

FEATURED ARTICLE

Looking Beyond Psychopathology: The Dual-Factor Model of Mental Health in Youth

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Abstract. In a dual-factor model of mental health (cf. Greenspoon & Saklofske, 2001), assessments of positive indicators of wellness (i.e., subjective well-being—SWB) are coupled with traditional negative indicators of illness (i.e., psychopathology) to comprehensively measure mental health. The current study examined the existence and utility of a dual-factor model in early adolescence. The SWB, psychopathology, academic functioning, social adjustment, and physical health of a general sample of 349 middle school students was assessed via self-report scales, school records, and teacher reports regarding students' externalizing psychopathology. The existence of a dual-factor model was supported through the identification of four mental health groups: 57% of the sample had complete mental health, 13% was vulnerable, 13% was symptomatic but content, and 17% was troubled. The means of the four groups differed significantly in terms of academic outcomes, physical health, and social functioning. Results support the importance of high SWB to optimal functioning during adolescence, as students with complete mental health (i.e., high SWB, low psychopathology) had better reading skills, school attendance, academic self-perceptions, academic-related goals, social support from classmates and parents, self-perceived physical health, and fewer social problems than their vulnerable peers also without clinical levels of mental illness but with low SWB. Among students with clinical levels of psychopathology, students with high SWB (symptomatic but content youth) perceived better social functioning and physical health.

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Mental health is increasingly viewed as a complete state of being, consisting not merely of the absence of illness or disorder but also the presence of positive factors such as life satisfaction, self-acceptance, and social contribution (Ryff & Singer, 1998; Keyes, 2003). Although there is budding attention to positive development, the majority of research conducted to date on adolescents' mental health has focused exclusively on psychological disorders (Evans et al., 2005). The mental health concerns of vulnerable youth who may be at risk for developing future problems—those who are not detected on screening measures of psychopathology, but, when given the opportunity, report diminished life satisfaction or happiness (cf. Greenspoon & Saklofske, 2001) or who are “languishing” in life (cf. Keyes, 2006)—have been overlooked to a large degree. Similarly, not all youth with clinical levels of psychopathology experience poor quality of life (Bastiaansen, Koot, & Ferdinand, 2005). The integration of positive and negative indicators of well-being into mental health assessment yields a more comprehensive picture of functioning (Huebner, Gilman, & Suldo, 2007; Snyder et al., 2003).

Traditional Negative Indicator of Mental Health—Psychopathology

Psychopathology refers to both internalizing psychological disorders (e.g., depression, anxiety) and externalizing disorders (e.g., conduct disorder, oppositional defiant disorder). Traditionally, mental health diagnosis is defined simply by the presence or absence of disorders or associated negative outcomes. If criteria are not met for a certain disorder, the patient is termed subclinical and no subsequent intervention would likely follow. By using traditional assessments, mental health becomes an inferred by-product in the absence of mental illness.

Positive Indicator of Mental Health—Subjective Well-Being (SWB)

SWB is the scientific term for happiness. SWB is comprised of three related but separate constructs: life satisfaction, positive af-

fect, and negative affect (Diener, 2000). Life satisfaction includes both global and domain-specific (e.g., family, school) cognitive appraisals of one's happiness. Affect entails fairly stable emotions and mood states. An individual reporting high SWB would make a positive judgment of the overall quality of his or her life, and experience more frequent positive affect (e.g., joy, elation, delight) relative to negative affect (sadness, guilt, anger; Diener, Lucas, & Oishi, 2002).

Cowen (1994) has proposed life satisfaction as a key indicator of psychological wellness, asserting “wellness is something more than/other than the absence of disease, that is, it is defined by the ‘extent of presence’ of positive marker characteristics” (p. 154). Park (2004) echoed the sentiment that “positive indicators such as life satisfaction should be included in any assessment battery to capture comprehensively what is meant by the psychological well-being of youth” (p. 27). Notably, there is little empirical support for the additive information that may be gleaned from including SWB in assessments of mental health. Moreover, the assertion that “youth reporting low levels of pathological symptoms could still experience diminished psychological well-being” (Park, 2004, p. 26) is intuitive but has little data behind it. This lack of empirical investigation and support may contribute to the continued emphasis on psychopathology, a focus that has persevered even in the face of the positive psychology and positive youth development movements (Seligman & Csikszentmihalyi, 2000).

Compared to the substantial body of literature on indicators of psychopathology, far fewer studies have focused on positive indicators of well-being in youth. The traditional model of wellness places happiness on a continuum with psychopathology, each being at opposite ends. Diener et al. (2002) assert that the absence of disease is not an adequate criterion to describe a person as mentally healthy, particularly not as possessing high or even average levels of SWB or optimal adjustment. In contrast to a one-dimensional view of mental health, a more encompassing view would define distress and well-being as sepa-

Table 1
Groups Yielded from a Dual-Factor Model of Mental Health

Level of Psychopathology	Level of SWB	
	Low	Average to High
Low	II. Vulnerable SWB composite \leq 30th percentile and Internalizing T score < 60 and Externalizing T score < 60	I. Complete mental health SWB composite $>$ 30th percentile and Internalizing T score < 60 and Externalizing T score < 60
High	IV. Troubled SWB composite \leq 30th percentile and Internalizing T score ≥ 60 or Externalizing T score ≥ 60	III. Symptomatic but content SWB composite $>$ 30th percentile and Internalizing T score ≥ 60 or Externalizing T score ≥ 60

Note. SWB = subjective well-being.

rate yet interrelated constructs. Such a two-factor framework of psychological health is supported by a factor-analytic study with adolescents in which a well-being factor loaded on by life satisfaction and positive affect was distinguishable from a distress factor loaded on by anxiety and negative affect (Wilkinson & Walford, 1998).

