or vice versa as a facilitating factor in the therapeutic process, studying the family relations may not only help clinicians to select the most suitable treatment for each patient and each family but also to predict the possibility of establishing a therapeutic alliance with the family and thus to improve the possibility of reaching a good outcome.

Contents

Part I - Literature review on adolescent anorexia nervosa and family relations

Chapter 1

Family relations in adolescent anorexia

1.1	Anorexia nervosa, a disease of adolescence.....	19
1.2	Anorexia nervosa in adolescence: what is the family role?.....	32
1.3	Internalized family relations: attachment and representations of the parental bonding.....	37
1.4	The emotions and the body: from the individual to the family affective regulation	48
1.5	Family relations: from the perceived to the observed family dynamics	53

Part II - Three studies on family relations of adolescents with restricting type anorexia nervosa

Chapter 2

The Parental Bonding in families of adolescents with anorexia.

Attachment representations between parents and offspring

2.1	Aim.....	61
2.2	Methods.....	62
3.2.1	Participants.....	62

3.2.2	Procedure.....	63
3.2.3	Measures.....	64
3.2.4	Analyses.....	65
2.3	Results.....	66
2.3.1	Description of the families of adolescents with anorexia and of the control families.....	66
2.3.2	Latent class analysis of maternal and paternal bonding	68
2.4	Discussion.....	71

Chapter 3

The emotion regulation in families of adolescents with anorexia.

Alexithymia in the daughter, mother and father based on clinical versus self-evaluation

3.1	Aim.....	81
3.2	Methods.....	83
4.1.1	Participants.....	83
4.1.2	Procedure.....	84
4.1.3	Measures.....	85
4.1.4	Analyses.....	88
3.3	Results.....	90
3.3.1	Analyses of the single family.....	90
3.3.2	The alexithymia categories.....	92
3.3.3	Family analyses.....	92
3.3.4	Analyses of the family members.....	94
3.3.5	Analyses of the family couple contrasts.....	95
3.4	Discussion.....	97

Chapter 4

Assessing the triadic interactions.

The Lausanne Trilogue Play applied to families of adolescents with anorexia and families of adolescents with emotional disorders

4.1	Aim.....	106
	4.1.1 The evaluation of the triadic interactions based on the Lausanne Trilogue Play	106
	4.1.2 Goals of the study	110
4.2	Methods	
	4.2.1 Participants.....	110
	4.2.2 Procedure.....	112
	4.2.3 Measures.....	113
	4.2.4 Analyses.....	118
4.3	Results.	120
4.4	Discussion.....	125
	4.4.1 Clinical implications.....	133

Chapter 5

General Conclusions.....	136
---------------------------------	------------

References.....	151
------------------------	------------

**Part I -
Literature review on adolescent anorexia
and family relations**

Chapter 1

Family relations in adolescent anorexia

1.1 Anorexia nervosa, a disease of adolescence

Anorexia nervosa (AN) is a manifestly striking pathology and yet elusive, paradoxical and disquieting. Being an attempt at redemption and death at the same time, it poses to clinicians and theorists greatly complex questions that are reflected in the variety of diverse and contradictory theories formulated in different areas of study. Being a borderline pathology between somatic and psychic (Garner, & Garfinkel, 1988), anorexia has always sparked debates between the supporters of the mainly psychological origins of the illness (Bruch, 1978; Brusset, 2004; Jeammet, 2010; Kestemberg, Kestemberg, & Decobert, 1972) and those who suggested prevalent organic causes (Kaye & Weltzin, 1991).

If from a historical point of view it is appropriate to remember the long lasting confusion between anorexia and Simmonds' disease (hypopituitarism), even today, the ongoing debate seems to focus on certain positions of a mainly biological nature drawing their inspiration from neuroanatomy, neurophysiology and genetics (Kaye, Fudge, & Paulus, 2009; Thornton, Mazzeo, & Bulik, 2010), which find their confirmation in the various neurotransmitter, neuroendocrine and metabolic alterations present in conjunction with eating disorders (EDs). On the other hand, cultural and sociological interpretations decidedly ascribe the emergence of eating disorders to the evolution of customs and of the dominant culture (Cash & Deagle, 1997). Family-based approaches, particularly the systemic one, (Liebman, Minuchin, Baker, & Rosman, 1975; Minuchin, Rosman & Baker, 1978; Minuchin et al., 1975; Selvini Palazzoli, 1989), take into consideration as the basic unit for analysis the family nucleus with its pathological interactions, sometimes complementing and other times opposing approaches (e.g. psychoanalytic approach) that are more

focused on the individual and his/her psychic functioning (Bruch, 1978; Brusset, 2004; Jeammet, 2004; Kestemberg, Kestemberg, & Decobert, 1972).

The very issue of attributing a psychological significance to the phenomenon of anorexia is definitely complex: also in this area the available theories are various and diverse for theoretical matrix. For instance, within the same psychoanalytic field there is no clear consensus on the role of anorexia as a specific syndrome, a symptom ascribable to several modes of functioning, or even as an indication of a stable peculiar personality structure. Kernberg (2004) claims that anorexia is usually found within a borderline personality structure and is therefore the manifestation of serious character pathology. Brusset's position (Brusset, 2004), instead, appears to be more vague since he acknowledges the existence, alongside the classic forms of anorexia which have been studied for quite some time, of some "extreme" forms that underlie other psychopathologies (psychoses), as well as many phenomena of "hysterical pseudoanorexia", whose manifestations are quite similar to anorexia proper. More radical, in this sense, is Nicolò (2010), who claims that the anorexic symptom itself may hide completely different psychic organizations and economies. In particular, the author makes a distinction between the context of an anorexic syndrome, i.e. classic anorexia nervosa, characterized by perverse functioning; adolescent reactive types of anorexia, which are transitory or based on hysteria; and anorexia as an extreme defense from an impending psychotic breakdown.

Regardless of the different explanatory theories, it is certainly helpful not to neglect some important elements of biologically grounded concrete reality which characterize the clinical presentation of anorexia, so as not to forget some unavoidable physical aspects of such a body-related psychopathology that are linked to malnutrition and its tragic consequences, thus mirroring the attitude of the patients

themselves to consider mental functioning as a self-standing entity, completely separate from their real, suffering bodies.

Currently, for a diagnosis of anorexia nervosa to be formulated, according to the Diagnostic and Statistical Manual of Mental Disorders Fifth Edition (DSM-5), (American Psychiatric Association, 2013), a number of precise symptomatological and clinical criteria must be met (APA, 2013; pg 338): “

- A. Restriction of energy intake relative to requirements, leading to a significantly low body weight in the context of age, sex, developmental trajectory, and physical health. Significantly low weight is defined as a weight that is less than minimally normal or, for children and adolescents, less than that minimally expected.
- B. Intense fear of gaining weight or of becoming fat, or persistent behavior that interferes with weight gain, even though at a significantly low weight.
- C. Disturbance in the way in which one’s body weight or shape is experienced, undue influence of body weight or shape on self-evaluation, or persistent lack of recognition of the seriousness of the current low body weight.”

Moreover there are two different type of symptomatological presentation of anorexia (APA, 2013; pg 339):

“Restricting type (F50.01): During the last 3 months, the individual has not engaged in recurrent episodes of binge eating or purging behavior (i.e., self-induced vomiting or the misuse of laxatives, diuretics, or enemas). This subtype describes

presentations in which weight loss is accomplished primarily through dieting, fasting, and/or excessive exercise.

Binge-eating/purging type (F50.02): During the last 3 months, the individual has engaged in recurrent episodes of binge eating or purging behavior (i.e., self-induced vomiting or the misuse of laxatives, diuretics, or enemas).”

The syndrome can be (APA, 2013; pg 339):

“In partial remission: After full criteria for anorexia nervosa were previously met. Criterion A (low body weight) has not been met for a sustained period, but either Criterion B (intense fear of gaining weight or becoming fat or behavior that interferes with weight gain) or Criterion C (disturbances in self-perception of weight and shape) is still met.

In full remission: After full criteria for anorexia nervosa were previously met, none of the criteria have been met for a sustained period of time.”

For what concerns the severity (APA, 2013; pg 339):

“The minimum level of severity is based, for adults, on current body mass index (BMI) (see below) or, for children and adolescents, on BMI percentile. The ranges below are derived from World Health Organization categories for thinness in adults; for children and adolescents, corresponding BMI percentiles should be used. The level of severity may be increased to reflect clinical symptoms, the degree of functional disability, and the need for supervision.

Mild: BMI > 17 kg/m²

Moderate: BMI 16-16.99 kg/m²

Severe: BMI 15-15.99 kg/m²

Extreme: BMI < 15 kg/m²”

The main variation from the Diagnostic and Statistical Manual of Mental Disorders Fourth Edition, Text Revision, (DSM-IV-TR) (American Psychiatric Association, 2000) is thus represented by the elimination of amenorrhea from the diagnostic criteria (criterion D) (Föcker, Knoll, & Hebebrand, 2013, Mustelin et al., 2016), which is no longer deemed as necessary for the diagnosis: “

D. In females, after menarche, amenorrhea, i.e. absence of at least 3 consecutive menstrual cycles

(a woman is considered to be amenorrhoeic if her menstrual cycle is only the consequence of the administration of hormones, e.g. estrogens)”

The current psychiatric nosography is the result of a categorical approach which tends to set clear boundaries between one diagnostic category and another; the only form of possible overlapping is the so-called comorbidity. A category system certainly provides an advantage in terms of economy, reliability and stability: thanks to it, clinicians can communicate in a reliable manner and in a common language. Nevertheless, the categorical structure of DSM-5 sometimes affects the wealth of information, making it impossible to fully grasp the complexity of each single clinical case.

The analysis of the patients’ clinical histories with regard to the evolution, prognosis and medical complications that, in the long run, these pathologies can lead to, highlights the way how many patients suffering from an eating disorder may move from one diagnostic category to another in the course of their lives, so that one

gets the impression that only a single illness is present, the gravity and type of whose symptoms vary according to each situation.

Within the area of the comorbidity of eating disorders, different pathologies can frequently be found in association with anorexia nervosa: the most common of these are mood disorders, anxiety disorders, personality disorders, substance abuse (particularly alcoholism). Epidemiological data confirm that depression is the most frequent psychopathology, in terms of comorbidity, in association with eating disorders: 40-80% (Godart, Perdereau, Jeammet, & Flament, 2005; Godart et al., 2007; Mattar, Thiébaud, Huas, Cebula, & Godart, 2012) as opposed to 13% in the general population (DSM IV). Also anxiety disorders, and in particular social phobia and obsessive-compulsive disorder (OCD) have been investigated in depth, as the most common other co-diagnoses in patients with anorexia (Godart, Flament, Lecrubier, & Jeammet, 2000; Mattar et al., 2012). As regards anxiety disorders in patients with anorexia, the lifetime prevalence ranges from 20% to 63% (Braun, Sunday, & Halmi, 1994; Godart et al., 2000) with values from 3% to 54% for social phobia; from 3% to 66% for OCD; and around 55% for generalized anxiety disorder (Fornari et al., 1992; Braun, Sunday, & Halmi, 1994; Godart et al., 2000). Population studies show a prevalence of anxiety disorders ranging from 24 to 48% in patients suffering from anorexia nervosa (Hudson, Hiripi, Pope, & Kessler, 2007; Swanson, Crow, Le Grange, Swendsen, & Merikangas, 2011). Moreover, some authors have found that anxiety disorders precede the onset of anorexia (Godart et al., 2000; Raney et al., 2008). The Danish Population Register Study (Meier et al., 2015) in particular shows that anxiety disorders increase the subsequent risk of anorexia nervosa and that the highest risk can be observed in obsessive-compulsive disorders, especially in anxious male patients and in the children of fathers suffering

from panic attacks (Meier et al., 2015). Furthermore, some important studies show a high presence (44%) of positive family history for psychiatric illness (Nicholls, Lynn, & Viner, 2011).

As regards epidemiological and prognostic aspects, anorexia nervosa is the most studied and best known among the various forms of eating disorders. In adolescence, the general prevalence of anorexia nervosa is around 0,7%-1,2% (Smink, Van Hoeken, & Hoek, 2012); however, the prevalence of adolescent girls with symptoms within the range of eating disorders was assessed with values up to 40% (Ackard, Fulkerson, & Neumark-Sztainer, 2007). Finally, in a recent population study conducted in Germany using DSM-5 criteria and standardized assessment methods such as EDI 3 (Garner, 2004), the prevalence of a complete AN syndrome was 0.3%, while the subthreshold syndrome was present in the 0.8% (Hammerle, Huss, Ernst, & Bürger, 2016).

The age of onset of the disorder has a rather ample interval, between the ages of 13 and 25, with a bimodal type of distribution, i.e. with two peaks, one at 14 and the other at 18; in most cases it affects female adolescents between the ages of 15 and 19 (Smink et al., 2012; Micali, Hagberg, Petersen, & Treasure, 2013). At the same time, although adolescence has always been seen as a particularly risky age range, the phenomenon has spread to pre-pubertal ages as well as to post-adolescence. Several studies on the subject, moreover, have observed a marked prevalence of the phenomenon among individuals belonging to middle-upper social classes from industrialized countries (Ahrén, Chiesa, Af Klinteberg, & Koupil, 2012). Other data, however, show that many individuals suffering from eating disorders nowadays come from a varied socio-economical background and feature many atypical symptoms compared to the past (Carney, 2009).

There are very serious prognostic aspects of anorexia nervosa also in adolescence, with a 1,8% percentage of mortality in patients with onset within the first 18 years, which goes up to 5,9% in a patient sample of all ages (Steinhausen, 2009). This ratio increases 5,6% for each decade in which the individual is ill (Sullivan, 1995; Herzog, Nussbaum, & Marmor 1996). Also the chronicization rate in its early forms is rather high (16,9%) (Steinhausen, 2009). More recent data (Ackard, Richter, Egan, & Cronemeyer, 2014), although referring to a single, but ample and stratified sample according to age at the first observation, show more favorable outcomes in adolescents (27,5%) and deaths in relatively more limited percentages (7.3%) than in more advanced ages; it is important to remember, however, that an unfavorable outcome is observable anyway in 65,2% of young patients with anorexia after about 7 years on average (Ackard et al., 2014).

In an ample meta-analysis including also cases related to adolescents, Vall and Wade (2015) identify the intensity of symptomatological change during the early phases of treatment as the best outcome predictor, both at the end of therapy and at the follow-up. The authors point out that a higher BMI at the onset, reduced behavior of binge/purge, better motivation to cooperate to the recovery process, low level of depression and concern about body image and weight, little co-morbidity, better functioning in interpersonal relationships and fewer family problems contribute to a favorable prognosis.

Moreover, also from an aetiopathogenetic viewpoint, the picture has become increasingly complex: together with the prevalent psychological factors, genetic, biological, familial, sociocultural and environmental variables have also been thoroughly investigated. Thus, it had become increasingly difficult to find one's bearings among thousands of works that faithfully follow the rules of the medicine of

evidence but that sometimes study only very sectorial aspects of such a complex pathology. It is equally difficult to distinguish the factors that really lead to the onset of anorexia nervosa, or that perform a precipitating role in the evolution of the disorder, from those that simply derive from, or are associated with, the anorexic behavior. Up to this day, epidemiological studies attribute great predisposing value to age, gender and socio-cultural status, as well as psychosocial factors (Ahrén et al., 2012).

In the current state of knowledge the most accredited view could be summarized in the words of the Practice parameter of the American Academy of Child and Adolescent Psychiatry (Lock, La Via, & American Academy of Child and Adolescent Psychiatry (AACAP) Committee on Quality Issues (CQI), 2015, pg 414): “The etiology of AN is likely multifactorial and precipitated by the interaction of several risk factors, including biological, psychological, environmental/cultural, and sociological.”

In parallel with the understanding of the psychological aspects that underlie the EDs, biological factors have begun to acquire more interest. A great deal of data based on studies of functional neuroimages, for example, converge in indicating the presence of an atrophic alteration of the brain’s grey matter (Bär, de la Cruz, Berger, Schultz, & Wagner, 2015). The structural alterations of brain, widely documented and associated with weight modifications, take place mostly in the areas of the so-called “emotional brain”: insula, amygdala, globus pallidus, and putamen (Bär et al., 2015; Fuglset, Endestad, Landrø, & Rø, 2015). The widest variations in the thickness of the cortex can be observed in the frontal and temporal lobes (Fuglset et al., 2015). Such structural alterations of the central nervous system are reversible by means of an appropriate and effective therapy as long as the disorder is not

chronicized (Bernardoni et al., 2016; King et al., 2015; Mainz, Schulte-Rüther, Fink, Herpertz-Dahlmann, & Konrad, 2012). Bernardoni et al. (2016), comparing the thickness of the patients' cerebral cortex with that of healthy participants, have found that a brief, three-month therapy leads to weight recovery and to the normalization of cortical thickness.

Other authors have highlighted the role of the releasing factor for corticotrophin (CRF), opioid peptides and ghrelin (Hasan & Hasan, 2011). The corticotrophin is the main mediator in the hypothalamic–pituitary–adrenal (HPA) axis, and acts in various other parts of the brain and of the limbic system in particular. Opioid peptides (beta-lipotropin, beta-endorphin and dynorphin) might be, in turn, involved in the caloric intake. As regards ghrelin, it may function as a hunger hormone, acting through a complex mechanism in order to maintain anabolism (Monteleone et al., 2016). On the other hand, alterations due to peptides, hormones and neurotransmitters are frequently found in patients with eating disorders, which might be a consequence of a state of malnutrition, as well as a further element in the pathogenesis of the disorder.

Particularly interesting is the research on altered serotonin, whose initial findings date back to the 70s and 80s. The reverse correlation between 5-hydroxytryptamine (5-HT) and food intake has been known for some time: an increase in serotonin levels or its agonists (fluoxetine, fenfluramine, tryptophan), seems indeed to be able to reduce food intake and increase the feeling of satiety, particularly after meals, thus leading to a decrease in the number of meals (Blundell, Lawton, & Halford, 1995). More recent works (Gauthier et al., 2014) have instead shown that the levels of serotonergic markers are significantly lower in anorexia

and are good indicators of the outcome. An increase in such levels corresponds to a decrease in the associated depressive symptomatology.

The complex serotonergic system, in turn, appears to be potentially modulated by food intake. Malnutrition is likely to decrease brain serotonin because the precursor, tryptophan, is less available due to diet restriction (Haleem, 2012). This amplifies the feedback control over serotonin synthesis, finally decreasing serotonin neurotransmission. Therefore behavioral impulsivity, hyperactivity and depressive symptoms may be linked to this mechanism (Haleem, 2012). On the whole, literature data suggest that a restrictive diet or an acute anorexic condition lead to increase feedback control over serotonin synthesis, and that the smaller availability of tryptophan in the diet decreases serotonin neurotransmission, resulting in hyperactivity, depression and impulsiveness (Haleem, 2012).

On the other hand observations on the relationship between serotonin and tryptophan, an amino acid, precursor of serotonin and available only through diet, have led to the formulation of a model for the understanding of the possible interactions between alterations in food intake and serotonergic activity (Kaye et al., 2003; Kaye, et al., 2009; Kaye & Weltzin, 1991). Kaye and colleagues (2003, 2009) maintain that patients with anorexia nervosa, both in the pre-morbid and post-morbid stages, show – through complex compensation mechanisms – high levels of serotonin, which are further incremented by meals. Kaye and Weltzin (1991) believe that the serotonin increase is responsible for the onset of anxious symptomatology, avoiding behavior and obsessionality. On this vulnerable terrain, stressful factors and hormonal changes, typical of puberty, might lead to a further alteration of the serotonergic system and to an increment of the symptomatology, which can be alleviated only by diet restrictions, at least temporarily. Refeeding, whether

spontaneous or forced, would once again lead to tryptophan and serotonin increase and the restart of anxious and obsessional symptoms, resulting in a new moving away from food and the establishment of a veritable vicious circle (Kaye et al., 2009).

So far, literature has mainly focused on the study of serotonergic activity in EDs in adulthood, while there is little validation in adolescence (e.g. Gauthier et al., 2014), indeed the life stage that is very often the moment of the onset of the pathology. Moreover, at the moment, the sometimes conflicting data obtained in the field of neurochemistry, seem stimulating and thought-provoking but they do not seem to have led to particular advancements in the therapy of this clinical condition, which remains complex and in many ways still unknown in its biological basis. To this regard, it's worth quoting the recommendation of the practice parameter of the American Academy of Child and Adolescent Psychiatry (Lock, La Via, & American Academy of Child and Adolescent Psychiatry (AACAP) Committee on Quality Issues (CQI), 2015), which states:

“Recommendation 7. The use of medications, including complementary and alternative medications, should be reserved for comorbid conditions and refractory cases CG”

As regards the family related components of anorexia, the studies of family aggregation show that anorexia is 5 times more frequent in families with other members affected by it. Studies on twins also show that heritability might range from 30% to 75% (Bulik et al., 2006). However, the data of recent studies are rather contradictory and difficult to interpret. For example, in three consecutive works (Klump, Burt, McGue, & Iacono, 2007; Klump, McGue, & Iacono, 2003; Klump, Perkins, Burt, McGue, & Iacono, 2007) Klump and colleagues conclude that the role

of genetic influences is marginal for 11-year-old twins, while heritability is high in the case of 17-year old twins. The author resorts to hormonal modifications in adolescence in order to hypothesize a differentiated genetic expression during puberty. Although many works admit that genetic mechanisms are relevant for anorexia nervosa, Hinney and Volckmar (2015) believe that only a small part of the variance can be explained by molecular genetic factors. Indeed, for the time being, genome-wide association studies (GWAS) do not show genome-wide significant loci for anorexia, while there are data in favor of the involvement of epigenetic mechanisms, particularly in the prenatal phase and in early post-natal development, which might favor the development of anorexic phenotypes (Hinney & Volckmar, 2015).

If the data regarding genetic and neurobiological components seem to offer limited perspectives for real progress in the therapeutic knowledge of this complex pathology, what seems to be much more interesting in a clinical and therapeutic context is the literature that indicate the crucial and central role of family components both in terms of persistence factor and of therapeutic facilitator in the treatments that are assumed to be the most effective.

1.2 Anorexia nervosa in adolescence: what is the family role?

A great deal of convergent literature data indicate the crucial and central role of family components both as regards the complex pathogenic and maintenance mechanisms of anorexia nervosa, and mostly as regards the therapeutic treatments that are seen as the most effective for patients with this pathology. The literature that studies family functioning and its correlation with the prognosis and the course of the illness is ample, but it is generally acknowledged that many questions are still open. Well-known authors like Herpertz-Dahlmann, Seitz and Konrad (2011) believe that anorexia is a mainly neuropsychiatric disorder in its pathogenesis, which has little to do with the “psychosomatic family model” described by Minuchin, Rosman, & Baker (1978).

And yet, population studies provide an indirect demonstration of the importance of family factors in the onset and course of anorexia nervosa. In a cohort study (National Birth Cohort) on a population followed from birth to the age of 30, Nicholls and Viner (2009) provide documentary evidence on the importance of maternal depressive symptoms as a risk factor for anorexia nervosa. Together with depression, other peculiarities of psychic functioning have been investigated in the members of families of patients with anorexia in relation to the quality of perception and contact with their emotional internal world. Some works describe the presence of alexithymic aspects not only in the patients suffering from anorexia nervosa, but also in their parents (Espina et al., 2003; Guttman & Laporte, 2002). Of great interest, even if still not widely studied, is indeed the emotional functioning of the parental couple and the family as a whole (Duclos et al., 2014).

If past research mainly focused on the causal aetiopathogenetic role of family dynamics on eating disorders, more recent literature tends to enhance the role of family functioning as a factor for the maintenance of the disorder or, conversely, of facilitation in the recovery process (Holtom-Visel & Allan, 2014). It is indeed clear that, in such a complex psychopathology as anorexia nervosa, absolute and sharp assumptions about the causal role of the family can neither be acceptable nor well-founded, ignoring the whole, complex set of vulnerability, biological and environmental factors that are necessary for the establishment of an eating disorder (Polivy & Herman, 2002). Moreover, certain conclusions on the causal – or rather secondary (consequent) – role of possible family dysfunctions in relation to eating disorders are not currently tenable because of the cross-sectional design that characterizes most research studies in this field (Jack, 2001; Treasure et al., 2008). The position of the Academy of Eating Disorders (AED) is clear and determined on the issue: the AED is “firmly against any aetiologic model of eating disorders in which family influences are seen as the primary cause of anorexia nervosa or bulimia nervosa, and condemns generalizing statements that imply families are to blame for their child’s illness.” (Le Grange, Lock, Loeb, & Nicholls, 2010, pg 1). It is indeed evident, in a general therapeutic perspective that is psychologically family oriented, how it can be sterile, as well as harmful, to blame the parents and prevent them from taking on the key role in helping and supporting the wellbeing of an adolescent with EDs, which is inevitably entrusted to them (Apter & Palacio-Espasa, 2012; Novick & Novick, 2011).

A recent Cochrane meta-analytic review, which examines family interventions for patients suffering from anorexia nervosa, shows the greater efficacy of family

therapies compared to other types of intervention (i.e. treatment as usual) (Fisher, Hetrick, & Rushford 2010). Moreover, in a subsequent meta-analysis, Couturier, Kimber, and Szatmari (2013) show that family treatment is superior to individual treatment also for adolescent patients. Thus, the guidelines of the Royal Australian and New Zealand College of Psychiatrists (RANZCP guidelines), in the section about anorexia nervosa in adolescents and children (Hay et al., 2014), support the growing evidence of efficacy of family treatment (Lock, 2011; Smith & Cook-Cottone, 2011), when considering first line treatment for adolescents under the age of 19, particularly when weight loss is recent and the duration of the illness is under three years (Le Grange et al., 2010; Le Grange et al., 2012; Lock, 2011).

The family therapies that have shown greater evidence of efficacy often have their roots in the systemic approach, the forerunner of fruitful literature on mental anorexia in adolescence (Selvini Palazzoli, 1989; Minuchin et al., 1975). Such therapies, in particular the Maudsley family therapy approach or Family Based Therapy (FBT) (Le Grange & Eisler, 2009; Murray & Le Grange, 2014), have been specifically set up and conceived for the treatment of eating disorders and anorexia nervosa in particular and later manualized, which makes their effectiveness more easily verifiable. There is indeed great evidence, often obtained by means of randomized controlled trials (RCT) that support the efficacy of this type of therapies, particularly for what concerns adolescent patients. However, some recent studies, show how also other therapies, like the adolescent-focused therapy (AFT) (Fitzpatrick, Moye, Hoste, Lock, & le Grange, 2010), can be as effective as the Family Based Therapy (FBT) in adolescence (Herpertz-Dahlmann, van Elburg, Castro-Fornieles, & Schmidt, 2015; Le Grange, Lock, et al., 2014; Le Grange, Accurso, Lock, Agras, & Bryson, 2014).

Also family therapeutic approaches with a different theoretical view have shown good evidence of efficacy: this is the case of the dynamic therapy based on intra-family relationships proposed by the French group of Montsuris in Paris (Godart et al., 2012). Such a therapy, although not taking directly into consideration – unlike the other above-mentioned family approaches – food-linked behaviors, has proved its efficacy when added to treatment as usual, both in reducing food related symptoms and in improving general functioning, measured with the Morgan Russel outcome assessment schedule (Morgan & Hayward, 1988) in the version adapted to adolescent patients (Jeammet, Brechon, Payan, Gorge, & Fermanian, 1991). To add more complexity to this topic, it is greatly interesting to see that a new version of family-based treatment (FBT) is currently under study, which does not envisage the joint participation of parents and adolescent children, focusing instead on the separate treatment of the patients' parents. Some authors indeed claim that such parent-focused treatment might prove to be more effective than the classic joint family treatment (Hughes et al., 2014). It is clear that in some case the family approach is not the most advisable, and it is necessary to consider all the possible alternatives when such treatment is not effective, or when it is not possible to involve the family in a constructive manner (Espie & Eisler, 2015; Herpertz-Dahlmann et al., 2015).

Despite the complexity of a therapeutic choice based on the single case, it is however clear that the participation of the parental couple to the therapeutic process of the adolescent is acknowledged as a key factor for the outcome of the disorder. All the main guidelines for the management of anorexia underline the importance of the families' involvement in the treatment, even more so in the case of young adolescent patients (American Psychiatric Association, 2006; Espie & Eisler, 2015;

Hay et al., 2014; Herpertz-Dahlmann et al., 2015; Lock et al., 2015; National Institute for Health and Care Excellence, 2004). A deeper study of family functioning and relational and emotional dynamics within the families of young patients with anorexia might therefore be extremely helpful for the promotion of the most adequate therapeutic choices for each single patient and family, at the same time directing therapeutic work on the most salient aspects that need to be modified at a family level.

1.3 Internalized family relations: attachment and representations of the parental bonding

To date, there is a wide literature focusing on the attachment theory (Bowlby, 1969) as a possible framework for understanding anorexia nervosa origin, course and treatment response (Keating, Tasca & Hill, 2013; Ringer & Crittenden, 2007; Tasca, Taylor, Ritchie, & Balfour, 2004). Despite the increasing evidence of dysfunctional family relations and insecure attachment style in eating disordered patients (Ramacciotti et al., 2001; Troisi et al., 2006; Ward et al., 2001), literature data are still contradictory and limited by a wide variety of methodological approaches (Zachrisson & Skårderud, 2010). Moreover the risk of blaming the parents for the daughters' disorders imposes more caution in interpreting the relationships between the attachment style and the development of psychiatric disorders. The attachment construct entails the patients' experience, perception and meaning-making of parental relationship and therefore it does not concern the actual parents' behaviors. On the contrary assertions that favor guilt induction and feelings of accusation may only negatively affect the parents' ability to contribute to the care process. Nevertheless in some cases the history of clinical approaches of different theoretical matrixes, the psychoanalytic and the family systemic ones just to name a few, can be an example of the important ethical challenges linked to the issue (Zachrisson & Skårderud, 2010).

As to the attachment theory, eating disorder symptoms can be conceived as consequences of the emotional and psychological functioning that organizes the attachment patterns (Ringer & Crittenden, 2007; Zachrisson & Skårderud, 2010). Every time the attachment system is activated, the individual implements proximity

seeking behaviors, looking for security and protection from specific figures, usually the parents (Bowlby, 1969). Following this theoretical framework, eating disorders may be conceptualized as a dysfunctional and failing attempt to re-enact proximity seeking behaviors, firstly included by Bowlby (1969) among the children's key attachment behaviors (Orzolek-Kronner, 2002). In particular, the restricting behaviors, which are characteristic of the anorexic disorder, can be considered as an equivalent of distancing experiences and emotions from the self, a key aspect of the dismissing attachment. Tasca et al. (2009) proposes a mediation model, in which attachment is supposed to influence affect regulation strategies, which in turn may affect eating disorders. The emotions and the affects, which are difficult to regulate only at a mental symbolic level, may also be modulated by these patients through food, thus fostering the potential development of EDs.

