SUSCEPTIBILITY OF SINGAPORE CHINESE SCHOOLGIRLS TO ANOREXIA NERVOSA – PART II (FAMILY FACTORS)

L P Kok, C S Tian

ABSTRACT

It was found that of a group of 656 GCE 'O' level Chinese Singapore schoolgirls in schools of good academic standing, where pressure was expected to be high, 15 (6%) had high drive for thinness (DT) scores. The families of these latter girls were not perceived to be significantly more enmeshed or rigid than those with low DT scores, and other family functioning was also not significantly different.

Keywords: *Family factors, enmeshment, rigidity*

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INTRODUCTION

Family pathology has been implicated as one of the causes of anorexia nervosa. In a discussion of the aetiology of this disorder, Hsu (1983)[1] pointed out that as far back as 1873, enmeshment in the families has been postulated; Palazzoli (1974)[2] studied 12 anorectic families and noted that what are striking was the poor communication, rejection of messages, inability to resolve conflicts, the blame shifting, overprotection and rigidity in these families. Parents were also found to be overprotective, to be preoccupied with success and outward appearance[3,4]. In such psychosomatic families the important characteristics were enmeshment, overprotectiveness, rigidity and lack of conflict resolution[5,6]. However, in Asian societies, although some of these factors, especially over-protectiveness and rigidity are felt to be common, the incidence of anorexia nervosa is low, (a Hong Kong study found less than 10 cases over 5 years in a psychiatric unit serving 500,000 people[7], and in Singapore 8 cases were described[8]; thus such family factors may perhaps not play a great part in engendering eating problems. In England it has been shown that 8.2% of London schoolgirls[9], 12.3% of Asians and 8.7% of Caucasians[10] have high scores on scales that detect anorectic types of attitudes and beliefs and how this could be related to their attitudes to eating. To date, no studies have been done in Singapore to assess the attitude to eating in female adolescents, how they perceive family relationships, and whether overprotectiveness and rigidity is common in this society.

In order to address some of these concerns, this study set out to investigate:

a) the pattern of cohesion and adaptability in families of normal adolescents;
b) the type of parental bonding, care and protection they perceive exists between them and their families;
c) the differences in (a) and (b) between a group of girls who are high scorers on the Drive for Thinness Subscale of the Eating Disorders Inventory[11] and those who are low scorers.

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METHODOLOGY

All GCE 'O' level Singapore Chinese schoolgirls from 4 girls' schools in the district where the hospital that the authors were working in, were enlisted into this study. The questionnaires were initially discussed with the principals and then all the 'O' level girls in each school were seen and the purpose of the study explained to them. Anonymity of replies was preserved in order to ensure better compliance as some of the questions might have been perceived as too sensitive, or probing, and might not be answered accurately. The rating scales included:

1) Family Adaptability and Cohesion Evaluation Scale II (FACIES II)

The Family Adaptability and Cohesion Evaluation Scale II (FACIES II)[12] is a scale developed by Olson et al (1982) to assess family functioning on 2 dimensions – how cohesive the family is and how adaptable it is to change. It comprises 28 questions on a 4-point scale, and each question assesses how the family is functioning at present, and how the ideal family should be. Thus 2 scores of family functioning are obtained ie 'Now' and 'Ideal' scores. The difference between the 2 scores is an indirect measure of Family Satisfaction.

2) Parental Bonding Instrument

The Parental Bonding Instrument was developed by Parker (1979)[13] to measure the bond between child and parent, in particular the parental components of this bond, which were found to comprise:

a) care, a bipolar factor along a dimension of care, involvement, emotional warmth and support, empathy, closeness versus indifference, rejection and neglect.
b) overprotection, control, infantilisation and intrusion versus permitting and encouragement of autonomy and independence.

The Parental Bonding Instrument comprising 25 self rating questions is a simple self rating instrument that measures bonding between parents and children. The interviewee rates various attitudes and behaviour of his parents, as remembered by him, in the first 10 years of his life. It measures 2 factors – (a) care and empathy, (b) overprotection and infantilisation.

3) Eating Disorders Inventory[11]

The Eating Disorders Inventory is a 64-item questionnaire on a 5-point scale which comprises subscales that measure the drive for thinness, bulimia scores, body dissatisfaction, ineffectiveness, perfectionism, interpersonal distrust, interoceptive awareness and maturity fears. These are psychological and behavioural traits that have been found to be important in anorectic patients.

