The association between mothers’ psychopathology, children’s competencies and psychological well-being in obese children


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ABSTRACT. BACKGROUND: The prevalence of childhood obesity is rapidly increasing, and many obese children suffer from emotional and behavior problems and mental disorders. Associations with social stigmatization of obesity, maternal psychopathology, socioeconomic status (SES) and resilience factors are discussed. OBJECTIVE: We hypothesize maternal psychopathology to have an impact on the psychological well-being of an obese child. We further hypothesize that competence factors within the child are important key factors that influence the way a child deals with the psychological burden of obesity. METHOD: A referred clinical sample of 89 obese children with their mothers was assessed using a structured clinical interview for DSM-IV diagnosis and questionnaires for child and maternal psychopathology, SES, body mass index (BMI), and percent overweight. Correlations, hierarchical linear and logistic regression models were used to analyze associations between mothers and child and the impact of potential predictors. RESULTS: Mental disorders were found in 37.3% of the obese children in our sample. Maternal anxiety predicted the mother referred child’s internalizing problems as well as the child’s depression and anxiety self-report scores. The mental disorder status of the mother predicted the child’s internalizing problems, and maternal binge eating disorder (BED) had an impact on the mental disorder of the child. If the child’s total competences were included in the hierarchical regression model they predicted the child’s outcome in all three subscales of the Child Behavior Checklist (CBCL), thereby reducing the effect of maternal anxiety to influencing the child’s depression score only. Neither SES nor the child’s percent overweight accounted for the child’s well-being. CONCLUSIONS: Although maternal psychopathology and diagnosis of mental disorder had some impact on the psychological well-being of the child, the child’s competences showed a significant negative association with the child’s well-being. Studies on parental and children’s skills and competences will highlight the complex interaction of childhood obesity, comorbidity of mental disorders, and resilience factors and will lead to additional approaches for intervention.

INTRODUCTION

Overweight in children and adolescents represents an uncontrolled, worldwide epidemic, with health consequences not only for adult life but increasingly also for the childhood years (1, 2). In 1973 5% of boys aged 8-11 years old were obese in the United States (3). This figure rose to 11% in 1994 and 15% in 1999. In the same period the prevalence for 12- to 17-year-old rose from 5 to 15% (1, 3, 4).

This is a three-fold increase of overweight children in a period of 36 years.

Many obese children have psychosocial problems: besides poorer academic achievement (5, 6) and reduced quality of life (7), they suffer from lower self- and body-esteem and have a more negative body image compared with their normal-weight peers (8-11). Emotional and behavior problems and higher rates of mental disorders have all been associated with

*This study was conducted as part of a national research project, supported by the Swiss National Fund to evaluate a parent-treatment-programme for obese children (Training für adipöse Kinder und ihre Eltern – TAKA).

Key words: Familial transmission, childhood obesity, comorbidity of mental disorder, resilience.

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Received: July 2007
Accepted: March 25, 2008
Obese children and children's psychopathology

METHOD

Subjects
Subjects were 59 children (34 girls, 25 boys), aged 8-12 and their mothers, screened for treatment in a family-based behavioral treatment study. The sample was recruited in two half-cantons of Switzerland, Basel-Stadt and Basel-Land, via public announcements and referrals from pediatricians. Of the 184 parents who contacted the institute 121 were excluded (43 were no longer interested, 9 mentioned other reasons, 68 were not included due to inclusion criteria). Inclusion criteria were BMI above the 85th age- and gender-specific percentile, no severe mental illness such as psychosis, major depression, or substance abuse disorder, and neither the child nor the mother undergoing therapeutic treatment or participating in an alternative weight-loss program. Participants had to be free from unstable medical conditions, including diabetes, coronary heart disease, and endocrine disorders. After the telephone screen, 63 subjects were invited to the first interview, after which one did not meet inclusion criteria, two refused to participate, and one dropped out for other reasons, leaving 59 eligible for the study.