Moreover Ward et al. (2001) hypothesized an intergenerational transmission of attachment styles from the mothers to the daughters. In this study the authors (Ward et al., 2001) examined the attachment patterns of patients with severe anorexia and their mothers, using the Adult Attachment Interview (AAI) (George, Kaplan, & Main, 1985). Although patients with anorexia and their mothers commonly showed a dismissing attachment style, the authors did not find an association between mothers' and daughters' attachment patterns. Nevertheless the study suggested that mothers of women with EDs displayed a high rate of unresolved losses, similarly to mothers of failure-to-thrive infants due to nonorganic reasons (Crittenden, 1987). This implies a lower capacity in the reflective functioning and emotional regulation on the mothers' part, which may be transmitted or learned from mother to daughter. The latter may in fact respond to the parental difficulties by means of idealization or compulsive caregiving (Ward et al., 2001). According to the

authors, along with hidden problems in the parental couple relationship, this kind of maternal psychological functioning might be considered as a risk factor for the daughters' development of anorexia nervosa (Ringer & Crittenden, 2007; Ward et al., 2001).

Overall, to summarize the findings regarding attachment in eating disorders, it is worth noticing that insecure attachment (dismissing or preoccupied types) is frequent among patients with EDs: in particular dismissing attachment tends to be more represented in patients with restricting anorexia, while patients with bulimia show an higher prevalence of attachment preoccupation (Zachrisson & Skårderud, 2010). On the whole, patients with EDs often report problems with childhood family relationships (Zachrisson & Skårderud, 2010), but the precise nature of the problems and the mechanism underlying their connection with eating disorders are rather unclear, since findings from scientific literature appear to be still inconclusive (Ringer & Crittenden, 2007; Ward, Ramsay, & Treasure, 2000; Zachrisson & Skårderud, 2010).

Literature exploring the connection between eating disorders and early parent-child relations include studies based on the attachment theory as well as on the parental bonding construct (Ward et al., 2000; Zachrisson & Skårderud, 2010). Both of the constructs provide information about the family relationships, as subjectively perceived by an individual (Duclos et al., 2014), but, while the attachment construct refers mainly to how the child responds to parental behaviors, the parental bonding construct instead addresses mainly the representation of the parents' contribution to the parent-child relation (Parker, Tupling, & Brown, 1979). Several studies dealt in fact with the application of the Parental Bonding Instrument (PBI) (Parker et al., 1979), a self-administered questionnaire, specifically designed to

investigate two fundamental dimensions of the parental bonding, care and protection, which represent the emotional ties of parents to the children. The PBI questionnaire seems to be a reliable and valid instrument (Parker et al., 1979; Scinto, Marinangeli, Kalyvoka, Daneluzzo, & Rossi, 1999), scarcely influenced by the personality traits of the respondent (Parker, 1983; Mackinnon, Henderson, Scott, & Duncan-Jones 1989). This instrument has been widely used in patients with eating disorders, providing often-conflicting results (see Table 1.1). As the studied population (clinical or non-clinical groups), the age range, the eating disorder diagnostic categories and the control group differed from one study to another, the presence of significant differences in perceived parental bonding varies across the different studies. For what concerns adult samples only, however, the majority of the findings seem to point to a lower parental care perceived by patients with EDs, along with a marked overprotection (Tetley, Moghaddam, Dawson, & Rennoldson, 2014). Nevertheless in their systematic review Tetley et al. (2014) suggested that this characteristic may not be specific to patients with eating disorder, as they do not differ in the care and protection levels from patients with other psychiatric disorders. Moreover the studies have to date failed in establishing a potential distinction among different eating disorders diagnoses as regards the perceived parental bonding.

Only very few studies (Russel, Kopec-Schrader, Rey, & Beumont, 1992; Di Pentima et al., 1998) have specifically investigated parental bonding in adolescents with anorexia, although adolescence is very often the moment of the anorexic onset and at the same time the more fruitful life stage to treat it (Ackard et al., 2014; Steinhausen, 2009). It is worth noticing that, due to the specificity of the adolescent period, the results obtained in the adult sample are not always replicated unchanged in the adolescent samples. In line with this premise, somehow surprisingly, both of

the two studies available, conducted on adolescent samples (Russel et al., 1992; Di Pentima et al., 1998), found the adolescents with restricting-type anorexia to perceive an optimal parental bonding with both mothers and fathers. Unlike the binge-purging-type patients (Di Pentima et al., 1998), the former even perceive a better care and a lower control on the parents' part, compared to adolescents in the general population included in the control groups. For what concerns the first study (Russel et al., 1992), the explanation of the striking result may lay in the different treatment (and in the different treatment stage) already received by most of the patients included in the research. Not only the daughters in treatment, but also the parents, receiving parental counseling, are plausibly making an effort to change their previous attitudes within the family relations, striving to give a more positive image to the clinicians. Another possible explanation concerns the tendency to idealization and defensive avoidance, usually exhibited by the patients with restrictive conducts, which may use dismissing attachment strategies in order to control their negative feelings (Di Pentima et al., 1998; Ringer & Crittenden, 2007; Zachrisson & Skårderud, 2010). Unlike the other adolescents, which, seeking to win their autonomy, usually tend to overestimate the parental protection, the patients with restrictive anorexia in fact seem to avoid the adolescent struggle for independence and identity definition, using idealization and avoidance defenses. It is therefore likely that they try to avoid also giving a negative evaluation to the parents in the questionnaire, as if this act were too dangerous and aggressive, and could seriously threaten the parental objects: "Do anorexia nervosa patients fail to recognize or express the normative struggle for autonomy because of their ambivalence concerning the issue of separation?" (Russel et al., 1998, pg 239).

Concerning the parents themselves, there has been little research specifically into the parents' own attachment patterns and perceived parental bonding, and whether there might be intergenerational transmission of these patterns remains unclear. Only one study (Canetti, Kanyas, Lerer, & Bachar, 2008), conducted exclusively on adult patients, has at least in part addressed the intergenerational transmission of parental bonding styles, administering the PBI questionnaire to parents of patients with EDs, finding some evidence for specificities on the paternal and maternal side (see Table 1.1).

Table 1.1 – *Studies using the PBI in patients with eating disorders*

Research	Study population	Control Group	Parental bonding measured by PBI
Palmer Oppenheimer, & Marshall, 1988	72 women with EDs: 35 with Anorexia nervosa 37 with Bulimia	healthy controls	Lower maternal and paternal care
Steiger, Fraenkel, & Leichner,,1989	58 patients with EDs: 15 restricting-type anorexia nervosa 9 binge-type anorexia nervosa 21 normal-weight bulimia 13 bulimia following a prior history of anorexia nervosa	24 healthy women	All patients with EDs rated fathers as less caring than did controls

Research	Study population	Control Group	Parental bonding as described by the PBI
Calam, Waller, Slade, & Newton, 1990	98 women with EDs: 31 anorexia nervosa 34 bulimia with a history of anorexia nervosa 33 bulimia with no history of anorexia nervosa	242 female volunteers	Mothers less caring Fathers less caring and more protective
Rhodes & Kroger, 1992	20 late adolescent women with EDs: 11 Anorexia nervosa 9 Bulimia nervosa	20 healthy late adolescent female university students	Lower maternal care and higher maternal overprotection
Russel, Kopec-Schrader, Rey, & Beumont, 1992	54 <u>adolescents</u> with anorexia (mean age 15.4 yrs)	54 Normal probands 54 psychiatrically referred patients with different disorders	Both parents more caring and less overprotective compared with psychiatrically referred peers and similarly to normal probands
Sordelli, Fossati, Devoti, & La Viola, 1996	42 patients with restricting-type anorexia <hr/> 26 patients with bulimia	None	Both parents absolutely caring <hr/> Both parents caring and overwhelming
Di Pentima et al., 1998	62 <u>adolescents</u> with EDs (mean age 14.3 yrs): 35 with restricting-type anorexia <hr/> 27 binge-purging type anorexia	55 healthy controls 22 patients with Crohn's disease or celiac disease	Patients reported to have an adequate parental bond with both parents <hr/> Inadequate parental bond especially with the father

Research	Study population	Control Group	Parental bonding as described by the PBI
Bulik, Sullivan, Fear, & Pickering, 2000	15 Chronically ill patients with anorexia	98 Community controls	Lower maternal and paternal care
Leung, Thomas, & Waller, 2000	57 patients with EDs: 30 with anorexia nervosa 27 with bulimia	23 matched controls women	Higher parental overprotection in AN
Yamaguchi et al., 2000	51 inpatients with EDs, divided into suicidal and non-suicidal patients	107 non-psychiatric controls	Significantly higher parental overprotection reported in suicidal patients compared to non-suicidal patients and non-psychiatric controls
De Panfilis, Rabbaglio, Rossi, Zita,, & Maggini., 2003	64 female eating disordered outpatients	68 female healthy controls	Low parental care and high control predicted symptoms linked to eating behaviors (e.g. weight phobia and body image concerns). Low maternal care predicted deficits in <u>affective regulation</u> (i.e.. <u>alexithymia</u>)
Turner, Rose, & Cooper, 2005	367 adolescent and young women, belonging to the community, still living at home	None	Low parental care and high maternal overprotection were significant predictors of eating attitudes
Canetti, Kanyas, Lerer, & Bachar, 2008	43 young women with anorexia, 36 of their <u>mothers</u> and 31 of their <u>fathers</u>	33 non-clinical age matched young women	Both parents less caring and fathers more controlling in AN. Paternal granfathers more controlling in AN. Not only mother control and father care but also <u>maternal grandmother</u> care were related to symptom severity.

Research	Study population	Control Group	Parental bonding as described by the PBI
Swanson et al., 2010	43 women with anorexia followed as inpatients	77 female age-matched university undergraduates	Lower levels of parental care in AN. Low maternal care and high control were associated with eating symptoms, as well as with an avoidant coping style.
Rommel, Nandrino, Antoine, & Dodin, 2013	44 young women with EDs 25 with restricting type anorexia 19 with purging type anorexia nervosa or bulimia nervosa	37 age-matched healthy controls	Maternal care predicted <u>emotional awareness</u> in patients with restrictive AN. Maternal overprotection predicted lower emotional awareness in patients with purging symptoms
Duclos et al., 2014	60 <u>adolescents</u> and young women with anorexia	None	The daughters perceive parents as less caring than how the latter perceive themselves. Parental bonding perceived by daughters do not relate with levels of expressed emotions within the family.
Horesh, Sommerfeld, Wolf, Zubery, & Zalsman, 2015	53 young women with EDs	26 age-matched psychiatric patients 60 healthy volunteers	Lower level of paternal care and higher level of paternal overprotection in both EDs and other psychiatric patients

The results of the current researches on the issue raise the question whether the patients' perception of parental bonding are a consequence of the disorder, or whether, instead, a real lack of care or high overprotection might be one of the factors contributing to the complex etiopathogenesis of anorexia nervosa (Bullik, Sullivan, Fear, & Pickering, 2000). Yet precisely in the two studies on adolescent samples, that is exactly where the disease should be just at the onset, there is no evidence of differences in the perception of parental bonding between patients with anorexia restricting type and controls (Russel et al., 1992; Di Pentima et al., 1998). It is yet worth noticing that the self-reported retrospective measure of parental bonding, used in all the studies reviewed, may cast doubts upon the validity of any causal conclusions. These patients' tendency to deny problems and to offer idealized images of self and of significant others poses some questions regarding the validity of self-rated measures in anorexia (Russel et al., 1992). Moreover, the recall of the bonding may be influenced by the actual experiences of current relationships, particularly in the case of an EDs onset (Duclos et al., 2014; Tetley et al., 2014). Either the patient's perception of parental bonding may change after the EDs onset, or the parents' actual behaviors may be modified in the sense of a greater protection towards the ill daughter (Tetley et al., 2014).

The Parental Bonding Instrument (PBI) seem thus to reflect perceived, rather than actual relations and interactions, experienced within the family environment (Canetti et al., 2008; Di Pentima et al., 1998). Nevertheless the mental representations of parents, build during childhood, cannot be less critical than the actual interactions in developing psychopathological symptoms (Parker, 1983). Further research into the mechanism underlying the connection between early familial relationships, attachment, parental bonding representations and eating

disorders may help clinicians to deliver more effective and targeted therapeutic treatments. As opposed to blame parents for their offspring's difficulties, working on how the parents' own attachment and parental bonding representations influence current relationships, and on the affective regulation strategies linked to the attachment styles (Tasca et al., 2009), may help to modify the actual family functioning and thus the outcome of patients with eating disorders, among whom anorexia (Dallos, 2004; Tetley et al., 2014).

1.4 The emotions and the body: from the individual to the family affective regulation

Literature seems to confirm the relationship between the need of resorting to the body for symptoms and the difficulties in managing and expressing emotions and affects at a symbolic and verbal level. Alexithymic characteristics were in fact detected in proportions significantly superior to the norm in patients suffering from eating disorders, anorexia nervosa in particular (Taylor, Parker, Bagby, & Bourke, 1996; Harrison et al, 2009). The degree of difficulty in identifying feelings has been also acknowledged as an important prognostic factor in relation to the course of the anorexic pathology (Speranza, Loas, Wallier, & Corcos, 2007).

Alexithymia can be defined as a cognitive and affective deficit that affects the emotional sphere and that implies difficulties in identifying and describing feelings, and an externally oriented way of thinking along with constricted imaginal processes: it is characterized by a certain difficulty in recognizing feelings and differentiating them from bodily sensations, and by difficulties in manifesting, communicating and thinking about feelings (Taylor, Bagby, & Parker, 1997). According to this theoretical viewpoint, alexithymia can be considered as a specific emotional dysregulation, acquired in infancy, and characterized by a deficit in symbolization: the somatic sensations which accompany emotional activation seem to be weakly linked to images, symbols and words (Berthoz, Perdereau, Godart, Corcos, & Haviland, 2007; Taylor & Bagby, 2004). As opposed to the much less studied concept of psychological mindedness (Giromini, Brusadelli, Di Noto, Grasso, & Lang, 2015) alexithymia on the contrary implies a difficulty in reflecting on personal feelings and thoughts, which may be an important prerequisite for introspection and therefore for

the success of therapies based on insight (Lumley, Neely, & Burger, 2007). No wonder instead that alexithymia is seen as a transversal risk factor in a lot of somatic and mental pathologies (Taylor & Bagby 2004) and also in adolescence an important correlated factor in many somatic and psychiatric disorders (Honkalampi et al., 2009; Manninen et al., 2011; Rieffe & De Rooij, 2012; Van Rijn et al., 2011), including also eating disorders (Berger et al., 2014; Karukivi et al., 2010). When talking specifically about adolescence, the relation between alexithymia and internalizing symptoms is by now ascertained: the presence of alexithymia in patients with internalizing disorders can signify that a situation capable of stirring an emotion is rejected, forgotten or experienced in a maladaptive manner (Rieffe & De Rooij, 2012). Moreover, recent studies (Manninen et al., 2011) seem to link alexithymia in adolescence also to the most typically externalizing symptoms: the inability to modulate emotions through their cognitive elaboration might account for the tendency of patients with high levels of alexithymia to release the tension of their unpleasant emotional states by means of impulsive actions or compulsive behaviors (Taylor, 2000; Gatta, Dal Santo, Rago, Spoto & Battistella, 2016). Such a mechanism for relieving tension might also explain why alexithymia is an important correlated factor of many somatic disorders (Ebeling, Moilanen, Linna, & Räsänen, 2001), sometimes triggered by psychological factors like migraine and tense headache (Chiappedi, Mensi, Termine & Balottin, 2016; Gatta et al., 2015).

Within this general background the relation between alexithymia and eating disorders finds its place. Among adolescents in the general population, the link between alexithymia and alterations in eating behaviors has been proved: indeed, food related symptoms seem to be much more diffused among adolescents with alexithymic features than among those who do not show high levels of alexithymia

(Karukivi et al., 2010). The work of Berger et al. (2014), concerning female adolescents at high risk of obesity and binge eating, shows how the link between the patients' interpersonal problems and their depression is mediated by the young girls' alexithymic characteristics. Therefore, also this study suggests that the alteration of eating behaviors might be linked to the need to regulate affects and emotions through food, which in these patients are difficult to modulate exclusively at the level of mental elaboration (Corcos et al., 2000; Taylor et al., 1996; 1997).

Despite the fact that anorexia usually onset in adolescence, the studies that examine the possible deficits of emotion regulation in patients with anorexia of this specific age range are fewer than those regarding adult patients (Zonneville-Bender, van Goozen, Cohen-Kettenis, van Elburg, & van Engeland, 2002; Zonneville-Bender et al., 2004; Zonneville-Bender, van Goozen, Cohen-Kettenis, van Elburg, & van Engeland 2004). However, adolescence certainly appears to be an age full of turmoil, but also full of different developments and possibilities, which certainly deserves to be studied in its specificity (Jeammet, 2004). Indeed, the results of the most recent studies suggest not only that low functioning in the area of emotional regulation characterizes adolescent patients with anorexia, as well as adults, but also that such a feature is closely related to the recovery possibility. The most recent data reveal in fact that an alexithymic deficit in adolescent patients appears to be even less sensitive to certain types of therapy (i.e group cognitive behavior therapy) than the food related symptom itself (Ohmann et al., 2013). In addition to being, in some ways, resistant to change (Ohmann et al., 2013), emotional deficits are also an important factor for the persistence of the anorexic disorder (Courty, Godart, Lalanne, & Berthoz, 2015). The difficulties in identifying, displaying and communicating feelings are in fact closely linked to those aspects of anxiety and

social avoidance that seem to aggravate and exacerbate food related symptoms in anorexia (Coutry et al., 2015).

Moreover, some studies indicate a relationship between alexithymia and general family pathology, in particular between the difficulties in identifying feelings and the family affective dysfunctions (Lumley, Mader, Gramzow, & Papineau, 1996). Despite this interesting general remark, alexithymia has been widely studied especially at an individual level, while there is more scarce and uncertain literature on emotional dysregulation and alexithymia in the families of patients with anorexia (Dahlman, 1996; Guttman and Laporte, 2002; Espina et al, 2003). And yet, there is some evidence that *family functioning* plays an essential role in the evolution of the disorder (Lyke & Matsen, 2013; Ravi, Forsberg, Fitzpatrick, & Lock, 2009; Rodríguez Martín, Novalbos Ruiz, Martínez Nieto, Escobar Jiménez, & Castro De Haro, 2004), even more so in the case of young and adolescent patients (Duclos et al., 2014; Godard et al., 2012). Anorexia nervosa is in fact often a severe disorder that affects the adolescent and her/his family, disturbing their equilibrium. The *emotional functioning* of the families of adolescents with anorexia, however, is still little studied and far from clear, despite the fundamental role it plays in the evolution of the disorder and in the therapies that intend to take on both adolescents and their families (Godard et al., 2012).

The relationship between the emotional deficits of patients with anorexia and the emotional functioning of their parents is therefore an important aspect, which is almost completely unexplored in adolescence (Duclos et al., 2014). Studies on adult patients show contradictory results: if in an early study by Dahlman (1996) the mothers of patients with anorexia showed more alexithymia than mothers of the control group, such results are not confirmed in more recent studies (Guttman &

Laporte, 2002). Moreover, even when parents displayed levels of alexithymia higher than average (Espina et al, 2003), such results appeared to be mainly linked to a state of emotional distress (Guttman & Laporte, 2002) and negative affectivity, linked to the daughter illness (Espina et al., 2003). In current literature there is a lack of studies that examine emotional functioning in the family, although a few authors (Guttman & Laporte, 2002) consider family relationships as more relevant than the psychopathological and personality traits of the individual in predicting the alexithymia of the daughter with anorexia. Moreover, family functioning and the parents' affective response have been demonstrated to be linked to the specific risk factors that might also trigger anorexia (Lyke & Matsen, 2013). In the same way, after the onset of the disorder in the daughter, the single psychological traits of all family members and their ways of expressing emotions continue to be interconnected with the clinical severity of anorexia (Duclos et al, 2014;. Fornari et al, 1999; Rommel et al., 2013). It might therefore be useful for the research to give more weight to the emotional functioning of families rather than just to single personality traits (i.e. alexithymia) when predicting the possibility of establishing a therapeutic alliance and, therefore, also the outcome of the treatment of an adolescent with anorexia nervosa.

1.5 Family relations: from the perceived to the observed family dynamics

The anorexic disorder affects the adolescent as well as his family, seriously triggering relational imbalance. Evidence suggests that family functioning can play an important role in the onset as well as in the evolution of the disorder (Lyke & Matsen, 2013; Ravi et al., 2009; Rodríguez Martín et al., 2004). Nevertheless, the issue is still debated: literature data supporting the importance of the family dynamics are contradictory and limited by a wide variety of methodological approaches, mainly based on self-rated assessment (Holtom-Visel & Allan, 2014), which implies significant limitations due to the patients' self-awareness. In fact important authors, as Herpertz-Dahlmann et al. (2011), claim that anorexia is a predominantly neuropsychiatric disorder in its pathogenesis, which has nothing to do with the model of psychosomatic family, firstly described by Minuchin et al. (1978). Minuchin et al. (1975, 1978) in fact described a specific prototype of family structure, characterized by an overinvolved and rigid interpersonal style that prevents individuals from the free expression of emotions, in particularly the negative ones. According to this classical description, aggressiveness and conflicts seem to be hidden behind a unity façade, while weak generational boundaries between the parents and the offspring allow coalitions to emerge among different family members. Nevertheless it is now generally recognized, also within the family approach, that different family patterns may exist in families of patients with anorexia nervosa (Wallin & Kronvall, 2002). Moreover, as already stated, the Academy of Eating Disorders (Le Grange et al., 2010) has taken a clear and strong position about the family issue, declaring to be “against any aetiologic model of eating disorders in which family influences are seen as the primary cause of anorexia

nervosa or bulimia nervosa”. The focus of the interest therefore seems to have moved from the causal and pathogenic role of family factors to their maintaining or vice versa facilitating role for the treatment of the anorexic disorder (Holtom-Visel & Allan, 2014).

Parents have in fact a pivotal role of help and support to the adolescent recovery, a task for which they cannot be replaced. The parental couple’s participation and the involvement of the whole family in the adolescent’s treatment process are recognized as a key prognostic factor by all the main guidelines for the treatment of anorexia nervosa (APA, 2006; Espie & Eisler, 2015; Hay et al., 2014; Herpertz-Dahlmann et al., 2015; Lock et al., 2015; NICE, 2004). Some pioneering studies have also shown that encouraging paternal involvement could improve treatment outcomes (Couturier et al., 2013; Horesh et al., 2015). Yet the role of the fathers is still poorly studied and often misunderstood in favor of an exclusive and undue focus on the mother-daughter relationship. Nonetheless, family therapy has achieved the most relevant evidence of effectiveness (type I evidence) in the care of patients with anorexia nervosa (Couturier et al., 2013; Fisher et al., 2010) and it is considered the first-line treatment for teens under the age of 19, especially those with recent weight loss and illness duration below 3 years (Hay et al., 2014; Le Grange et al., 2010; Lock, 2011). This is the case of the well-established Family Based Therapy (FBT) (Le Grange & Eisler, 2009; Murray & Le Grange, 2014), which proved to be effective for adolescents with EDs (Herpertz-Dahlmann et al., 2015; Le Grange et al., 2014). Yet other family therapeutic approaches, based on different theoretical matrixes than behavioral or systemic ones, have also shown good evidence of effectiveness: this is the case of the psychodynamic therapy, based on the intra-family relationships (Godart et al., 2012). Such a therapy (added to the

treatment as usual), while unlike the above-mentioned family approaches it does not tackle explicitly food-related behaviors, has proven to be equally effective, both in reducing the eating symptoms and in improving the general psychological functioning of the patients (Godart et al., 2012). In fact, it is well established that the family therapy models work, but it is still unclear why they work, and to what extent there are specific family dynamics to be targeted and modified in order to facilitate a positive outcome for the patient. To the current state of knowledge, we can still say that future studies on the interactive processes of the family will help to clarify the issue (Wallin & Kronvall, 2002).

Although the inner representations of the relationships with the parental figures, developed during childhood, cannot be less significant than the real interactions in fostering a dysfunctional or psychopathological development (Parker, 1983), it can be even more important to investigate the current relationships in order to modify any dysfunctional familial dynamic that may favor the persistence of the eating disorder in the offspring. This is particularly true in adolescence, a phase of life open to the most varied developments. As Jeammet (2004; 2010) suggested, in adolescence the play of references between the actual relations with parents and the internalized ones with the parental imagoes, between external and internal reality, is still open and fluid. The process of subjectivation, the evolution of the adolescent's inner world, demands this intricate articulation between present and past, actual and interiorized relationships. Externalizing and projecting the inner representations on the current relationships with parents, the adolescent wants a response from the external world, primarily the parents and the family. The answer offered by the environment, challenged by and involved in the inner conflicts of the adolescent

plays a crucial role, in turn touching and modifying the adolescent's inner representations (Jeammet, 2004; 2010).

In line with these theoretical premises, the most recent systematic review on family functioning in families of patients with EDs (Holtom-Visel & Allan, 2014) underscored the need to carry out further studies adding observer-rated tools to the habitual self-reported ones. Self-reported questionnaires are in fact the most widely used measures for studying the family functioning, although it is clear that they capture the family components' perceptions and viewpoint of reality, which may largely differ from the observers' ratings of the family interactions. Several studies, based on different questionnaires, have described the family functioning perceived by the patients with eating disorders and, to a lesser extent, by the patients' parents and siblings as well (Holtom-Visel & Allan, 2014). Compared to families of offspring without eating disorders, in general, the families of patients with an eating disorder report a more dysfunctional family functioning, although it is still unclear if there are any differences based on the different eating disorders considered (Gillett, Harper, Larson, Berrett, & Hardman, 2009; Holtom-Visel & Allan, 2014; McDermott, Batik, Roberts, & Gibbon et al., 2002). Parents of patients with eating disorders, particularly of those with anorexia (Sim et al., 2009), not only experience greater family conflict, but also more feelings of stress and depression. However, it is not yet known whether and how maternal perceptions differ from paternal ones (Holtom-Visel and Allan, 2014). Moreover, patients perceive their family functioning even more negatively than their parents (Dancyger, Fornari, Scionti, Wisotsky, & Sunday, 2005). According to longitudinal studies (Gowers & North, 1999; Woodside et al., 1996), the patient's more positive perception of family functioning seems to be linked to a better outcome (Holtom-Visel & Allan, 2014).

The majority of studies reviewed by Holtom-Visel & Allan (2014), however, displayed some limitations linked to the cross-sectional design, and primarily to the use of solely self-report measures: as many as the 82% of the studies in fact used self-reported questionnaires, which are known to be affected by social desirability and negation. Only few studies applied observer-rated measures along with the self-reported ones, and demonstrated that the families of patients with anorexia perceived their functioning to be better than the observers' ratings (Gowers & North, 1999; Wallin & Hansson, 1999). In the study of Gowers and North (1999), a structured interview for measuring family functioning has been applied along with questionnaires, while also a videotaped observational measure was part of the test battery of the Wallin and Hansson's study (1999), which found families of young patients with anorexia to be more overinvolved and rigid than families belonging to the control group. The latter, however, were not matched for age neither other characteristics to the families with a daughter with anorexia. Despite this important limitation, according to the authors (Wallin & Hansson, 1999), differences between the family groups suggested that families of patients with anorexia are overall more dysfunctional than other non-clinical families. In line with the description of Minuchin et al. (1975, 1978), the parental subsystem appeared to be not differentiated enough, and the boundaries between generations seemed so fragile that coalitions may emerge across them. Nevertheless the families of daughters with anorexia differed from each other and did not fit a single prototypical model (Minuchin et al., 1975).

Moreover in a subsequent study, Wallin and Kronvall (2002) assessed the families of patients with anorexia after a family treatment and found that they had improved towards a more adaptive functioning at a two years follow up. These

results supported the hypothesis that the recovery from anorexia may benefit from an improvement of the family functioning, and focuses attention on the prognostic family factors that are able to influence the treatment outcome (Wallin & Kronvall, 2002). These interesting but still open problems might be further clarified by further studies on family functioning, conducted using not only the habitual self-reported measures, but also clinician-rated and observational procedures, as highlighted by Holtom-Visel and Allan's systematic review (2014).

**Part II -
Three studies on family relations of
adolescents with restricting type anorexia**

Chapter 2

The Parental Bonding in families of adolescents with anorexia. Attachment representations between parents and offspring

**The Parental Bonding in families of adolescents with anorexia.
Attachment representations between parents and offspring**

2.1 Aim

Literature is completely lacking data on the intergenerational transmission of parental bonding and attachment representations in families of adolescent patients with EDs, and in particular with anorexia, which was the aim of the present study.

In particular, the first aim of the study was to investigate the perceived parental bonding, as described by the Parental Bonding Instrument (PBI), in a group of newly diagnosed adolescents with restricting-type anorexia, comparing them to healthy controls.

The second and main aim was to broaden the limited knowledge on parental bonding in adolescents with anorexia and in their parents and to evaluate whether the families of adolescents with anorexia exhibit specific patterns of parental bonding, in order to better understand if these specific patterns can be transmitted from generation to generation. To achieve these goals, a Latent Class Analysis approach was adopted to identify specific pattern of parental bonding transmission, (separately for the maternal and the paternal bonding) comparing the families of patients with anorexia with families belonging to the general population. The perceived parental bonding was collected for what concerns both the mother and the father of the patients. Moreover, parental perceptions of their family of origin were evaluated as well, in order to adopt a family-level approach.

2.2 Methods

2.2.1 Participants

168 adolescents and parents participated in the study. They belonged to the 26 families of patients with anorexia and the 30 families of the control group. The adolescents had been consecutively admitted as inpatients to the Child and Adolescent Neuropsychiatry Unit, National Neurological Institute IRCCS C. Mondino – University of Pavia (Italy), the recruitment lasted 5 months.

Selection for the anorexia group was based on the following inclusion criteria: new diagnosis of anorexia nervosa, restricting subtype in accordance with the DSM-IV-TR criteria (APA, 2000); age between 12 and 18 years; current BMI below the tenth percentile per age and sex. Exclusion criteria instead were: another major diagnosis (autism, schizophrenia, learning disabilities); insufficient understanding of the Italian language. Adolescents for the control group were selected according to the following inclusion criteria: normal weight adolescents, aged between 12 and 18 years. Exclusion criteria for the families of the control group were: presence of adolescent's symptoms related to food (either restrictive or purging or binge eating conducts) or other psychopathological symptoms, insufficient understanding of the Italian language.

The mean age of the 26 adolescent patients with anorexia (23 females and 3 males) was 14.62 years (standard deviation = 2.00; range 12 to 18 years), and their mean current Body Mass Index was 15.55 (standard deviation = 1.34). The control group was made up of 30 healthy subjects (27 females and 3 males), the mean age of the adolescents was 14.30 years (standard deviation = 2.07; range 12 to 18 years).

2.2.2 Procedure

Child and adolescent psychiatrists and clinical psychologists, not directly involved in the research project, recruited the patients and their parents and obtained their informed consent. A child neuropsychiatrist with special interest and clinical experience in adolescent anorexia evaluated all patients and collected a comprehensive medical and family history. Patients were diagnosed according to the DSM-IV-TR criteria for restricting type anorexia nervosa (APA, 2000). The diagnosis of potential comorbid disorders was supported by the Kiddie-SADS semi-structured interview (Kaufman, Birmaher, Brent, Ryan, & Rao, 2000).