RESULTS

There were 656 Chinese schoolgirls, with a mean age of 16, and a response rate of 100% was achieved (2 did not complete their questionnaires). The scores of the subjects on the Eating Disorder Inventory and their relationship to the Body Mass Index, history of teasing and dieting has been presented in another paper (Part I)[14].

The subjects were divided into 2 groups:

a) Group I: with a high drive for thinness score of 15 and above (the cut-off point for a group suffering from anorexia nervosa)[11].

b) Group II: a group with a low drive for thinness score of less than 15.

The mean score for drive for thinness in the subjects was 3.55 and the standard deviation was 4.5.

Of the 656 schoolgirls, 15 were found to have a high drive for thinness score and the rest 641, had scores below it.

Table Ia – FACIES II results (perceived) in high drive for thinness group

Adaptability \ Cohesion	Disengaged 0-52	Separated 53-63	Connected 64-74	Enmeshed 75-98	
Chaotic 65-98	–	–	–	–	
Flexible 56-64	–	–	1 (6.7%)	–	1 (6.7%)
Structured 47-55	2 (13.3%)	1 (6.7%)	2 (13.3%)	–	5 (33.3%)
Rigid 0-46	7 (46.7%)	2 (13.3%)	–	–	9 (60%)
	9 (60%)	3 (20%)	3 (20%)	–	15 (100%)

Table Ib – FACIES II results (ideal) in high drive for thinness group

Adaptability \ Cohesion	Disengaged 0-52	Separated 53-63	Connected 64-74	Enmeshed 75-98	
Chaotic 65-98	–	–	–	–	
Flexible 56-64		1 (6.7%)	2 (13.3%)	2 (13.3%)	5 (33.3%)
Structured 47-55	1 (6.7%)	1 (6.7%)	7 (46.7%)	–	9 (60%)
Rigid 0-46	–	1 (6.7%)	–	–	1 (6.7%)
	1 (6.7%)	3 (20%)	9 (60%)	2 (13.3%)	15 (100%)

Tables Ia and Ib show the distribution of the high DT group on the FACIES II Scale, both perceived and ideal. Nine (60%) of the families were perceived as both rigid and none as enmeshed; in this group only one (6.7%) wished to have a rigid family functioning as their ideal; and 2 (13.3%) wanted to have an enmeshed family system.

Table IIa – FACIES II results (perceived) in low drive for thinness group

Adaptability \ Cohesion	Disengaged 0-52	Separated 53-63	Connected 64-74	Enmeshed 75-98	
Chaotic 65-98	–	–	–	–	
Flexible 56-64	1 (0.2%)	6 (0.9%)	10 (1.6%)	5 (0.8%)	22 (3.4%)
Structured 47-55	22 (3.4%)	66 (10.3%)	63 (9.9%)	1 (0.2%)	152 (23.8%)
Rigid 0-46	280 (43.8%)	150 (23.5%)	35 (5.5%)	–	465 (72.8%)
	303 (47.4%)	222 (34.7%)	108 (16.9%)	6 (0.9%)	639 (100%)

Table IIb – FACIES II results (ideal) in low drive for thinness group

Adaptability \ Cohesion	Disengaged 0-52	Separated 53-63	Connected 64-74	Enmeshed 75-98	
Chaotic 65-98	1 (0.2%)	2 (0.3%)	18 (2.8%)	11 (1.7%)	32 (5%)
Flexible 56-64	7 (1.1%)	25 (3.9%)	146 (22.8%)	71 (11.1%)	249 (39%)
Structured 47-55	9 (1.4%)	79 (12.4%)	200 (31.3%)	24 (3.8%)	312 (48.8%)
Rigid 0-46	10 (1.6%)	18 (2.8%)	14 (2.2%)	4 (0.6%)	46 (7.2%)
	27 (4.2%)	124 (19.4%)	378 (59.2%)	110 (17.2%)	639 (100%)

Tables IIa and IIb show the distribution of the low DT group on the FACIES II scale, both perceived and ideal. Four hundred and sixty-five (72.8%) of the families were perceived to be rigid on the Adaptability dimension and 6 (0.9%) were seen as being enmeshed on the Cohesion dimension. Ideally, 46 (7.2%) wished to have a rigid family system and 110 (17.2%), an enmeshed system.

