

Concordance of Parent-Child Temperament Ratings in a Clinical Sample of Adolescent Girls

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ABSTRACT: Fifty-six adolescents meeting DSM-III-R criteria for anorexia nervosa, bulimia, and major depression, were asked to complete self-assessments of temperament using the Dimensions of Temperament Survey—Revised (DOTS-R). Parents independently rated their children using a parent version of this scale. We found that parents and patients agreed significantly on all nine subscales. This high correlation suggests that parents' perceptions of their adolescents' temperaments concur with the adolescents' self-perceptions. These findings suggest that the observation of temperament remains concordant even in parent/child dyads often characterized by significant conflict.

KEY WORDS: Temperament; parent child concordance; adolescents.

Temperament differences between children is an area of growing interest and research since the landmark work of Thomas and Chess.¹ Simply defined, temperament denotes the characteristics of an individual's behavioral style. These features have been shown by some investigators to have a genetic basis.² Other authors have theorized that temperament has a genetic origin that is influenced over time by environment and development.³

Temperament has been shown to be an important early predictor of

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some features of later behavioral adaptation.⁴ It may also be an important factor in early parent-child relationship development.⁵ The relationship between childhood temperament and the later development of psychopathology is under investigation and shows promise as an early risk or protective factor for vulnerability to psychiatric disorder.^{6,7,8}

Although much of the original research on temperament focused on infancy and early childhood, recent work has shown that certain dimensions of temperament continue to be identifiable into adolescence and young adulthood.⁹ Lerner et al.,⁹ in their design of The Dimensions of Temperament Survey—Revised (DOTS-R) sought to identify age-specific, content-related constructs likely to be identifiable throughout the life span. Demonstrated continuity across this age range is a unique feature of the DOTS-R, making it a potentially important tool for the study of temperament in developmental perspective. The DOTS-R is conceptually based on the original nine categories of temperament described by Thomas and Chess in the New York Longitudinal Study.¹

Since the development of this tool, many investigators have shown that temperament measured during adolescence is associated with important features of coping and adaptation in later life. Specifically, adolescent temperament has been shown to be correlated with social adjustment, academic performance, and perceived self-esteem.^{10,11}

Further, Windle et al.¹² have provided evidence that temperament, when considered in combination with family social support, is predictive of internalizing and externalizing disorders of adolescence (specifically depression and delinquency). Other evidence is emerging to indicate that variations in adolescent temperament may also be predictive of vulnerability to later onset of many forms of psychopathology.^{10,12-14} Because adolescent temperament appears to be an important factor in predicting vulnerability to behavioral disturbance, the further validation of temperament assessment tools is an important research agenda in child psychiatry.

Temperament in young children is generally assessed using either direct behavioral observation or parental report. Temperament measures in adolescent populations are unique in the sense that self-report can be used, providing a potential alternative to parental sources. If adolescent self-report proves a valid measure, it could serve to alleviate problems of bias thought to exist in parental ratings. The accuracy of parental report of child temperament has been questioned by many researchers due to the potential confounding ef-

fect of perceptual bias, i.e., that parents' perceptions of their children's behavior may be distorted by attitudes and attributions not based on a child's actual characteristics. This phenomenon has been previously demonstrated in infant temperament ratings where prenatal maternal characteristics predicted ratings of infant temperamental difficulty.¹⁵

Parent perceptual bias or distortion would seem possible in adolescent populations, as they are often characterized by a high degree of parent-child strife and, thus, perhaps interpersonal distortion. The relationship between parental temperament report and adolescent self-report has not been explored and remains potentially divergent.

In this study we explored whether ratings of temperament by self and parent-report were concordant across individual subscales of the DOTS-R in three adolescent clinical populations. The relationship between parent and adolescent ratings has potential importance both for the validation of the DOTS-R and for further understanding of uses of the measure of temperament in an adolescent population.

Methods

Subjects

Fifty-six female adolescent outpatients seen in a teaching children's hospital outpatient clinic for eating disorders were studied. Those patients meeting DSM-III-R criteria for anorexia nervosa ($n = 18$), bulimia ($n = 19$), and major depression ($n = 19$) were drawn from consecutive outpatient evaluations at this clinic for study in this project. The psychosomatic program, although located in an upper middle-class community, serves patients from diverse socioeconomic backgrounds. For the analysis, these groups were matched for SES (mode = 2 by Hollingshead Redlich Two Factor Index) and age (15.5 ± 1.8).

Formal diagnosis was obtained by consensus between one senior clinician and a child psychiatry fellow using clinical interviews. All patients and parents included in the study completed the DOTS-R as a part of a routine clinical assessment in addition to other standardized assessment tools.