The control group was composed of parents and offspring, randomly recruited among the adolescents attending two local secondary schools. The agreement of the educational authorities was obtained and the parents of the participating adolescents were required to give their informed consent to the study. To exclude a history of eating disorder and the presence of psychopathological and behavioral disorders, the adolescents of the control group and their parents separately underwent a detailed anamnestic interview, during which a trained child and adolescent psychiatrist also administered the Eating Disorder Inventory-2 (EDI-2) (Garner, 1991) to the adolescents.

To evaluate parental rearing styles, all the participating adolescents and their parents were administered the PBI questionnaire (Parker et al., 1979). In particular, the adolescents with anorexia and their parents were requested to answer the questionnaire during their first week of hospitalization. All data were collected and treated in strict compliance to the Helsinki declaration. All parents and patients signed an informed consent, reviewed by the Institutional Review Board of the C. Mondino Institute of Neurology of Pavia.

2.2.3 Measures

The PBI is a 25 items self-report measure of two fundamental dimensions of parental bonding, care and overprotection. Twelve care items reflect the dimension of affection and nurturing versus emotional rejection and neglect. Thirteen overprotection items assess the dimension of rigid control versus the fostering of autonomy. According to Parker's instructions (1979), the PBI items were rated on a Likert scale, ranging from 1 (very likely) to 4 (very unlikely), for both parents. On the basis of the care and overprotection values emerging from the application of the questionnaire, four parenting styles have been defined: optimal bonding (high care and low overprotection); absent or weak bonding (low care and overprotection); affectionless control (high overprotection and low care); affectionate constraint (high care and high overprotection) (see Figure 2.1). Good psychometric properties of the scale, with Cronbach's α ranging from 0.74 to 0.95, have been reported (Parker et al., 1979).

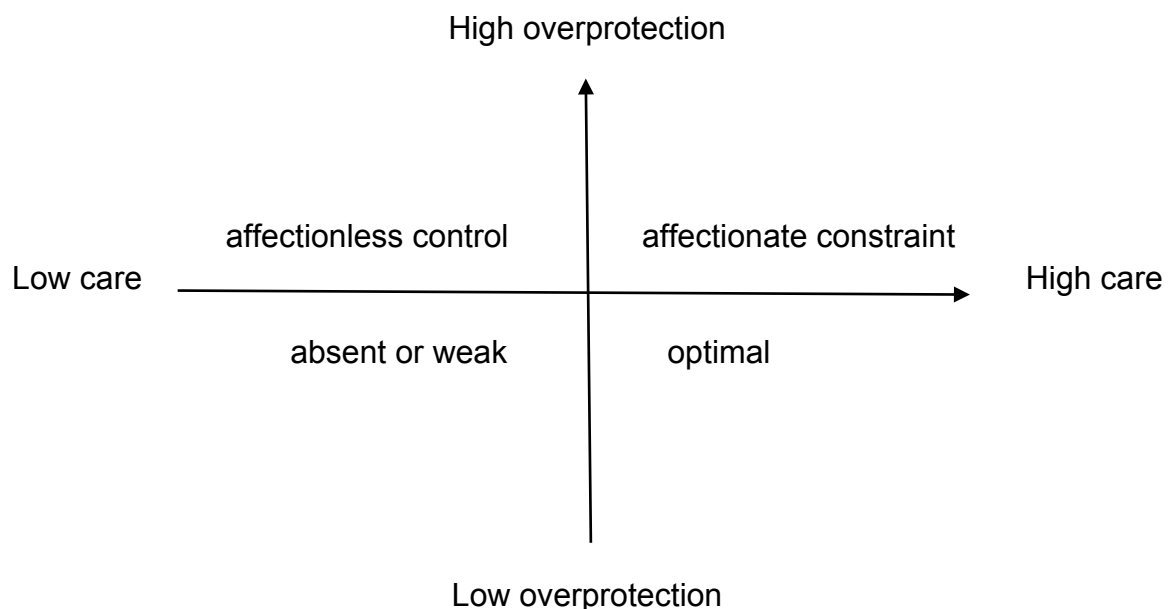


Figure 2.1. Parental bonding styles emerged from the dimensions of care and overprotection

2.2.4 Analyses

As a first approach to the data, in order to examine at a manifest level the PBI responses, before applying the Latent Class Analysis, the parental care and overprotection variables were analysed by comparing the means of the two groups of families, using the Student's t-test.

The Latent Class Analysis

The Latent Class Analysis approach (LCA - e.g. Hagenaars & McCutcheon, 2006) was then chosen to identify a latent categorical variable, namely to identify a hypothetical construct, accounting for the covariance between the observed variables. The LCA assumes the latent variable to be categorical and composed by a number of classes, which describe the presence or absence of the characteristics of the latent variable. Each class should represent a 'profile' in relation to specific variables that are in this study: family roles, care and overprotection, typical of families of adolescents with anorexia and families of the control group. One latent variable with two classes representing the two family groups, families of adolescents with anorexia and families of the control group, was hypothesized in this context. The same hypothesis was formulated separately for maternal bonding and paternal one. The two latent class structure was supposed to be different in relation to the maternal and paternal bonding. However, given the explorative nature of the modelling approach used herein, no specific hypothesis about how the paternal bonding structure and the maternal bonding structure would differ was put forward. The variables (manifest variables) introduced in the LCA model were the group (anorexia and control), the family role (adolescent, mother, father), the PBI variable care (two levels: low care and high care) and the PBI variable overprotection (two levels: low overprotection and high overprotection).

The LCA approach has been extensively used in the psychological and medical literature to model the relations among variables in order to identify the underlying structure characterized by one or more latent categorical variables and draw a profile of people falling into one class or another (e.g. Mannarini & Boffo, 2015; Mannarini, Balottin, Toldo, & Gatta, 2016). The model fitting the data was assessed by looking at the Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC). The Chi square and the Likelihood Ratio statistics were also considered. The model has a good fit if both statistics with a probability higher than $p = .05$. The LCA analysis was performed with LEM software (Vermunt, 1997).

2.3 Results

2.3.1 Description of the families of adolescents with anorexia and of the control families

With the aim of exploring the perceived parental bonding, measured by the Parental Bonding Instrument (PBI), in a group of newly diagnosed adolescents with restricting-type anorexia, and in their families, patients and parents were compared with adolescents and parents belonging to families from the general population. In table 2.1 PBI care and overprotection scales scores are reported. The adolescents presented similar scores, whereas significant differences emerged between parents of adolescents with anorexia and parents of healthy controls (see Table 2.1).

Table 2.1 – Mean scores (*M*), standard deviations (*sd*), *t* statistics and probability (*p*) values of PBI subscales for family roles and anorexia group and control group

Role	PBI Subscale	Anorexia group	Control group	t value (p)
		M (sd)	M (sd)	
Adolescent	Maternal care	25.38 (4.290)	26.43 (3.789)	-1.119 (n.s.)
	Maternal overprotection	13.19 (5.947)	14.63 (6.092)	-1.003 (n.s.)
	Paternal care	23.69 (4.663)	24.13 (5.295)	-0.363 (n.s.)
	Paternal overprotection	11.65 (5.284)	11.43 (5.621)	0.168 (n.s.)
Mother	Maternal care	22.42 (6.191)	25.22 (4.757)	-2.248(0.02)
	Maternal overprotection	16.08 (7.488)	12.41 (6.120)	2.351 (0.02)
	Paternal care	21.38 (6.706)	25.61 (3.715)	-3.67(0.001)
	Paternal overprotection	14.15 (7.546)	12.12 (6.396)	1.262 (n.s.)
Father	Maternal care	22.32 (5.031)	24.40 (3.747)	-2.091(0.03)
	Maternal overprotection	10.76 (5.876)	14.14 (6.357)	-2.293(0.02)
	Paternal care	20.60 (5.339)	22.68 (5.309)	-1.648 (n.s.)
	Paternal overprotection	11.08 (5.923)	10.82 (5.106)	0.204 (n.s.)

Note. PBI: Parental Bonding Instrument. Anorexia group: families of adolescents with anorexia, Control group: control families

2.3.2 Latent class analysis of maternal and paternal bonding

The LCA analysis identified the two-latent-class models as hypothesized both for paternal and maternal bonding. The indices fitting the data were Chi square = 9.90, $df = 6$, $p = .13$, $L_2 = 9.99$, $df = 6$, $p = .13$, AIC (L_2) = -2.01, BIC (L_2) = -2.75 for paternal bonding, and Chi square = 11.73, $df = 6$, $p = .06$, $L_2 = 11.11$, $df = 6$, $p = .16$, AIC (L_2) = -1.11, BIC (L_2) = -17.63 for maternal bonding.

Once the latent structure was identified, the probability parameter estimates for each latent class revealed their distinctive characteristics, (see Table 2.2). For both paternal and maternal bonding, in general, Class 1 and Class 2 presented rather similar probabilities, in the range .45 - .55, but each class evidenced different structures, which allowed the interpretation of the data. Substantial probability values used for the latent class interpretation are evidenced in bold in Table 2.2.

Maternal bonding is characterized as follows: Class 1 is represented by the families of patients with anorexia (.52), the maternal bonding comes through the father's transmission line (.39) and is characterized by low care (.75) and high overprotection (.64). Class 2 is represented by the families of the control group (.59) and in this case the maternal bonding comes through the mother's transmission line (.38) and is characterized by high care (.54) and low overprotection (.71). Similarly, as far as *paternal bonding* is concerned, Class 1 is represented by the families of patients with anorexia (.61). In particular the paternal bonding comes through the father's transmission line (.44) and is characterized by low care (.81) and low overprotection (.59). Class 2 instead is represented by the control group (.71), where the paternal bonding comes through her mother's transmission line and is characterized by high care (.79) and low overprotection (.58).

Considering now the two groups, families of patients with anorexia versus control families, it is possible to evidence differences and analogies between them. For families of adolescents with anorexia (class 1), both maternal (.52) and paternal (.61) bonding comes through the father's transmission line (.39 and .44 respectively for maternal and paternal bonding). In fact the adolescents' father bonding is characterized by specificities concerning the relationship recalled both with his father and his mother. However the kind of transmission is not the same, that is, maternal bonding is characterized by low care (.75) and high overprotection (.64), whereas paternal bonding is characterized by low care (.81) and low overprotection (.59).

For control families (class 2), both maternal (.59) and paternal (.71) bonding comes through the mother's transmission line (.38 and .46 respectively for maternal and paternal bonding), namely, the parental bonding recalled by the control adolescents' mother is characterized by specificities both in the maternal and in the paternal bonding. Maternal and paternal bonding are characterized in fact by high care (.54 and .79 respectively) and low overprotection (.71 and .58 respectively).

Table 2.2 – Two two-class latent class analyses: parental bonding and maternal bonding. Manifest variables: group, family role, care and overprotection. Probability values.

		Maternal bonding		Paternal bonding	
Latent Class		Class 1	Class 2	Class 1	Class 2
		(.48)	(.52)	(.55)	(.45)
Group	Anorexia	.52	.41	.61	.29
	Controls	.48	.59	.39	.71
Family role	adolescent	.33	.33	.32	.34
	mother	.28	.38	.23	.46
	father	.39	.28	.44	.20
Care	low	.75	.46	.81	.21
	high	.25	.54	.19	.79
Overprotection	low	.36	.71	.59	.58
	high	.64	.29	.41	.42

Note. Substantial probability values for the interpretation are evidenced in bold

2.4 Discussion

In the comparison between the families of patients with anorexia and the families belonging to the general population, the Latent Class Analysis approach allowed to identify specific pattern of parental bonding transmission, separately for the maternal and the paternal bonding. The maternal bonding latent variable was characterized by two latent classes. The first latent class was represented by the group of families of patients with anorexia and characterized by a low level of maternal care along with a high level of overprotection, which correspond to the affectionless control parenting style (Parker et al., 1979). As far as adolescents with anorexia are directly concerned, it is worth noticing that they did not contribute significantly in defining this first class. Surprisingly, it was essentially the father to recall and perceive the mother as careless and over controlling. On the other hand, mothers, specifically those belonging to the control group, recalled their mothers as full of care but not too much protective towards them. This second profile (representing the second latent class), specified by a high level of maternal care and a low level of protection -corresponding to the optimal bonding (Parker et al., 1979)- was in fact characteristic of the control group (see Table 2.2).

The paternal bonding latent variable presented also two latent classes, which correspond respectively to the paternal bonding patterns of families of adolescents with anorexia and control families. A low level of paternal care characterized the first latent class, which specifies the families of patients with anorexia. Also in the case of paternal bonding this profile did not receive a significant contribution from the adolescents with anorexia. Once again, however, the fathers of adolescents with anorexia perceived their own fathers as scarcely affectionate, i.e. they perceived an

absent or weak bonding (Parker et al., 1979). Conversely, the mothers of the control group, recalled their fathers as affectionate and warm towards them. This quality identifies the second latent class, which was characteristic of the families belonging to the control group, where high levels of paternal care were present in the majority of cases, identifying a recalled optimal bonding style (Parker et al., 1979). Differently from what has been shown for the maternal overprotection, the levels of paternal overprotection were not higher in families with adolescents with anorexia (see Table 2.2).

The similarity of results between the patients with restricting type anorexia and the control adolescents (see Table 2.1 and 2.2) in the perceived maternal as well as paternal bonding style, confirms the few previous findings in adolescents (Russell et al., 1992; Di Pentima et al., 1998) and actually raises the question of a potentially altered report of parental bonding due to the lack of awareness or specific personality traits of this kind of patients. Patients with restrictive conducts are in fact well known for their implacable attempt to deny difficulties, which can lead them even to death (Russell et al., 1992). This is in line with the defensive attitudes typical of the dismissing attachment, which has been shown to characterize many patients with restricting type anorexia (Zachrisson & Skårderud, 2010): putting at a distance from the self the experiences, the individuals with a dismissing attachment succeed in controlling their negative feelings and exhibit an extreme autonomy and independence from others. The struggle for autonomy is indeed a key aspect characterizing the adolescent process of subjectivation and separation from the idealized parents of childhood, and at the same time, according to some theories, it is supposed to have a crucial role in eating disorders psychopathology, where this physiological adolescent process may encounter some complications (Brusset,

2004; Jeammet, 2010). It could be just because of their major concerns regarding autonomy and separation that adolescents with anorexia did not judge their parents less than perfect in the PBI questionnaire (Russell et. al, 1992; Di Pentima et al., 1998): perhaps they may feel that a critique could be too much aggressive and concretely threatening the parents. Idealization and avoidance may thus prevent adolescents with anorexia from fighting with their parents, while many other adolescents, longing to win their autonomy, tend on the contrary to judge negatively parents and thus to overestimate the parental overprotection (Cubis, Lewin, & Dawe, 1989; Russell et al., 1992).

On the other hand it is also possible to explain the absence of differences between adolescents with anorexia and controls, assuming that patients with restricting type anorexia show a parental bonding genuinely analogous to that of adolescents belonging to the general population. This explanation seems however unlikely, based on the different findings obtained on patients with binge-purging type anorexia or with bulimia. Adolescent patients with binge-eating/purging type anorexia in fact have been found to perceive their parental bonding as very inadequate with the mother as well as the father, described as excessively controlling and limiting the daughter's autonomy and freedom (Di Pentima et al., 1998). It is worth noticing that these findings are reported from the same study that found, in line with our results, adolescent with restricting type anorexia to describe parents as very caring and permissive, feeling an optimal bonding with them (Di Pentima et al., 1998). The authors hypothesized that the difference between the two groups of patients had to be explained by the opposed defense and attachment mechanisms adopted by the purging (more preoccupied) and restricting (more avoidant) patients. This conclusion may also be supported by the differences found in our sample between parents

belonging to families of adolescents with anorexia and the parents belonging to the control group, where the bonding was perceived as more dysfunctional in the first group of parents.

Regarding the parents themselves, there has been little research specifically into the parents' own perceived parental bonding, with the only exception of a study by Canetti, et al. (2008) conducted exclusively on adult patients, which found some specificities on the paternal and above all on the maternal side. Whether there might be intergenerational transmission of the attachment patterns along generations in patients with anorexia remains therefore still unclear. Overall the results of the present study showed that the parents of adolescent patients with anorexia recall their own mothers as apprehensive and authoritarian (high overprotection) but not particularly affectionate and empathetic (low care) and their father as not particularly involved and affective in the children care (low care). In particular the fathers' relationships with their own parents were perceived as largely difficult, thus opening the hypothesis of a potential intergenerational transmission of the parental bonding in families of patients with anorexia, especially along the paternal line. The intergenerational transmission of a less affective and highly protection-oriented quality of parental bonding may provide a vulnerable environment for the complex etiopathogenesis of eating disorders. These findings open, but do not close, the question regarding the relationship between parenting styles in different generations and the development and course of anorexia nervosa in the offspring (Canetti et al., 2008).

In the maternal bonding line, the families of patients with anorexia revealed a very different profile from the other families of the control group. The first families were in fact characterized by a lower level of maternal affection along with an

elevated level of protection and control, perceived in particular by the patients' fathers. On the other hand, in the control group the maternal relationship was characterized by an elevated level of care accompanied by a normal level of protection and autonomy. This was true especially in the control group mothers' case: the control adolescents' mothers appeared to perceive their own mothers as warm and attentive, but at the same time permissive enough, i.e. they recalled an optimal bonding with them. Unlike their offspring, the parents of patients with anorexia seemed thus to perceive their maternal relationship as more problematic compared with the control parents.

This result is in line with the still very scarce and limited research on attachment states of mind in parents of patients with eating disorders. Mothers of patients with EDs were in fact showed an increased degree of unresolved state of mind concerning, in particular, losses and traumas, which have not yet been completely elaborated (Pace, Cavanna, Guiducci & Bizzi, 2015; Ward et al., 2001). An issue of unresolved loss appears to be consistent with the early separation difficulties that may be considered among the risk factors for the EDs onset (Pace et al., 2015; Ward et al., 2001). According to the attachment theory, the representations and the internal working models of relationships can be transmitted through generations: the parents' internal representation of relations with their own attachment figures may impact on their attitude towards their offspring, providing a sort of continuity across different generations' parental behaviors. In line with these premises, in the only study specifically concerning the mothers of adult patients with anorexia, Ward et al. (2001) found a high rate of insecure attachment representation and unresolved losses, which are often connected to deficits and difficulties in the emotional regulation and reflective functioning (Keating et al., 2013; Tasca et al,

2009). Along with the attachment-related parenting behaviors, these latter characteristics may also in turn act as a risk factor in the mother-daughter relationship, potentially fostering the onset of an eating pathology in the daughters (Pace et al., 2015; Ringer & Crittenden, 2007; Ward et al., 2001). Maternal negative perception of their own mothers (i.e. PBI low levels of care) seemed in fact to be linked with the severity of eating symptoms in the daughters with anorexia (Canetti et al., 2008).

Consistently with these first findings on adults, the results of this study, conducted specifically on adolescents, show a perception of the maternal bonding as more dysfunctional in parents of patients than in the other parents. The parents' representations of maternal relations characterized by a lower level of care and a high degree of overprotection may, in turn, affect their own attitude towards the adolescent offspring. It is thus possible to suppose that the intergenerational transmission of a less affective and highly protection-oriented quality of maternal bonding may provide a vulnerability to eating disorders, whose multifactorial symptomatic manifestation is clearly precipitated further by different conditions and later circumstances (Lock et al., 2015). However, since it is impossible to draw causal inferences in this type of cross-sectional study, alternatively it is also plausible that the patients' parents change their perception of their parents after the onset of the child's illness. The deep sense of crisis and guilt linked to the child's condition may in fact lead parents to blame themselves and to perceive their own parental figures as inadequate as they feel to be at the moment for their ill offspring.

Although previous studies have mainly explored the maternal side, our results showed an important contribution of the paternal perceptions in defining a specific profile of families with an adolescent offspring with anorexia. Not only the patients'

mothers but mostly the fathers negatively perceive their relationship with their mothers. Moreover, in the paternal bonding line further specificities emerged in the families of patients with anorexia, which were characterized by a low level of care and affection perceived on the father's part. Again, it was mainly the paternal consideration of his own father as careless and affectionless (i.e. characterized by a weak or absent bonding) to specify the profile of the families of patients with anorexia, as if the male line would have a preeminent role in the perceptions of family dysfunctions.

This result points to a key role for fathers in the complex relational dynamics of the families. A father who shows more interest and emotional involvement in the care of the offspring can give an irreplaceable and lasting contribution to their wellbeing (Gottman, 1997; Lamb, 2010); on the other hand, a father perceived as slipping away from the relationship can be considered emotionally absent and unavailable. Moreover, first findings pointed to an intergenerational transmission of the parental bonding representations from father as well as from mother to offspring (Canetti et al., 2008), suggesting that fathers' perception of their own paternal figures' involvement can play a pivotal role in their self-image as parents, and consequently influence the actual fathers' behaviors with their offspring. The hypotheses made to interpret the results concerning the paternal side demand however further investigation. Future studies need to assess not only the fathers' perceptions of their own relationships with their parents, but also the processes that link fathers' evaluations of the parents' attitudes with their own parenting representations and behaviors.

Our findings however are likely to support the hypothesis of a major paternal contribution in the family dynamics of patients with anorexia. In addition to the more

studied mother-daughter relationship, recent studies have pointed to the equally important role of the father-daughter bond as a risk or as protective factor in the onset and persistence of food-related symptoms (Jones, Leung, & Harris, 2006; Couturier et al., 2013; Duclos et al., 2014; Horesh et al., 2015). If on the one hand the therapeutic alliance with parents has been demonstrated to predict a positive outcome of family therapies for adolescents with anorexia (Couturirer et al., 2013; Isserlin & Couturier, 2012), on the other hand the father's exclusion may prevent treatment from success. The results from this controlled study seem to indicate that therapeutic approaches should include the paternal participation in the treatment and at the same time address issues related to the fathers' perceptions of the parental role in the relationship with the adolescent with anorexia.

Having said that, the limited number of patients and parents participating in the study, due to the particular clinical context of the research, imposes some limitations in interpreting the results of the Latent Class Analysis applied. Moreover the use of self-reported measures only, along with the cross-sectional design of the study, are limitations that suggest caution in interpreting the results, without drawing any causal conclusions. The self-reported retrospective measure of parental bonding have their undeniable advantages, such as the quickness to administer, and the information obtained directly from the individual concerned. Nevertheless, self-reported tools also have many weaknesses: the recall of the parental bonding are likely to be influenced by the subjective interpretation and modified by the real experiences of current relationships, particularly in the difficult and stressful situation of an anorexic onset (Tetley et al., 2014). Moreover, these measures are affected by the social desirability, which is particularly challenging in the case of patients with

anorexia, that are well known for being inclined to provide idealized images, depleted from any negativity (Russell et al., 1992).

Further researches, conducted using a multi-informant assessment, based on the self-report tools along with clinician-report interviews, will help clarify the intergenerational transmission of the families' attachment and bonding patterns and their relative role in the origin and course of anorexia nervosa. This may help clinicians to provide more effective therapeutic treatments, tailored to the patient's and parents' needs. As opposed to make accusations for the offspring's difficulties (Lock et al, 2015; Zachrisson & Skårderud, 2010), involving parents in the treatment of adolescent patients with anorexia and addressing how their own attachment and parental bonding affect current relationships, could be helpful for the whole family dynamics and thus for the patient's outcome.

Chapter 3

The emotion regulation in families of adolescents with anorexia.

Alexithymia in the daughter, mother and father based on clinical versus self- evaluation

The emotion regulation in families of adolescents with anorexia.

Alexithymia in the daughter, mother and father based on clinical versus self-evaluation

3.1 Aim

Affective regulation deficits of patients with anorexia can be linked to the emotional functioning of parents (Duclos et al., 2014). Studies conducted on adult patients have shown conflicting results regarding their parents' potential emotional deficits (Dahlman, 1996; Espina, 2003; Guttman & Laporte, 2002). Moreover studies adopting self-report evaluations (e.g. the Toronto Alexithymia Scale -TAS-20) demonstrate that the high levels of alexithymia reported by patients are frequently associated with negative emotions and in particular depression (Corcos et al., 2000; Montebanocci et al., 2006; Speranza et al., 2003, 2005, 2007). Self-administered questionnaires, revealing high levels of alexithymia, are not always in line with performance-based assessment designed to detect an individual's capability to attribute, discriminate and verbally describe feelings when performing a specific task (Parling, Mortazavi, & Ghaderi, 2010; Rozenstein, Latzer, Stein, & Eviatar, 2011).

Self-reported assessments related to alexithymia can be thus questionable in terms of validity and reliability. Inevitably, they can be affected by the person's will and capacity to refer to his/her personal feelings, therefore by the aptitude that someone with alexithymia is not presumed to possess (Lumley, 2000; Lumley, et al., 2007). Being so complex, alexithymia requires accurate measuring that implies multi-method assessment (Taylor & Bagby, 2004) which involves a categorization (e.g.

categorical diagnosis) along with a dimensional evaluation (e.g. trait intensity assessment), obtained from both the self-reported and the clinician administered tools. A recent research involving patients with eating disorders (Berthoz et al., 2007) has been oriented along these lines, examining different alexithymia evaluating tools which include the self-reported questionnaire Toronto Alexithymia Scale (TAS-20) (Bagby, Parker, & Taylor, 1994), and the less commonly used other-report, *Observer Alexithymia Scale d'Haviland (OAS)* (Haviland, Warren, & Riggs, 2000).

Bearing in mind the above, this study aims mainly to analyze the application of a multi-method evaluation for alexithymia in adolescent girls suffering from anorexia as well as in their parents. To this end two different tools were selected, the self-report questionnaire TAS-20 (Bagby, Parker, & Taylor, 1994; Bagby, Taylor, & Parker, 1994) and the structured clinical interview Toronto Structured Interview for Alexithymia (TSIA) (Bagby, Taylor, Parker, & Dickens, 2006). The two theoretically similar measurements, conceived by the Toronto-based group, were compared in terms of sensitivity and ability to identify the presence and level of alexithymic characteristics in the family of patients suffering from anorexia.

The second goal of this research was to gain greater insight on alexithymia in adolescents with anorexia and in their parents, assessing them not merely as single individuals, but as members belonging to an interrelated family triad, where feelings are managed and expressed in a specific manner. Each triad was explored comparing the levels of the alexithymia in the daughter, mother and father and obtaining a mean alexithymia level related to each family triadic nucleus.

3..2 Methods

3.2.1 Participants

The study included 46 participants: 16 adolescents with anorexia (13-17 years) and the 30 parents. The help-seeking adolescent patients, consecutively referred to the Child and Adolescent Neuropsychiatric University Unit of the San Gerardo Hospital, Monza, University of Milan Bicocca, were asked to participate in the study. Each triad (daughter, mother, father) was regarded as a restricted family nucleus. In case of brothers or sisters, due to ethical issues, they were excluded from this research, so that there was no medicalization for them. The study complied with the standards of ethical conduct at the San Gerardo Hospital in Monza. All participants were required to give their written informed consent to participate in the study.

Setting the inclusion criteria involved: a diagnosis of anorexia nervosa, restricting subtype, in accordance with the DSM-IV-TR criteria (APA, 2000), feminine gender, age between 13 and 17, and parents' informed consent to take part also directly in the study. Whereas the exclusion criteria involved other important conditions diagnosed in accordance with the DSM-IV-TR (i.e. autism, schizophrenia, mental retardation) having psychotherapy for more than 3 months and insufficient understanding of the Italian language.

The mean age of adolescent patients with anorexia was 15.81 years, ranging from 13 to 17 years, the mean Body Mass Index was 16 (standard deviation=2), a representative sample of the population attending the Child and Adolescent Neuropsychiatric University Unit who accept to take part in clinical research programs (Bomba, Corbetta, Bonini, et al., 2014; Bomba, Corbetta, Gambera, et al.,

2014; Bomba et al., 2013; Conti et al., 2013; Tremolizzo et al., 2014). Of the 32 parents, one father died and, at the time of the study, there was no trace of one mother. The mean age of the mothers was 45.8, ranging in age from 36 to 52 years, and the mean age of the fathers was 49.13, ranging in age from 38 to 61.

3.2.2 Procedure

A neuropsychiatrist with special clinical experience in adolescent anorexia evaluated all patients, obtaining a detailed family and medical history. Adolescent patients, who were diagnosed, adopting DSM IV-TR criteria for restricting type anorexia nervosa, had to complete as well the Eating Disorder Inventory (EDI-3) (Garner, 2004). The semi-structured interview Kiddie-SADS (Kaufman et al., 2000) was used in order to diagnose also potential co-morbid disorders.

The recruitment lasted 4 months. All adolescents and parents were required to give their written informed consent to the research. Both adolescent patients and their parents had to complete TAS-20 questionnaires and participated in the TSIA structured interview. Each patient and parent had the same setting, each assessed separately. The responses to the TSIA clinical interview were collected by two adequately trained interviewers, both unaware of the scores provided in the TAS-20 self-report. Two judges, among whom one expert in applying the instrument, scored all the interviews collected. An agreement score was reached in the few cases where there was disagreement in attributing the score.

3.2.3 Measures

The Toronto Alexithymia Scale (TAS-20)

To measure alexithymia, the TAS-20 (Bagby, Parker, et al., 1994; Bagby, Taylor, et al., 1994) is the most commonly used self-administered questionnaire. It yields a total score and it also measures three core dimensions related to alexithymia: the difficulty in identifying feelings (F1), the difficulty in describing feelings to others (F2), and the externally-oriented thinking (F3).

In total there are 20 items, each is assessed using a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The total score may vary from a minimum of 20 to a maximum of 100. The Italian version of the TAS-20 has demonstrated factorial validity, internal consistency and high test-retest reliability (Bressi et al., 1997).

The Toronto Structured Interview for Alexithymia (TSIA)

The TSIA (Bagby et al., 2006) measures alexithymia by means of a clinical interview that contains a total of 24 questions. The 24 items are divided into 4 subscales (each composed by six items) designed to evaluate four major components of alexithymia: the difficulty in identifying feelings (DIF), the difficulty in describing feelings (DDF), the externally-oriented thinking (EOT), and the imaginal processes (IMP). For each question there is a score on a three-point Likert scale, ranging from 0 to 2. Higher scores indicate a higher level of alexithymia, and total scores may vary from 0 to 48.

The TSIA structured interview was conceived in order to overcome the limitations of the TAS-20 (see Table 3.1), among which the self-administration and the lacking of an assessment of the imaginative capacities (imaginal processes –

IMP - of the TSIA). Answer may in fact be investigated and clarified by the clinician interviewer, any time the participant interviewee has not enough awareness of his/her potential difficulties with emotions and feelings. This is made possible by having an external interviewer, differently to what happens with the self-administration of the self-reported TAS-20 questionnaire. The TSIA in tandem with the TAS-20 can therefore allow a richer multi-method assessment, basing on different assessment tools, self and other-reported (Taylor & Bagby, 1988; Taylor & Bagby, 2004).