Measures
Subjects were weighed and measured, and the BMI and weight percent overweight. BMI (percent overweight; effective BMI/BMI 50% percentile) were calculated. All of the mothers were interviewed using a structured interview. DSM-IV short version of the ADIS-IV (40) for the assessment of mental disorders according to the DSM-IV (29). A structured interview, DIB, a German interview with established reliability and validity (39) was conducted with both the child and the mother. The interview was evaluated with an interview assessing DSM-IV research criteria for obesity in children (41). German versions for childhood obesity (12-16). Obese children frequently report disturbed eating behavior (17, 18) and binge eating disorder (BED) (19-21). These findings have been explained by the social stigmatization of obesity and the consequences of bullying and teasing (22-24). However, another explanation could be the transmission of mental disorders in the family. There are numerous studies showing that mental disorders in the family (25-26). Whether this holds true specifically for obese children was examined by Epstein et al., who included maternal psychopathology, socioeconomic status (SES) and child's percent overweight in their hierarchical regression model to test the influence of these factors on the child's psychological functioning (15, 16). Positive associations between maternal psychopathology and SES and the child's emotional and behavioral problems were found (13, 15, 16). Existing findings, however, have their methodological limitations, as they mostly rely on maternal reports, no clinical expert diagnoses according to Diagnostic and Statistical Manual for Mental Disorders (IV DSM-IV) (29) were made for children and mothers, and variation in body mass index (BMI) was small in the clinically obese group.

Parental mental disorders often co-occur with psychiatric disorders, eating problems, and socioeconomic factors, and these may constitute specific and non-specific risk factors for the healthy development of the child (26, 30). The cumulative presence of risk factors such as chronic diseases (e.g., obesity), social stigmatization and parental psychopathology may increase the probability of impaired development of the obese child. However, protective factors such as a healthy parent, outside social support, and the child's own competencies may reduce this risk (31-35). The risk-resilience model of the impact of adversities on the child's development proposes a broader perspective on the way a child deals with stressors (31, 33, 35-37). Genetic influences, social environment, parental illness and skills, the quality of relationships with others, and the child's own competencies interact to define the outcome and mastery of a chronic stressor such as obesity. It is the goal of this study to clarify the role of maternal psychopathology and mental disorder in the psychopathological status of the obese child. We hypothesize that the obese child's well-being can be explained by maternal psychopathology. To obtain reliable and valid assessment of mothers' and children's psychopathology, we avoided informant bias. We assessed the children's and the mothers' psychopathological status with structured clinical interviews such as the Kinder-DIPS (39) and Mini-DIPS (40), in addition to child and parent questionnaires.

Because psychopathological problems are more frequent among overweight children and yet a substantial number of obese children do not show any psychopathological problems, other factors beyond familial transmission influence obese children's vulnerability. We intend to expand the diagnostic model by including potential factors such as parental neglect or resilience perspective, and we hypothesize that we will find decreased rates of mental disorders and behavioral problems with increased competences of the child.
listed in Table 2. We had to restrict the number of independent variables in the model to avoid overfitting (65). The p-values of the various regressions were considered as purely exploratory and therefore no further attempt was made to adjust for multiple testing. In a separate analysis the two categorical variables mental disorder and BED of the child were analyzed using a hierarchical logistic regression model. Analyses were conducted using SPSS 11.0. To meet regression analysis assumptions (homoscedasticity, normality) the following variables were transformed: the DIBK total score, the STAIK T-score (all log-transformed), percent overweight of child, internalizing/externalizing score of CBCL, total problems score of CBCL, mother’s BAII and BDI score (all square-root transformed).

## RESULTS

Psychopathology of children and mothers

Children were on average 10.27 years (SD=1.46) old and were 60.0% (SD=22.3%) overweight. Their mothers were on average 39.9 (SD=5.1) years old and had a mean BMI of 28.2 (SD=3.8). Twenty-five families had a low SES (42.4%), 29 a middle SES (49.2%), and 5 a high SES (8.3%).

Twenty-two (37.3%) of the children met criteria for a mental disorder according to DSM-IV-TR, 28 (45.9%) had a CBCL total problems score above the clinical cutoff, 25 (41.0%) an internalizing disorder, and 20 (32.8%) an externalizing disorder. Anxiety and depression scores in the sample were high (STAIK: 25.4%, n=15 above clinical cutoff); those for depression were average (8.5%, n=5 above clinical cutoff). Twenty-one (36.2%) of the children met criteria for a BED. There were no sex differences for any of the above-mentioned characteristics (p>0.05 for all comparisons based on t- or χ²-tests).