Table IIIa – Classification of families by levels of functioning

Adaptability \ Cohesion	Disengaged 0-52	Separated 53-63	Connected 64-74	Enmeshed 75-98
Chaotic 65-98	Chaotically disengaged	Chaotically separated	Chaotically connected	Chaotically enmeshed
Flexibly 56-64	Flexibly disengaged	Flexibly separated	Flexibly connected	Flexibly enmeshed
Strict 47-55	Structured and disengaged	Structured and separated	Structured and connected	Structured and enmeshed
Rigid 0-46	Rigidly disengaged	Rigidly separated	Rigidly connected	Rigidly enmeshed

Balanced
Midrange
Extreme

The 2 groups were divided into 3 levels of functioning based on their scores viz (Table IIIa):

a) balanced
ie middle 4 squares – flexible and separated
– flexible and connected
– structured and separated
– structured and connected

b) mid-range
ie outer 8 squares excluding the corner squares
– chaotic and separated
– chaotic and connected
– disengaged and flexible
– disengaged and structured
– rigid and separated
– rigid and connected
– enmeshed and flexible
– enmeshed and structured

c) extreme
ie the outer 4 squares – disengaged and chaotic
– disengaged and rigid
– enmeshed and chaotic
– enmeshed and rigid

There was no significant difference between the 2 groups in the ideal and perceived levels of functioning (Tables IIIb and IIIc).

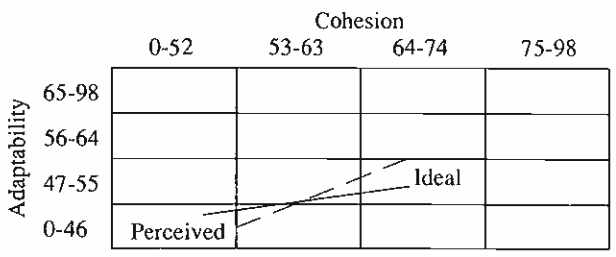
Table IIIb – Levels of functioning in high and low DT subjects (perceived)

Functioning	Group 1	Group 2
Balanced	11 (74%)	450 (70%)
Mid-range	2 (24%)	131 (26%)
Extreme	2 (2%)	26 (4%)
	15	607
		NS

Table IIIc – Levels of functioning in high and low DT subjects (ideal)

Functioning	Group 1	Group 2
Balanced	11 (73.3%)	450 (70.4%)
Mid-range	4 (26.7%)	163 (25.5%)
Extreme	–	26 (4.1%)
	15	639
		NS

Fig 1 – Family satisfaction graph



Group 1 —— (High DT)
Group 2 ------ (Low DT)

Group 1	Cohesion	Adaptability
Mean ideal	66.73	53.60
Mean perceived	51.80	43.20
Group 2		
Mean ideal	67.56	54.57
Mean perceived	52.27	41.43

Fig 1 shows the measures of the 2 groups on current functioning (perceived) and ideal functioning – which is an indirect measure of family satisfaction. In the low DT group, the current functioning was rigid and separated and the ideal was structured and connected. The high DT group had a current functioning at the rigid, disengaged level and an ideal functioning also at the structured and connected level.

Table IV compares the mean differences between perceived and ideal cohesion and adaptability in the 2 groups, and shows that there is no significant difference between the 2 groups.

Table IV – Family Satisfaction: a comparison of groups 1 and 2

Variable		N	Mean	SD	T Value	Sig.
Difference between mean perceived and ideal						
Cohesion:	Group 1	15	14.93	11.76		
	Group 2	639	15.29	11.38	0.12	NS
Difference between perceived and ideal						
Adaptability:	Group 1	639	13.16	9.08	1.2	NS
	Group 2	15	10.40	8.77		

NS : not significant

Table V – Parental Bonding

Variable		N	Mean	SD	T Value	Sig.
Father over-protection	Group 1	15	14.7	6.9	–1.62	NS
	Group 2	641	11.9	6.9		
Father care	Group 1	15	21.5	7.8	–0.77	NS
	Group 2	641	22.7	7.6		
Mother over-protection	Group 1	15	13.5	6.5	–0.04	NS
	Group 2	641	15.5	6.8		
Mother care	Group 1	15	25.0	7.1	–0.58	NS
	Group 2	641	24.0	6.1		

Table V shows that on the Parental Bonding Instrument, there was no significant difference between the 2 groups on measures of parental overprotection and care.