The validation study conducted by the Toronto group (Bagby et al., 2006), along with the validation of the Italian version (Caretti et al., 2011), demonstrated that the TSIA has a good interrater, test-retest and internal reliability and also concurrent validity with the TAS-20. The hierarchic factor structure consists of 4 subscales grouped into two higher order dimensions: conscious emotional awareness (DIF and DDF) and operational thinking (EOT and IMP).

Table 3.1 – *Strengths and limits of the self-report compared to the clinical interview*

TAS-20	TSIA
Toronto Alexithymia Scale	Toronto Structured Interview for Alexithymia
Self-reported questionnaire	Structured clinical Interview
10-15 minutes to administer	40 minutes to administer
Quick administration	Lengthy administration
No training is needed for administration	Training is needed for administration
Simple scoring	Training is needed for scoring
Individuals need to be aware of potential deficits in emotion regulation	Ambiguous answers may be clarified by mean of the inquiry
Individuals are presumed to reply sincerely	An external observer may evaluate individuals' responses
The fantasy activity is not measured	The immaginal processes are assessed
The respondent's lacking capability or motivation to reply sincerely may represent a limit	The reliability of the measure depends on standardized administration and scoring across different interviewers and different raters

3.2.4 Analyses

The study used a Rasch analysis approach (Rasch, 1960): applying the Andrich Rating Scale Model (ARSM) (Andrich, 1978) in order to obtain the estimates of the measurements on the Likert ratings provided by participants for each of the two scale items. WINSTEP Ministep *Rasch-Model* program (Linacre, 2016) served to estimate the level of alexithymia pertaining to each individual on the rating scale. The Rasch analysis was used for the analysis of the data owing to its psychometric properties, especially the invariance of comparison, which made it possible to reach the main objective of the study, i.e. comparing the item responses of the individuals (Mannarini, 2009; Mannarini & Boffo, 2014; Mannarini, Boffo, Bertucci, Andrisani, & Ambrosini, 2013). In fact when the responses of two different individuals are compared, the comparison appears to be independent of stimuli (or items) determining the responses, in the case that the data fits the Rasch model.

In this study a Rasch analysis was applied separately for the two scale total scores and for each of the common factors of the scales (factor 1= Difficulty in identifying feelings - DIF, factor 2 = Difficulty in describing feelings - DDF, factor 3 = externally-oriented thinking - EOT). Estimates of each individual were standardized in order to compare the total scores and scale factors between the two different scales. Furthermore an alexithymia mean standard score was calculated for each family nucleus. Subsequently the difference between alexithymia levels in family members was evaluated by calculating a contrast standard value for each couple in the family, in particular between daughter and mother, daughter and father, mother and father. The data on the 16 families were summarized by grouping them into three categories representing different levels of alexithymia at a family level and separately for daughters, mothers and fathers: category 1 (*Low*) included standard

scores lower than -1.64 ($p < .05$), therefore respondents with a low level of alexithymia, category 2 (*Middle*) range between -1.64 and 1.64, thus intermediate level of alexithymia, category 3 (*High*) above 1.64 ($p < .05$), thus a high level of alexithymia. The same categories were constructed in view of the contrasts between family members. Denominating x and y the members of a couple, category 1 (*Low*) included couples with a statistically different level of alexithymia, where x has a lower level of alexithymia compared with y (lower than -1.64, $p < .05$). Category 2 (*Mid*) included couples with statistically non significantly differences in alexithymia (between -1.64 and 1.64, $p > .05$) and category 3 (*High*) contained couples with statistically different levels of alexithymia, where x has a higher level of alexithymia compared with y (higher than 1.64, $p < .05$). Considering the small number of participants, the frequencies of the individuals belonging to the three categories were converted into percentages. Categorizing the standard scores rather than calculating the mean scores seemed more suited for the aims of this study, giving the possibility to compare the two scales, at the extreme levels (*Low* and *High* categories) of the distributions, i.e. at the low and high levels of alexithymia, which could be more clinically interesting. Chi-square analyses evaluated the differential functioning between the two scales in identifying and measuring alexithymia in families, family members and couple contrasts. Chi-square analyses were performed separately for the *Low* and *High* - the two extreme categories - and for the two scale total scores and common factors. The two extreme categories were explored and the mid one was excluded in order to underscore statistically significant results.

3.3 Results

3.3.1 Analyses of the single family

Table 3.2

Alexithymia estimate standard score for different family members, overall level of family alexithymia, and contrasts between family members in relation to the TSIA and the TAS-20 common factors and total score - Data concerning 1 out of the 16 families.

Factor	Family	TSIA		TAS		Family couple	TSIA	TAS
		Family member standard score	Family mean standard score	Family member standard Score	Family mean standard score		Couple contrast standard score	Couple contrast standard score
F1	D	2.36**	.20	-3.39**	-2.91**	D vs M	2.96**	1.29
	M	-1.84*		-2.27**		D vs F	1.78*	.55
	F	.09		-3.07**		M vs F	-1.50	1.01
F2	D	-.53	.97	-2.30**	-2.18**	D vs M	-1.62	-2.91**
	M	1.75*		-1.85*		D vs F	-1.67*	2.89**
	F	1.68*		-2.40**		M vs F	-.28	2.81**
F3	D	.96	1.58	-.10	-1.37	D vs M	-.33	1.18
	M	1.48		-2.77**		D vs F	-1.43	.52
	F	2.3**		-1.43		M vs F	-1.21	-.67
Total	D	2.70**	2.38**	-3.10**	-4.04***	D vs M	.94	1.06
	M	1.57		-4.85***		D vs F	-.25	.61
	F	2.89**		-4.17***		M vs F	-1.17	-.44

Notes: * p <.05, **p<.01, ***p<.001

D, Daughter; M, Mother; F, Father

Factors: F1-DIF = difficulty identifying feelings; F2-DDF = difficulty describing feelings; F3-EOT = externally oriented thinking.

Table 3.2 illustrates the alexithymia Rasch estimate standard score in relation to the TSIA and the TAS-20 total scores and their common factors, concerning the family members (daughters, mothers and fathers), the family mean standard score (overall level of family alexithymia), and finally the alexithymia contrast standard

score between family members (family couple contrasts). For illustrative purposes, the data on a single family are provided herein, but the data were analyzed for each of the 16 families that took part in the study.

For the selected family, the TSIA detected a significantly high total score of mean family alexithymia. Moreover the interview picked up significantly high total scores of alexithymia both for the daughter and father, while the mother was not characterized by a statistically significant score. In relation to the factor 1, the daughter revealed a significantly high score, while the mother revealed a significantly low level of difficulty in identifying feelings. In terms of factor 2, mother and father have significantly high levels of difficulties in describing feelings, whereas for factor 3 only the father shown a significantly high score.

The TAS-20 differed in detecting alexithymia both at the individual and at the family level. Both the family mean total score of alexithymia and the three members' ones are significantly low. All family members in fact exhibited significantly low levels of alexithymia in relation to the total score, and specifically factor 1 and factor 2. Only for factor 3, the low level of alexithymia did not reach statistical significance.

Moreover the distance between the levels of alexithymia of family members (family couple contrasts) appeared to be different when measured by the two different scales. The TSIA reveals that the daughter had much more difficulty in identifying feelings (factor 1) compared to the mother or the father. While using the TAS-20 self-report, all the family members had a similarly low score. If using the TSIA factor 2 the daughter appeared to be able to describe her own feelings better than her father, the opposite happened with TAS-20 where the father saw himself as more able to describe his own feelings, compared to his daughter.

3.3.2 The alexithymia categories

As previously mentioned, in order to sum up the data related to the 16 families, three categories (*Low*, *Medium* and *High*) were constructed to represent the different levels of alexithymia of the families in general (overall level of family alexithymia) and of the different family members (daughters, mothers and fathers). The same three categories were subsequently created for daughter vs mother, daughter vs father and mother vs father in order to estimate the contrast between the degrees of alexithymia within the different family couples. Three figures illustrate the results in relation to the three common factors and to the total score, where the two scales are compared. Figure 3.1 depicts the distribution of frequency percentages related to the *Low* and *High* categories in relation to the family alexithymia mean standard score (overall level of family alexithymia). Figure 3.2 depicts the distribution of frequency percentages in relation to the family members (daughters, mothers and fathers). Whereas Figure 3.3 depicts the distribution of frequency percentages associated to the *Low* and *High* categories for what concerns the contrasts between family members. Chi-square analyses were then carried out to test the statistical significant divergences between the two scales in relation to the three common factors and to the total scores.

3.3.3 Family analyses

The data concerning the overall level of family alexithymia in the 16 families are illustrated in Figure 3.1. The results points to the fact that the TAS-20 yielded a significantly ($p < .001$) larger percentage of families, for all factors and for the total score (range 18.5% - 75%), falling in the *Low* category (which includes families with average low levels of alexithymia) compared with the TSIA (range 0.0% - 12.5%).

The TSIA, however, yielded a significantly ($p < .001$) higher percentage of cases (range 6.25% - 25%) associated to the *High* category (thus the category including families with average high levels of alexithymia), with the only exception of factor 1. What in synthesis emerged are the marked divergences between the two scales in relation to the *Low* category level of alexithymia in factor 1, 2, 3 and total score, and in relation to the *High* category level for what concerns factor 2, 3 and total score.

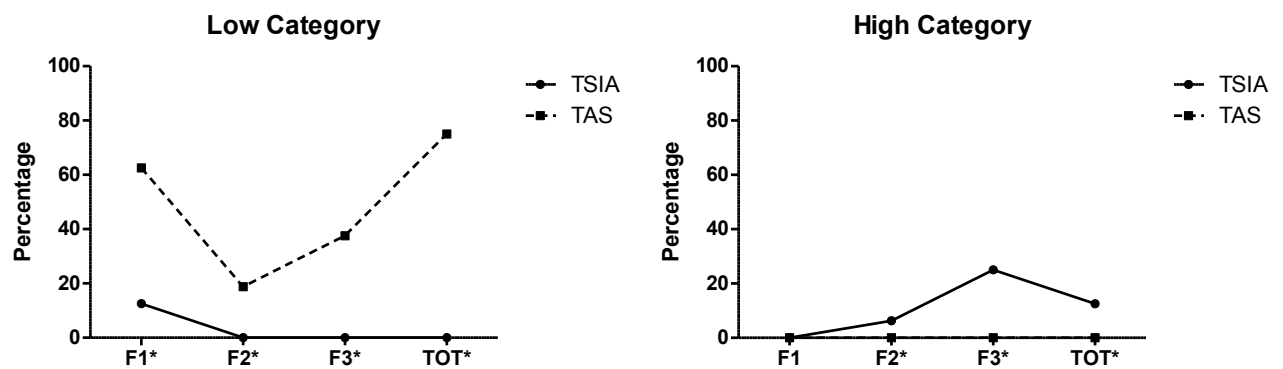


Figure 3.1. Family alexithymia mean standard score percentage: a comparison between the TSIA and the TAS-20

Notes:

Low Category: percentage of family obtaining scores below the standard score -1.64, $p < .05$

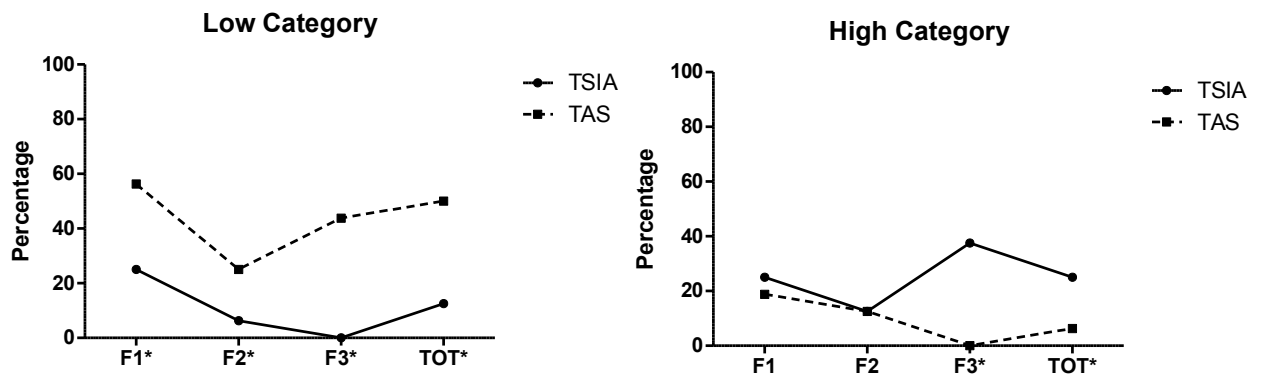
High Category: percentage of family obtaining scores above the standard score 1.64, $p < .05$

F1-DIF = difficulty identifying feelings; F2-DDF = difficulty describing feelings; F3-EOT = externally oriented thinking; TOT =total score.

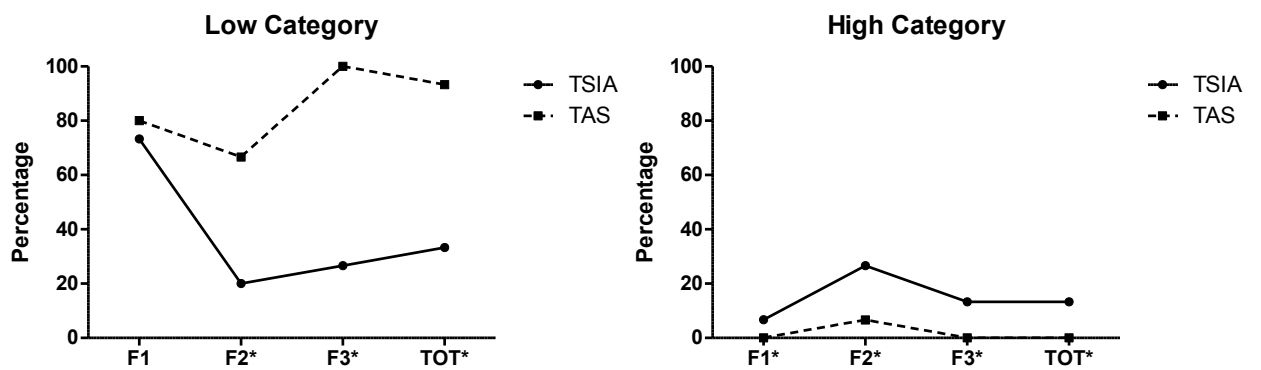
* TSIA vs TAS-20 comparison $p < .05$

3.3.4 Analyses of the family members

a) DAUGHTER



b) MOTHER



c) FATHER

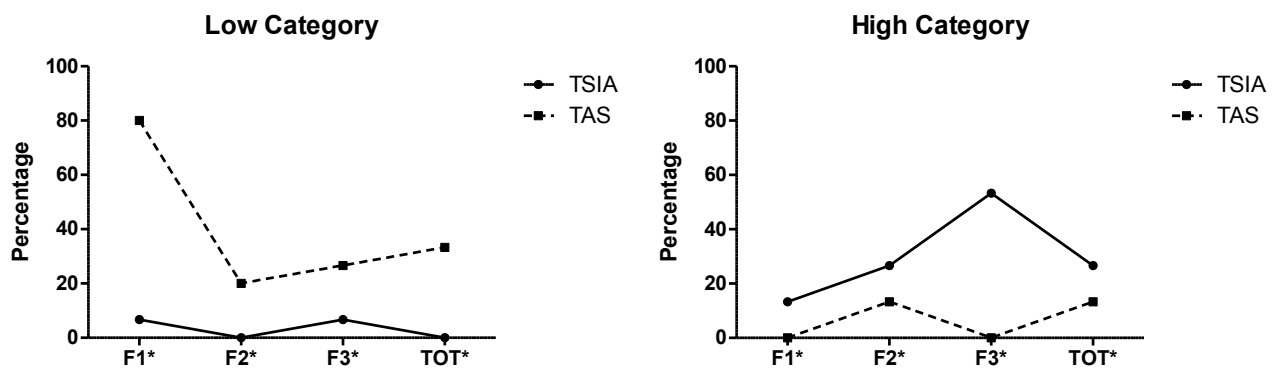


Figure 3.2. Family members alexithymia standard score percentage: a comparison between the TSIA and the TAS-20

Notes: Low Category: percentage of daughters (a)/ mothers (b)/ fathers(c) obtaining scores below the standard score -1.64, $p < .05$; High Category: percentage of daughters (a)/ mothers (b)/ fathers(c) obtaining scores above the standard score 1.64, $p < .05$

F1-DIF = difficulty identifying feelings; F2-DDF = difficulty describing feelings; F3-EOT = externally oriented thinking; TOT =total score.

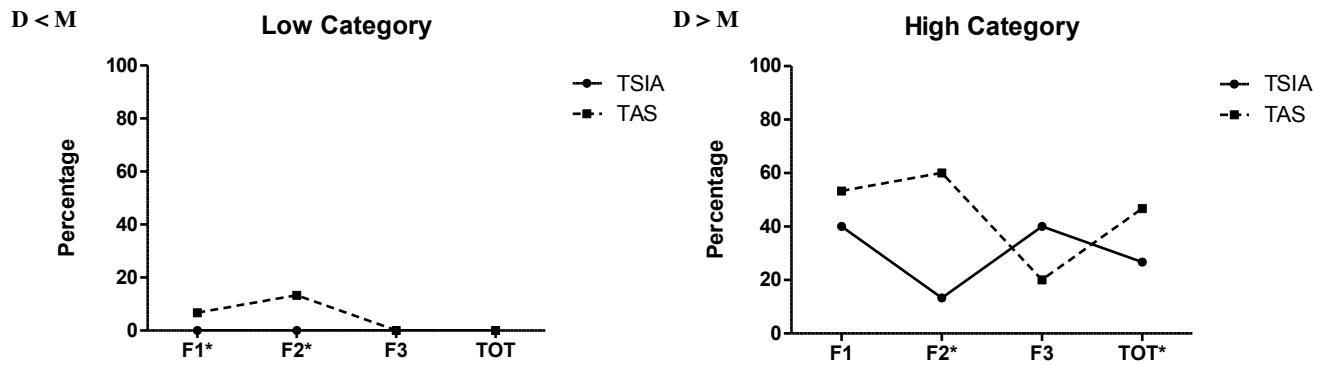
* TSIA vs TAS-20 comparison $p < .05$

As illustrated in Figure 3.2, the TAS-20 revealed a significantly ($p < .001$) higher number of participants falling into the *Low* category (range 20% - 100%) compared to the TSIA (from 0.0% to 73.3%), for the different family members, for all factors and total scores. While the TSIA generally revealed a significantly ($p < .001$) larger percentage of participants (from 6.7% to 53.3%) associated to the *High* category, compared with the TAS-20 (from 0.0% to 18.75%). In particular a significant difference between the TSIA and the TAS-20 in the *Low* category entails the factor 1, factor 3 and the total score for the daughters, the factor 3 and the total score for the mothers, and the factor 1 for the fathers. The two scales, in the *High* category, exhibited differences, principally in the factor 3 for the daughters and for the fathers and in the factor 2 for the mothers.

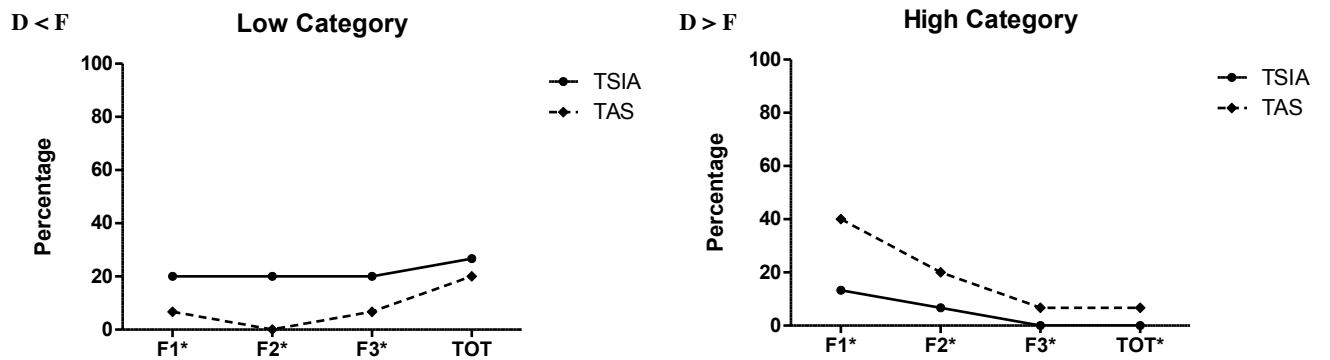
3.3.5 Analyses of the family couple contrasts

The contrasts between family members for the *Low* and *High* categories (distribution of frequency percentages) are shown in Figure 3.3. The *Low* category comprises of cases where the first member of the couple shown a significantly lower alexithymia compared to the second member of the couple. Reversely, the *High* category contains cases where the first member in the couple has a significantly higher degree of alexithymia compared to the second one. Compared to the TAS-20 self-report, the TSIA scale once more proves to be more sensitive in evidencing the differences between the family members, both at the *Low* and at the *High* level.

a) DAUGHTER VS MOTHER



b) DAUGHTER VS FATHER



b) MOTHER VS FATHER

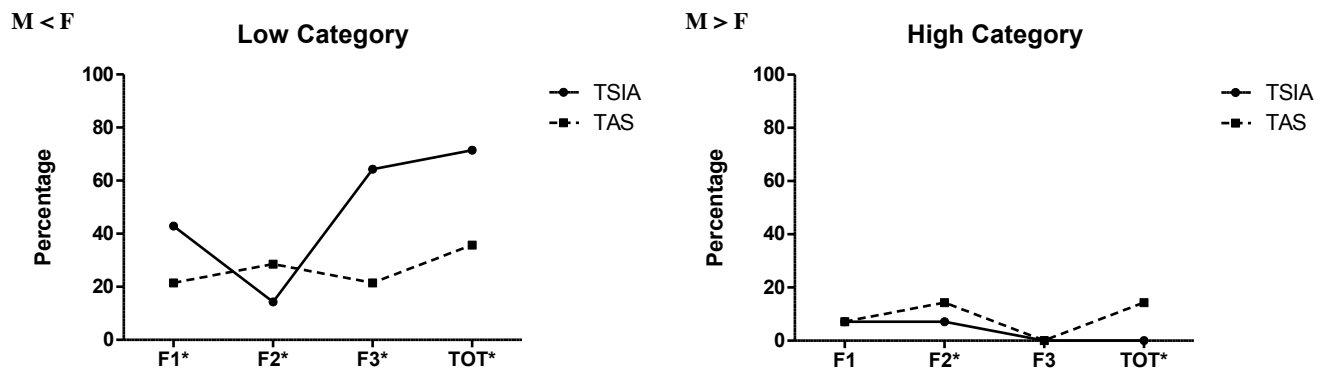


Figure 3.3. Family couple contrasts alexithymia standard score percentage: a comparison between the TSIA and the TAS-20

Notes: Low Category: percentage of contrasts daughter vs mother (a)/ daughter vs father (b)/ mothers vs father (c) below the standard score -1.64, $p < .05$; High Category: percentage of contrasts daughter vs mother (a)/ daughter vs father (b)/ mothers vs father (c) above the standard score 1.64, $p < .05$

F1-DIF = difficulty identifying feelings; F2-DDF = difficulty describing feelings; F3-EOT = externally oriented thinking; TOT =total score.

* TSIA vs TAS-20 comparison $p < .05$

3.4 Discussion

This research work strives to explore how two distinct assessment tools, the self-administered questionnaire and the clinical interview created by the Toronto based group, differ in detecting and evaluating the intensity of alexithymia in families of patients with anorexia. Although the TAS-20 questionnaire has been commonly used and despite its simple application in research areas, some limitations have emerged, both in terms of accuracy and clinical validity, in particular when focusing on psychopathology (Lumley et al., 2007). Rather than the faster and cheaper self-report evaluation, when dealing with the stressful and difficult conditions of families of adolescents with anorexia, an in-depth clinical study of alexithymia may be mandatory.

Unlike other studies, a latent trait analysis made it possible to assess each individual latent level of alexithymia, regardless of the content of the items pertaining to the two instruments and of other variables, not directly linked to the individual assessed. Latent trait analysis yielded the patients' and parents' levels of alexithymia identified by the two tools, making a comparison possible between the two. In the comparison the two instruments produced a marked difference, both in terms of the total score and in terms of the alexithymic factors, included in both measures (F1-DIF, F2-DDF, F3-EOT).

The level of alexithymia measured by the clinical instrument was higher compared to the self-administered questionnaire, especially for the parent adult participants. In fact alexithymia perceived by the participants themselves in their personal answers was always lower, with the sole exception of the first factor (F1), for the mothers. In this case, since the mothers tended to be conscious of their high capability in identifying feelings, they reported it correctly also in the self-report

questionnaire. Therefore the lower scores identified by the two measures did not differ significantly in relation to the first factor for the mothers.

Concerning the young adolescent patients with anorexia, compared to the TAS-20 self-report, the TSIA interview identified a higher level of alexithymia, in relation to the total alexithymia and externally oriented thinking (F3). Results pertaining to difficulty in identifying (F1) and expressing one's own feelings (F2) are less clear. The TAS-20 identified a larger number of lower scores compared to the TSIA, probably because the adolescent patients cannot be aware of their difficulties pertaining to feelings or may even attempt to deny their problems. Whereas, and in line with literature, comparably high scores were obtained from both the clinical interview TSIA and the self-administered TAS-20, concerning specifically F1 and F2.. In fact, research carried out using the TAS-20 self-report alone managed to identify the difficulties people with anorexia have in identifying and expressing their feelings (F1, F2).(Guttman & Laporte, 2002; Speranza et al., 2005, 2007; Taylor et al., 1996).

In this study, however, a combined use of the clinical interview and the self-administered questionnaire seem to have produced, as claimed by the authors of the two measurement methods (Bagby et al., 2006; Taylor & Bagby, 2004), notably richer and more detailed clinical information on our group of participants, adults in particular. In fact a sense of deep distress and crisis for the daughter's life-threatening illness can lead parents towards denial and massive defensive attitudes when faced with self-reported questionnaires. Alternatively, parents may feel such anxiety and distress that they cannot accurately answer the self-report, despite their attempt to do so (Espina, 2003). In line with these considerations, some research data reveals elevated negative affectivity and emotional distress, (for instance a state of anxiety or depression) in the parents of patients with anorexia, probably

related to the high alexithymic score identified by the self-administered instruments (Duclos et al., 2014; Espina, 2003; Guttman & Laporte, 2002). It can therefore be deducted that the interviews carried out and scored by trained psychiatrists and psychologists may be more sensitive in detecting the actual level of alexithymia, seeing that it greatly reduces confounding factors triggered by a negative emotional condition of the parents, by their defense mechanisms and different levels of awareness and abilities in reflecting on their own emotional experiences (Bagby et al., 2006; Tremolizzo et al., 2014).

Results on the overall level of family alexithymia underscore that the TSIA clinical interview, can detect a significantly higher level of family alexithymia for all of the factors and the total, compared to the TAS-20. When considering the total scores obtained using the TSIA, the mean family alexithymia index was very high for some families (13%), while no families obtained low alexithymic scores. In marked contrast, the opposite takes place when adopting TAS-20 where no family scored high levels of alexithymia, while an unexpected 75% of the families scored very low, based on the self perceptions of the participants.

This notable contrast in the two assessments of family alexithymia may depend mainly on the fathers' scores, which are lower for all of the TAS-20 factor and total scores compared with the TSIA assessed by the clinician. In fact when they were the ones answering the questionnaire the marked difference with the clinical assessment (TSIA) may stem precisely from the fathers' difficulty in identifying their own emotional deficits, due perhaps to a defense style based on factual problem-solving and concrete externally oriented thinking (Espina, 2003).

Compared to the existing literature and the current approaches on adult patients with eating disorders and their parents (Espina, 2003; Guttman & Laporte,

2002), studying the role of paternal rather than maternal alexithymia alone is a fairly novel approach. It can be hypothesized that the specific paternal emotional functioning could be, to a certain extent, part of the previous personality traits. Their style based on concrete thinking and cutting off emotions may induce these male partners towards a collusive relationship within the couple, whose counterpart is a more emotionally reactive woman. Complex dynamics within such a couple may subsequently involve adolescent daughters with anorexia. It should however be noted that the young daughter's life threatening illness is a traumatic condition that frequently triggers in such fathers the freezing of their feelings (Espina, 2003), the more so since they could already have the tendency to resort to massive primary defense mechanisms. This sort of paternal reaction to the daughter's traumatic condition can trigger in turn a vicious circle and consequently have also negative effects on the young girl's chances of improvement and recovery from the illness.

At present, some literature has highlighted that little communication and emotional contact perceived by the patients with anorexia in the families (Duclos et al., 2014; Rodríguez Martín et al., 2004; Rommel et al., 2013), and a sense of coldness and hostility (Duclos et al., 2014; Ravi et al., 2009) perceived even on the father's side (Le Grange et al., 2010; Ravi et al., 2009), can be correlated to severe eating disorders. The role played by the father in adolescents with anorexia has in fact emerged as pivotal (Couturier et al., 2013; Horesh et al., 2015). During the therapeutic process paternal participation has shown to be extremely important. If paternal warmth and involvement has proven to have a positive role in terms of the outcome of the adolescent daughter's anorexia, quite contrarily, the paternal alexithymia examined herein could be connected to a lesser degree of paternal participation, which in turns may affect the family relationships and thus also the

daughter's outcome (Couturier et al., 2013; Duclos et al., 2014; Horesh et al., 2015). From a therapeutic perspective, it may therefore be important to recognize the paternal role and address the problem of the reciprocal emotional communication among family members during the treatment. Encouraging the father's participation and supporting his role can perhaps avoid that the fathers slip away and remain emotionally and concretely excluded. This may be fundamental when trying to change the intra-family dynamics, which have emerged as a main factor for a positive outcome in the family psychodynamic therapy of adolescents with anorexia (Godart et al., 2012).

In considering the importance of family relations, the differences in emotional functioning among the different family members are worth investigating, placing the focus on how family couples (mother-daughter, father-daughter and mother-father) differ in terms of alexithymia. The TSIA and TAS-20 at this level have yielded very contrasting results, in particular regarding paternal alexithymia, which was lower for the TAS-20 self-report and higher for the TSIA clinical interview. With regard to the total alexithymia, the comparison between the mothers and the fathers within the parental couple may be considered to be the most clinically significant. The mothers showed significantly less alexithymia than the fathers. This result became even more evident when applying the TSIA clinical interview that tends to reduce the fathers' tendency towards negation. The clinical interview shed light on the wide gap that exists between the two partners in terms of total alexithymia, with as many as the 71% of the parental couples where the father revealed more alexithymia than the mother. Whereas, only in a very limited number of parental couples, there was a similar level of alexithymia between the two partners, as if there were a sort of alexithymic accordance between the two. Finally the opposite condition, of a greater

alexithymia in the mother, compared to the father, was not identified in any of the couples.

