

Original Article

# Adolescent Defense Style as Correlate of Problem Behavior

Julia Huemer<sup>1</sup>, Richard J. Shaw<sup>2</sup>, Antonio Prunas<sup>3</sup>,  
Rebecca Hall<sup>2</sup>, James Gross<sup>4</sup>, and Hans Steiner<sup>2</sup>

<sup>1</sup>Department of Child and Adolescent Psychiatry, Medical University of Vienna, Vienna, Austria, <sup>2</sup>Department of Psychiatry and Behavioral Sciences, Stanford University School of Medicine, Stanford CA, USA, <sup>3</sup>Department of Psychology, University of Milan-Bicocca, Milan, Italy, <sup>4</sup>Department of Psychology, Stanford University, Stanford CA, USA

**Abstract:** *Objective:* Adolescent problem behaviors are often the visible results of intrapsychic distress. Defensive reactions are the unconscious means of managing intrapsychic distress. This cross-sectional study examines the strength of defensive style as measured by self-report on the Response Evaluation Measure (REM-71) relative to age, sex, and SES, as a correlate of internalizing and externalizing problem behaviors, as assessed by the Youth Self Report (YSR). *Methods:* A sample of 1,487 students from two suburban high schools completed self-report measures of defense style, self-esteem, and internalizing and externalizing problem behaviors. Demographic variables (age, sex, and SES) were included as covariates. *Results:* Mature and immature defense style correlated as expected with problem behaviors. Demographic variables contributed minimally to the variance in the outcome variable. *Conclusions:* Defense style, as assessed by the REM-71, is a significant correlate of clinically elevated internalizing and externalizing problem behaviors in youth as in adults. This study adds to the convergent validity of the REM-71.

**Keywords:** defense reactions, internalizing and externalizing problem behaviors, adolescence

## *Abwehrmechanismen als Korrelate von Problemverhalten*

**Zusammenfassung:** *Ziel:* Problemverhalten bei Jugendlichen ist oftmals eine Konsequenz von intrapsychischem Stress. Psychologische Abwehrmechanismen sind unbewusste Maßnahmen um intrapsychischen Stress zu reduzieren. Die vorliegende Querschnittsstudie untersucht die Art des Abwehrstils als Korrelat zu internalisierendem und externalisierendem Problemverhalten (Fragebogen «Youth Self Report» (YSR)) mithilfe des Fragebogens «Response Evaluation Measure» (REM-71), relativ zu Alter, Geschlecht und sozioökonomischen Rahmenbedingungen. *Methoden:* Eine Gruppe von 1487 Studenten von 2 suburbanen Schulen füllten Fragebögen zu Abwehrstil, sowie internalisierendem und externalisierendem Problemverhalten aus. Demographische Variablen wie Alter, Geschlecht und sozioökonomischer Status wurden als Kovariate beschrieben. *Resultate:* Reifer und unreifer Abwehrstil korrelierte mit Problemverhalten. Demographische Variablen trugen minimal zur Varianz der Ergebnisse bei. *Schlussfolgerungen:* Der mit Hilfe von REM-71 erfasste Abwehrstil ist, vergleichbar mit Ergebnissen bei Erwachsenen, ein signifikantes Korrelat von klinisch relevantem internalisierendem und externalisierendem Problemverhalten. Diese Studie trägt zur Konvergenzvalidität des REM-71 bei.

**Schlüsselwörter:** Abwehrmechanismen, internalisierendes und externalisierendes Problemverhalten, Adoleszenz

## Introduction

The DSM-5 (Paris & Phillips, 2013) defines defense mechanisms as “mechanisms that mediate the individual’s reaction to emotional conflict and external stressors. Some defense mechanisms are mostly invariably maladaptive. Others may be either maladaptive or adaptive, depending on their severity, their inflexibility, and the context in which they occur” (p. 819). This study builds on the research of both Sigmund Freud and Anna Freud (Vaillant, 1994), sug-

gesting that defense mechanisms may have a link with psychiatric symptoms. This proposal has been supported by the large body of evidence suggesting that the maturity of defenses is related to measures of both psychological health as well as to the presence of specific psychiatric symptoms or general measures of psychological distress (Bond & Perry, 2004; Holi, Sammallahti, & Aalberg, 1999; Muris, Wnands, & Horselenberg, 2003; Sammallahti, Aalberg, & Pentinsaari, 1994).