Dual-Factor Model of Mental Health in Youth

To date, only one published study has explored the integration of psychopathology and SWB in children with respect to implications for outcomes. Specifically, Greenspoon and Saklofske (2001) isolated groups of elementary school children who demonstrated that psychopathology could co-occur with high life satisfaction and, conversely, that the absence of psychopathology and low life satisfaction could exist simultaneously. The former group, children who would likely be identified on screeners of pathological behavior, possessed a distinct set of traits (e.g., high sociability and good interpersonal relations) relative to other children characterized by high psychopathology and low life satisfaction. Thus, knowledge of children's life satisfaction was helpful in predicting their functioning and adjustment, even among children already

identified as at least minimally psychologically disordered. The latter group of children, who experienced diminished life satisfaction even though they were not clinically disrupted, had relatively low self-concepts, low perceived academic competence, and poor interpersonal relationships. Traditionally, such children would not be targeted for intervention because of the absence of psychopathology. This study illustrates the utility of a *dual-factor model of mental health*, that is, psychopathology and SWB as separable constructs that make unique contributions to predictions of children's functioning. Findings suggest that the construct of SWB is as worthy a target of study as the disorders on which psychology has historically focused.

Aims of Current Study

The overarching purpose of the project was to further explore the utility of the dual-factor model of mental health in youth (cf. Greenspoon & Saklofske, 2001) by (a) extending the generalizability of existing research to U.S. adolescents (findings from the aforementioned study were based on a sample of children in Grades 3–6 in western Canada) and (b) examining a wider variety of important outcome measures on which students with various mental health profiles may differ. Table 1

summarizes the subgroups yielded from a dual-factor model. Complete mental health refers to youth with optimal wellness. Vulnerable youth are typically excluded from study and services because of their lack of psychopathology, but may need assistance given their low perceived quality of life. Symptomatic but content youth, although identified as deviant, may not suffer to the same extent because of their positive cognitive judgments of life. Troubled youth have mental health problems and appraise the quality of their lives as poor. The specific classification criteria included in Table 1 are described in the Results section.

The current study aimed to answer two primary questions. First, what proportion of children in a general population of middle school students have complete mental health, are vulnerable, symptomatic but content, or troubled? Second, do the subgroups of adolescents yielded from a dual-factor model of mental health differ in terms of educational functioning, social relationships, and physical health? The identification of adjustment differences between groups of students with low psychopathology and between groups with high psychopathology will provide mental health professionals with an empirical rationale for attending to mental health beyond the presence or absence of illness—a goal consistent with a commitment to increase wellness in all children. Outcome variables in the current study were selected because of their salience to healthy development during youth.

Educational outcomes selected for study include academic achievement, in-school conduct, and attitudes toward learning and school. A growing body of research identifies important links between academic functioning and life satisfaction (for a review, see Suldo, Riley, & Shaffer, 2006). Previous research with youth has also found that high life satisfaction is associated with social interactions with peers (Martin & Huebner, 2007) and higher perceptions of social support from multiple sources (Suldo & Huebner, 2006). Therefore, the current study examined students' social problems and perceived social support from teachers, peers, and parents. The current study is unique in its focus on physical health, and is

the first examination of comprehensive SWB (i.e., life satisfaction and affect) relative to adolescents' health. Previous research with youth has linked psychopathology and physical health problems (Pine, Cohen, Brook, & Coplan, 1997; Rohde, Lewinsohn, & Seeley, 1994). Studies of adults suggest a relationship between SWB and physical health (Michalos & Zumbo, 2002). Preliminary research with youth links reduced life satisfaction to worse perceived overall health and activity limitations because of poor health (Zullig, Valois, Huebner, & Drane, 2005). Specific indicators of physical health measured in the current study include perceptions of overall health, bodily pain, and the extent to which health problems limit children's activities with their families.

Method

Participants

Participants consisted of 349 students from a middle school (grades 6–8) in the southeastern United States and 44 teachers from the same school familiar with the student participants. Student participants ranged in age from 10 to 16 years ($M = 12.96$; $SD = 0.97$), with 60% female and 40% male. Fifty-five percent of student participants were Caucasian, 14% African American, 12% Hispanic or Latino, 10% multiracial, and 8% other ethnicities. Twenty-six percent of students participated in the free or reduced-cost school lunch program (used as an indicator of low socioeconomic status [SES]). Subgroups slightly underrepresented in the sample, as compared to the school-wide demographics, included African American students (19% of the student population) and students from low SES backgrounds (32% of student population). Multiracial students were overrepresented in the sample (5% of student population).