Moreover, when adopting the TSIA clinical interview, a remarkable number of adolescent daughters with anorexia also revealed less alexithymia than their fathers. Remarkably the exact opposite is true using the TAS-20 self-administered questionnaire, probably due to the paternal negation tendency. While in most cases, adolescent daughters with anorexia, both in the TAS-20 self-report and in the TSIA interview, revealed more alexithymia than their mothers, who generally did not score high in alexithymia.

The gap between the different levels of alexithymia, which reflects the way family members distinctively perceive and experience feelings within the family, could be an important clinical indicator that sheds light on family relations (Inslegers et al., 2012). Further research is needed to explore the potential function of this kind of indicator and if it can be regarded as a discriminant index that distinguishes the sort of family functioning, the possibility of establishing a therapeutic alliance with a family, and perhaps the quality of the daughter's outcome. Family relations, as highlighted in some literature (Guttman & Laporte, 2002), may be more relevant in predicting the alexithymia of the adolescent daughter with anorexia, than the psychological and psychopathological characteristics of parents taken individually. Furthermore, difficulties in family relations and emotional responsiveness have shown to be among the risk factors that may precipitate anorexia nervosa (Lyke & Matsen, 2013). Similarly, with the onset of the young girl's anorexia, its clinical severity continues to be interconnected to the emotional characteristics of family members and the ways they express their feelings (Duclos et al., 2014; Fornari et al., 1999; Rommel et al., 2013).

An innovative aspect of the study consists in the use of the TSIA clinical interview. Presently, no other research has used a self-reported questionnaire alongside a clinical interview in order to investigate the alexithymia of adolescents with anorexia as well as that of their parents. The results of the study points to the use of clinical interviews as more sensitive tools in identifying alexithymia, especially in such particular contexts. Moreover the TSIA clinical interview, compared to the TAS-20 self-report, seemed to have a greater ability to capture the gap in the emotional functioning of the different members of the family. Considering the above, it would be useful to undertake a validation process of the TSIA scale in the Italian adolescent age group.

Potential weaknesses of this study, that need to be considered, include not only the above-mentioned lack of validation of the TSIA for the Italian adolescents, but also the absence of a control group. Moreover a larger adolescent-parent sample would also be a useful improvement for the study. Nevertheless the Rasch modeling approach, applied herein, is able to overcome the limitation related to the lack of a control group, because of its property of *invariance of comparisons*. Subsequent studies should extend the family sample, including, whenever feasible, even the adolescent patient's brothers and sisters. This however was not possible at present, seeing to the ethical issues that would emerge and the families' reluctance to have their healthy offspring participate in the study. Future researches should also assess other psychological characteristics, which include attachment styles and depression (Corcos et al., 2000), analyzed not merely at the individual but also at the family level. Outcome measures on adolescent anorexia are also called for. To assess the usefulness of the alexithymia index measured at the family level, future studies could carry out a longitudinal observation of the adolescents' evolution to gain better

insight on whether the variables analyzed herein may be prognostically useful and meaningful.

In conclusion, the clinical interview seemed to be a potentially more sensitive tool compared to the self-evaluation, which enables the integration of data related to the adolescent patients with anorexia and their parents. The TSIA clinical interview can therefore be adopted as tool that is worth validating among the adolescent population. In addition, this research explored the functioning of the family couples in relation to the emotional regulation and highlighted an important gap in alexithymia within families, especially in the parental couples, where fathers have markedly more high levels of alexithymia than mothers. Clinical questions have emerged on the usefulness of putting greater focus on the family functioning rather than the individual psychological characteristics when seeking to predict a potential therapeutic alliance with the family, which is a pivotal step for gaining a positive outcome of the adolescent girl with anorexia.

Chapter 4

Assessing the triadic interactions. The Lausanne Trilogue Play applied to families of adolescents with anorexia and families of adolescents with emotional disorders

Assessing the triadic interactions.

The Lausanne Trilogue Play applied to families of adolescents with anorexia and families of adolescents with emotional disorders

4.1 Aim

A more in-depth study of the family triadic functioning and of the relational and emotional dynamics in families of young patients with anorexia may result helpful in choosing the most effective treatment for each patient and for each family. Moreover it may help to direct the therapeutic work on the most important aspects to be changed at the family level, in order to improve the chances of the patient care. In their systematic review in fact Holtom-Visel and Allan (2014) suggested the need to carry out further studies on family functioning in families of patients with EDs, using observer-rated clinical tools, in addition to the usual self-report.

4.1.1 The evaluation of the triadic interactions based on the Lausanne Trilogue Play

The direct observational method, based on a recorded play session, named Lausanne Trilogue Play (LTP) (Fivaz-Depeursinge & Corboz-Warnery, 1999), has already shown strong efficacy in detecting the specific characteristics of the family triadic interactions in the context of therapeutic orientation, preventive and social interventions. The introduction of the method as a research tool and in clinical practice dates back to about ten years ago. Thereafter several scientific papers, published in leading journals, have explored important aspects of the family

functioning, which have often been neglected by the individual approach to child and adolescent patients. Authors from different countries, and in particular from Switzerland, offered significant contributions in this field of the research on developmental psychology and psychiatry.

In particular, the Lausanne group (Fivaz-Depeursinge & Favez, 2006), using the LTP, studied the infant's ability to handle the triangular interactions and to share feelings with the parents. This ability seemed to be strictly linked with the co-parenting and the couple's conflict. The disturbed or harmonic dyadic parent-child interaction depends in fact on the quality of the interaction with the other parent and within the parental couple. When a relational conflict is present, the child's triangular abilities are used to relieve the tension within the parental couple, and not to promote the child's psychological development. The Swiss research group also found that the reversed role, which is an important risk factor for different developmental disorders, could be linked to rigidly organized family interactions (Fivaz-Depeursinge, Frascarolo, Lopes, Dimitrova, & Favez, 2007). In these cases, along with a reversed hierarchy between parents and child and a less supportive parenting, also a lacking triangular coordination was observed, due to dyadic coalition that tended to exclude the third part. The child in turn often tries to animate and provoke parents in order to control the tension between them. According to the structural theory of the family, the boundaries between generations appear to be clear in triadic alliance situations, while they seem more confused when dyadic coalitions are present (Fivaz-Depeursinge Lopes, Python, & Favez, 2009). When a two against one situation emerges, the child tries to meet the parents' need to regulate their contentious, using at this aim his triangular communication ability. The family alliances are in fact the result of a complex path that links personality traits of the two parents, co-parenting

behaviors, child's temperament and early interactive contribution (Galdiolo & Roskam, 2015).

Subsequent studies confirmed that an early evaluation of the triangular interactions could be useful to predict some core aspects of the child psychological development: children in fact learn to regulate their inner states and emotions in the context of the family relationships. Studying in a community sample the longitudinal development of the family alliances since pregnancy, the Swiss group demonstrated a relationship between the familial alliance and the cognitive-emotional development of the child at the age of 5 (Favez et al., 2012). Along with the child temperament, a high stable alliance appeared to predict better outcomes in children, in particular for the development of the Theory of Mind. Moreover a Swedish research group of the Karolinska Institutet (Hedenbro & Rydelius, 2014) showed that children who exhibit better triangulation capabilities within the family at 9 months have better peer and social competences at the age of 4. In turn, the early triangulation capabilities and specifically the turn-taking competence correlate with the quality of the parents' responsiveness. The LTP may therefore be a valuable tool in identifying children and families with communication deficits and dysfunctional relational patterns.

The high potential for clinical intervention in relationally frail family systems was also demonstrated in a study from the University of South Florida, using the LTP procedure (McHale & Coates, 2014). This American research team, studying the co-parenting of African-American families with unmarried couples, found that only a few family exhibited high levels of family warmth, solidarity and cooperation within the parental couple. On the contrary, the majority of families showed high degrees of tension-competitiveness, signaled by disputes and interferences. Moreover behaviors signaling disengagement, marked by repeated absenting from the ongoing

interaction, were highly represented. Another American research team from the Ohio State University (Altenburger, Schoppe-Sullivan, Lang, Bower, & Kamp Dush, 2014) found that the prenatal LTP may open a window into the development of the co-parental behaviors and representations before the baby's birth, as the co-parenting develops during pregnancy and is already different from the couple relationship before the childbirth. A significant continuity was observed between the prenatal co-parental behaviors and the observed co-parenting behavior one year later; moreover, fathers who engaged in higher quality prenatal intuitive parental behaviors were discovered to exhibit more supportive parental behavior during the postpartum, when pregnant mothers presented lower parenting behaviors (Schoppe-Sullivan et al., 2014).

Despite the increasing number of studies using this innovative observational tool in different family contexts (Frascarolo, Zaouche-Gaudron, Rouyer, & Favez, 2005; Lavadera, Laghi, & Togliatti, 2011; Mazzoni, Lavadera, Di Benedetto, Criscuolo, & Mangano, 2015; Simonelli, Bighin, & Palo, 2012), data regarding families with adolescent offspring are still very limited. Nevertheless a recent study (Gatta, Sisti, Sudati, Miscioscia, & Simonelli 2016), aiming to examine the usefulness of the LTP in planning treatments, found that the LTP assessment of the family interactions may help clinicians to focus on the dysfunctional familial dynamics, thus improving the effectiveness of their intervention with the families of children and adolescents with psychiatric disorders.

These considerations pave the way to an in-depth exploration of this procedure in the context of the adolescent psychopathology.

4.1.2 Goals of the study

The aim of the present study is therefore to investigate the triadic interactions within the families of adolescents with anorexia nervosa, using the Lausanne Trilogue Play (LTP) (Fivaz-Depeursinge & Corboz-Warnery, 1999).

The study aims in particular to explore:

- 1) the quality of the triangular coordination (third phase of the LTP procedure)
- 2) the co-parenting, i.e. the parental couple's ability to play a structural role for the daughter (third phase of the LTP procedure)
- 3) the interactive dynamics within the parental couple (fourth phase of the LTP procedure)

To achieve these goals, we compared families of patients with anorexia with families of patients suffering from emotional disorders (anxiety and depression) in order to highlight the characteristics of the families of daughters with anorexia, which are not simply explained by the general familial difficulties due to a daughter's psychiatric disorder present in both the family groups.

4.2 Methods

4.2.1 Participants

120 adolescents and parents participated in the study, belonging either to the 20 families of patients with anorexia or to the 20 families of the control group. The adolescents had been referred consecutively (from January to June 2016) to the Childhood, Adolescence and Family Unit at the ULSS 16—University of Padova

(Italy), or to the Child and Adolescent Neuropsychiatry Unit, National Neurological Institute IRCCS C. Mondino – University of Pavia (Italy).

Selection was based on the following inclusion criteria for the group with anorexia nervosa: diagnosis of anorexia nervosa, restrictive subtype according to the DSM-5 (APA, 2013); female gender; age between 13 and 18 years; current BMI below the tenth percentile per age and sex. Exclusion criteria instead were: diagnosis of autism spectrum disorder, schizophrenia, learning disabilities (according to DSM-5); having received psychotherapy for a significant period (more than 3 months); insufficient understanding of the Italian language; being from a single-parent family.

Patients for the control group were selected according to the following inclusion criteria: normal weight female adolescents with an anxiety or mood disorder (depressive type) diagnosis (DSM-5), age between 13 and 18 years. Exclusion criteria for the families of the control group were: presence of symptoms related to food (either restrictive or purging or binge eating conducts), diagnosis of autism spectrum disorder, schizophrenia, learning disabilities (according to DSM-5), having received psychotherapy for a significant period, insufficient understanding of the Italian language, single-parent families.

The mean age of the adolescent patients with anorexia was 14.80 years (standard deviation =1.70; range 13 to 18 years), and their mean current Body Mass Index was 15.55 (standard deviation =1.34). The fathers' mean age was 49.53 years (standard deviation =6.16; range 36 to 58 years), while the mothers' mean age was 47.00 years (standard deviation =6.17; range 34 to 58 years). Concerning the control group, the mean age of the adolescents was 14.85 years (standard deviation =1.57; range 13 to 18 years), the fathers' mean age was 51.11 years (standard deviation

=6.74; range 38 to 62 years) and the mothers' mean age was 47.31 years (standard deviation =6.31, range 37 to 58 years). The socioeconomic status (SES, Hollingshead, 1975) distributions of the two family groups (no significant differences) are presented in Table 4.1.

Table 4.1

The Socioeconomic Status (SES) distribution of the families of adolescents with anorexia and of the control families

SES	Low	Medium low	Medium	Medium high	High
AN	2 (10%)	2 (10%)	4 (20%)	9 (45%)	3 (15%)
CTR	2 (10%)	4 (20%)	5 (25%)	4 (20%)	5 (25%)

Note: AN: Families of adolescents with anorexia., CTR: Control families

4.2.2 Procedure

Child and adolescent psychiatrists and clinical psychologists, not directly involved in the research project, recruited the patients and their parents. All participants gave their written informed consent to participation in the study, within a wider project authorized by the Ethical Committee of the ULSS 16 of Padua. The study was conducted in accordance with the national and institutional code of good ethical practice.

A neuropsychiatrist with special interest and clinical experience in anorexia nervosa evaluated all patients and collected a comprehensive medical and family history. Patients, diagnosed according to the DSM-5 criteria for restricting type anorexia nervosa (APA, 2013), also completed the Eating Disorder Inventory (EDI-3) (Garner, 2004). The diagnoses of anorexia nervosa and potential comorbid disorders, as well as the anxiety or depressive disorder diagnoses, were supported by the Kiddie-SADS semi-structured interview (Kaufman et al., 2000).

The families participated in a videotaped play session according to the Lausanne Trilogue Play (LTP) procedure, before the remaining psychological assessment. The semi-standardized observational tool, the Lausanne Trilogue Play (LTP), was then scored by two specifically trained judges, blind to the results of the other tests. In rare cases of disagreement in attributing the score, an agreement score was reached through discussion.

4.2.3 Measures

The Lausanne Trilogue Play (LTP). The LTP is a semi-standardized observational tool based on a videotaped, semi-structured play session, aimed at studying the triad as a whole as well as the organization of its parts (Fivaz-Depeursinge & Corboz-Warnery, 1999). Parents are asked to interact (i.e. imagine to organize an activity together) with their daughters in four phases. In the first phase, one parent is asked to interact with the daughter, while the other parent is simply present. In the second phase, the second parent is asked to interact with the daughter, while the parent who played first is no longer involved. In the third phase, the parents are asked to interact together with their daughter as a triad. In the fourth

phase, the parents are asked to continue to interact and converse with each other, without involving the daughter. The whole play section takes approximately 15 min. The first two phases are indicated as two-plus-one phases, and the third phase is identified as the three-together phase. While during the fourth phase, which is again a two-plus-one phase, the parents are asked to allow the daughter not to be involved in the couple's interaction.

The narrative of a situation based on separation and autonomy is the theme of the triadic play, tailored for adolescent patients. Parents and daughter are asked to organize a weekend, in which the daughter will remain at home without the parents. They have to build this narrative, following the four different phases. Nevertheless in order to code the family relationships, the content of the narrative built is not very important but it is essential to note how the family shares the construction of the narrative, based on the frequency of initiatives and proposals intended to enrich the history (that should be co-constructed with the contributions of each family member). The LTP paradigm (Fivaz-Depeursinge & Corboz-Warnery, 1999) was modified in the way explained in order to be applied to adolescents up to 18 years (Lavadera et al., 2011; Malagoli Togliatti & Mazzoni, 2006) The coding scheme of the LTP (Malagoli Togliatti & Mazzoni, 2006) used herein, was adopted and explained in other international works (Lavadera et al., 2011; Mazzoni et al., 2015; Mazzoni & Lubrano Lavadera, 2013). Fivaz-Depeursinge supervised the modifications of the task and the coding system proposed and manualized by Malagoli Togliatti and Mazzoni (2006). The coding scheme comprises 4 scales, each defining an observational variable measured for each individual and for each phase and graded on a 3 point Likert scale (0 = dysfunctional, 1 = partially functional; 2 = functional). The two judges are required to define the presence - based on the

frequency and duration - or the absence of some behavioral indicators (i.e. a given behavior during the activity) in order to assign a score to each functional level: participation, organization, shared attention and emotional contact.

Participation is the ability to get involved in the same interactive space, getting in touch with the other family members (McHale, Kuersten Hogan, & Lauretti, 2001). It indicates the inclusion or the exclusion of a member of the triad in the interaction and is assessed by observing how the participant places his body in the interactive field, in particular, if he/she sits correctly and if he/she orients his/her body to other family members and the task. Participation represents the simplest function to be achieved and the lowest step to establish collaboration, which have to remain stable throughout the interaction time, because without an adequate physical orientation and closeness it is not possible for the participant to interact and play with the other family members.

Organization is the capacity of each participant to play a role coherent with the different parts of the play: the roles played by each parent and the daughter have to be different according to the different phases. When a parent is in the active position, he/she should help his/her daughter in the activity providing suggestions and supporting and encouraging the girl's proposals. When a participant is in the observer position, he/she should take up this role quickly, remain involved in the interaction, demonstrating his/her support for the partner without trying to replace him/her, and repairing any errors or deficiencies of the other parent. In the first two parts, the daughter should work together with the active parent, proposing initiatives but also being able to be guided to the target. In the third part, the three members should coordinate and alternate without competing with each other, proposing initiatives that facilitate the inclusion of all members in the current play. In the last

phase, the parents must be able to leave a certain autonomy of action to their daughter and to interact with each other as a couple; the daughter must be able to accept this exclusion and continue the assigned task alone. This functional level (organization) evaluates also the participants' coherence to the subsystem to which they belong: since parents represent the structuring system and the daughter the evolutive subsystem, they are expected to play differently.

Shared attention assesses the ability to reach and maintain a joint attentive focus, shared by the triad during the play, which allows to communicate meanings and affections and to co-construct a common narrative plot during the whole play. The shared attention is achieved when each of the participants (regardless of the role played in a specific phase) pays attention to the interactive elements, to the ongoing activities and to the actions of the other participants, sharing meanings with each other by mean of looks, gestures and words. A participant gets a functional score if he/she watches the game and the other participants, speaks about the game and its plot, follows the play goal agreeing with the other family members. The coherence among gazes, actions and verbalization is crucial in achieving a functional focalization.

The emotional contact is the more complex functional level, which implies the emotional sharing, the reciprocity and communion of affections (McHale et al., 2001). It is evaluated observing the affective tone shown during the triadic play: ways of looking, physical contact, verbal communication of affections and reinforcements within the triad. It is expected that the individual smiles spontaneously, makes jokes and laughs at others' jokes, he/her should may express approval and praise for the initiatives proposed, showing complicity with the partner. In short, if each participant

is able to have fun in an authentic and shared way, a good affective contact is achieved.

This coding system allows having a score for each family member and for each functional level in each part of the play, a combined family score for each functional level and for each part and finally a global score of family functioning. The global score of the family is the sum of the overall scores for each family member and represents a dimensional assessment of the triadic coordination that ranges from 0 (absent coordination) to 40 (maximum coordination). The cut-off to distinguish the families into categories of different alliances are: 0 to 23 for low coordination families and 24 to 40 for those families with a high coordination. According to the Lausanne Group, the family alliance construct indicates the quality of the coordination expressed by the family while sharing the play experience and while trying to reach a common goal. The family alliance may be a valuable index of the triadic functioning, basing on the assumption that functional or dysfunctional triadic dynamics exhibited during daily life may be observed also during the experimental situation of the videotaped play. In particular 4 types of family alliances were distinguished based on the global coordination exhibited:

- disturbed (global score 0-16): the family cannot carry out the task of the play because the roles are not well defined and undergo continuous interference. The game pieces are confused and overlapping, generating a continuous tension and ambiguity or even the exclusion of a member of the triad. The emotional climate is negative, although it may present a “false-positivity”;

- collusive (global score 17-23): there is a division of the parental subunit; these families fail to achieve the goal of the game and to share fun. The difficulty of the parental subsystem to provide help and guidance to the child or of the child to

accept the "guidance" of the parents is clear. Competition between parents is present and can become evident. The emotional climate is crossed by a constant tension repaired and often hidden by an apparent serenity;

- in tension (global score 24-32): the family plays together, but encounters obstacles that create "tension" in the emotional climate, otherwise serene. The co-parenting coordination in some moments of the game is lost, threatening the emotional sharing. Despite these ups and downs the parents try to repair the wrong coordinations, restoring a cooperative atmosphere;

- collaborative (global score 33-40): it is observed in families that show a good level of cooperation and coordination. The family plays together as a team, reaching the established goal of affective sharing. Parents work together and coordinate to facilitate the child; in the case of "missteps", the parental subsystem manages to repair effectively.

The inter-rater reliability between the two judges' scores was evaluated for the overall score and for every single dimension, using Cohen's K coefficient. The reliability estimates proved to be much higher than the recommended threshold value of .60 concerning the total and the single dimensions, ranging from .70 to 1. As regards the alliances categories, the agreement between the two judges reached the score of 1, indicating a perfect agreement.

4.2.4 Analyses

A log-linear model approach for categorical variables was applied in order to analyze the families of adolescents with anorexia nervosa and compare them with the control ones (Agresti, 2002). Modeling the data on the basis of the log-linear

analysis allows to estimate parameters which describe and evidence the significant interactions between variables measured by the LTP and the two groups, the research group of families of adolescents with anorexia (AN), and the control group of families of adolescents with anxiety or depression (CTR). Moreover it allows the analysis of the relations of each family member, father, mother and daughter, with all the LTP variables between the two groups of families. The use of log-linear models for categorical data in psychological research has been consistently used in existing literature (e.g. Mannarini et al., 2016).

The analyses were performed by means of bidimensional contingency tables; interaction parameters and standard errors were estimated in order to calculate a standard score for each interaction. Estimated parameters are presented in Tables 2-5, with statistically significant values evidenced by the corresponding probability errors (* $p < .05$, ** $p < .01$, *** $p < .001$, tendency $^{\circ}.05 < p < .07$).

In order to evaluate the quality of the coordination expressed by the families during the play, the four alliance categories (namely disturbed, collusive, in tension, collaborative) were analyzed comparing the two family groups (Table 4.2). For each play functional level (participation, organization, shared attention, affective contact), and in each part of the play (phases 1, 2, 3, 4), three categories of the family functioning (dysfunctional, partially functional and functional)- which are represented by either a whole family functioning or by the contribution of a single family member (father, mother, daughter) - were analyzed in relation to the two family groups (AN, CTR) (Tables 4.3, 4.4, 4.5).

4.3 Results

Table 4.2

Log-linear estimated parameters to compare the two families groups (AN and CTR) in relation to four Alliances Categories (disturbed, collusive, in tension, collaborative)

Alliances Category	AN	CTR
Disturbed	0.63	-0.63
Collusive	1.44**	-1.44**
In tension	-0.54°	0.54°
Collaborative	-1.53**	1.53**

Note: AN: Families of adolescents with anorexia, CTR: Control families

°. $05 < p < .07$, * $p < .05$, ** $p < .01$.

Considering the Alliances categories (Table 4.2), the families of adolescents with anorexia seem to present collusive alliances significantly more than the control families during the LTP play; on the other hand, a high coordination (corresponding to the “in tension” alliances and the collaborative alliances) was more frequently seen in the control families

Table 4.3

Organization. Log-linear estimated parameters to compare the two family groups (whole family and family members' contribution) in relation to three family functioning categories in phase 3 and phase 4 of the play

<i>Phase 3</i>	AN	CTR	AN-F	CTR-F	AN-M	CTR-M	AN-D	CTR-D
Dysfunctional	1.07**	-1.07**	0.71	-0.71	0.83*	-0.83*	0.69	-0.69
Partially functional	-0.02	0.02	0.18	-0.18	0.18	-0.18	-0.17	0.17
Functional	-1.05**	1.05**	-0.89**	0.89**	-1.01***	1.01***	-0.52*	0.52*
<i>Phase 4</i>	AN	CTR	AN-F	CTR-F	AN-M	CTR-M	AN-D	CTR-D
Dysfunctional	0.92**	-0.92**	1.09**	-1.09**	1.06**	-1.06**	0.62*	-0.62*
Partially functional	-0.38	0.38	-0.32	0.32	-0.34	0.34	-0.13	0.13
Functional	-0.54*	0.54*	-0.77**	0.77**	-0.72**	0.72**	-0.49*	0.49*

Note: AN: Families of adolescents with anorexia, CTR: Control families

AN-F : Anorexia-Father, CTR-F :Control- Father, AN-M :Anorexia -Mother,

CTR-M : Control -Mother, AN-D : Anorexia-Daughter, CTR-D : Control-Daughter.

Phase 3– Parents and daughter interact as a triad

Phase 4 - Parents interact and converse with each other , without involving the daughter

*p < .05, **p < .01.

Table 4.3 provides the significant results concerning the Organization functional level within the family; interpretable data were found as regard Phase 3 and Phase 4. In the dysfunctional category of Phase 3 a positive significant association is observed in relation to the families of adolescents with anorexia, evidencing the problematic interaction within the triad; conversely a positive significant association is observed in relation to the control group families as regards the functional category, showing that in these families the organization of the roles within the triad is coherent. More accurate analyses regarding the role of each member in the families evidence that all the three members (father, mother and daughter) are better organized while interacting within the triad in the control families. Like in Phase 3, the control parents seem to be able to positively interact with each other, also when the daughter is not involved in the conversation (Phase 4); their interactive dynamic is in fact maintained at a functional level, whereas the interaction of the parents of the daughter with anorexia nervosa becomes dysfunctional.

Table 4.4

Affective contact. Log-linear estimated parameters to compare the two family groups (whole family and family members' contribution) in relation to three family functioning categories in phase 3 and phase 4 of the play

<i>Phase 3</i>	AN	CTR	AN-F	CTR-F	AN-M	CTR-M	AN-D	CTR-D
Dysfunctional	0.98*	-0.98*	0.65	-0.65	0.63	-0.63	0.81	-0.81
Partially functional	-0.02	0.02	-0.05	0.05	-0.14	0.14	-0.10	0.10

Functional	-0.96*	0.96*	-0.60*	0.60*	-0.49	-0.49	-0.71*	0.71*
<hr/>								
<i>Phase 4</i>	AN	CTR	AN-F	CTR-F	AN-M	CTR-M	AN-D	CTR-D
Dysfunctional	1.14*	-1.14*	0.92*	-0.92*	0.94*	-0.94*	0.73	-0.73
Partially functional	-0.11	0.11	-0.07	0.07	0.33	-0.33	-0.27	0.27
Functional	-1.03*	1.03*	-0.85**	0.85**	-1.27**	1.27**	-0.46	0.46
<hr/>								

Note: AN: Families of adolescents with anorexia, CTR: Control families

AN-F : Anorexia-Father anorexia, CTR-F :Control- Father, AN-M :Anorexia -Mother, CTR-M : Control -Mother, AN-D : Anorexia-Daughter, CTR-D : Control-Daughter.

Phase 3– Parents and daughter interact as a triad

Phase 4 - Parents interact and converse with each other , without involving the daughter

*p < .05, **p < .01.

Table 4.4 shows the estimated values of the log-linear analysis between the two family groups and the functional levels of the emotional contact regarding Phases 3 and 4. As far as emotional contact is concerned for both phases, families of adolescents with anorexia seem to be more dysfunctional; in particular in phase 3, emotional sharing and affective reciprocity seem to be more appropriate for the control group fathers and daughters; in phase 4, the affective contact of fathers and mothers belonging to the research group is significantly more dysfunctional.

Table 4.5

Shared attention. Log-linear estimated parameters to compare the two family groups (whole family and family members' contribution) in relation to three family functioning categories in phase 1 and phase 3 of the play

<i>Phase 1</i>	AN	CTR	AN-F	CTR-F	AN-M	CTR-M	AN-D	CTR-D
Dysfunctional	0.44	-0.44	0.32	-0.32	-0.02	0.02	0.01	-0.01
Partially functional	0.09	-0.09	0.14	-0.14	0.47	-0.47	0.18	-0.18
Functional	-0.53*	0.53*	-0.46°	0.46°	-0.45	0.45	-0.19	0.19

<i>Phase 3</i>	AN	CTR	AN-F	CTR-F	AN-M	CTR-M	AN-D	CTR-D
Dysfunctional	0.72°	-0.72°	0.56	-0.56	0.57	-0.57	0.71	-0.71
Partially functional	-0.25	0.25	0.08	-0.08	0.02	-0.02	0.16	-0.16
Functional	-0.47°	0.47°	-0.64*	0.64*	-0.59*	0.59*	-0.55*	0.55*

Note: AN: Families of adolescents with anorexia, CTR: Control families

AN-F: Anorexia-Father, CTR-F: Control- Father, AN-M: Anorexia -Mother,

CTR-M: Control -Mother, AN-D: Anorexia-Daughter, CTR-D: Control-Daughter.

Phase 1- One parent (mother in this table) is asked to interact with the daughter, while the other parent is simply present

Phase 3 - Parents and daughter interact as a triad

°. $05 < p < .07$, * $p < .05$.

Considering the shared attention functional level, significant results are observed in Phases 1 and 3 of the play (see Table 4.5). In these phases, appropriate joint attention is achieved more often by the control families: as to Phase 3, the contribution of each member of the control family is relevant; as to phase 1, we observed only a tendency towards a significant positive association between daughters of the control group and a functional category of shared attention.

4.4 Discussion

The results showed different interactive patterns in the families of patients with anorexia, compared to families of patients with other psychopathological disorders. The overall triadic coordination exhibited by the families of adolescents with anorexia was significantly lower than that of the families from the control group. It is worth noting that the low coordination alliances, in particular the collusive ones, were characteristic of the families of patients with anorexia, that were mostly judged to have dysfunctional family alliances. Vice versa the two alliances included in the functional polarity, i.e. the cooperatives and in tension ones, were significantly more represented in the families of patients with emotional symptoms. The families of girls with anorexia, often categorized as collusive during the LTP play, failed to achieve the goal of the play and to share fun and pleasure. The collusive alliances are characterized by great difficulty on the part of the parental subsystem in providing help and guidance to the child and/or on the part of the child in accepting the parents' guidance (Malagoli Togliatti & Mazzoni, 2006). These families often exhibited a division within the parental subunit, along with a competitive climate between parents, which can be either manifested or hidden by an apparent serenity.

This second case may remind the environment described by Jeammet (2010) where the aggressiveness, denied or cut off within the family, can not be used by the daughter in order to organize the inner process of separation from parents and complete the adolescent individuation process. In particular within the triads of the research group, the quality of interaction decayed in the third phase where families were required to display a greater triangular coordination. The parental subsystem experienced difficulties in maintaining a structuring role in relation to the daughter's initiatives, providing her help, support and guidance; adolescents with anorexia in turn struggled in showing independent proposals and in developing personal projects and ideas. Moreover the fourth phase of the LTP showed major difficulties on the parents' part to carve out a couple-specific relational space.