DISCUSSION

Olson et al (1982)[15] developed a model to look at family functioning, along 2 dimensions – family cohesion and family adaptability. Family cohesion measures the emotional ties and closeness that members have for one another, and incorporates the following variables – emotional bonding; time and space; boundaries; coalitions; decision making; interest; and recreation. Four levels of cohesion are postulated to exist:

ie i) disengaged (very low)
ii) separated (low to moderate)
iii) connected (moderate to high)
iv) enmeshed (very high)

The best levels of cohesion for effective functioning are hypothesized to be the midlevel ones of being separated or connected. Extreme functioning with either enmeshment or disengagement, are postulated to be likely to give rise to family pathology.

Family adaptability is defined by Olson et al (1982)[15] as "the ability of a marital or family system to change its power

structure, role relationships, and relationship rules" depending on the situation or circumstances and is related to how the family functions as a unit, how it makes decisions when change occurs. The variables included into the family adaptability concept are family power, negotiation styles, role relationships and relationship rules. The 4 possible levels of adaptability are rigid (very low), structured (low to moderate), flexible (moderate to high), and chaotic (very high).

The results of this study showed that in terms of family functioning there was no significant difference between the low and high drive for thinness group. Neither group was enmeshed on the cohesion dimension, but 60% of the high DT group and 47% of the low DT group were rigid on the adaptability dimension. There was no significant difference also between the 2 groups in terms of ideal family functioning (Fig 1). The high drive for thinness group perceived the family to be rigidly disengaged and wished the ideal family to be structured and connected while the low drive for thinness group saw the family as being just a little more rigidly separated than the other group and also wished the ideal family to be structured and connected.

A comparison with other societies showed that the Singapore family is perceived as more rigid. In Hawaii, family functioning of Caucasians, Chinese Americans, Japanese Americans and Part Hawaiians were seen as "separated and structured" (Jing et al 1986)[16] while the ideal family was desired to be connected and flexible. Thus the perceived Singapore family structure is seen as less balanced and more rigid than those in Hawaii. In terms of ideal family functioning, the Singapore subjects wished for more cohesion, but in a more structured way, compared to the Hawaiians.

In China, a small sample of Chinese families in Nanjing (Qi et al 1986)[17] showed that in families of children with few behaviour problems the perceived family functioning was at the flexible connected (balanced) level, and the ideal was at that of flexible enmeshment ie a shift to the right. In another study of Chinese families in Beijing (Xu et al 1986)[18] 61% were balanced, 27% were midrange and 12% extreme. Comparing this with the findings in the Singapore subjects (Table IIIa), less Singapore families were functioning at the extreme level. In Xu's study neurotics showed a shift to the lower left part of the Circumflex Model, and appeared to be similar to what was found in this present study for the high DT group where a similar shift to the lower left occurred.

As for enmeshment, it appears that this is perceived to occur in only a few families (less than 1% in the low DT group and none in the high DT group). It was interesting that in both groups, about 13-17% wished to have enmeshed families (Tables Ib and IIb). Thus this study shows that enmeshment is not more common in those with behaviour that could lead to anorexia nervosa. As for family satisfaction, which was measured indirectly by looking at the difference between how families perceive their current functioning and what they wish the ideal to be [15], Table IV shows that both groups were not significantly different.

In Singapore, the Parental Bonding Instrument has been used mainly by Tsoi (1989)[19] to measure the relationship of transsexuals with their parents, and Kok et al (1991) [20] to assess the relationship between homosexuals and their parents.

The results in this study showed that there was no significant difference in overprotection and care by parents of both the high and low DT groups. Overprotection has been postulated to be an important factor that may contribute to anorexia nervosa. As the subjects in the high DT group were not a clinical group, it could be that overprotection was not present among parents, but could increase if they actually developed anorexia nervosa. In that case, the overprotection would be a reaction to their condition and not a cause of it.

CONCLUSION

In conclusion then, it does not appear that families of girls who show high drive for thinness scores are very different from those who have low scores. Enmeshment and overprotection does not appear to be significantly different in the 2 groups. If the high scorers were indeed to develop anorexia nervosa in future, then it would appear that such family factors may not be important in the aetiology of anorexia nervosa. Unfortunately a follow up is not possible as the replies were anonymous. A further study, an open one, with a long follow up may be able to shed more light on this subject, although problems about obtaining truthful responses may have to be overcome.

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