Research with the Defense Style Questionnaire (DSQ),

one of the most widely used self-report instruments used to assess defenses, for example, has showed that it is possible to use defenses to differentiate between normal control subjects and many psychiatric populations, including those with eating disorders, mood and anxiety disorders, and individuals with borderline and other personality disorders (Andrews, Singh, & Bond, 1993; Bond, Gardner, Christian, & Sigal, 1983; Bond & Perry, 2004). Most of these findings, though, were limited to adult samples. We wanted to test this association in a large sample of adolescents with age-specific instrumentation.

There is an ongoing debate on how to differentiate best defensive mechanisms and label them into categories. The REM-71 has proved to be a psychometrically balanced self-report instrument for the assessment of defenses in adolescents and adults and, in a modified version, in school-age children (Araujo, Medic, Yasnovsky, & Steiner, 2006; Steiner, Araujo, & Koopman, 2001). The instrument represents a departure from models that categorize nonpsychotic defenses into three or four groups.

Previous data suggest the need for studies of the relationship between defenses and psychosocial variables in children and adolescents. Existing studies suggest that maturity of defenses in adolescents has a similar relationship with adjustment, with immature defenses being associated with lower levels of adaptation, and mature defenses being associated with better global adjustment (Cramer, Blatt, & Ford, 1988; Erickson, Feldman, & Steiner, 1996). Adolescent studies of defenses using the DSQ have shown that it is also possible to differentiate normal adolescents from those with psychiatric disorders, including delinquent youths and those with psychosomatic illness (Erickson et al., 1996; Feldman, Araujo, & Steiner, 1996; Muris et al., 2003; Steiner & Feldman, 1995). More recently, Ruuttu et al. (2006) demonstrated that maturity of Defense Style is associated with the amount of psychiatric symptoms in adolescents assessed using the General Health Questionnaire. Similar findings have been reported in studies using the DSM-IV Psychopathology Questionnaire for Youths and the Youth Self-Report (YSR) in adolescents (Evans & Seaman, 2000; Muris et al., 2003). Longitudinal studies have also shown that immature defenses in late adolescence predict psychiatric symptoms in young adulthood (Tuulio-Henriksson, Poikolainen, Aalto-Setälä, & Lonnqvist, 1997). A recent study found a positive association between Factor 1 defenses and severity of psychopathology and, to a much lesser extent, a negative association between Factor 2 and psychopathology in a mixed adult and adolescent sample (Prunas, Preti, Huemer, Shaw, & Steiner, 2014). Additionally, sex proved to moderate the association between immature defenses and symptoms.

Another study investigated developmental aspects of psychological defenses in relation to self-complexity, self-perception, and symptomatology through a comparison of two groups of adolescents characterized by defense maturity level (i.e., immature versus mature defenses), the mature defense group reported significantly higher self-com-

plexity than the immature defense group, and mature defense mechanisms seemed to be more adaptive in late adolescence (Evans, 2000). Another study by Muris et al. (2003) sought to examine relationships between defense styles, personality traits, and psychopathological symptoms in nonclinical youths. Results revealed clear relationships between personality traits (neuroticism and psychoticism) and defense styles (neurotic and immature defense), on the one hand, and psychopathological symptoms, on the other hand. In addition to this, regression analyses indicated that personality traits and defense styles both accounted for unique proportions of the variance in psychopathological symptoms.

In this study, we used a large community sample of exclusively adolescents to further explore the relationships between defense style and problem behaviors. Specific hypotheses tested in the current confirmatory study were as follows:

- 1) Immature defense style assessed using the REM-71 will be positively associated with measures of problem behaviors assessed using the Youth Self Report Scale.
- 2) Mature defense style assessed using the REM-71 will be negatively associated with measures of problem behaviors.