Along with the total family score, the LTP functional levels of organization, shared attention and emotional contact were significantly poorer in families of adolescents with anorexia. If the participation in the play was somehow guaranteed to every participant within the families of patients with anorexia as well as within the families of patients suffering from other disorders, the organization of roles was instead significantly deficient in the former families. The participants from the families of girls with anorexia did not comply with their role, especially in the third and in the fourth phase; all three members of the family had difficulties in establishing triangular interaction, failing to coordinate with each other during the third phase. Although the attempts of the daughters with anorexia to include both parents and to establish an alternation between them were sometimes observable, the division within the parental couple made often it impossible for parents to respect each other's initiatives and to achieve a triangulation. The daughters with anorexia nervosa as well as their mothers and fathers scored lower in the organization of the roles, both

in the third and in the fourth phases. The daughter in fact was always included in the interaction, also when the parents were asked to continue to interact with each other, letting the daughter be simply present in a third-part position (fourth phase). In some cases it even seemed as if she was assigned the task of managing the relationship between the parents.

Similarly to our results, different studies, conducted using the LTP (Fivaz-Depeursinge & Favez, 2006; Fivaz-Depeursinge et al., 2007) have shown that sometimes children need to use their triangular and communicative abilities in order to relieve the tension within the conflicting parental couple. When a dyadic coalition is produced, the boundaries between generations appear to be unclear and the child tends to use his communicative capacities more to meet parental needs than to support his own needs and psychological development (Fivaz-Depeursinge et al., 2007; Fivaz-Depeursinge et al., 2009). With the necessary modifications due to the adolescent phase, this reference to the infant age may probably help to explain why the girls with anorexia have significantly higher difficulties in meeting their role, in line with their parents. The young daughter in fact may be included in the complex dynamics created by the parental couple to such an extent that it is not impossible that family difficulties find a voice also in the daughter's symptom (Minuchin et al., 1975, 1978; Schor & American Academy of Pediatrics Task Force on the Family; 2003). Nevertheless, it is at the same time undoubtedly true that the adolescent's life-threatening condition may represent a traumatic factor for the parents, that often seem to be compelled to focus exclusively on the daughter's condition, in a desperate attempt to avert the worst. Moreover, besides being a life-threatening condition, anorexia nervosa is also a chronic illness characterized by the resistance on the part of the adolescent to take part in a therapeutic process. Thus the constant

involvement of the parents in the treatment is often necessary in order to maintain the adolescent's adherence to the therapeutic plan.

Shared attention is lower in families of daughter with anorexia in the first as well as in the third phase, because of the specific difficulty in maintaining a triangulation and in including a third individual in it. The interaction was in fact often maintained at a dual level, where the third part is excluded from the attentional space. In the majority of the cases this implies that the mother and the daughter did not pay attention to the father when he was in the role of participant observer, as if he did not exist in the interactive space (first phase). The father in turn did not pay any attention to what was happening between the mother and the daughter during their dyadic interaction and isolated himself, undertaking different lonely activities (i.e. writing messages, answering the phone, checking the agenda etc.). It is worth hypothesizing that the relationship needs to be kept on a dyadic level from which one of the family members has to be excluded, the triangulation seems still unmanageable as if there were a lack of a transitional space, a third term between the self and the other (Giannakoulas & Fizzarotti Selvaggi, 2004). In this phase the father's contribution was predominant in producing the attentional dysfunction of the whole family. The fathers of patients with anorexia obtained in fact a significantly lower score in the shared attention, while the scores achieved by the mothers and the daughters were substantially comparable to those of the control group. This finding points to a major role for fathers in the complex relational dynamics of the triad and of the whole family of the patients with anorexia. The exclusion of the father may in fact represent a risk factor for the daughter's psychopathology while his participation may be considered a protective factor in the adolescent's development, in line with the studies that indicate that the fathers' involvement in the child care

produces well-being with permanent effects (Gottman, 1997; Lamb, 2010). Despite the finding that the role of the fathers is often unrecognized in favor of an exclusive concentration on the relationship of the mother and her daughter, some pioneering findings have shown that the paternal involvement in the treatment is crucial in gaining a positive outcome in anorexia nervosa (Couturier et al., 2013; Godart et al., 2012; Hay et al., 2014; Horesh et al., 2015). On the contrary a defensive and fleeing paternal response to the daughter's severe pathology can trigger a vicious circle and therefor probably prejudice the patient's evolution. This paternal tendency may therefore be a crucial aspect to be targeted and modified within a treatment specifically designed for the families of patients with anorexia.

In the third phase of the LTP play, all the three components of the families of patients with anorexia contributed equally to the attentive dysfunctions. It was very difficult to achieve the co-construction of a shared narrative plot, which was instead interrupted and restarted every time that a new phase started. Some families for example interpreted the goal of the play as if participants were asked to organize two different weekends, the mother's one and the father's one, and the daughter was called to choose the best in the third phase. In these cases the fourth phase was usually not even carried out, showing impossibility on the parents' part to carve out a couple-specific relational space. Although with significant differences between the single families, it is worth noticing that in general the acceptance of the adolescent separation seems to challenge the families of adolescents with anorexia. This can be easily understood bearing in mind the daughter's alarming and life-threatening condition, which is likely to absorb completely the parents' attentions. Another possible hypothesis entails the potential confusing trans-generational dynamics in a family constellation where individual spaces may be overlapping with each other and

generations interweave through mutual projections and identifications (Giannakoulas & Fizzarotti Selvaggi, 2004).

The results also showed that families of patients with anorexia have greater difficulties in sharing positive emotions, although the sometimes-apparent serene façade. In the third and in the fourth phases, a constant tension, unrepaired, traversed the affective climate, to such an extent that the families often failed to achieve the shared goal of the play and to have fun together. In the third phase the difficulty was mainly on the fathers' and on the daughters' part: unlike the mothers, they scored in fact lower than the controls in the emotional contact. The father-daughter couple appeared to be oriented on a similar tepid affective polarity, while the mother often expressed feelings more directly and maintained different emotional characteristics, as shown in a previous study (Balottin Nacinovich, Bomba, & Mannarini, 2014). During the third phase of the LTP in fact the affective quality of the interaction was compromised by the father's and the daughter's difficulty to keep in touch with each other and spontaneously share affects. This is in line with the findings of other studies conducted on different samples of female adolescents with anorexia, where fathers were shown to have a pivotal role in the potential emotional deficits of families with daughter with anorexia (Balottin et al., 2014; Duclos et al., 2014). The paternal emotional absence or coldness (for example in the case of an alexithymic father) may represent a defensive reaction in front of the daughter's illness but it in turn entails less affective connection and consequently may affect the quality of family interactions and the daughter's outcome. On the other hand fostering paternal warmth and participation may improve the family relations (Duclos et al., 2014; Godart et al., 2012).

During the fourth phase it is the parental couple to have more difficulties in managing the task of the play. Parents showed high degrees of tension, competitiveness and conflicts, which often made it impossible for them to speak with each other, without the daughter's intervention, and sometimes, even, perform the fourth phase. The parental conflict, manifested in these specific difficult circumstances, seems to negatively impact not only on the partners but on the family and the daughters as well. In general, concerning the affective quality, a potentially strong continuity between the couple and the triadic relation, including the offspring, has been shown (Kitzmann, 2000). It is not only the influence of each parent separately that would provide a matrix for the daughter's emotional development but also, and even more significantly, the affective regulation of the parental couple, as expressed in the complex relational dynamics of the triad (Gatta et al., 2016; Kooiman et al., 2004). In the case of one parent's emotional involvement perceived as insufficient or negative, the offspring appeared to be protected from developing by the perception of an optimal emotional participation of the other parent (Kooiman et al., 2004). Nevertheless, an offspring's maladaptive affective regulation could be learned within a parental and family climate where feelings went often unrecognized or set aside and emotions were experienced and expressed confusedly. Evaluating the couple relationship, starting from the conflicts and distress, can therefore prove to be useful in order to better understand the functioning of the whole family and therefore plan treatments, tailored for the patient as well as for the family needs (Gatta et al., 2009; 2011; Mannarini, Balottin, Munari, & Gatta 2016). On the other hand, A relationship in which emotions and thoughts are shared within the attachment relationship (Mannarini & Boffo, 2014) with the father as well as with the mother is able to facilitate the development of an adaptive affective regulation and a

rich inner emotional life in the offspring (Taylor et al., 1997), thus enhancing the possibility of recovery of the daughter with anorexia.

Comparing families of patients with anorexia with families of patients suffering from emotional disorders (anxiety and depression), rather than families with adolescent girls belonging to the general population, helped highlighting the former families' characteristics, which are not simply explained by the general familial difficulties due to a daughter's psychiatric disorder, regardless of the specific disorder studied. However one of the major limitations of the study lies in the difference between the two family groups studied. In fact the two groups are different not only concerning the respective disorder investigated but probably also for what concerns the perceived severity of the disorder, especially for what concerns the physical consequences. Anorexia Nervosa is a far more invalidating disorder than depression and anxiety, having a higher rate of life-endangering physical symptoms, not to mention that unlike the family of individuals with depression and anxiety, the family of individuals with anorexia nervosa has to deal with the more intense resistance of the adolescent to adhere to a therapeutic treatment and to accept the parental involvement. Subsequent studies may partially overcome this limitation by exploring the potential influence of the subjective severity of the respective disorder, as evaluated by each family member, on the triadic family functioning. Moreover the characteristics belonging to families of adolescents with anorexia might be better clarified by using more than a unique control group in subsequent studies. In addition to the control groups formed by families of adolescents with a different psychiatric disorders, future studies may include a control group of families of adolescents from the general population and a control group comprising families of daughters with a

body physical syndrome linked to a medical condition (e.g. functional hypothalamic amenorrhea or medical gastrointestinal disorder).

4.4.1 Clinical implications

The findings of the present study suggest that studying the triadic interactions can prove to be helpful in choosing the most suitable therapeutic approach, tailored to each patient's and to each family's needs, both in the case of anxiety or depression and in the case of anorexia (Gatta et al., 2012; Mannarini et al., 2013). The most recent literature emphasize that the involvement of the parental couple and of the whole family cannot be disregarded in treating adolescents with eating disorders (APA, 2006; Espie & Eisler, 2015; Hay et al., 2014; Herpertz-Dahlmann et al., 2015; Lock et al., 2015; NIHCE, 2004). Shedding light on the potentially dysfunctional interactive dynamics within the parental couple and within the triad, the LTP observational procedure might be valuable in assessing whether, in a specific moment, it is possible to constructively engage the family in the treatment of the patient with anorexia. This is a mandatory step in order to avoid a failure of the family treatment, caused primarily by an inappropriate or premature therapeutic choice. Although being the therapeutic first choice, in fact, the familial approach is not always effective, especially in the cases where it is not possible to constructively involve the family in the treatment (Espie & Eisler, 2015; Herpertz-Dahlmann et al., 2015). On the other hand if the family relationships are too dysfunctional, the individual psychotherapy can achieve only partial results.

At the same time the observation of the triadic relations may help to orient the therapeutic work on the most important aspects to be changed at the family level. In

line with the current literature (Duclos et al., 2014; Godart et al., 2012), the results of our study support the need to tackle the emotional contact and the reciprocal affective communication among family components, and to improve the father's participation in the treatment. Paternal involvement and warmth proves in fact to be fundamental for the outcome and those fathers who tend to slip away and remain excluded emotionally and concretely need to be encouraged and supported (Couturier et al., 2013; Godart et al., 2012; Hay et al., 2014; Horesh et al., 2015). Subsequent studies will therefore explore if the LTP can really help clinicians to better recognize the intra-familial dynamics that are worth modifying, possibly offering an additional key for a more successful treatment in adolescents with anorexia (Godart et al., 2012).

Chapter 5

General conclusions

5.1 General conclusions

Despite the fact that the onset of anorexia nervosa takes place at an increasingly earlier age and that the prevalence of the disorder in adolescence is growing, research studies regarding this specific age range are still scarce (Herpertz-Dahlmann et al., 2015; Epsie & Eisler, 2015). And yet, the 40% of new cases of anorexia have their onset between the ages of 15 and 19 (Smink et al., 2012; Micali et al., 2013), an age range which, however, also features the highest recovery rates (Ackard et al., 2014). Treating this serious and potentially deadly psychopathology in a timely and effective manner can therefore be crucial (Vall & Wade, 2015) and research in this field can substantially increase the range of available interventions and the effectiveness of their application in different clinical situations.

Although it is well known that family treatments have proved to be very effective in dealing with this psychopathology, the functioning mechanisms of such therapies and the specific family dynamics which the treatment should more fruitfully address are still potentially fertile areas that need to be explored for research in this field (Wallin & Kronvall, 2002). The general conviction is that the studies analyzing the family dynamics that are present in a specific period of time in the families of patients with anorexia nervosa cannot aspire to make any aetiological inferences and that, therefore, the issue of pathogenesis is beyond their goals (Holtom-Visel & Allan, 2014; Zachrisson & Skårderud, 2010). However, assessing and describing the functioning of patients suffering from restricting type anorexia within their families may potentially be the primary objective of the studies since it can be helpful, and indeed indispensable, in order to establish what are the most valid therapeutic measures that need to be activated.

The three studies presented in this thesis are indeed an attempt to grasp and analyze, with different, complementary methodologies, some aspects of family functioning which have remained almost unexplored for what concerns adolescent patients. In fact, research studies seem to be particularly limited (Herpertz-Dahlmann et al., 2015) in the case of the extremely important and crucial developmental stage of adolescence, the elective age for the onset of this psychopathology whose outcome can potentially be very serious for later period in a person's life (Ackard et al., 2014; Steinhausen, 2009; Epsie & Eisler, 2015), leaving unexplored many aspects which might be quite helpful in the treatment of patients. It is not a coincidence that family treatment – a frontline treatment recommended by international guidelines – is particularly effective for adolescent patients with a recent pathological onset (Le Grange et al., 2010; Le Grange et al., 2012; Lock, 2011). The examination of family dynamics seems therefore to be the priority for the treatment of adolescent patients who are still living with their families.

The first study of the thesis examines the perception of parental bonding (Parker et al., 1979) on the part of adolescent patients with restricting type anorexia and their parents, attempting to assess the possible continuity and influence of different attachment styles between generations (parents to their own parents – children to their parents) within the patients' families (Canetti et al., 2008; Ringer & Crittenden, 2007; Ward et al., 2001). Indeed, the attachment theoretical model indicates the mutual influence of parental styles and of attachment throughout three generations (grandparents, parents and children). Within a psychodynamic reading of family relationship, a deeper understanding of the place that a child occupies in the mind of her/his parents and in their internal world may be impossible without also going back to the representation of the parents' relationship with their own parents

(Jeammet, 2004, 2010). Moreover, scholars of different theoretical backgrounds, who mainly follow systemic or psychoanalytic theories on anorexia, have noticed in the families of adolescents with anorexia the presence of relationships that are often marked by a noticeable enmeshment and a certain confusion of one another's roles, something that frequently leads to a veritable transgression of generational boundaries (Jeammet, 2004; Kestemberg et al., 1972; Minuchin et al., 1975, 1978; Selvini Palazzoli, 1989; Wallin & Hansson, 1999; Wallin & Kronvall, 2002). And yet, research studies on the potential transgenerational transmission of parental bonding and attachment representations are still very limited (Pace et al., 2015). Moreover, there is no evidence regarding the families of adolescent patients, who are indeed the only patients with eating disorders to experience the relationship with their parents as quite positive, as shown by the results of this study as well as by those of the two previous research studies on patients with restricting type anorexia of this specific age range (Russell et al., 1992; Di Pentima et al., 1998).

This first study presented in this thesis, instead, shows interesting results for what concerns the patients' parents, who remember more dysfunctional relationships with their own parents, compared to the parents of the control group, both in terms of lesser affective participation and of excessive maternal protection. This, on one hand, might support the argument that the results obtained from adolescents with restricting type anorexia in self-report questionnaires could be invalidated by scarce awareness and possible denial on the part of the patients themselves (Lock et al., 2015; Russell et al., 1992; Di Pentima et al., 1998). On the other hand, the specificities expressed by the patients' parents regarding the perception of the bonding with their own parents raise the issue of how the models of parental attachment can influence the relationship with the children itself and can therefore

become the possible target of an intervention aimed at changing, for the better, the relationships within the families of patients with anorexia. Theoretical and research studies (Taylor et al., 1997; Keating et al., 2013; Tasca et al., 2009) are in fact in agreement when they show how attachment representations are closely linked to the quality of affect regulation, which is investigated in the second of the studies presented in this thesis. An insecure attachment, characterized, for example, by unresolved loss, can be associated with an alexithymic type of difficulty in understanding, expressing and working through one's emotions: these aspects together are an important risk factor for the relationship between a mother and a daughter with anorexia (Pace et al., 2015; Ringer & Crittenden, 2007; Ward et al., 2001), or better, between both parents and their daughter. Even if it has not been sufficiently researched, the relationship between a father and his child seems to be equally important as the maternal one, both as a risk factor and as a facilitating factor for treatment of anorexia (Couturier et al., 2013; Horesh et al., 2015). This is also in line with the results of the first research study of the thesis, which has found that in the patients' families there is a more negative perception of the bonding on the paternal side.

On the other hand, the cross-sectional design of the present study does not allow clarifying whether these parents' negative perceptions of their own parental bonding precede the daughters' illness, or whether these are the consequence of the latter. Current relationships and subsequent experiences can indeed influence past memories and representations, particularly in the case of extremely traumatic experiences, like, for the parents, the diagnosis of their daughter's anorexia, with the concrete danger for her life that it often entails (Duclos et al., 2014; Tetley et al., 2014). This consideration takes into account the importance of investigating the

internal perceptions of both parents and daughters, dismissing the sterile and probably unsolvable controversy on what are the causes and what are the consequences (Holtom-Visel & Allan, 2014; Tetley et al., 2014; Zachrisson & Skårderud, 2010). From the therapeutic point of view, the consideration of the mutual connection between internal representations (i.e. parental bonding and representations of attachment) and actual relationships and interactions indeed provides two important entry points to therapeutic work with families. If, on one hand, the work on representations can favor the modification of parental behavior and of real interactions between the parents and their ill daughters, on the other hand it is also true that direct work on the concrete relationships taking place between parents and children can also modify the internal representations of such relationships.

Therefore it was interesting to analyze not only the internal representations of family bonds, but also the interactions occurring between parents and daughters (the third study presented in this thesis) and the regulation of emotions within the family (second study), which might act as a link between these two dimensions – the internal world of representations and the external reality of interactions (Jeammet, 2004). The representations of attachment bonds are indeed closely connected with the more or less functional regulation of affects and with the concretely acted parental behaviors (Tasca et al., 2009).

The second study analyzed in this thesis investigates the possible peculiarities of the psychic functioning of family members of patients with anorexia in relation to the quality of the perception and contact with their emotional internal world, making use of the alexithymia construct. In this case, it was deemed more appropriate not to simply limit the work to the investigation of the internal perceptions of patients and parents based on their subjective emotional experience, expressed

by means of self-report questionnaires, but also to resort to an external clinical assessment by means of a structured interview which was specifically designed to assess alexithymia: the Toronto Structured Interview for Alexithymia (TSIA) (Bagby et al., 2006). Alexithymia is a specific deficit in affect regulation which implies a specific difficulty in identifying, processing and verbally describing emotions, often accompanied with a limited imaginative and phantasmatic capacity (Taylor et al., 1997). Deficits of an alexithymic nature have been frequently detected in patients with anorexia and are a factor for the persistence of the disorder (Coutry et al., 2015). However, the literature data on adolescent and their parents is scarce and contradictory.

The study presented in this thesis is indeed the first research which has used a multimethod assessment (self-reports along with clinical interviews), to investigate alexithymia in the family, considering mother, father and daughter with anorexia not only as isolated individuals but also as members of an interconnected triad, with peculiar modalities of experiencing and communicating their feelings. Possibly, the most surprising finding was indeed the polarization of the family members regarding their way of managing and experiencing their feelings, which seems to be diametrically opposed in the parental couple. The patients' fathers often show a marked misunderstanding of their own emotions, which they find difficult to communicate or to use for the construction of emotionally coloured fantasies, preferring instead to remain anchored to reason and to concrete and material reality. On the contrary, the patients' mothers seem to be polarized towards greater receptivity and ability to understand and analyze their own feelings, which might make them feel more excessively involved, even to the point of overwhelming them. This way of managing feelings seems in line with the maternal stories told, during the

attachment interviews, by the mothers of patients with anorexia, who are greatly involved and overwhelmed as they recollect their own unresolved losses (Pace et al., 2015; Ringer & Crittenden, 2007; Ward et al., 2001). This issue was often central not only in the interviews conducted for other studies using the Adult Attachment Interview (Pace et al., 2015; Ward et al., 2001) but also in the assessment interviews for alexithymia carried out for the present study. Daughters with anorexia, instead, have a way of experiencing emotions that is usually closer to that of their fathers, characterized by a substantial distance from their own internal experience, which are often incommunicable and unusable for reasoning on one's own and other people's actions. In line with the data showing how a dismissing type of attachment is often a feature of patients with restricting type anorexia (Ringer & Crittenden, 2007; Zachrisson & Skårderud, 2010), both the first and the second works that are part of this thesis may show how adolescent patients defensively distance themselves from their emotions and experiences, which remain in the background, incomprehensible and silent, replaced by a rational and idealized notion of relationships (e.g. the optimal parental relationships reported by the patients in the first study).

The use of the clinical interview together with a self-report questionnaire has proved to be quite useful particularly in these cases, where the awareness of one's own emotional world is limited or massive and totalizing defense mechanisms hinder its access (Lock et al., 2015; Russel et al., 1992). This indeed seems to be the case not only of patients with anorexia but also of their fathers, who are unable to acknowledge their own emotional difficulties and report them in the questionnaires, where they are clearly spotted by the interviewing clinician. At a family level, therefore, alexithymia seems to be mostly detected by the clinical assessment of the interview, which seems to provide added value in particularly delicate contexts like

those laden with distress and suffering which characterize the families of girls suffering from a psychopathology that might have potentially dramatic consequences. In such circumstances, clinical assessments and observational methods can help to better acknowledge certain aspects of family relationships and of the psychic functioning of family members which they are not always able to fully acknowledge themselves (Gowers & North, 1999).

The third study which is part of this thesis aims at actually exploring the interactive modalities taking place between mother, father and daughter through the use of a semi-standardized observational procedure, the Lausanne Trilogue Play (LTP) (Fivaz-Depeursinge & Corboz-Warnery, 1999), by now widely applied in international literature but still underused in the case of adolescent psychopathology. In this innovative application to the families of patients with restricting type anorexia, the LTP detects some interactive specificities which differentiate them from another family group with daughters suffering from different psychopathologies (mood or anxiety disorders). The roles within the mother-father-daughter triad are not always very clear and defined, and this is particularly the case when all three protagonists in the interaction are asked to use their skills in terms of triangulation and involvement. The relationship seems to be maintained more often at a dual level through the establishment of family coalitions that are sometimes transversal in terms of generational boundaries (Jeammet, 2004, 2010; Kestemberg et al., 1972; Minuchin et al., 1975, Minuchin et al., 1978; Selvini Palazzoli, 1989; Wallin & Hansson, 1999; Wallin & Kronvall, 2002). The father places himself (or is placed) at the margin of the mother-daughter interaction, often excluded from it. This result, once again, highlights the importance of the paternal role in the families of adolescent patients with anorexia, and it is in line with the results of the two previous studies.

Father and daughter, moreover, act on a polarity of greater self-control and emotional detachment than mothers. The modalities of emotional regulation, highlighted in the second study on alexithymia present in this thesis, are in fact markedly different in the patients' mothers and fathers. Moreover, a certain conflictual division of the parental couple can be noticed; the parents are often unable to carve out their own private space in relation to their daughter. Of course, the present observational study cannot clarify whether the daughter intrudes upon the parental relationship in order to try to manage a pre-existing conflictuality (Fivaz-Depeursinge & Favez, 2006; Fivaz-Depeursinge et al., 2007; Fivaz-Depeursinge et al., 2009; Minuchin et al., 1978) or whether her inclusion is due to an understandable, anxious focalization of the parents on the issues of their ill daughter (Tetley et al., 2014). If the first hypothesis is interesting as a reading of anorexia as a malfunction of the emotional-relational area (Jeammet, 2010; Duclos et al., 2014; Godart et al., 2012), also the second hypothesis is equally rich from a therapeutic point of view. Working on the dysfunctional elements of current interactions, whether or not they have been acquired after the onset of the illness, can indeed mobilize family relationships, favoring a positive outcome for the young patient (Wallin & Kronvall, 2002; Godart et al., 2012).

The use of the LTP method, therefore, allows the direct observation of family dynamics, paving the way to the possibility of therapeutic work based on them. On the other hand, however, there is the risk of unduly transforming the results of direct observation into absolute facts, which may be then interpreted to the advantage of aetiopathogenetic readings of anorexia nervosa of relational matrix (e.g. systemic) thanks to the construction of one-directional causal links, which cannot possibly be assessed or ascertained by means of such methods. On the other hand, in such a

complex and articulated field of study – the psychopathology of anorexia nervosa and family relationships – scientific research can only offer limited results, destined to be further enriched, confirmed or disconfirmed.

Often, the studies available in current literature are carried out using also very different methods and observational perspectives (Holtom-Visel & Allan, 2014), each one of which has its limitations, as well as its own wealth. In particular, the first study presented in this thesis adopts the subjective viewpoint of the patients and of their family, investigating the perceptions and representations of their bondings with the parents by means of a self-report questionnaire. The second study, instead, enriches the self-reported assessment of patients and parents regarding the emotional functioning with a clinical evaluation based on a structured interview on alexithymia. This, therefore, makes it possible to highlight the marked discordance between the two typologies of evaluation which has emerged through the comparison between the level of deficit in emotion regulation detected in the clinical assessment and the one that has been reported by the patients themselves and their parents. Thus, keeping in mind the strong limitations of a self-report assessment (Lock et al., 2015) in the context of situations of great emotional impact (i.e. a daughter's illness) or of serious psychopathology, the choice made in the third study was to make use of a direct observational method, able to comprehensively detect the family interactions among mother, father and daughter.

These three studies also feature other methodological differences. The study on alexithymia makes use of an internal comparison of two measuring tools, by means of a Rasch model (Rasch, 1960) which has made it possible to detect the latent level of alexithymia of each individual, excluding the influences of the structure of the questions present in the interview or the questionnaires, and of the external

variables that were not directly linkable to the respondent. This study, therefore, did not resort to the comparison with a group of control families. In the study on the perceived parental bonding, instead, with the aim of detecting the specificities of patients with anorexia and their parents, the families have been compared with a control group consisting of families belonging to the general population, once again using a latent method of analysis, the Latent Class Analysis (Hagenaars & McCutcheon, 2006). Finally, the observational study conducted with the Lausanne Trilogue Play has been enriched by the use of a pathological control group, which featured the presence of adolescents coming to the same child and adolescent services because of other types of psychopathological issues, such as emotional and affective disorders (i.e. anxiety and mood disorders, of depressive type). The comparison with a pathological group helped to attribute the specificities detected in the interactive dynamics of the families of patients with restricting type anorexia to the particular form of pathology examined, rather than to a more generic situation, stressful and burdensome at a relational and family level, which can be detected in the case of any psychiatric pathology that has been diagnosed to the children. Moreover limitations need to be taken into account concerning the restricted samples of patients and parents included in the studies, due to the specific clinical context of research.

These three studies examine aspects – different but closely linked to one another – of the functioning of families of adolescent patients with restricting type anorexia nervosa. The specific interest in the age range of adolescence and in a family approach that sees the parents' role as fundamental is the unifying and innovative element of these three studies, which show their different weak and strong points, as previously mentioned. While the first study analyses the

representations of attachment bonding of patients and parents in a global, family-oriented sense, the second study more specifically focuses on the aspects of emotional regulation within the triad, which is then examined more directly – for what concerns real interactions – in the third observational study, which makes use of LTP. Future, more complex studies might include the simultaneous assessment of all these different aspects, thoroughly investigating their mutual connections. Further contributions might come from the simultaneous use of different evaluation methods and observational viewpoints within the same study, combining the self-reported assessment of patients and their families with clinical interviews and direct observational methods.

Starting from the familial bonding, represented and remembered, and reaching the real interaction, the three researches unanimously show how the study of the triad and of the family can provide a great deal more to what can be detected at an individual level, simply considering the ill adolescent in an isolated manner. In the first study, for example, what is pathological is not the relationship with the parents as perceived by the patient, but rather, the relationship as remembered by the parents, particularly by fathers; this suggests a complex interconnection between different individualities and generations within the family. Again, in the second study, the most interesting aspect is the gap between very different individual functionings in terms of emotion management, and once again the main feature is not the daughters' alexithymia but that of the fathers, who in this are quite different from the mothers. Finally, the study on the overall functioning of the triad offers a glimpse of a three-person relationship (i.e. triangulation) that is difficult to manage, and of the preeminent role of the problems in the parental couple, which can predate or follow the illness.

If it is possible to assume that the daughter's illness can affect the parental self-esteem and self-perception as parents, negatively modifying also the perception of their own parents (as it was assessed in the first study present in this thesis), then it is possible to think that therapeutic work on the ongoing relationships between parents and daughter can positively modify also their representations. In this sense, the use of the LTP observational method might allow us to directly detect the relational dynamics on which later therapeutic work could be focused, and at the same time get important indications on the adequacy of an intervention at a family level in any specific situation. Conversely, if it is true that a parent's self-representation is linked to that of his own parents and can influence the relationship with his own children, it can be assumed that working on the same perceptions and representations in the parents can eventually modify family relationships and therefore help to promote a positive outcome in the pathology of the children. As Jeammet (2004) states, the relationships in the external reality can influence and modify the representations of the internal world, just as internal representations can influence behavior and therefore external relationships, thus providing different entry points for therapeutic interventions.

Couple therapy or psychodynamic counseling for the parental couple (Giannakoulas & Fizzarotti Selvaggi, 2004) can be an example of a type of approach for the modification of internal representations, just like individual psychodynamically oriented treatments for adolescents, such as the adolescent-focused therapy (AFT) (Fitzpatrick et al., 2010) whose effectiveness has by now been proved. Systemic-type therapies (Minuchin et al., 1975; Minuchin et al., 1978; Selvini Palazzoli, 1989), just like other approaches based on behavioral modifications, like the well-known Family Based Therapy (FBT) (Le Grange & Eisler, 2009; Murray & Le Grange,

2014), instead, seem to mostly affect the level of real family interactions occurring in a specific moment, probably later indirectly modifying their representations. Further research studies might then explore the relationship between the family's interactive modalities and the course of the patient's illness, measuring the modifications of family dynamics in relation with the quality of the outcome of the patient with anorexia, following different typologies of treatment based on an individual (e.g. AFT and counseling for the parents) or a family approach, of a more or less behavioral type (FBT vs Family Therapy (FT) according to the psychodynamic model of family relationships of Godart et al. (2012).