Measures and Indicators

Students' Life Satisfaction Scale (SLSS; Huebner, 1991). The SLSS is a 7-item measure of global life satisfaction de-

signed for use with students in Grades 3–12. Respondents indicate on a Likert scale, ranging from 1 (*strongly disagree*) to 6 (*strongly agree*), the degree to which they endorse general statements about their life (e.g., “life is going well,” “I wish I had a different life”). An overall life satisfaction score is obtained by reverse-scoring negatively worded items, then summing the responses and dividing by 7. For a summary of the respectable psychometric properties of the SLSS (e.g., high test–retest and internal consistency reliability, validity established via significant relationships with other measures of life satisfaction), see Gilman and Huebner (1997). In the current study, coefficient alpha was .89.

Positive and Negative Affect Scale for Children (PANAS-C; Laurent et al., 1999). The PANAS-C consists of a 12-item and a 15-item self-report scale that assess frequency of positive affect and negative affect, respectively. Respondents rate 27 words that describe feelings and emotions on a Likert scale, ranging from 1 (*very slightly or not at all*) to 5 (*extremely*), to indicate the extent to which they have experienced each mood or feeling in the past few weeks. Positive affect descriptors include interested, excited, and proud. Negative affect adjectives include jittery, lonely, and sad. Ratings within each scale are averaged to generate overall scores of positive and negative affect. The correlation between the positive and negative subscales is low (Laurent et al., 1999). Internal consistency is high for both scales, and construct validity has been supported through the magnitude of relationships with measures of constructs with which affect is theoretically related and different (Laurent et al., 1999; Seligson, Huebner, & Valois, 2005). In this study, coefficient alphas were .88 (positive affect) and .93 (negative affect).

The Youth Self-Report Form of the Child Behavior Checklist (YSR; Achenbach & Rescorla, 2001). The YSR is comprised of 112 items designed to measure eight dimensions of psychopathology among adolescents ages 11–18. Participants indicate the

degree to which a feeling or behavior is true for themselves currently (i.e., in the past 6 months) using a Likert scale that ranges from 0 (*not true*) to 2 (*very true*). A composite of the three subscales assessing (a) withdrawn–depressed, (b) somatic complaints, and (c) anxious–depressed was used as the indicator of internalizing psychopathology. Reliability and validity of the YSR is well established (see Achenbach & Rescorla, 2001). In the current study, coefficient alpha for the internalizing composite was .89.

Teacher Report Form of the Child Behavior Checklist (TRF; Achenbach & Rescorla, 2001). The TRF is a 113-item rating scale completed by teachers and other school personnel who are familiar with the child’s behavior in the school setting. The TRF has norms for youth ages 5–18 years, and taps the same dimensions of psychopathology as the YSR. Respondents rate students’ present behavior (i.e., behavior occurring over the past 2 months) using the same 0–2 agreement scale as in the YSR. A composite of the two subscales assessing (a) rule-breaking behavior and (b) aggressive behavior was used as the indicator of externalizing psychopathology. The reliability and validity of the TRF is well established; the test manual includes a thorough summary of the high test–retest reliability and construct validity (Achenbach & Rescorla, 2001). In this study, coefficient alpha for the externalizing composite was .92.

Social Problems subscale of the YSR. The 11-item Social Problems subscale of the YSR assesses students’ perceptions of the degree to which they have negative interactions with peers or exhibit socially awkward behaviors. See Achenbach and Rescorla (2001) for a summary of the high test–retest reliability and empirical support for construct validity. In the current study, coefficient alpha for the social problems scale was .70.

Child and Adolescent Social Support Scale (CASSS; Malecki & Demaray, 2002). The CASSS is a self-report measure of children’s perceptions of social support from five sources: parents, teachers, class-

mates, a close friend, and school administrators. Using a Likert response metric, ranging from 1 (*never*) to 6 (*always*), students rate how often they perceive receiving four types of support (emotional, instrumental, appraisal, and informational) offered by each source (e.g., parent, teacher). Scores within each subscale were averaged so that higher scores reflect higher perceived social support from each source. Only three subscales (Parent, Teacher, Classmate) were administered in the current study. The CASSS has high test-retest reliability and strong correlations with other established measures of social support (Malecki, Demaray, & Elliot, 2000). In the current study, coefficient alpha was .95 for each support scale (Teacher Support, Classmate Support, and Parent Support).

School Attitude Assessment Survey—Revised (SAAS-R; McCoach & Siegle, 2003). Students' beliefs relevant to educational functioning were measured via four scales of the 35-item self-report SAAS-R: (1) Academic Self-Perceptions (perceived academic abilities), (2) Motivation and Self-Regulation (ability to regulate daily behavior to attain academic goals), (3) Valuing of School (importance placed on academic achievement in order to meet long-term goals), and (4) Attitude Toward School (feelings of pride and belonging to one's specific school). Respondents indicated agreement with each item using a Likert scale, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Each scale of the SAAS-R has adequate reliability (McCoach & Siegle, 2003). See McCoach and Siegle (2001, 2003) for a summary of criterion-related validity. Validity is also supported by significant correlations between scales of the SAAS-R and indicators of similar constructs (Suldo, Shaffer, & Shaunessy, in press). In the current study, coefficient alpha ranged from .90 (Academic Self-perceptions) to .95 (Attitudes Towards School).