Measures

At the time of diagnosis, all patients were asked to complete the DOTS-R (SELF). This is a 54-item self-report inventory coded to form nine subscales used to measure temperament across the life-span but with a version specifically geared for a young adult population.¹⁶ Concurrently, parent(s) (either mother individually, or a consensus rating by both parents) of these patients were asked to complete the parent version of the inventory. These two inven-

tories are identical in content but differ only in use of pronouns to denote the subject of the questionnaire. The subscales of the DOTS-R are based conceptually on the original dimensions of temperament defined by Thomas and Chess in the New York Longitudinal Study.¹ The original items of the DOTS-R were then subjected to factor analysis. Internal consistency across all dimensions in the targeted age groups (preschool, elementary, and young adult) in the inventory design has been shown to be moderate to high using Cronbach's alpha.¹⁷ The subscales of the DOTS-R are as follows: 1) activity level-general; 2) activity level-sleep; 3) approach-withdrawal; 4) flexibility-rigidity; 5) mood quality; 6) rhythmicity-sleep; 7) rhythmicity-eating; 8) rhythmicity-daily habits; 9) task orientation. All scales were scored by a psychometrician not directly involved in the clinical care of the patients.

Analysis

All parent and adolescent ratings on each subscale were compared using the Pearson and Spearman correlation coefficients as measures of association. Since both analyses yielded comparable results, we will only use the Pearson in this report. Furthermore, we compared the means of adolescents and parents ratings by means of Student's *t* as a measure of disparity. A two-tailed test of significance was used for all aspects of the analysis.

Results

Ratings by parents and their adolescents on the DOTS-R correlate significantly on all nine subscales of this instrument (Pearson's *r* ranging from 0.795 to 0.643, all *p*'s < .001, [see Table 1]). These correlations appear to be independent of diagnostic category or age: there was no significant correlation between age and any of the temperamental subscales. We also ran separate correlations in each of the diagnostic subgroups and found associations of similar magnitude as the ones reported for the whole sample. In addition, two-tailed Student's *t*-tests were performed comparing the mean of parent and patient scores on individual subscales in order to confirm that these two groups of raters not only agreed with the direction, but also the magnitude of the association (see Table 1). We found no significant differences between parents and patients on any of the nine subscales.

Discussion

As expected, there was a high level of agreement between parent(s) and daughters on ratings of adolescent temperament both in terms of

Table 1
Correlations Between Parent and Adolescent Ratings of Temperament

	<i>Patient</i>		<i>Parent</i>		<i>Pearson's</i> <i>r</i>	<i>t</i>	<i>p</i>
	<i>Mean</i>	<i>(S.D.)</i>	<i>Mean</i>	<i>(S.D.)</i>			
ACT-G	20.375	(5.280)	19.750	(5.313)	0.795*	0.624	0.534
ACT-S	9.125	(3.866)	8.764	(3.328)	0.790*	0.527	0.599
APPR	19.182	(4.359)	19.582	(3.933)	0.663*	-0.505	0.614
FLEX	14.071	(3.269)	14.143	(3.107)	0.667*	-0.119	0.901
MOOD	19.714	(5.855)	20.821	(5.343)	0.743*	-1.045	0.298
RHYS	14.946	(4.708)	15.618	(3.956)	0.756*	-0.813	0.418
RHYE	12.768	(4.592)	12.875	(4.549)	0.684*	-0.124	0.902
RHDP	10.161	(2.702)	10.698	(2.880)	0.646*	-1.005	0.317
TASK	19.500	(4.729)	20.429	(4.872)	0.739*	-1.023	0.304

*p < 0.001

the direction of the association as well as the magnitude attributed to each subscale. The correlations are significant, but range from moderate to high. This is not surprising, given that some of the items ask for a rating of events that are somewhat private and not readily observable in an adolescent population.

Still, the significant correlation between ratings by parents and their adolescents suggests that the parental perception of the adolescent's temperament concur with the adolescent's self-perceptions. This concordance appears to be stable across the age range studied. Of practical importance, then, is the conclusion that this scale, which can be applied to either parent or adolescent with equal facility, offers results that are concordant across the adolescent-parent dyad. Investigators utilizing this instrument may reasonably limit the sources polled when assessing temperament in adolescent patients within the diagnostic groups studied. This suggests that either parent or adolescent may be an equally valid informant in the assessment of temperament by this measure.