In line with the most recent international literature (American Psychiatric Association, 2006; Espie & Eisler, 2015; Hay et al., 2014; Herpertz-Dahlmann et al., 2015; Lock et al., 2015; National Institute for Health and Care Excellence, 2004), the research studies for this thesis suggest how treatment for adolescent patients must not only be timely but also structured and global, without neglecting the role of the parents and particularly of the fathers. The results of the three studies indeed show, from three different perspectives, the overall importance of the contribution of fathers to family relationships. In parallel with the tendency of some of these men to withdraw from a very difficult relationship with their ill daughters, on a concrete (third study) and emotional (second study) level, also many theories and research studies from international literature seem to have long forgotten or neglected the role of fathers in the families of patients with anorexia, focusing exclusively on the maternal role. However, the involvement of fathers in family relationships and in the treatment of their daughters seems to be a precious and irreplaceable element for the patients' cure (Couturier et al., 2013; Godart et al., 2012; Hay et al., 2014; Horesh et al., 2015).

The study of family dynamics can therefore offer a reference point for the specific planning of structured and global models of intervention which cannot neglect the care and support of the patients' parents and their families. Also thanks to the research evidence, such interventions might become more and more focused on the families and on the patients who really need them, on their actual necessities and on the best way of supporting the course of their treatment in view of maximizing the possibility of curing young patients with anorexia, with timely interventions and avoiding, as far as possible, more serious outcomes of the illness.

References

- Ackard, D. M., Fulkerson, J. A., & Neumark-Sztainer, D. (2007). Prevalence and utility of DSM-IV eating disorder diagnostic criteria among youth. *International Journal of Eating Disorders, 40*(5), 409–417. doi: 10.1002/eat.20389
- Ackard, D. M., Richter, S., Egan, A., & Cronemeyer, C. (2014). Poor outcome and death among youth, young adults, and midlife adults with eating disorders: an investigation of risk factors by age at assessment. *International Journal of Eating Disorders, 47*(7), 825–835. doi: 10.1002/eat.22346
- Agresti A. (2002). *Categorical data analysis*. New York: Wiley.
- Ahrén, J. C., Chiesa, F., Af Klinteberg, B., & Koupil, I. (2012). Psychosocial determinants and family background in anorexia nervosa--results from the Stockholm Birth Cohort Study. *International Journal of Eating Disorders, 45*(3), 362–369. doi: 10.1002/eat.20953
- Altenburger, L. E., Schoppe-Sullivan, S. J., Lang, S. N., Bower, D. J., & Kamp Dush, C. M. (2014). Associations between prenatal coparenting behavior and observed coparenting behavior at 9-months postpartum. *Journal of Family Psychology, 28*(4), 495–504. doi: 10.1037/fam0000012
- American Psychiatric Association. (2006). *American Psychiatric Association Practice Guidelines for the Treatment of Psychiatric Disorders: Compendium 2006*. Arlington, VA: American Psychiatric Association.
- American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition*. Arlington, VA: American Psychiatric Association.

- American Psychiatric Association. (2000). *Diagnostic and Statistical Manual of Mental Disorders, 4th edition, Text Revision, (DSM-IV-TR)*. Washington, DC: American Psychiatric Association.
- Andrich, D. A. (1978). Rating formulation for ordered response categories. *Psychometrika*, *43*, 561–573.
- Apter, G., & Palacio-Espasa, F. (2012). Parentalité coupable ou hypercoupable? Telle est la question! [Parenthood, guilty or very guilty? This is the question]. *Enfances & Psy* *57*(4), 36-46. doi: 10.3917/ep.057.0036
- Bär, K. J., de la Cruz, F., Berger, S., Schultz, C. C., & Wagner, G. (2015). Structural and functional differences in the cingulate cortex relate to disease severity in anorexia nervosa. *Journal of Psychiatry & Neuroscience*, *40*(4), 269–279. doi: 10.1503/jpn.140193
- Bagby, R. M., Parker, J. D., & Taylor, G. J. (1994). The twenty-item Toronto Alexithymia Scale-I: Item selection and cross-validation of the factor structure. *Journal of Psychosomatic Research*, *38*(1), 23–32. doi: 10.1016/0022-3999(94)90005-1
- Bagby, R. M., Taylor, G. J., & Parker, J. D. (1994). The Twenty-item Toronto Alexithymia Scale-II: Convergent, discriminant, and concurrent validity. *Journal of Psychosomatic Research*, *38*(1), 33–40.
- Bagby, R. M., Taylor, G. J., Parker, J. D. A., & Dickens, S. E. (2006). The development of the Toronto Structured Interview for Alexithymia: item selection, factor structure, reliability and concurrent validity. *Psychotherapy and Psychosomatics*, *75*(1), 25–39. doi: 10.1159/000089224
- Balottin, L., Nacinovich, R., Bomba, M., & Mannarini, S. (2014). Alexithymia in parents and adolescent anorexic daughters: comparing the responses to TSIA

- and TAS-20 scales. *Neuropsychiatric Disease and Treatment*, 10, 1941–1951. doi: 10.2147/NDT.S67642
- Berger, S.S., Elliott, C., Ranzenhofer, L.M., Shomaker, L.B., Hannallah, L., Field, S.E., . . . Tanofsky-Kraff, M. (2014). Interpersonal problem areas and alexithymia in adolescent girls with loss of control eating. *Comprehensive Psychiatry*, 55(1), 170–178. <http://doi.org/10.1016/j.comppsy.2013.08.005>
- Bernardoni, F., King, J. A., Geisler, D., Stein, E., Jaite, C., Nätsch, D., . . . Ehrlich, S. (2016). Weight restoration therapy rapidly reverses cortical thinning in anorexia nervosa: A longitudinal study. *NeuroImage*, 130, 214–222. doi: 10.1016/j.neuroimage.2016.02.003
- Berthoz, S., Perdereau, F., Godart, N., Corcos, M., & Haviland, M. G. (2007). Observer- and self-rated alexithymia in eating disorder patients: levels and correspondence among three measures. *Journal of Psychosomatic Research*, 62(3), 341–347. doi: 10.1016/j.jpsychores.2006.10.008
- Blundell, J. E., Lawton, C. L., & Halford, J. C. (1995). Serotonin, eating behavior, and fat intake. *Obesity Research*, 3 (Suppl 4), 471S–476S.
- Bowlby, J. (1969). *Attachment and loss: Vol 1. Attachment*. New York, NY: Basic Books.
- Bomba, M., Corbetta, F., Bonini, L., Gambera, A., Tremolizzo, L., Neri, F., & Nacinovich, R. (2014). Psychopathological traits of adolescents with functional hypothalamic amenorrhea: a comparison with anorexia nervosa. *Eating and Weight Disorders*, 19(1), 41–48. doi: 10.1007/s40519-013-0056-5
- Bomba, M., Corbetta, F., Gambera, A., Nicosia, F., Bonini, L., Neri, F., . . . Nacinovich, R. (2014). Heart rate variability in adolescents with functional

- hypothalamic amenorrhea and anorexia nervosa. *Psychiatry Research*, 215(2), 406–409. doi: 10.1016/j.psychres.2013.11.012
- Bomba, M., Riva, A., Veggo, F., Grimaldi, M., Morzenti, S., Neri, F., & Nacinovich, R. (2013). Impact of speed and magnitude of weight loss on the development of brain trophic changes in adolescents with anorexia nervosa: a case control study. *Italian Journal of Pediatrics*, 39, 14. doi: 10.1186/1824-7288-39-14
- Braun, D. L., Sunday, S. R., & Halmi, K. A. (1994). Psychiatric comorbidity in patients with eating disorders. *Psychological Medicine*, 24, 859–867. <http://dx.doi.org/10.1017/S0033291700028956>
- Bressi, C., Taylor, G., Parker, J., Bressi, S., Brambilla, V., Aguglia, E., . . . Invernizzi, G. (1997). Cross validation of the factor structure of the 20-item Toronto Alexithymia Scale: an Italian multicenter study. *Journal of psychosomatic research*, 41, 551-559. doi:10.1016/S0022-3999(96)00228-0
- Bruch, H. (1978). *The golden cage: The enigma of anorexia nervosa*. Cambridge, MA: Harvard University Press.
- Brusset, B. (2004) L'anorexie mentale des adolescentes [Adolescent anorexia nervosa]. In S. Lebovici, R. Diatkine, & M. Soulé (Eds) *Nouveau Traité de psychiatrie de l'enfant et de l'adolescent* . 2nd ed. Paris, FR: Quadrige/Presses Universitaires de France.
- Bulik, C. M., Sullivan, P. F., Fear, J. L., & Pickering, A. (2000). Outcome of anorexia nervosa: eating attitudes, personality, and parental bonding. *International Journal of Eating Disorders*, 28(2), 139–147.
- Bulik, C. M., Sullivan, P. F., Tozzi, F., Furberg, H., Lichtenstein, P., & Pedersen, N. L. (2006). Prevalence, heritability, and prospective risk factors for anorexia nervosa. *Archives of General Psychiatry*, 63(3), 305–312. doi:

10.1001/archpsyc.63.3.305

- Calam, R., Waller, G., Slade, P., & Newton, T. (1990). Eating disorders and perceived relationships with parents. *International Journal of Eating Disorders*, *9*(5), 479-485.
- Canetti, L., Kanyas, K., Lerer, B., Latzer, Y., & Bachar, E. (2008). Anorexia nervosa and parental bonding: the contribution of parent-grandparent relationships to eating disorder psychopathology. *Journal of Clinical Psychology*, *64*(6), 703-716. doi: 10.1002/jclp.20482
- Caretti, V., Porcelli, P., Solano, L., Schimmenti, A., Bagby, R. M., & Taylor, G. J. (2011). Reliability and validity of the Toronto Structured Interview for Alexithymia in a mixed clinical and nonclinical sample from Italy. *Psychiatry Research*, *187*(3), 432–436. doi: 10.1016/j.psychres.2011.02.015
- Carney, J. M. (2009). A demographic and symptom descriptive study of callers to the National Association of Anorexia Nervosa and Associated Disorders: linking research and advocacy. *Eating Disorders*, *17*(4), 293–301. doi: 10.1080/10640260902991137
- Cash, T.F., & Deagle, E.A. (1997). The nature and extent of body-image disturbances in anorexia nervosa and bulimia nervosa: A meta-analysis. *International Journal of Eating Disorders*, *22*, 107-125. doi: 10.1002/(SICI)1098-108X(199709)22:2<107::AID-EAT1>3.0.CO;2-J
- Chiappedi, M., Mensi, M. M., Termine, C., & Balottin, U. (2016). Psychological Therapy in Adolescents with Chronic Daily Headache. *Current Pain & Headache Reports*, *20*(1), 3. doi: 10.1007/s11916-015-0532-x
- Conti, E., Tremolizzo, L., Bomba, M., Uccellini, O., Rossi, M. S., Raggi, M. E., ... Nacinovich, R. (2013). Reduced fasting plasma levels of diazepam-binding

- inhibitor in adolescents with anorexia nervosa. *International Journal of Eating Disorders*, 46(6), 626–629. doi: 10.1002/eat.22129
- Corcos, M., Guilbaud, O., Speranza, M., Paterniti, S., Loas, G., Stephan, P., & Jeammet, P. (2000). Alexithymia and depression in eating disorders. *Psychiatry Research*, 93(3), 263–266. doi: 10.1016/S0165-1781(00)00109-8
- Courty, A., Godart, N., Lalanne, C., & Berthoz, S. (2015). Alexithymia, a compounding factor for eating and social avoidance symptoms in anorexia nervosa. *Comprehensive Psychiatry*, 56, 217–228.
<https://doi.org/10.1016/j.comppsy.2014.09.011>
- Couturier, J., Kimber, M., & Szatmari, P. (2013). Efficacy of family-based treatment for adolescents with eating disorders: a systematic review and meta-analysis. *International Journal of Eating Disorders* 46(1), 3–11. doi: 10.1002/eat.22042
- Crittenden, P. M. (1987). Non-organic failure-to-thrive: Deprivation or distortion? *Infant Mental Health Journal*, 8, 56–64.
- Cubis, J., Lewin, T., & Dawes, F. (1989). Australian adolescents' perceptions of their parents. *Australian and New Zealand Journal of Psychiatry*, 23(1), 35–47.
- Dahlman, K. (1996). Affective capacity in mothers of eating disorders patients. *Dissertation Abstracts International. B, the Sciences and Engineering*, 56(9), 5163–5164.
- Dallos, R. (2004). Attachment narrative therapy: Integrating ideas from narrative and attachment theory in systemic family therapy with eating disorders. *Journal of Family Therapy*, 26(1), 40–65.
- Dancyger, I., Fornari, V., Scionti, L., Wisotsky, W., & Sunday, S. (2005). Do daughters with eating disorders agree with their parents' perception of family

- functioning? *Comprehensive Psychiatry*, 46(2), 135–139. doi:
10.4236/ojn.2012.24059
- De Panfilis, C., Rabbaglio, P., Rossi, C., Zita, G., & Maggini, C. (2003). Body image disturbance, parental bonding and alexithymia in patients with eating disorders. *Psychopathology*, 36 (5), 239-246. doi: 10.1159/000073449
- Di Pentima, L., Magnani, M., Tortolani, D., Montecchi, F., Ardovini, C., & Caputo, G. (1998). Use of the Parental Bonding Instrument to compare interpretations of the parental bond by adolescent girls with restricting and binge/purging anorexia nervosa. *Eating and Weight Disorders*, 3(1), 25–31.
doi:10.1007/BF03339983
- Duclos, J., Dorard, G., Berthoz, S., Curt, F., Faucher, S., Falissard, B., & Godart, N. (2014). Expressed emotion in anorexia nervosa: what is inside the 'black box'? *Comprehensive Psychiatry*, 55(1), 71–79. doi:
10.1016/j.comppsy.2013.10.002
- Ebeling, H., Moilanen, I., Linna, S. L., & Räsänen, E. (2001). Somatic expressed psychological distress and alexithymia in adolescence--reflecting unbearable emotions? *Nordic Journal of Psychiatry*, 55(6), 387–393. doi:
10.1080/08039480152693273
- Espie, J., & Eisler, I. (2015). Focus on anorexia nervosa: modern psychological treatment and guidelines for the adolescent patient. *Adolescent Health, Medicine and Therapeutics*, 6, 9–16. doi: 10.2147/AHMT.S70300
- Espina, A. (2003). Alexithymia in parents of daughters with eating disorders: its relationships with psychopathological and personality variables. *Journal of Psychosomatic Research*, 55(6), 553–560. doi:10.1016/S0022-3999(03)00016-3

- 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. doi: 10.1111/j.1545-5300.2012.01419.x
- Fisher, C. A., Hetrick, S. E., & Rushford, N. (2010). Family therapy for anorexia nervosa. *The Cochrane Database of Systematic Reviews, (4)*, CD004780. doi: 10.1002/14651858.CD004780.pub2
- Fitzpatrick, K. K., Moye, A., Hoste, R., Lock, J., & le Grange, D. (2010). Adolescent focused psychotherapy for adolescents with anorexia nervosa. *Journal of Contemporary Psychotherapy, 40*, 31–39. doi: 10.1007/s10879-009-9123-7
- Fivaz-Depeursinge, E., & Corboz-Warnery, A. (1999). *The primary triangle: A developmental systems view of mothers, fathers, and infants*. New York, NY: Basic Books.
- Fivaz-Depeursinge, E., & Favez, N. (2006). Exploring triangulation in infancy: two contrasted cases. *Family Process, 45*(1), 3–18.
- Fivaz-Depeursinge, E., Frascarolo, F., Lopes, F., Dimitrova, N., & Favez, N. (2007). Parents-child role reversal in trilogue play: case studies of trajectories from pregnancy to toddlerhood. *Attachment & Human Development, 9*(1), 17–31. doi: 10.1080/14616730601151425
- Fivaz-Depeursinge, E., Lopes, F., Python, M., & Favez, N. (2009). Coparenting and toddler's interactive styles in family coalitions. *Family Process, 48*(4), 500–516. doi: 10.1111/j.1545-5300.2009.01298.x
- Föcker, M., Knoll, S., & Hebebrand, J. (2013). Anorexia nervosa. *European Child & Adolescent Psychiatry, 22 Suppl 1*, S29–35. <https://doi.org/10.1007/s00787-012-0358-6>

- Fornari, V., Kaplan, M., Sandberg, D.E., Matthews, M., Skolnick, N., & Katz, J. (1992). Depressive and anxiety disorders in anorexia nervosa and bulimia nervosa. *International Journal of Eating Disorders*, 12, 21-29.
- Fornari, V., Wlodarczyk-Bisaga, K., Matthews, M., Sandberg, D., Mandel, F. S., & Katz, J. L. (1999). Perception of family functioning and depressive symptomatology in individuals with anorexia nervosa or bulimia nervosa. *Comprehensive Psychiatry*, 40(6), 434–441.
- Frascarolo, F., Zaouche-Gaudron, C., Rouyer, V., & Favez, N. (2005). Variations in fathers' discourse on fatherhood and in family alliances during infancy. *European Journal of Psychology of Education*, 20 (2), 185-199.
- Fuglset, T. S., Endestad, T., Landrø, N. I., & Rø, Ø. (2015). Brain structure alterations associated with weight changes in young females with anorexia nervosa: a case series. *Neurocase*, 21(2), 169–177. doi: 10.1080/13554794.2013.878728
- Galdiolo, S., & Roskam, I. (2016). From me to us: the construction of family alliance. *Infant Mental Health Journal*, 37(1), 29–44. doi: 10.1002/imhj.21543
- Gatta, M., Dal Santo, F., Rago, A., Spoto, A. & Battistella, P. A. (2016). Alexithymia, impulsiveness and psychopathology in non-suicidal selfinjured adolescents. *Neuropsychiatric Disease and Treatment*, 12. doi:10.2147/NDT.S106433.
- Gatta, M., Balottin, L., Mannarini, S., Chesani, G., Del Col, L., Spoto, A., & Battistella, P. A. (2016). Familial factors relating to alexithymic traits in adolescents with psychiatric disorders. *Clinical Psychologist*. doi: 10.1111/cp.12098
- Gatta, M., Dal Zotto, L., Nequinio, G., Del Col, L., Sorgato, R., Ceranto, G., Testa, C.P., Pertile, R., & Battistella, P.A. (2011). Parents of Adolescents with Mental Disorders: Improving Their Caregiving Experience. *Journal of Child and*

- Family Studies*, 20 (4), 478-490. doi: 10.1007/s10826-010-9415-2.
- Gatta, M., Ramaglioni, E., Lai, J., Svanellini, L., Toldo, I., Del Col, L., Salviato, C., Spoto, A., & Antonio, B.P. (2009). Psychological and behavioral disease during developmental age: the importance of the alliance with parents. *Neuropsychiatric Disease and Treatment*, 5, 541-546. doi: 10.2147/NDT.S5880.
- 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. doi: 10.4081/ripppo.2016.198.
- Gatta, M., Spitaleri, C., Balottin, U., Spoto, A., Balottin, L., Mangano, S., & Battistella P. A. (2015). Alexithymic characteristics in pediatric patients with primary headache: a comparison between migraine and tension-type headache. *The Journal of Headache and Pain*, 16:98. doi: 10.1186/s10194-015-0572-y
- Gatta, M., Spoto, A., Svanellini, L., Lai, J., Toldo, I., Testa, C.P., & Battistella, P.A. (2012). Alliance with patient and collaboration with parents throughout the psychotherapeutic process with children and adolescents: A pilot study. *Journal of Psychopathology*, 18 (1), 28-34.
- Garner, M. M., & Garfinkel, P. E. (Eds) (1988). *Diagnostic issues in anorexia nervosa and bulimia nervosa*. New York: Brunner Mazel
- Garner, D. M. (1991). *Eating Disorder Inventory-2. Professional Manual*. Lutz, FL: Psychological Assessment Resources
- Garner, D. M. (2004). *Eating Disorder Inventory-3. Professional Manual*. Lutz, FL: Psychological Assessment Resources
- Gauthier, C., Hassler, C., Mattar, L., Launay, J.-M., Callebert, J., Steiger, H., ...

- Godart, N. (2014). Symptoms of depression and anxiety in anorexia nervosa: links with plasma tryptophan and serotonin metabolism. *Psychoneuroendocrinology*, *39*, 170–178. doi: 10.1016/j.psyneuen.2013.09.009
- George, C., Kaplan, N., & Main, M. (1985). *The Adult Attachment Interview*. Unpublished manuscript. Berkeley: Department of Psychology, University of California,.
- Giannakoulas, A., & Fizzarotti Selvaggi, S. (2004) *Il counseling psicodinamico. [The psychodynamic counseling]*. Roma, IT: Borla.
- Gillett, K. S., Harper, J. M., Larson, J. H., Berrett, M. E., & Hardman, R. K. (2009). Implicit family process rules in eating-disordered and non-eating-disordered families. *Journal of Marital and Family Therapy*, *35*(2), 159–174. doi: 10.1111/j.1752-0606.2009.00113.x
- Giromini, L., Brusadelli, E., Di Noto, B., Grasso, R., & Lang, M. (2015). Measuring psychological mindedness: Validity, reliability, and relationship with psychopathology of an Italian version of the Balanced Index of Psychological Mindedness. *Psychoanalytic Psychotherapy*, *29*(1), 70–87. <https://doi.org/10.1080/02668734.2015.1006666>
- Godart, N. T., Flament, M. F., Lecrubier, Y., & Jeammet, P. (2000). Anxiety disorders in anorexia nervosa and bulimia nervosa: co-morbidity and chronology of appearance. *European Psychiatry*, *15*, 38-45.
- Godart, N. T., Perdereau, F., Jeammet, P., & Flament, M. F. (2005). Comorbidity between eating disorders and mood disorders: review. *Encephale*, *31*, 575-587. doi: 10.1016/S0013-7006(05)82417-0

- Godart, N. T., Perdereau, F., Rein, Z., Berthoz, S., Wallier, J., Jeammet, P., & Flament, M. F. (2007). Comorbidity studies of eating disorders and mood disorders. Critical review of the literature. *Journal of Affective Disorders*, *97*, 37-49 doi: 10.1016/j.jad.2006.06.023
- Godart, N., Berthoz, S., Curt, F., Perdereau, F., Rein, Z., Wallier, J., ... Jeammet, P. (2012). A randomized controlled trial of adjunctive family therapy and treatment as usual following inpatient treatment for anorexia nervosa adolescents. *PloS One*, *7*(1), e28249. doi: 10.1371/journal.pone.0028249
- Gottman, J. (1997). *The heart of Parenting*. New York: Simon & Schuster.
- Gowers, S., & North, C. (1999). Difficulties in family functioning and adolescent anorexia nervosa. *The British Journal of Psychiatry: The Journal of Mental Science*, *174*, 63–66.
- Guttman, H., & Laporte, L. (2002). Alexithymia, empathy, and psychological symptoms in a family context. *Comprehensive Psychiatry*, *43*(6), 448–455. doi: 10.1053/comp.2002.35905
- Hagenaars, J. A. & McCutcheon, A. (2006). *Applied latent class analysis*. Cambridge: Cambridge University Press.
- Haleem, D. J. (2012). Serotonin neurotransmission in anorexia nervosa. *Behavioural Pharmacology*, *23*(5-6), 478–495. doi: 10.1097/FBP.0b013e328357440d
- Hammerle, F., Huss, M., Ernst, V., & Bürger, A. (2016). Thinking dimensional: prevalence of DSM-5 early adolescent full syndrome, partial and subthreshold eating disorders in a cross-sectional survey in German schools. *BMJ Open*, *6*(5), e010843. doi: 10.1136/bmjopen-2015-010843

- Harrison, A., Sullivan, S., Tchanturia, K., & Treasure, J. (2009). Emotion recognition and regulation in anorexia nervosa. *Clinical Psychology & Psychotherapy*, 16(4), 348–356. doi: 10.1002/cpp.628
- Hasan, T. F., & Hasan, H. (2011). Anorexia nervosa: a unified neurological perspective. *International Journal of Medical Sciences*, 8(8), 679–703. doi:10.7150/ijms.8.679. PMC 3204438
- Haviland, M. G., Warren, W. L., & Riggs, M. L. (2000). An observer scale to measure alexithymia. *Psychosomatics*, 41(5), 385–392.
- Hay, P., Chinn, D., Forbes, D., Madden, S., Newton, R., Sugenor, L., ... Royal Australian and New Zealand College of Psychiatrists. (2014). Royal Australian and New Zealand College of Psychiatrists clinical practice guidelines for the treatment of eating disorders. *Australian and New Zealand Journal of Psychiatry*, 48(11), 977–1008. doi: 10.1177/0004867414555814
- Hedenbro, M., & Rydelius, P. A. (2014). Early interaction between infants and their parents predicts social competence at the age of four. *Acta Paediatrica*, 103(3), 268–274.
- Herzog, D.B., Nussbaum, K.M., & Marmor, A.K. (1996). Comorbidity and outcome in eating disorders. *Psychiatric Clinics of North America*, 19, 843–859. [http://dx.doi.org/10.1016/S0193-953X\(05\)70385-3](http://dx.doi.org/10.1016/S0193-953X(05)70385-3)
- Herpertz-Dahlmann, B., Seitz, J., & Konrad, K. (2011). Aetiology of anorexia nervosa: from a "psychosomatic family model" to a neuropsychiatric disorder? *European archives of psychiatry and clinical neuroscience*, 261 (Suppl 2), S177-181.
- Herpertz-Dahlmann, B., van Elburg, A., Castro-Fornieles, J., & Schmidt, U. (2015). ESCAP Expert Paper: New developments in the diagnosis and treatment of

- adolescent anorexia nervosa--a European perspective. *European Child & Adolescent Psychiatry*, 24(10), 1153–1167. doi: 10.1007/s00787-015-0748-7
- Hinney, A., & Volckmar, A.-L. (2015). Perspectives of genetic research in eating disorders using the example of anorexia nervosa]. *Psychotherapie, Psychosomatik, Medizinische Psychologie*, 65(1), 8–10. doi: 10.1055/s-0034-1394405
- Holtom-Viesel, A., & Allan S. (2014). A systematic review of the literature on family functioning across all eating disorder diagnoses in comparison to control families. *Clinical Psychology Review*, 34, 29-43. doi: 10.1016/j.cpr.2013.10.005.
- Honkalampi, K., Tolmunen, T., Hintikka, J., Rissanen, M.-L., Kylmä, J., & Laukkanen, E. (2009). The prevalence of alexithymia and its relationship with Youth Self-Report problem scales among Finnish adolescents. *Comprehensive Psychiatry*, 50, 263–268. doi: 10.1016/j.comppsy.2008.08.007
- Horesh, N., Sommerfeld, E., Wolf, M., Zubery, E., and Zalsman, G. (2015). Father-daughter relationship and the severity of eating disorders. *European Psychiatry*, 30, 114–120. doi: 10.1016/j.eurpsy.2014.04.004
- Hudson, J. I., Hiripi, E., Pope, H. G., & Kessler, R. C. (2007). The prevalence and correlates of eating disorders in the National Comorbidity Survey Replication. *Biological Psychiatry*, 61(3), 348–358. doi: 10.1016/j.biopsych.2006.03.040
- Hughes, E. K., Le Grange, D., Court, A., Yeo, M. S., Campbell, S., Allan, E., ... Sawyer, S. M. (2014). Parent-focused treatment for adolescent anorexia nervosa: a study protocol of a randomised controlled trial. *BMC Psychiatry*, 14, 105. doi: 10.1186/1471-244X-14-105

- Inslegers, R., Vanheule, S., Meganck, R., Debaere, V., Trensou, E., & Desmet, M. (2012). Interpersonal problems and cognitive characteristics of interpersonal representations in alexithymia: a study using a self-report and interview-based measure of alexithymia. *The Journal of Nervous and Mental Disease*, 200(7), 607–613. doi: 10.1097/NMD.0b013e31825bfad9
- Isserlin, L., & Couturier, J. (2012). Therapeutic alliance and family-based treatment for adolescents with anorexia nervosa. *Psychotherapy*, 49(1), 46–51. doi: 10.1037/a0023905
- Jack, S. (2001). *Working with families*. In J. E. Mitchell (Ed.), *The outpatient treatment of eating disorders — A guide for therapists, dieticians and physicians*. Minneapolis: University of Minnesota Press.
- Jeammet, P. (2004). *Psicopatologia dell'adolescenza* [Adolescent Psychopathology]. Roma, IT: Borla.
- Jeammet, P. (2010). *Anoressia-Bulimia: il paradosso dell'adolescenza*. [Anorexia-Bulimia: the paradox of adolescence]. In A.M Nicolò & L. Russo (Eds) (2010). *Una o più anoressie*. [One or more anorexia]. Roma, IT: Borla
- Jeammet, P., Brechon, G., Payan, C., Gorge, A., & Fermanian, J. (1991). Le devenir de l'anorexie mentale: une étude prospective de 129 patients évalués au moins quatre ans après leur première admission. [The outcome of anorexia nervosa: a prospective study of 129 patients evaluated at least 4 years after their first admission]. *Psychiatrie de l'Enfant*, 34, 381–442.
- Jones, C. J., Leung, N., & Harris, G. (2006). Father-daughter relationship and eating psychopathology: the mediating role of core beliefs. *The British Journal of Clinical Psychology*, 45 (3), 319–330. doi: 10.1348/014466505X53489

- Karukivi, M., Hautala, L., Korpelainen, J., Haapasalo-Pesu, K. M., Liuksila, P. R., Joukamaa, M., & Saarijarvi, S. (2010). Alexithymia and eating disorder symptoms in adolescents. *Eating Disorders*, *18* (3):226–238. doi: 10.1080/10640261003719518
- Kaufman, J., Birmaher, B., Brent, D. A., Ryan, N. D., & Rao, U. (2000). K-SADS-PL. *Journal of the American Academy of Child and Adolescent Psychiatry*, *39*(10), 1208. doi: 10.1097/00004583-200010000-00002
- Kaye, W. H., Barbarich, N. C., Putnam, K., Gendall, K. A., Fernstrom, J., Fernstrom, M., ... Kishore, A. (2003). Anxiolytic effects of acute tryptophan depletion in anorexia nervosa. *International Journal of Eating Disorders*, *33*(3), 257–267; discussion 268–270. doi: 10.1002/eat.10135
- Kaye, W. H., Fudge, J. L., & Paulus, M. (2009). New insights into symptoms and neurocircuit function of anorexia nervosa. *Nature Reviews. Neuroscience*, *10*(8), 573–584. doi: 10.1038/nrn2682
- Kaye, W. H., & Weltzin, T. E. (1991). Serotonin activity in anorexia and bulimia nervosa: relationship to the modulation of feeding and mood. *The Journal of Clinical Psychiatry*, *52 Suppl*, 41–48.
- Keating, L., Tasca, G. A., & Hill, R. (2013). Structural relationships among attachment insecurity, alexithymia, and body esteem in women with eating disorders. *Eating Behaviors*, *14*(3), 366–373. doi: 10.1016/j.eatbeh.2013.06.013
- Kernberg O. F. (2004). *Aggressivity, Narcissism, and Self-Destructiveness in the Psychotherapeutic Relationship: New Developments in the Psychopathology and Psychotherapy of Severe Personality Disorders*. New Haven, CT: Yale University Press.