Grade-point average (GPA). GPA was calculated by assigning numerical values to letter grades received for academic performance in each class (e.g., A = 4.0, B = 3.0)

and dividing by the total number of classes attempted. Participants' year-to-date class grades through the grading period in which self- and teacher-report data were collected (mean GPA for the first, second, and third 9-week segments of the current school year) were obtained from school records.

Standardized assessment scores. The Florida Comprehensive Assessment Test (FCAT; Florida Department of Education, 2005) is a statewide, norm-referenced test administered to all students in Florida in Grades 3–11 for purposes of educational assessment and accountability. The FCAT includes criterion-referenced tests that measure student progress toward statewide benchmarks. Scores are assigned on a five-level grading criteria (1–5), with Levels 3–5 constituting a passing score. Criterion-referenced FCAT math and reading scores were analyzed in the current study. More information about the FCAT is available at <http://fcat.fldoe.org/>.

Attendance. Attendance history was operationalized as the total number of school days missed during the school year through the grading period in which the study was conducted. Therefore, higher attendance scores reflect more time absent from school.

Child Health Questionnaire—Child Form 87 (CHQ-CF87; Landgraf, Abetz, & Ware, 1999). The CHQ-CF87 is an 87-item self-report measure for use with children ages 10–18, designed to assess 12 physical and psychosocial concepts. The following three scales assessing physical health were analyzed in the current study: (1) General Health Perceptions (subjective assessment of overall health and frequency of illness), (2) Bodily Pain/Discomfort (intensity and frequency of physical pain and discomfort), and (3) Limitations in Family Activities (frequency of disruption in usual family activities because of child's health or behavior). Although two additional scales (Physical Functioning and Social/Physical Role) were originally intended to be examined, scores from these scales were not retained for data analyses because of ex-

treme non-normality (i.e., values for skew > 4 and kurtosis > 19 in the current sample). Moderate to high internal consistency and test-retest reliability has been established for the CHQ (see Schmidt, Garratt, & Fitzpatrick, 2002; Waters, Salmon, Wake, Wright, & Hesketh, 2001). Validity has been supported in previous research of the CHQ scores in youth with physical health conditions (see Landgraf et al., 1999). Coefficient alpha for the CHQ-CF87 subscales used in the current study ranged from .81 (General Health) to .88 (Limitations in Family Activities).

Procedures

Written approval to conduct the research was secured from the principal investigator's university institutional review board and the participating school district. The principal investigator explained study goals and procedures to all regular education teachers and students in the participating school. Although not every student was compensated for participation, incentives such as gift certificates were provided to students selected at random from the larger body of student participants. The principal investigator distributed letters that outlined the goals and procedures of the project to parents of all students and requested active consent for student participation. Approximately 40% of students returned signed parent consent forms. In the spring of 2006, students with parental consent and student assent to participate were administered a brief demographics questionnaire (i.e., questions about students' ethnic identity, receipt of free or reduced-cost lunch, and marital status of biological or adoptive parents) and each of the self-report instruments described above in groups of 50–75 students during the regular school day. Measures were counterbalanced to control for order effects. The authors of the current study and several research assistants were present at data collection sessions to ensure valid and confidential completion and collection of all measures. After the collection of self-report data, teachers familiar with participants were asked to provide additional in-

formation about participants' behavior by completing the TRF. Incentives (\$5 gift certificates) were provided upon completion of each teacher rating scale. Information relevant to participants' GPAs, FCAT scores, and attendance was obtained from school records.

Overview of Analyses

All analyses were conducted using SAS version 9.1. Eight multivariate outliers were excluded from the final data set; thus, data from 341 participants were used in all subsequent analyses. Students were classified into mental health groups based on national norms provided for commercially available instruments and sample norms for all other instruments. Because student SES and family composition (i.e., parent marital status) were consistently differentially represented in mental health groups, these variables were entered as covariates in all subsequent analyses to control for influences of the demographic variables on the dependent variables. Three between-groups multivariate analyses of covariance using General Linear Model Method I (Type III), which adjusts for unequal sample sizes within cells, were conducted to determine if mental health groups differed on educational, social, and physical health variables, respectively, after controlling for the influences of covariates on the outcomes. Univariate analyses of covariance were examined for each indicator within the area of functioning to determine which indicators were driving the effect. Results of Tukey-Kramer tests and group means were examined to identify differences between mental health groups on outcome measures. Comparisons between two sets of groups were of particular interest. First, differences between youth with complete mental health and their vulnerable peers would support the notion that an absence of psychopathology is insufficient to ensure wellness. Second, differences between troubled and symptomatic but content youth would support the notion that intact SWB protects children with mental illness from experiencing the most deleterious outcomes.

Results

Mental Health Groups Yielded Through a Dual-Factor Model

SWB scores and psychopathology scores were used to determine the existence and sample size (n) of the four proposed mental health status groups (see Table 1). Consistent with previous research (Kasser & Sheldon, 2002; Sheldon, Kasser, Houser-Marko, Jones, & Turban, 2005), an aggregate SWB variable was created by standardizing and summing scores for life satisfaction and positive affect, then subtracting standardized negative affect scores. All subsequent analyses were conducted using the aggregate SWB variable.