## Methods

### Subjects

This study was approved for passive consent by the institutional review board. Passive consent was indicated by the agreement of students in two local suburban high schools in the United States to participate in the survey. Those administering the questionnaires were clinically trained, and questionnaires were only given to subjects after they had received sufficient information about the purpose of the study. This study sample was a nonclinical population. Of the students surveyed, 89% returned valid surveys. Of these 1,487 students, 45% were male ( $N = 663$ ) and their mean age was 15.9 years ( $SD = 1.2$ , range 13–20). Ethnic composition of the sample was as follows: Caucasian 39.5%, Hispanic 25.8%, Asian 12.9%, Other 11.8%. Their parents' employment levels were average for the region (94% of fathers and 82% of mothers were employed; 77% of the students came from two-income homes).

### Measures

#### Response Evaluation Measure

The REM-71 (Steiner et al., 2001; Steiner & Feldman, 1995) is a 71-item, self-report questionnaire used for the assessment of defenses which has been previously described and its factor structure reported in the adult, ado-

lescent, and child population (Araujo et al., 2006; Yasnovsky et al., 2003). Initial validation against life satisfaction measures provided support for face validity. Twenty-one defenses mechanisms are assessed based on responses to three or four items, each of which is rated on a 9-point scale from *strongly disagree* (scored as 1) to *strongly agree* (scored as 9). Individual defense scores are derived from the average scores for the items representing that defense. Unrotated principal components analysis yields a two-factor solution that is utilized in the current study and that was confirmed in a second large sample of Italian adults and adolescents (Prunas et al., 2009). Factor 1 (F1) consists of 14 immature defenses that distort reality in accordance with expected outcome, leading to less adaptive functioning. Factor 2 (F2) consists of seven mature defenses used to attenuate unwelcome reality but which promote more adaptive functioning.

### Youth Self-Report (YSR)

To explore the hypotheses regarding problem behaviors, participants completed the YSR (Achenbach & Rescorla, 2001). The YSR is a self-report measure designed to establish an empirically based classification system of child psychopathology. Subjects rate themselves using a 3-point scale on 20 items describing social competency and 102 behavioral problems of clinical relevance. The YSR is factor analyzed to describe seven narrow-band syndromes (withdrawal, anxiety/depression, somatic complaints, thought problems, attention problems, delinquency, and aggression). Behaviors can be further categorized into two broadband syndromes described as *Internalizing* (withdrawn, depressed, overcontrolled) or *Externalizing* (aggressive, gets into fights, is undercontrolled). There is also a score for Total Problem Behaviors.

### Statistics

Statistics were calculated using the Statistical Package for the Social Sciences (SPSS). Comparisons of defense styles, sex, age and SES with problem behaviors were carried out using Pearson correlations. The type I error level was chosen to be 0.05. Additionally, multiple regression analyses were carried out for YSR problem behaviors and defense factors, controlling for sex, age and SES.

### Results

The primary objective of the analyses was to assess the unique and combined relationships between defense style and problem behaviors. Multiple hierarchical regression analyses were employed to identify the independent contributions of age, sex, SES, and defense mechanisms in re-

lation to the dependent variables of problem behaviors. Age, sex, and SES were included in the first step, and the two factors of defense style in the second step. In all of the analyses, when age, sex, and SES were entered into the first regression model, they accounted for 1–3% of the variance in problem behaviors (adjusted  $R^2$ ).

### Problem Behaviors

Pearson correlation coefficients were first computed to show the relationship between defense style as assessed using the REM-71 and measures of problem behaviors as assessed using the YSR (see Table 1). Immaturity of Defense Style (F1) was significantly positively correlated with all three scales of the YSR (all  $ps < .0001$ ), with correlations varying between 0.48 (Externalizing) to 0.65 (Total Problem Score). Mature Defense Style (F2) was significantly negatively correlated with all three scales of the YSR (all  $ps < .0001$ ), with correlations varying between  $-0.16$  (Internalizing) to  $-0.23$  (Externalizing). The strength of the correlations suggests that Immature Defenses (F1) are more strongly associated with problem behaviors than are Mature Defenses (F2), as we would expect from our developmental model.

Table 1

*Pearson correlations of defense styles, sex, age and SES with measures of problem behaviors assessed with the Youth Self Report*

	Problem behaviors		
	Internalizing	Externalizing	Total problems
F1	0.60*	0.48*	0.65*
F2	-0.16*	-0.23*	-0.20*
Age	0.08***	0.04	0.07***
SES	0.10**	0.11*	0.13*

Note. \* $p < .0001$ , \*\* $p < .001$ , \*\*\* $p < .05$ .