On a theoretical basis, these findings are notable in that they occur in a clinical cohort where conflict between adolescent and parent is often an integral feature of the psychopathology. These findings suggest that even in parent-child dyads characterized by a high likelihood of strife, there is strong agreement in the assessment of adolescent temperament. This is a notable contrast to the lack of concordance found between parent and child ratings of depression or

symptoms of conduct disorder in populations of child psychiatric inpatients. Since the range of diagnoses within the study group is limited (to depression and eating disorders) there is the possibility that an associated limitation in temperamental range also exists within the study population. The possibility then that the concordance is found only in a narrow range of temperamental profiles which characterize those disorders studied should be considered and may limit the generalizability of the findings.

Concordance of parent-child assessments within psychiatric assessment, in general, has been a problematic and complex issue. Herjanic et al.¹⁸ have shown that when children and their parents report on concrete items such as the presence or absence of specific symptoms there is relatively high concordance between reports. However, when the frequency, severity, or duration of symptoms are assessed the correspondence between parent and child tends to be low. Mothers' and fathers' reports, however, were correlated. Kazdin et al.¹⁹ found low and generally nonsignificant correlations between mother-child and father-child ratings of depressive symptomatology in a latency age population of depressed inpatients. Weissman et al.²⁰ using several assessment tools also find no significant correlation between children and their mothers' ratings of depression. Poznanski et al.,²¹ suggest that children may under-report symptoms that they believe will draw criticism from adults.

In looking at a more heterogeneous clinical group of child psychiatric inpatients, Kazdin et al.²² found low to moderate correlation between parent and child ratings of symptoms. In that study, the low correlation did not vary as a function of the type of disorder or the assessment format used (self-report and interviews were both tried). In a meta-analysis of 119 studies, Achenbach et al.,²³ concluded that there is a low correlation between parent and child ratings, especially in adolescent populations.

Our findings of concordance of temperament ratings appears to be in contrast to the discordance seen in various symptom scales and diagnostic assessments. Perhaps there is a qualitative difference between the observation and self-experience of a construct such as temperament when compared to the assessment and experience of psychiatric symptoms, which are often more acute in onset and fleeting or inconsistent in duration. Further, psychiatric symptoms are associated with negative value judgments and, in addition, are often egodystonic to the patient. This may result in either an under-rating of symptoms as Poznanski et al.²¹ suggests, or a lack of acknowledge-

ment or insight into symptomatology. In theory, temperament is thought to represent the more enduring aspect of behavioral style and, if so, it would follow that parents and patients with a history of experience with this behavioral consistency would develop perceptions that are highly reliable. This inter-rater reliability lends validity to the notion that temperament is a relatively stable and unchanging trait throughout adolescence.

Another factor that may explain the discrepancy between our findings and those previously cited is age. Much of the work to date on concordance between parent and child ratings of psychiatric symptoms has been done in the latency age population. The clinician may be inclined to assume that adolescents are more reliable self-reporters based on developmental maturity alone. The literature, however, remains mixed on this issue. Weissman et al.²⁴ found no age effect in a sample ranging from 6-17 for any diagnostic category. In contrast, Herjanic and Reich²⁵ find better concordance between early adolescents and their parents compared to a latency age sample, while Edelbrock et al.,²⁶ find better agreement with younger children. Achenbach's meta-analysis is suggestive of better correlations in a latency age population as well. It remains unclear whether the observed discrepancies may be accounted for by changes in a parent's perception or acknowledgement of symptomatology in a child or by changes in the child's self-awareness and/or self-disclosure.

The fact that our sample is entirely female may also be an important factor in the high rate of concordance. However, the effect of sex in studies of concordance appears as ambiguous as age effects. Herjanic et al.¹⁸ found better concordance between females and their parents in a population of depressed boys and girls ranging in age from 6 to 16, while Weissman et al.²⁴ found more agreement between mother and sons in similar assessments of depressive symptomatology.

The results of this study may raise more questions than they resolve. Clearly, there is need for further investigation into parent-child temperament correlations in other clinical populations as well as in the general population. Differences between parent-child correlations in ratings of constructs such as temperament, as opposed to ratings of psychiatric symptomatology, seems apparent and should be investigated further.

Summary

The concordance found in temperament ratings in this population of depressed and eating disordered adolescents lends validity to the use of DOTS-R as a temperament measure. It implies that temperament may be adequately assessed using this tool by either parent or child in future research designs. Further, the findings are particularly notable in the clinical cohort studied in which conflict between parent and child is often an integral feature of the psychopathology suggesting that the observation of temperament remains concordant even in parent/child dyads characterized by significant conflict.

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