Regarding group assignments, participants were first classified according to mental health problems. High psychopathology was defined according to published, gender-specific norms for the Achenbach System of Empirically Based Assessment (Achenbach & Rescorla, 2001). Scores within the "at-risk" or "clinically significant" range on either self-reported internalizing symptoms or teacher-rated externalizing symptoms were grouped as high psychopathology. Selection of informants was based on the notion that children may not be highly reliable reporters of their externalizing or acting out behaviors, but are the most informed reporters of their internalizing symptoms. To be considered at risk or clinically significant, participant scores had to be at or above a T score of 60 on one or both groups of symptoms (Achenbach & Rescorla, 2001). Using these criteria, 103 of the 441 participants (30%) met criteria for high psychopathology. The remaining 70% of participants were in the normal range of symptoms based on T scores below 60, and were thus classified as low psychopathology.

Because no published norms for SWB are available in the current literature, decision points for high and low SWB corresponded with the proportion of students classified as having high or low psychopathology. A raw SWB composite score corresponding to the 30th percentile was chosen as the cut point.

Similar to the method used for psychopathology, all students above the 30th percentile on SWB (z score ≥ 0.76 ; raw scores of life satisfaction ≥ 4.10 , positive affect ≥ 3.34 , negative affect ≤ 1.22) were classified as average to high SWB, whereas students below the 30th percentile (z score < 0.76 ; raw scores of life satisfaction < 4.10 , positive affect < 3.34 , negative affect > 1.22) were classified as low SWB.

Of note, previous research has dichotomized global life satisfaction (one component of SWB) using a cut point that corresponds to a raw score of 4.0 (on the 1–6 scale), in which scores above 4.0 are considered high life satisfaction and scores below 4.0 are considered low life satisfaction (e.g., Suldo & Huebner, 2004a). When applying the raw score cut point of 4.0 for life satisfaction to the sample, approximately 25% of participants reported global life satisfaction scores below 4.0 and would be considered to have low life satisfaction. Thus, it is plausible that roughly 30% of the sample would indeed be considered low on the SWB composite variable as well. Because of the paucity of research on children's affect, similar classifications of high levels of positive or negative affect have not been published.

Finally, a new variable representing mental health groups was created based on participants' dichotomized scores on SWB and psychopathology. A summary of the cut points used to assign participants to mental health groups is included in Table 1. Demographic characteristics for each of the four mental health groups are presented in Table 2.

Group 1: Youth with complete mental health. This subgroup of 194 children (57% of the sample) scored in the low to average range on self-reported internalizing symptoms and teacher-rated externalizing symptoms and reported satisfactory levels of SWB. Z ratios and associated two-tailed probabilities were calculated to test the significance of the differences between proportions of participants in each subgroup compared to the total sample on each demographic variable. As shown in Table 2, group composition

Table 2
Demographic Characteristics of Participants in Mental Health Groups
(N = 341)

Demographic Variable	Mental Health Group				Total Sample (N = 341) %
	Complete Mental Health (n = 194) %	Vulnerable (n = 44) %	Symptomatic but Content (n = 44) %	Troubled (n = 59) %	
Gender					
Male	41.75	36.36	45.45	37.29	40.76
Female	58.25	63.64	54.55	62.71	59.24
Ethnicity					
American Indian	0.52	—	—	6.78*	1.47
Asian	6.70	—	2.27	6.78	5.28
African American	9.28	11.36	25.00	23.73	14.08
Hispanic or Latino	12.37	20.45	9.09	10.17	12.61
White	60.31	56.82	45.45	45.76	55.43
Multiracial	8.76	11.36	15.91	6.78	9.68
Unknown	2.06	—	2.27	—	1.47
Socioeconomic status					
Low	16.49*	34.09	31.82	38.98*	24.63
Average or high	83.51*	65.91	68.18	61.02*	75.37
Family composition					
Married parents	70.10*	50.00	59.09	37.29*	60.41
Parents not married	29.90*	50.00	40.91	62.71*	39.59
Grade level					
6	32.99	36.36	27.27	33.90	32.84
7	37.11	36.36	45.45	25.42	36.07
8	29.90	27.27	27.27	40.68	31.09

Note. The *z* tests were employed to test the significance of the difference between proportions of participants in each mental health group and the total sample.

**p* < .05.

approximates the makeup of the total sample with respect to gender, ethnicity, and grade level. Students with low SES and/or whose parents are not married are significantly underrepresented, and high SES students and/or students with married parents are overrepresented (*p* < .05).

Group 2: Vulnerable youth. For roughly 44 children (13% of the sample), although psychopathology scores were not high, SWB scores were low. Group composition approximates the total sample with respect to all demographic characteristics.

Group 3: Symptomatic but content youth. Approximately 13% of participants (*n* = 44) had high psychopathology scores and reported average to high SWB. This group approximates the composition of the total sample on all demographic characteristics.