To further examine the relationship between defenses and problem behaviors, a series of hierarchical regression analyses were carried out with Factor 1 and 2 as independent variables, and self-report of symptoms on the YSR as dependent variables (see Table 2). After controlling for age, sex, and SES, defense style accounted for 39% of the variance for Internalizing symptoms, 30% of Externalizing symptoms, and 48% of Total Problem Behaviors. The effect of defenses (Factor 1 and/or Factor 2) was more significant than that of age, sex, or SES in predicting all criterion measures.

To examine the question of the relationship between defenses and clinically significant Total Problem scores on the YSR, Total Problem scores were first dichotomized into two levels, either “nonclinical,” comprising a T score of less than 60, or “clinical,” comprising a T score of 60 or greater, as recommended in the YSR scoring manual (p. 45). This measure examines the relationship between

Table 2

*Results of linear regression analyses: YSR problem behaviors and defense styles, controlling for sex, age and SES*

Problem behaviors and defense styles	Standardized estimate	F	R <sup>2</sup>	df
Internalizing				
Factor 1	0.62****	172.12	0.43	5/1142
Factor 2	-0.19****			
Sex	-0.13****			
Age	0.08***			
SES	-0.01			
Externalizing				
Factor 1	0.50****	101.25	0.31	5/1142
Factor 2	-0.27****			
Sex	0.06			
Age	0.03			
SES	0.01			
Total Problems				
Factor 1	0.67****			
Factor 2	-0.23****	220.8	0.49	5/1142
Sex	-0.03****			
Age	0.06			
SES	ns			

Note. \*\*\*\* $p < .0001$ , \*\*\* $p < .001$ , \*\* $p < .01$ , \* $p < .05$ .

defenses and problem behaviors from a typological perspective, close to clinical practice. The results of logistic regression analyses are summarized in Table 3. The results of this analysis are significant (model fit statistics AIC [Akaike Information Criterion] intercept with covariates = 1088.05; likelihood ratio  $\chi^2 = 397.06$ ,  $df = 5$ ,  $p < .0001$ ). The effect of defenses (Factor 1 and/or Factor 2) was more significant than that of age, sex, or SES in predicting clinically significant YSR Total Problem scores.

In addition, to test for contributions of YSR syndrome scales, we correlated YSR syndrome scales with REM-71 sum scores for mature and immature defense style. All of these calculations revealed significantly positive results for each of the YSR syndrome scales for Immature Defense Style (F1) and significantly negative results for each of the YSR syndrome scales for Mature Defense Style (F2), both at the .01 level. Furthermore, we carried out another set of regression analyses with YSR syndrome scales as dependent variables and REM-71 sum scores as independent variables. Also, all of these calculations revealed significant results.

## Discussion

In this study, self-reported defense styles were associated with measures of problem behaviors, as predicted by the Freudian and Vaillant's model, confirming the convergent

validity of the REM in adolescents. Results also demonstrated a strong relationship with scores of problem behaviors that fall into the clinically significant range on the YSR. Our study is in line with results from many previous studies in that immature defenses are strongly correlated with increased behavioral problems, including studies using the Child Behavior Checklist (Noam & Recklitis, 1990; Sandstrom & Cramer, 2003). Our study also showed that mature defenses have a significant negative correlation with behavioral problems, assessed using the YSR, although the strength of these relationships is weaker than that of immature defenses.

Studies in adults have shown some associations in specific psychiatric disorders, most notably borderline personality disorders, where the defenses of splitting, omnipotence/devaluation, projective identification, and acting out are commonly identified (Bond & Perry, 2004). There are also some findings of associations in individuals with obsessive-compulsive disorder and somatization (Kipper et al., 2004; Nickel & Egle, 2006; Pollock & Andrews, 1989), although in general the robust findings are those in which defenses are categorized on a hierarchical basis of presumed maturity.