Seventeen (27.9%) mothers met criteria for a diagnosis of a mental illness and five (8.5%) for a BED, both according to DSM-IV-TR (29). Five (8.5%) and eight (13.6%) mothers were above the clinical cutoff for depression (BDI) and anxiety (BAII), respectively.

Associations between children’s and mother’s psychopathology, weight and SES

Mothers’ anxiety and depression was associated with child’s anxiety and depression, and CBCL total problem score and internalizing problems (Table 3). Eating disorders pathology was however not associated, neither was BMI of the mother associated with a higher psychopathological score in the child.

Predictors of children’s well-being

In Table 4 significant predictors of children’s well-being of all three models are presented. Mother’s BAII and child’s total competences (CBCL) were found to be the best predictors of the child’s well-being (Table 2). Mother’s BAII was positively related to internalizing problems, depression (DIKJ), and anxiety (STAIK) of the child. The child’s total competences score was negatively related to the internalizing and externalizing problems score (CBCL), as well as to self-reported depression (DIKJ). Further we found a positive relationship between the probability of mental disorder of the mother and internalizing problems of the child.

There was a positive relationship between mother’s BED and the probability of a mental disorder of the child (OR: 22.13, 95% CI: (3.45, 264.315) p<0.003, r² Nagelkerke=0.271).

## DISCUSSION

The major aim of our study was to analyze the impact of mother’s psychopathology on the psychopathological problems of the obese child. We first analyzed prevalence rates of mental disorders in our sample. As expected the rate of mental disorders in our clinical sample (37% by clinical interview) was much higher than in a normal population of Swiss children and adolescents (22.5%) (36), the assessment by structured interview combining mother and child report underlines the validity and reliability of this result. We then tested for associations between children’s mental health and potential predictors. Our results show significant associations...
between the psychopathology of obese children and psychological distress of their mothers. Children who had a mother with a mental disorder and her own behavior disorder had a higher risk of having internalizing problems. In line with the literature and our expectations, mothers with a BPD had higher internalizing problems, which suggested the increased probability of a mental disorder (21, 57).

Confirming previous results (13, 15, 16), our hierarchical linear model analyses confirmed the mother's psychopathology to be a predictor for the child's psychological problems. Epstein suggested that the impact of the mother's behavior on the child's well-being might be due to her interpretations of the child's psychological status, findings based on mothers' reports only. We showed (13, 15, 16, 58) that maternal psychopathology predicts children's behavior problems also in child-reported, and expert-based sources of clinical assessment of child and mother, which strengthens the validity of our results. The child's percent overweight did not account for additional variance in the psychopathological symptoms of the child. In contrast to Epstein's findings, SES did not predict children's psychological problems in our sample. This may be due to the different social context in Switzerland, and our sample consisting of mostly middle-class children. According to our findings, externalizing symptoms predicted the child's internalizing problems and the child's self-reported depression and anxiety symptoms, underlining the importance of the inclusion of parents in diagnosis and treatment of obese children. Our results of the associations between mother's psychopathology and child's behavior problems were not as strong and evident as in Epstein's studies (15, 16). Maternal anxiety only accounted for differences in the child's psychopathological problems, whereas mother's depressive symptoms and eating-disorder pathology did not make a significant contribution. This may be due to different measures and to the fact that our mostly middle-class sample was of lower general psychopathology.