Group 4: Troubled youth. These 59 children (17% of sample) had high psychopathology and low SWB. Group composition approximates the total sample with respect to gender and age. Youth who are American Indian, low SES, and/or have unmarried parents are overrepresented, whereas youth from high

Table 3
Mean Levels of Educational Functioning by Mental Health Group
(N = 341)

Dependent Variable	Mental Health Group							
	Complete Mental Health (n = 194)		Vulnerable (n = 44)		Symptomatic but Content (n = 44)		Troubled (n = 59)	
	M	SD	M	SD	M	SD	M	SD
Grade point average ^{1,2}	3.62 _a (3.57)	0.52	3.31 _{a,b} (3.36)	0.71	3.26 _b (3.29)	0.64	3.15 _b (3.26)	0.71
FCAT—reading level ¹	3.61 _a (3.53)	1.11	2.95 _b (3.07)	1.03	3.21 _{a,b} (3.27)	1.04	2.91 _b (3.09)	1.13
FCAT—math level ^{1,2}	3.93 _a (3.82)	1.11	3.36 _{a,b} (3.49)	1.03	3.23 _b (3.30)	1.23	3.05 _b (3.28)	1.31
School absences ²	3.98 _a (4.14)	4.01	6.25 _b (6.31)	7.63	5.72 (5.68)	5.17	5.61 (5.21)	4.75
Academic self-perception	6.11 _a	0.74	5.31 _b	1.17	5.63 _b	1.05	5.08 _b	1.32
Motivation and self-regulation	5.94 _a	0.88	5.12 _b	1.19	5.39 _b	1.24	4.87 _b	1.33
Valuing of school ¹	6.74 _a (6.73)	0.60	6.31 _b (6.33)	1.02	6.42 _{a,b} (6.43)	1.18	6.34 _b (6.35)	0.80
Attitudes toward school	5.92 _a	1.21	5.36 _{a,b}	1.50	5.09 _{b,c}	1.49	4.45 _c	1.84

Note. Tukey-Kramer comparisons were employed to analyze group means in cases of significant *F* tests. Significant differences between group means are indicated by different letters. Means having the same subscript are not significantly different. Means not marked by letters are not significantly different from any group means. In the cases of dependent variables that were significantly related to covariates, adjusted means are presented in parentheses.

¹Dependent variables significantly related to the covariate of socioeconomic status.

²Dependent variables significantly related to the covariate of parent marital status.

SES and/or married parent families are underrepresented.

Differences in Adjustment Among Mental Health Groups

Educational functioning. A between-subjects multivariate analysis of covariance tested the main effect of mental health group on academic functioning. Adjustment was made for the two covariates (SES and parent marital status) that accounted for disproportionality in two of the groups, as described earlier. With use of Wilks's criterion, the combined dependent variables (FCAT—reading, FCAT—math, GPA, attendance, academic self-perceptions, attitudes towards school, valuing of school, and motivation or self-regula-

tion) were significantly affected by group membership, $F(24, 929) = 3.96, p < .001$. After adjustment by covariates, univariate tests (analyses of covariance) for each schooling variable reached statistical significance ($p < .05$), indicating that academic functioning differs among children with different mental health profiles even after the relationships between demographic variables (SES, parent marital status) and academic functioning are controlled for statistically. Results of follow-up analyses with Tukey-Kramer tests are shown in Table 3, along with unadjusted means and standard deviations for each group on each aspect of educational functioning. Adjusted means are also presented for dependent variables that were significantly related to one

Table 4
Mean Levels of Social Adjustment by Mental Health Group (N = 341)

Dependent Variable	Mental Health Group							
	Complete Mental Health (n = 194)		Vulnerable (n = 44)		Symptomatic but Content (n = 44)		Troubled (n = 59)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Social problems	2.07 _a	1.96	3.57 _b	2.37	3.68 _b	2.81	6.46 _c	3.51
SS: Classmates ¹	4.52 _a (4.56)	1.04	3.80 _b (3.74)	1.13	4.43 _a (4.41)	1.11	3.81 _b (3.71)	1.39
SS: Parents ²	5.16 _a (5.13)	0.81	4.23 _b (4.26)	1.23	4.87 _a (4.87)	0.93	3.63 _c (3.70)	1.28
SS: Teachers	5.02 _a	0.89	4.68 _a	1.03	4.80 _a	1.08	4.05 _b	1.26

Note. SS = social support. Tukey-Kramer comparisons were employed to analyze group means in cases of significant *F* tests. Significant differences between group means are indicated by different letters. Means having the same subscript are not significantly different. In the cases of dependent variables that were significantly related to covariates, adjusted means are presented in parentheses.

¹Dependent variables significantly related to the covariate of socioeconomic status.

²Dependent variables significantly related to the covariate of parent marital status.

or more covariate. The educational functioning of the youth with complete mental health was superior to that of their vulnerable peers on five of eight indicators. Regarding objective indicators of academic achievement, youth with complete mental health scored higher on the reading portion of the FCAT and had better school attendance. Although the complete mental health and vulnerable groups had statistically similar mean GPAs and scores on the math portion of the FCAT, mean achievement scores for the complete mental health group (but not the vulnerable group) significantly exceeded the scores of the two groups with high levels of psychopathology. Regarding attitudes towards schooling and education that are associated with academic success, youth with complete mental health reported higher perceptions of their academic abilities and of the value of schooling, as well more efforts directed towards self-regulation of academic behaviors. The educational functioning of the symptomatic but content youth did not differ from that of their troubled peers on any indicators of educational functioning.