There is an ongoing debate concerning the correct labeling of defenses, such as "immature" and "mature" or "assimilation" and "accommodation." The terms immature and mature are problematic because they are ambiguous and refer either to a developmental construct, whereby different defenses are acquired at different ages, or to relative adaptive efficacy. Added to this ambiguity is the implication that defenses occur on a continuum. Piaget's model may offer an alternative. The labels of assimilation and accommodation could be applied to Factor 1 and Factor 2, respectively. The basic meaning of assimilation is to take in, absorb, or incorporate as one's own. In Piaget's approach to development, it is the application of a general schema to a particular person, object, or event. Jung (Jung & Jung, 1972) used assimilation to characterize the process of altering objects, events, or ideas to fit the needs of the individual. It could be argued that Factor 1 defenses, more strongly associated with problem behaviors, thus more rigid, less adaptive, assimilate new information according to preexisting schemas mobilized in times of distress. Accommodation generally is any movement or adjustment, either physical or psychological, which is made in preparation for incoming stimuli, and could be usefully applied to Factor 2 defenses. In Piaget's theory, accommodation is the modification of internal schemes to fit a changing cognizance of reality. This would fit our finding that Factor 2 had a negative correlation with problem behaviors, i.e., exerted a protective effect. This clear developmental relabeling would resolve some of the dilemmas and ambiguities created by the labels of immature and mature resulting in an orthogonal system.

This study combined established instruments in a unique way to further investigate the relationships between defense styles and problem behaviors in adolescents. This



study is another encouraging building block in the research on defense styles, but more studies are needed. Specific limitations of the study include the commonly cited concerns about the use of self-report instruments to assess such complex constructs as defense mechanisms, as well as the potential that responses may be biased or distorted based on the subjects desire for social desirability (Bond & Perry, 2004; Laor, Wolmer, & Cicchetti, 2001). However, it is encouraging to note that our results are consistent with work done by Sandstrom and Cramer (Sandstrom & Cramer, 2003), who assessed defenses using a method that did not rely on the simple self-report of behaviors and that circumvented the potential confounding issue of social desirability. A second important limitation is that, since this is a cross-sectional study, it is not possible to establish definitive causal relationships between any of the variables. Future studies to help establish such relationships would need to be longitudinal in nature. To our knowledge, there have been just two such studies that lend support to the predictive value of defense maturity in terms of psychological health. Tuulio-Henriksson et al. (1997), in a nonclinical population of adolescents, found that immature defenses in late adolescence predicted psychiatric disturbance five years later in early adulthood. Vaillant and Vaillant (1990) similarly reported that maturity of ego defenses assessed before age of 50 made the greatest independent contribution to psychosocial adjustment in late midlife in their longitudinal study of male college sophomore students. The debate as to whether immature defenses may be an outcome of psychiatric illness versus a correlate of psychopathology is not resolved by the results of such studies (Bond & Perry, 2004). This latter point is particularly important to consider in subjects with depression, for whom it has been repeatedly shown that there is an increase in adaptive defenses and decrease in immature defenses as patients' symptoms improve with treatment (Akkerman, Lewin, & Carr, 1999; Bond & Perry, 2004). Similar findings have been reported in studies of adult patients with eating disorders (Blaase & Elklit, 2001).

In terms of further validation of the instrument, there are several options to achieve this endeavor. The multitrait-multimethod matrix (hereafter labeled MTMM) is an approach to assess the construct validity of a set of measures in a study. Convergent validity is the degree to which concepts that should be related theoretically are interrelated in reality, whereas discriminant validity is the degree to which concepts that should not be related theoretically are not interrelated in reality. MTMM allows assessing both types of validity and could therefore be of great importance for demonstrating which concepts related to immature and mature defense style are in reality interrelated. In this regard, it would be of particular interest, to look at further associations and variables of interest potentially influencing the development of defense style. In particular, the authors plan to do this, related to attachment style.

Furthermore, another important approach could be to look in more detail at the individual contributions of single

defense mechanisms to psychopathology in clinical and problem behavior in nonclinical populations.

Eventually, future work would benefit from larger studies in clinical populations of adolescents to contrast with results from nonclinical samples.

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Prof. Univ. Dr. med. Hans Steiner

Division of Child Psychiatry  
Stanford University School of Medicine  
401 Quarry Road  
Palo Alto, CA 94305-5719  
USA  
steiner@stanford.edu