Our second aim was to demonstrate the predictive value of the child's competencies for the child's well-being and relating the child competences in our hierarchical regression analysis showed this factor to be an important predictor for the child's psychological parameters. The only other predictive variable for the child's depression score was mother's anxiety. The child's overall competence negativity predicted the level of the child's psychopathological problems, internalizing and externalizing, and was a far better predictor than mother's psychopathology and child cooperation and lesser involvement in their overweight children. The total competences score includes social and academic skills and number of activities the child undertakes outside school. Of course the competences are themselves influenced by the family, by the psychological distress of the mother and her own behavior disorder. If we controlled for depression, they showed negative correlations with the child's problem scales. But in our sample they did not show any association with mother's psychopathology nor were they themselves predicted by the child's other CBCL subscales. Discussing the differential effects of obesity on children's well-being is perhaps still too straightforward, it might be more difficult to detect potential associations among variables (deflated correlation). As we described, the control group of mothers and children was available, future research should include this for the better understanding of the differential effects of obesity. Fourth, due to the restricted sample size some of the models we used are likely to suffer from overfitting. Fifth, as our study was conducted on a sample not able to make any statements regarding causal relationships. To do so, the nature of the associations between child's percent overweight, the child's psychological well-being, and mother's psychopathology should be further investigated in prospective longitudinal studies. Bearing the above-mentioned limitations in mind, we can say that the mother's psychological well-being and eating disorder status has a major influence on general psychopathological, behavioral problems, and frequency of mental disorders in the obese children. However, the presence of competences in the child determines if he or she can cope with the psychosocial burden of obesity. Enhancing resilience factors and teaching coping strategies in treatment programs may be the two key factors for intervention in childhood obesity.

REFERENCES


A pilot study exploring Machiavellianism in anorexia nervosa

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ABSTRACT: Machiavellianism has not previously been systematically explored in the eating disorders. This personality dimension involves the social cognitive processes required to identify others' intentions and the use of strategies to deceive and manipulate others. Individuals suffering with Anorexia Nervosa (AN) often try to conceal their disorder through the use of deceptive strategies. In this study we explore Machiavellianism in 22 female AN patients and 41 female healthy controls (HCs). AN patients and HCs did not differ significantly in their self-reported Machiavellianism, but both groups did score highly in this domain. Possible explanations for these results are discussed.

(original Research paper)

INTRODUCTION

Recent research has suggested that individuals with anorexia nervosa (AN) may experience deficits in their social cognitive abilities (1). Social cognition refers to the mental operations underlying social interactions, including perceiving, interpreting, and generating responses to the intentions, dispositions, and behaviours of others (2). Social cognition is used interchangeably with the term social information processing which includes social perception, social cognition, facial affect perception, ‘mind reading’, and emotional processing among others (3). A number of studies have shown that individuals reported to be high in AN are significantly less able than healthy controls (HCs) to recognise other peoples’ emotions (3-5). Furthermore there is some evidence suggesting that people with AN may experience difficulties in correctly inferring other peoples’ thoughts and intentions. For instance, one study found that a significant proportion of AN patients perform worse than HCs on experimental measures of Theory of Mind (ToM) (6). These potential difficulties in processing social and emotional information are consistent with the clinical observations that people with AN do experience problems in the socio-emotional arena. Having said this, social cognitive deficits have not been universally reported in AN. Two recent experimental studies (7, 8) have found to have impaired emotion recognition on experimental measures of ToM. It is possible that severe eating disorders, Machiavellianism, social cognition.

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Received: March 5, 2008
Accepted: March 31, 2008

Key words: Anorexia nervosa, eating disorders, Machiavellianism, social cognition.

Empathy has failed to distinguish between people with AN and HCs (9). The limited, and inconsistent research findings regarding social cognition in AN are compounded by the fact that only very few social cognitive domains and processes have been explored in AN. One area of social cognition that has been largely unexplored in AN is the personality trait of Machiavellianism, defined as the tendency to deceive and manipulate others for personal gain, involving individual differences in the ability to manipulate others and in the tendency to behave deviously. To be Machiavellian, one must be able to accurately identify others’ thoughts and intentions in order to predict how they will behave, and how one will manipulate them. Individuals who score highly on measures of Machiavellianism (High Machs) tend to take a detached, calculating approach in their interaction with other people, and are easily able to deceive their own gain. Low Machs, on the other hand, tend to take a more person-centred, empathic approach in their interaction with others. They tend to be more trusting of others, and believe that others are essentially good natured.

Machiavellianism has not been explored in the eating disorders. However, clinicians in the field have long recognised the ‘tactical denial’ or ‘deliberate concealment’ of difficulties or problems by eating disordered individuals (11). Individuals suffering with AN are often labelled as ‘manipulative’ by their physicians (12). This ‘tactical denial’ and ‘manipulativeness’ is evident particular-