Social functioning. A second between-subjects multivariate analysis of covariance tested the main effect of mental health group on social functioning after adjusting for the two covariates. With use of Wilks' criterion, the combined dependent variables (social problems, peer support, parent support, teacher support) were significantly affected by group membership, $F(12, 876) = 17.18, p < .001$. After adjustment by covariates, univariate analysis of covariance tests for each social functioning variable reached statistical significance, indicating that social functioning differs among children with different mental health profiles. Results of follow-up analyses with Tukey-Kramer tests are shown in Table 4, along with means and standard deviations for each group on each aspect of social functioning. Social functioning of the youth with complete mental health was superior to that of their vulnerable peers on three of four indicators of social functioning. Regarding interactions with peers, youth with complete mental health reported fewer social problems (e.g., loneliness, difficulty getting along with others,

Table 5
Mean Levels of Physical Health by Mental Health Group (N = 341)

Dependent Variable	Mental Health Group							
	Complete Mental Health (n = 194)		Vulnerable (n = 44)		Symptomatic but Content (n = 44)		Troubled (n = 59)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
General health perceptions	4.12 _a	0.52	3.71 _b	0.56	3.81 _b	0.63	3.29 _c	0.60
Bodily pain	5.14 _a	0.78	4.97 _a	0.87	4.95 _a	1.07	4.08 _b	1.03
Role limitations: family activities ¹	4.53 _a (4.50)	0.64	3.98 _b (4.02)	0.96	4.04 _b (4.07)	0.89	3.42 _c (3.47)	0.97

Note. Tukey-Kramer comparisons were employed to analyze group means in cases of significant *F* tests. Significant differences between group means are indicated by different letters. Means having the same subscript are not significantly different. In the cases of dependent variables that were significantly related to covariates, adjusted means are presented in parentheses.

¹Dependent variables significantly related to the covariate of socioeconomic status.

preference for younger friends) and greater social support from classmates and parents. The perceived social functioning of the symptomatic but content youth was superior to that of their troubled peers on all four indicators.

Physical health. A third between-subjects multivariate analysis of covariance tested the main effect of mental health group on physical health after adjusting for the two covariates. With use of Wilks's criterion, the combined dependent variables (general health, bodily pain, limitations in family activities) were significantly affected by group membership, $F(9, 811) = 17.18$, $p < .001$. After adjustment by covariates, univariate tests for each physical health variable reached statistical significance, indicating that physical health differs among children with different mental health profiles. Results of follow-up analyses with the Tukey-Kramer test are shown in Table 5, along with means and standard deviations for each group on each aspect of physical health. Youth with complete mental health reported better general health (e.g., sick less frequently, better feelings about their overall health) and fewer limitations in their family activities because of health or behavior prob-

lems. The self-perceived physical health of the symptomatic but content youth was superior to that of their troubled peers on all indicators.

Discussion

Results of the current study supported a four-factor model of mental health, as shown in Table 1. Complete mental health was present in 57% of a typical sample of middle school students. The 13% of students identified as vulnerable do not exhibit clinical levels of mental illness, but report a relatively poor quality of life. Vulnerable adolescents are possibly in need of assistance but are usually excluded from study and services because of psychology's traditional focus on psychopathology. Thirteen percent of students were symptomatic but content; although identified as at least minimally distressed, they do not appear to suffer to the same extent because of their positive appraisals of life and relatively frequent positive emotions. The troubled subgroup includes the 17% of youth who likely receive the bulk of psychological attention because they manifest clinical levels of mental health problems and report the quality of their lives is poor. The current study extends a

four-group classification system of children's mental health (cf. [Greenspoon & Saklofske, 2001](#)) to an additional developmental period—early adolescence.

The current study illustrated that positive and negative indicators of mental health are not the opposite ends of the same continuum. Specifically, not all students who displayed high psychopathology (30% of the sample) also reported low SWB; instead, almost half of the high-psychopathology group (13% of total sample) reported average to high levels of SWB. These findings are consistent with a separate study of a clinical sample of 126 children and adolescents referred for outpatient psychiatric treatment ([Bastiaansen et al., 2005](#)). At 1-year follow-up, 11% of youth still manifested clinical levels of psychopathology but experienced improvements in subjective quality of life, demonstrating that quality of life can be positive in the face of persistent mental health problems. Also notable, not all children in the current study without symptoms of mental illness reported desirable levels of wellness; indeed, 13% of the sample was vulnerable (i.e., low life satisfaction, infrequent positive emotions, frequent negative emotions).