- Kestenberg, E., Kestenberg, J., & Decobert, S. (1972) *La faim et le corp [Hunger and the body]*. Paris, FR: Presses Universitaires de France.
- King, J. A., Geisler, D., Ritschel, F., Boehm, I., Seidel, M., Roschinski, B., ... Ehrlich, S. (2015). Global cortical thinning in acute anorexia nervosa normalizes following long-term weight restoration. *Biological Psychiatry*, 77(7), 624–632. doi: 10.1016/j.biopsych.2014.09.005
- Klump, K. L., Burt, S. A., McGue, M., & Iacono, W. G. (2007). Changes in genetic and environmental influences on disordered eating across adolescence: a longitudinal twin study. *Archives of General Psychiatry*, 64(12), 1409–1415. doi: 10.1001/archpsyc.64.12.1409
- Klump, K. L., McGue, M., & Iacono, W. G. (2003). Differential heritability of eating attitudes and behaviors in prepubertal versus pubertal twins. *International Journal of Eating Disorders*, 33(3), 287–292. doi: 10.1002/eat.10151
- Klump, K. L., Perkins, P. S., Burt, S., McGue, M., & Iacono, W. G. (2007). Puberty moderates genetic influences on disordered eating. *Psychological Medicine*, 37(5), 627–634. doi: 10.1017/S0033291707000189
- Kitzmann, K.M. (2000) Effects of marital conflict on subsequent triadic family interactions and parenting. *Developmental Psychology*, 36(1), 3-13. doi: 10.1037/0012-1649.36.1.3
- Kooiman, C. G., Van Rees Vellinga, S., Spinhoven, P., Draijer, N., Trijsburg, R. W., & Rooijmans, H. G. M. (2004). Childhood adversities as risk factors for alexithymia and other aspects of affect dysregulation in adulthood. *Psychotherapy and Psychosomatics*, 73, 107–116. doi:10.1159/000075542
- Lamb, M. E. (2010). *The role of the father in child development*. Hoboken, New Jersey: John Wiley & Sons.

- Lavadera, A. L., Laghi, F., & Togliatti, M. M. (2011). Assessing family coordination in divorced families. *American Journal of Family Therapy*, 39(4), 277-291. doi: 10.1080/01926187.2010.539479
- Lasègue C. E. (1873). De l'anorexie hystérique. *Archives of General Medicine*, 21, 385-403.
- Le Grange, D., & Eisler, I. (2009). Family interventions in adolescent anorexia nervosa. *Child and Adolescent Psychiatric Clinics of North America*, 18, 159-173. doi:10.1016/j.chc.2008.07.004
- Le Grange, D., Lock, J., Loeb, K., & Nicholls, D. (2010). Academy for Eating Disorders position paper: the role of the family in eating disorders. *International Journal of Eating Disorders*, 43(1), 1–5. doi: 10.1002/eat.20751
- Le Grange, D., Accurso, E. C., Lock, J., Agras, S., & Bryson, S. W. (2014). Early weight gain predicts outcome in two treatments for adolescent anorexia nervosa. *International Journal of Eating Disorders*, 47(2), 124–129. doi: 10.1002/eat.22221
- Le Grange, D., Lock, J., Accurso, E. C., Agras, W. S., Darcy, A., Forsberg, S., & Bryson, S. W. (2014). Relapse from remission at two- to four-year follow-up in two treatments for adolescent anorexia nervosa. *Journal of the American Academy of Child and Adolescent Psychiatry*, 53(11), 1162–1167. doi: 10.1016/j.jaac.2014.07.014
- Le Grange, D., Lock, J., Agras, W. S., Moye, A., Bryson, S. W., Jo, B., & Kraemer, H. C. (2012). Moderators and mediators of remission in family-based treatment and adolescent focused therapy for anorexia nervosa. *Behaviour Research and Therapy*, 50(2), 85–92. doi: 10.1016/j.brat.2011.11.003
- Leung, N., Thomas, G., & Waller, G. (2000). The relationship between parental

- bonding and core beliefs in anorexic and bulimic women. *The British Journal of Clinical Psychology*, 39 (Pt.2), 205-213.
- Linacre, J.M. (2016). Winsteps® (Version 3.92.0) [Computer Software]. Beaverton, Oregon: Winsteps.com. Available from <http://www.winsteps.com/>
- Liebman, R., Minuchin, S., Baker, L., & Rosman, B. L. (1975). The treatment of anorexia nervosa. *Current psychiatric therapies*, 15, 51-57.
- Lock, J. (2011) Evaluation of family treatment models for eating disorders. *Current Opinion in Psychiatry*, 24, 274–279. doi: 10.1097/YCO.0b013e328346f71e.
- Lock, J., La Via, M. C., & American Academy of Child and Adolescent Psychiatry (AACAP) Committee on Quality Issues (CQI). (2015). Practice parameter for the assessment and treatment of children and adolescents with eating disorders. *Journal of the American Academy of Child and Adolescent Psychiatry*, 54(5), 412–425. doi: 10.1016/j.jaac.2015.01.018
- Lulé, D., Schulze, U. M. E., Bauer, K., Schöll, F., Müller, S., Fladung, A.-K., & Uttner, I. (2014). Anorexia nervosa and its relation to depression, anxiety, alexithymia and emotional processing deficits. *Eating and Weight Disorders: EWD*, 19(2), 209–216. doi: 10.1007/s40519-014-0101-z
- Lumley, M. A. (2000). Alexithymia and negative emotional conditions. *Journal of Psychosomatic Research*, 49(1), 51–54. doi: 10.1016/S0022-3999(00)00161-6.
- Lumley, M. A., Mader, C., Gramzow, J., & Papineau, K. (1996). Family factors related to alexithymia characteristics. *Psychosomatic Medicine*, 58(3), 211–216.
- Lumley, M. A., Neely, L. C., & Burger, A. J. (2007). The assessment of alexithymia in medical settings: implications for understanding and treating health problems.

Journal of Personality Assessment, 89(3), 230–246. doi:

10.1080/00223890701629698

Lyke, J., & Matsen, J. (2013). Family functioning and risk factors for disordered eating. *Eating Behaviors*, 14(4), 497–499. doi: 10.1016/j.eatbeh.2013.08.009

Mackinnon, A.J., Henderson, A.S., Scott, R., & Duncan-Jones, P. (1989). The Parental Bonding Instrument (PBI): an epidemiological study in a general population sample. *Psychological Medicine*, 19(4), 1023–1034. doi:

10.1017/S0033291700005754

Mainz, V., Schulte-Rüther, M., Fink, G. R., Herpertz-Dahlmann, B., & Konrad, K. (2012). Structural brain abnormalities in adolescent anorexia nervosa before and after weight recovery and associated hormonal changes. *Psychosomatic Medicine*, 74(6), 574–582. doi: 10.1097/PSY.0b013e31824ef10e

Malagoli Togliatti, M., & Mazzoni, S. (2006). *Osservare, valutare e sostenere la relazione genitori-figli. Il Lausanne Trilogue Play clinico. [Observing, evaluating and supporting the parent-child relationship: The clinical Lausanne Trilogue Play (LTPc)]*. Milano, IT: Raffaello Cortina.

Mannarini, S. (2009). A method for the definition of a self-awareness behavior dimension with clinical subjects: a latent trait analysis. *Behavior Research Methods*, 41(4), 1029–1037. doi: 10.3758/BRM.41.4.1029

Mannarini, S., Balottin, L., Munari, C., & Gatta, M. (2016) Assessing conflict management in the couple: the definition of a latent dimension. *The Family Journal*. doi: 10.1177/1066480716666066

Mannarini, S., Balottin, L., Toldo, I., & Gatta, M. (2016). Alexithymia and psychosocial problems among Italian preadolescents. A Latent Class Analysis

- approach. *Scandinavian Journal of Psychology*, 57, 473-481. doi:
10.1111/sjop.12300
- Mannarini, S., & Boffo, M. (2014). The relevance of security: A latent domain of attachment relationships. *Scandinavian Journal of Psychology*, 55(1), 53–59. doi: 10.1111/sjop.12091
- Mannarini, S., & Boffo, M. (2015). Anxiety, bulimia, drug and alcohol addiction, depression, and schizophrenia: what do you think about their aetiology, dangerousness, social distance, and treatment? A latent class analysis approach. *Social psychiatry and psychiatric epidemiology*, 50, 27-37. doi: 10.1007/s00127-014-0925-x
- Mannarini, S., Boffo, M., Bertucci, V., Andrisani, A., & Ambrosini, G. (2013). A Rasch-based dimension of delivery experience: spontaneous vs. medically assisted conception. *Journal of Clinical Nursing*, 22(17-18), 2404–2416. doi: 10.1111/jocn.12264
- Manninen, M., Therman, S., Suvisaari, J., Ebeling, H., Moilanen, I., Huttunen, M., & Joukamaa, M. (2011). Alexithymia is common among adolescents with severe disruptive behavior. *The Journal of Nervous and Mental Disease*, 199, 506–509. doi: 10.1097/NMD.0b013e3182214281
- Mattar, L., Thiébaud, M. R., Huas, C., Cebula, C., & Godart, N. (2012). Depression, anxiety and obsessive-compulsive symptoms in relation to nutritional status and outcome in severe anorexia nervosa. *Psychiatry Research*, 200, 513-517. doi: 10.1016/j.psychres.2012.04.032
- Mazzoni, S., Lavadera, A.L., Di Benedetto, R., Criscuolo, M., & Mangano, C. (2015). Parenting coalitions: Coparenting and toddler's interactive styles. *Psicologia Clinica dello Sviluppo*, 19 (1), 79-100. doi: 10.1449/79740

- Mazzoni, S., & Lubrano Lavadera, A. (2013). Le Jeu Trilogique de Lausanne (LTP) en clinique: application dans le contexte d'interventions de soutien à la relation parents-enfants. [The Lausanne Trilogue Play (LTP) in the clinical context: application for the supportive interventions on the parent-child relationship]. In N. Favez, F. Frascarolo-Moutinot, & H. Tissot (Eds) *Naitre et grandir en sein de la triade: le développement de l'alliance familiale [Borning and growing up in the triad: the development of the family alliance]*(pp. 177-192). Bruxelles, B: De Boeck.
- McDermott, B.M., Batik, M., Roberts, L., & Gibbon, P. (2002). Parent and child report of family functioning in a clinical child and adolescent eating disorders sample. *Australian and New Zealand Journal of Psychiatry*, 36(4), 509–514. doi: 10.1046/j.1440-1614.2002.01043.x
- McHale, J. P., & Coates, E. E. (2014). Observed coparenting and triadic dynamics in African American fragile families at 3 months' postpartum. *Infant Mental Health Journal*, 35(5), 435–451. doi: 10.1002/imhj.21473
- McHale, J., Kuersten Hogan, R., & Lauretti, A. (2001). Evaluating coparenting and family level dynamics during infancy and early childhood: The coparenting and family rating system. In P. Kerig & K. Lindahl (eds). *Family observational coding systems*. Mahwah, NJ: Erlbaum.
- Meier, S. M., Bulik, C. M., Thornton, L. M., Mattheisen, M., Mortensen, P. B., & Petersen, L. (2015). Diagnosed Anxiety Disorders and the Risk of Subsequent Anorexia Nervosa: A Danish Population Register Study. *European Eating Disorders Review*, 23(6), 524–530. doi: 10.1002/erv.2402
- Micali, N., Hagberg, K. W., Petersen, I., & Treasure, J. L. (2013). The incidence of eating disorders in the UK in 2000-2009: findings from the General Practice

- Research Database. *BMJ Open*, 3(5). doi: 10.1136/bmjopen-2013-002646
- Minuchin, S., Baker, L., Rosman, B. L., Liebman, R., Milman, L., & Todd, T. C. (1975). A conceptual model of psychosomatic illness in children: family organization and family therapy. *Archives of General Psychiatry*, 32(8), 1031–1038.
- Minuchin S, Rosman B, & Baker L. (1978). Psychosomatic families: anorexia nervosa in context. Cambridge, MA: Harvard University Press.
- Montebarocci, O., Codispoti, M., Surcinelli, P., Franzoni, E., Baldaro, B., & Rossi, N. (2006). Alexithymia in female patients with eating disorders. *Eating and Weight Disorders*, 11(1), 14–21. doi: 10.1007/BF03327739
- Monteleone, A., Monteleone, P., Dalle Grave, R., Nigro, M., El Ghoch, M., Calugi, S., ... Maj, M. (2016). Ghrelin response to hedonic eating in underweight and short-term weight restored patients with anorexia nervosa. *Psychiatry Research*, 235, 55–60. doi: 10.1016/j.psychres.2015.12.001
- Morgan, H.G., & Hayward, A. E. (1988). Clinical assessment of anorexia nervosa. The Morgan-Russell outcome assessment schedule. *The British Journal of Psychiatry*, 152(3), 367-371. doi: 10.1192/bjp.152.3.367
- Murray, S.B., & Le Grange, D. (2014). Family therapy for adolescent eating disorders: an update. *Current Psychiatry Reports*. 16,447. doi:10.1007/s11920-014-0447-y
- Mustelin, L., Silén, Y., Raevuori, A., Hoek, H. W., Kaprio, J., & Keski-Rahkonen, A. (2016). The DSM-5 diagnostic criteria for anorexia nervosa may change its population prevalence and prognostic value. *Journal of Psychiatric Research*, 77, 85–91. <https://doi.org/10.1016/j.jpsychires.2016.03.003>

- National Institute for Health and Care Excellence. (2004). *Eating Disorders: Core Interventions in the Treatment and Management of Anorexia Nervosa, Bulimia Nervosa and Related Eating Disorders*. London: NICE.
- Nicholls, D. E., Lynn, R., & Viner, R. M. (2011). Childhood eating disorders: British national surveillance study. *The British Journal of Psychiatry: The Journal of Mental Science*, 198(4), 295–301. doi: 10.1192/bjp.bp.110.081356
- Nicholls, D. E., & Viner, R. M. (2009). Childhood risk factors for lifetime anorexia nervosa by age 30 years in a national birth cohort. *Journal of the American Academy of Child and Adolescent Psychiatry*, 48(8), 791–799.
<https://doi.org/10.1097/CHI.0b013e3181ab8b75>
- Nicolò A.M., & Russo L. (Eds) (2010). *Una o più anoressie*. [One or more anorexia]. Roma, IT: Borla
- Novick, K. K., & Novick, J. (2011). *Working with parents makes therapy work*. Lanham, MD: Rowman & Littlefield Publishers.
- Ohmann, S., Popow, C., Wurzer, M., Karwautz, A., Sackl-Pammer, P., & Schuch, B. (2013). Emotional aspects of anorexia nervosa: results of prospective naturalistic cognitive behavioral group therapy. *Neuropsychiatrie: Klinik, Diagnostik, Therapie Und Rehabilitation: Organ Der Gesellschaft Osterreichischer Nervenarzte Und Psychiater*, 27(3), 119–128.
<https://doi.org/10.1007/s40211-013-0065-7>
- Orzolek-Kronner C. (2002). The effect of attachment theory in the development of eating disorders: Can symptoms be proximity-seeking. *Child and Adolescent Social Work Journal*, 19, 421–435. doi: 10.1023/A:1021141612634
- Pace, C. S., Cavanna, D., Guiducci, V., & Bizzi, F. (2015). When parenting fails: alexithymia and attachment states of mind in mothers of female patients with

- eating disorders. *Frontiers in Psychology*, 6, 1145. doi:
10.3389/fpsyg.2015.01145
- Palmer, H. D., & Jones, M. S. (1939). Anorexia nervosa as a manifestation of
compulsion neurosis: a study of psychogenic factors. *Archives of Neurology
and Psychiatry*, 41, 856-860.
- Palmer, R., Oppenheimer, R., & Marshall, P. (1988). Eating-disordered patients
remember their parents. A study using the Parental Bonding Instrument.
International Journal of Eating Disorders, 7, 101-106.
- Parker, G. (1983). Parental overprotection. New York: Grune & Stratton.
- Parker, G. (1983). Parental 'affectionless control' as an antecedent to adult
depression. A risk factor delineated. *Archives of General Psychiatry*, 40 (9),
956-960. doi:10.1001/archpsyc.1983.01790080038005
- Parker, G., Tupling, H., & Brown, L. B. (1979). A parental bonding instrument. *The
British Journal of Medical Psychology*, 52, 1-10. doi:10.1111/j.2044-
8341.1979.tb02487.x
- Parling, T., Mortazavi, M., & Ghaderi, A. (2010). Alexithymia and emotional
awareness in anorexia nervosa: time for a shift in the measurement of the
concept? *Eating Behaviors*, 11(4), 205-210. doi:
10.1016/j.eatbeh.2010.04.001
- Polivy, J., & Herman, C. P. (2002). Causes of eating disorders. *Annual Review of
Psychology*, 53, 187-213. doi: 10.1146/annurev.psych.53.100901.135103
- Ramacciotti, A., Sorbello, M., Pazzagli, A., Vismara, L., Mancone, A., & Pallanti, S.
(2001). Attachment processes in eating disorders. *Eating and Weight
Disorders*, 6(3), 166-170. doi: 10.1007/BF03339766
- Raney, T. J., Thornton, L. M., Berrettini, W., Brandt, H., Crawford, S., Fichter, M. M.,

- ... Bulik, C. M. (2008). Influence of overanxious disorder of childhood on the expression of anorexia nervosa. *International Journal of Eating Disorders*, 41(4), 326–332. doi: 10.1002/eat.20508
- Rasch, G. (1960). *Probabilistic Models for Some Intelligence and Attainment Tests*. Chicago, IL: The University of Chicago Press.
- Ravi, S., Forsberg, S., Fitzpatrick, K., & Lock, J. (2009). Is there a relationship between parental self-reported psychopathology and symptom severity in adolescents with anorexia nervosa? *Eating Disorders*, 17(1), 63–71. doi: 10.1080/10640260802570122
- Rhodes, B., & Kroger, J. (1992). Parental bonding and separation-individuation difficulties among late adolescence eating disordered women. *International Journal of Eating Disorders*, 8, 131-140.
- Rieffe, C., & De Rooij, M. (2012). The longitudinal relationship between emotion awareness and internalising symptoms during late childhood. *European Child & Adolescent Psychiatry*, 21, 349–356. doi: 10.1007/s00787-012-0267-8
- Ringer, F., & Crittenden, P. M. (2007). Eating disorders and attachment: the effects of hidden family processes on eating disorders. *European Eating Disorders Review*, 15(2), 119–130. doi: 10.1002/erv.761
- Rodríguez Martín, A., Novalbos Ruiz, J. P., Martínez Nieto, J. M., Escobar Jiménez, L., & Castro De Haro, A. L. (2004). Epidemiological study of the influence of family and socioeconomic status in disorders of eating behaviour. *European Journal of Clinical Nutrition*, 58(6), 846–852. doi: 10.1038/sj.ejcn.1601884
- Rommel, D., Nandrino, J. L., Antoine, P., & Dodin, V. (2013). Emotional differentiation and parental bonding in inpatients suffering from eating

- disorders. *The British Journal of Clinical Psychology*, 52(2), 215–229. doi: 10.1111/bjc.12010
- Rozenstein, M. H., Latzer, Y., Stein, D., & Eviatar, Z. (2011). Perception of emotion and bilateral advantage in women with eating disorders, their healthy sisters, and nonrelated healthy controls. *Journal of Affective Disorders*, 134(1-3), 386–395. doi: 10.1016/j.jad.2011.06.009
- Russell, J. D., Kopec-Schrader, E., Rey, J. M., & Beumont, P. J. (1992). The Parental Bonding Instrument in adolescent patients with anorexia nervosa. *Acta Psychiatrica Scandinavica*, 86(3), 236–239.
- Scinto, A., Marinangeli, M.G., Kalyvoka, A., Daneluzzo, E., & Rossi, A. (1999). The use of the Italian version of the Parental Bonding Instrument (PBI) in a clinical sample and in a student group: an exploratory and confirmatory factor analysis study. *Epidemiology and Psychiatric Sciences*, 8(4), 276-283. doi: 10.1017/S1121189X00008198
- Schoppe-Sullivan, S. J., Altenburger, L. E., Settle, T. A., Kamp Dush, C. M., Sullivan, J. M., & Bower, D. J. (2014). Expectant fathers' intuitive parenting: associations with parent characteristics and postpartum positive engagement. *Infant Mental Health Journal*, 35(5), 409–421. doi: 10.1002/imhj.21468
- Schor, E.L., & American Academy of Pediatrics Task Force on the Family (2003). Family pediatrics: report of the Task Force on the Family. *Pediatrics*, 111(6 Pt 2), 1541-1571.
http://pediatrics.aappublications.org/content/111/Supplement_2/1541.full.html
- Selvini Palazzoli, M. (1989). *L'anorexia mentale* [Anorexia nervosa]. Milano, IT: Feltrinelli Editore.

- Sim, L. A., Homme, J. H., Lteif, A. N., Vande Voort, J. L., Schak, K. M., & Ellingson, J. (2009). Family functioning and maternal distress in adolescent girls with anorexia nervosa. *International Journal of Eating Disorders*, *42*, 531–539. doi: 10.1002/eat.20654
- Simonelli, A., Bighin, M., & Palo, F. (2012). Coparenting interactions observed by the prenatal lausanne triogue play: An Italian replication study. *Infant Mental Health Journal*, *33* (6), 609-619. doi: 10.1002/imhj.21350
- Smink, F. R., Van Hoeken, D., & Hoek, H. W. (2012). Epidemiology of Eating Disorders: Incidence, Prevalence and Mortality Rates. *Current Psychiatry*, *14*, 406–414. doi: 10.1007/s11920-012-0282-y
- Smith, A., & Cook-Cottone, C. (2011). A review of family therapy as an effective intervention for anorexia nervosa in adolescents. *Journal of Clinical Psychology in Medical Settings*, *18*(4), 323–334.
<https://doi.org/10.1007/s10880-011-9262-3>
- Sordelli, A., Fossati, A., Devoti, R.M., & La Viola, S. (1996). Perceived parental bonding in anorectic and bulimic patients. *Psychopathology*, *29* (1),64-70. doi: 10.1159/000284973
- Speranza, M., Corcos, M., Loas, G., Stéphan, P., Guilbaud, O., Perez-Diaz, F., ... Jeammet, P. (2005). Depressive personality dimensions and alexithymia in eating disorders. *Psychiatry Research*, *135*(2), 153–163. doi: 10.1016/j.psychres.2005.04.001
- Speranza, M., Loas, G., Wallier, J., & Corcos, M. (2007). Predictive value of alexithymia in patients with eating disorders: a 3-year prospective study. *Journal of Psychosomatic Research*, *63*(4), 365–371. doi: 10.1016/j.jpsychores.2007.03.008

- Speranza, M., Stéphan, P., Corcos, M., Loas, G., Taieb, O., Guilbaud, O., ...
Jeammet, P. (2003). [Relationships between alexithymia, depression and interpersonal dependency in addictive subjects]. *Annales De Médecine Interne, 154 Spec No 1*, S65–75.
- Steiger, H., Fraenkel, L., & Leichner, P.P. (1989). Relationship of body-image distortion to sex-role identifications, irrational cognitions, and body weight in eating-disordered females. *Journal of Clinical Psychology, 45(1)*, 61-65.
- Steinhausen, H.C. (2009). Outcome of eating disorders. *Child and Adolescent Psychiatric Clinics of North America, 18(1)*, 225-242. doi: 10.1016/j.chc.2008.07.013
- Sullivan, P. F. (1995). Mortality in anorexia nervosa. *American Journal of Psychiatry, 152*, 1073–1074.
- Swanson, S. A., Crow, S. J., Le Grange, D., Swendsen, J., & Merikangas, K. R. (2011). Prevalence and correlates of eating disorders in adolescents. Results from the national comorbidity survey replication adolescent supplement. *Archives of General Psychiatry, 68(7)*, 714–723. doi: 10.1001/archgenpsychiatry.2011.22
- Swanson, H., Power, K., Collin, P., Deas, S., Paterson, G., Grierson, D., ... Taylor, L. (2010). The relationship between parental bonding, social problem solving and eating pathology in an anorexic inpatient sample. *European Eating Disorders Review, 18(1)*, 22–32. doi: 10.1002/erv.967
- Tasca, G. A., Taylor, D., Ritchie, K., & Balfour, L. (2004). Attachment predicts treatment completion in an eating disorders partial hospital program among women with anorexia nervosa. *Journal of Personality Assessment, 83(3)*, 201–212. doi: 10.1207/s15327752jpa8303_04

- Tasca, G. A., Szadkowski, L., Illing, V., Trinneer, A., Grenon, R., & Demidenko, N., Krysanski, V., Balfour, L., & Bissada, H.(2009). Adult attachment, depression, and eating disorder symptoms: The mediating role of affect regulation strategies. *Personality and Individual Differences, 47*, 662–667. doi: 10.1016/j.paid.2009.06.006.
- Taylor, G. J. (2000). Recent developments in alexithymia theory and research. *Canadian Journal of Psychiatry, 45*, 134–142.
- Taylor, G. J., & Bagby, R. M. (1988). Measurement of alexithymia. Recommendations for clinical practice and future research. *The Psychiatric Clinics of North America, 11*(3), 351–366.
- Taylor, G. J., & Bagby, R. M. (2004). New trends in alexithymia research. *Psychotherapy and Psychosomatics, 73*(2), 68–77. doi: 10.1159/000075537
- Taylor, G. J., Bagby, R. M. & Parker, J. D. A. (1997). *Disorder of affect regulation. Alexithymia in medical and psychiatric illness*. Cambridge: Cambridge University Press.
- Taylor, G. J., Parker, J. D., Bagby, R. M., & Bourke, M. P. (1996). Relationships between alexithymia and psychological characteristics associated with eating disorders. *Journal of Psychosomatic Research, 41*(6), 561–568.
- Tetley, A., Moghaddam, N. G., Dawson, D. L., & Rennoldson, M. (2014). Parental bonding and eating disorders: a systematic review. *Eating Behaviors, 15*(1), 49–59. doi: 10.1016/j.eatbeh.2013.10.008
- Thornton, L. M., Mazzeo, S. E., & Bulik, C. M. (2011). The Heritability of Eating Disorders: Methods and Current Findings. *Current Topics in Behavioral Neurosciences, 6*, 141–156. doi: 10.1007/7854_2010_91

- Treasure, J., Sepulveda, A.R., MacDonald, P., Whitaker, W., Lopez, C., Zabala, M., Kyriacou, O., & Todd, G. (2008). The assessment of the family of people with eating disorders. *European Eating Disorders Review*, *16*(4), 247–255. doi: 10.1002/erv.859
- Tremolizzo, L., Conti, E., Bomba, M., Uccellini, O., Rossi, M. S., Marfone, M., ... Nacinovich, R. (2014). Decreased whole-blood global DNA methylation is related to serum hormones in anorexia nervosa adolescents. *The World Journal of Biological Psychiatry: The Official Journal of the World Federation of Societies of Biological Psychiatry*, *15*(4), 327–333. doi: 10.3109/15622975.2013.860467
- Troisi, A., Di Lorenzo, G., Alcini, S., Nanni, R. C., Di Pasquale, C., & Siracusano, A. (2006). Body dissatisfaction in women with eating disorders: relationship to early separation anxiety and insecure attachment. *Psychosomatic Medicine*, *68*(3), 449–453. doi: 10.1097/01.psy.0000204923.09390.5b
- Turner, H.M., Rose, K.S., & Cooper, M.J. (2005). Parental bonding and eating disorder symptoms in adolescents: the mediating role of core beliefs. *Eating Behaviours*, *6*(2), 113–118. doi:10.1016/j.eatbeh.2004.08.010
- Vall, E., & Wade, T. D. (2015). Predictors of treatment outcome in individuals with eating disorders: A systematic review and meta-analysis. *International Journal of Eating Disorders*, *48*(7), 946–971. doi: 10.1002/eat.22411
- Van Rijn, S., Schothorst, P., Wout, M.V., Sprong, M., Ziermans, T., Van Engeland, H., . . . Swaab, H. (2011). Affective dysfunctions in adolescents at risk for psychosis: emotion awareness and social functioning. *Psychiatry Research*, *187*(1-2), 100–105. doi: 10.1016/j.psychres.2010.10.007

- Vermunt, J. K. (1997). *LEM A general program for the analysis of categorical data*.
Tilburg University: Department of Methodology and Statistic. Department of
Methodology and Statistic, Tilburg University.
- Wade, T. D., Gillespie, N., & Martin, N. G. (2007). A comparison of early family life
events amongst monozygotic twin women with lifetime anorexia nervosa,
bulimia nervosa, or major depression. *International Journal of Eating
Disorders*, 40(8), 679–686. doi: 10.1002/eat.20461
- Wallin, U., & Hansson, K. (1999). Anorexia nervosa in teenagers: Patterns of family
function. *Nordic Journal of Psychiatry*, 53(1), 29–35. doi:
10.1080/080394899426684
- Wallin, U., & Kronvall, P. (2002). Anorexia nervosa in teenagers: change in family
function after family therapy, at 2-year follow-up. *Nordic Journal of Psychiatry*,
56(5), 363–369. doi: 10.1080/080394802760322132
- Ward, A., Ramsay, R., & Treasure, J. (2000). Attachment research in eating
disorders. *The British Journal of Medical Psychology*, 73 (1), 35–51.
- Ward, A., Ramsay, R., Turnbull, S., Steele, M., Steele, H., & Treasure, J. (2001).
Attachment in anorexia nervosa: a transgenerational perspective. *The British
Journal of Medical Psychology*, 74(4), 497–505.
- Woodside, D. B., Lackstrom, J., Shekter-Wolfson, L., & Heinmaa, M. (1996). Long-
term follow-up of patient-reported family functioning in eating disorders after
intensive day hospital treatment. *Journal of Psychosomatic Research*, 41,
269–277.
- Yamaguchi, N., Kobayashi, J., Tachikawa, H., Sato, S., Hori, M., Suzuki, T., &
Shiraishi, H. (2000). Parental representation in eating disorder patients with

suicide. *Journal of Psychosomatic Research*, 49 (2),131-136. doi:

10.1016/S0022-3999(00)00146-X

Zachrisson, H. D., & Skårderud, F. (2010). Feelings of insecurity: review of attachment and eating disorders. *European Eating Disorders Review*, 18(2), 97–106. doi: 10.1002/erv.999

Zonnevillle-Bender, M. J. S., van Goozen, S. H. M., Cohen-Kettenis, P. T., van Elburg, A., & van Engeland, H. (2002). Do adolescent anorexia nervosa patients have deficits in emotional functioning? *European Child & Adolescent Psychiatry*, 11(1), 38–42. doi: 10.1007/s007870200006

Zonneville-Bender, M. J. S., van Goozen, S. H. M., Cohen-Kettenis, P. T., van Elburg, A., de Wildt, M., Stevelmans, E., & van Engeland, H. (2004). Emotional functioning in anorexia nervosa patients: adolescents compared to adults. *Depression and Anxiety*, 19(1), 35–42. doi: 10.1002/da.10145

Zonneville-Bender, M. J. S., van Goozen, S. H. M., Cohen-Kettenis, P. T., van Elburg, T. A., & van Engeland, H. (2004). Emotional functioning in adolescent anorexia nervosa patients--a controlled study. *European Child & Adolescent Psychiatry*, 13(1), 28–34. doi: 10.1007/s00787-004-0351-9