In addition to supporting the mere existence of a dual-factor model of mental health, findings in the current study illustrated the utility of such a model by identifying differences in functioning between each mental health group. On the majority of educational functioning indicators, students with complete mental health were more academically successful than their vulnerable peers. Vulnerable youth have diminished academic self-concept, view school as less important for long-term goals, and have reduced motivation to self-regulate behaviors necessary for learning relative to youth with complete mental health. Vulnerable youth also perform worse on an objective measure of reading achievement (the FCAT) and are absent from school more often than those students with complete mental health. Although longitudinal research is needed, these findings suggest that fostering SWB in all children may be essential to attain maximum positive academic functioning, as

the absence of mental illness is not sufficient to guarantee optimal academic achievement. Students with high psychopathology were at risk for inferior academic functioning (e.g., lower FCAT scores and school grades) regardless of their SWB, suggesting that average to high SWB alone is also not a sufficient condition for academic success. Regarding the clinical significance of differences between groups, the average FCAT reading score in both groups of students with low SWB was below 3 (the level required for grade promotion). Average FCAT reading scores were above 3 in both groups with average to high SWB, even those students who had clinical levels of psychopathology.

Regarding interpersonal functioning, the current study also confirmed that symptomatic but content youth perceive more positive interpersonal relationships with peers ([Greenspoon & Saklofske, 2001](#)) as well as perceive more social support from important adults in their lives than troubled youth. Consistent with previous research with adolescents demonstrating that low parental support co-occurs with increased symptoms of internalizing and externalizing psychopathology ([Bean, Barber, & Crane, 2006](#)) and diminished life satisfaction ([Suldo & Huebner, 2006](#)), the troubled youth in the current study perceived the lowest levels of social support from parents. On the majority of social functioning indicators, students with average to high SWB experienced better social relationships than their peers with comparable levels of psychopathology, which highlights the additive information SWB scores provide in predicting social functioning. Teachers were the only social support source on which students with complete mental health and their vulnerable peers did not differ. [Suldo and Huebner \(2006\)](#) found that middle and high school students with very low and average levels of life satisfaction perceived similar levels of teacher support, which suggests that relationships with teachers are not as highly associated with students' SWB as are relationships with other important adults, such as parents ([Suldo & Huebner, 2004b](#)).

By examining students' physical health, the current study also extended the range of outcomes associated with a dual-factor model of mental health in youth. On the majority of physical health variables, students with average to high SWB were healthier than their peers with comparable levels of psychopathology but lower SWB, which underscores the additive information SWB scores provide in predicting students' physical functioning. Specifically, vulnerable youth reported lower average levels of general health and more limitations in family activities because of health or behavior problems than youth with complete mental health. Relative to their troubled peers with comparable levels of high psychopathology but lower SWB, symptomatic but content youth reported better general health, experienced less bodily pain, and experienced fewer limitations in their family activities. Whereas previous research with pediatric samples found that children with a severe health problem (cancer) had levels of SWB comparable to healthy controls (McKnight, 2004), the current study suggests that, in a general sample of youth, dimensions of current health are related to SWB. The associations between SWB and physical health in the nonclinical sample support a link between positive indicators of mental health and physical functioning in youth, which augments the literature that identifies poor physical health outcomes for youth with mental disorders (Bardone et al., 1998).

Implications for Practice

The current study suggests that examining students' psychopathology in isolation may lead to an over- or underestimation of their functioning in important areas of life. The additive information provided by assessments of SWB supports the utility of assessing positive indicators of self-perceived wellness. SWB assessments should supplement, not replace, traditional negative indicators; the importance of monitoring psychopathology was supported by findings that demonstrated that symptomatic but content youth had inferior school grades, math achievement, perceived academic abilities, motivation or self-regula-

tion, and overall health, as well as more social problems and limitations in family activities because of health problems, when compared to their peers with complete mental health. Advances in the assessment of children's SWB have resulted in the availability of brief, validated measures of life satisfaction (the most stable indicator of SWB) appropriate for use with children and adolescents. In the current study, the seven-item SLSS functioned as a sensitive and reliable measure of life satisfaction in middle school students. School psychologists and health care providers should consider including the SLSS (available for free from the author) in routine assessments of children (e.g., comprehensive psychological examinations, health and wellness checks, and so on). Huebner and colleagues (2007) provide a comprehensive review of the SLSS and other life satisfaction measures for youth and an example of how to incorporate information from life satisfaction scales in psychoeducational evaluations.

The use of both SWB and psychopathology assessments may also more accurately identify students at each level of a school's multitiered model of service delivery. All students would likely benefit from the provision of school-wide programming (i.e., Tier 1) such as promoting positive student-teacher relationships or rewarding supportive peer interactions (Sprague & Horner, 2006). A brief measure of SWB such as the SLSS could be used to screen for vulnerable youth. These youth constitute an at-risk group likely to benefit from Tier 2, small-group strategies with increased focus on promoting well-being. Tier 2 interventions for symptomatic but content youth would address symptoms of psychopathology while continuing to promote SWB. Finally, interventions with the greatest intensity would be provided to troubled students; intervention plans for these students would be individualized and include strategies to reduce mental illness while at the same time working to increase well-being.

The results of the study underscore the superior functioning of adolescents with average to high SWB; an absence of mental health problems may not be sufficient to produce

optimal academic achievement, social relationships, nor physical health. If mental health professionals and educators continue to focus exclusively on identifying and treating mental illness, optimal functioning may be less likely for the majority of students. Instead, monitoring and attempting to increase SWB in all youth may yield broader effects. This notion has implications for how mental health professionals screen and identify children in need of assistance, how government funding agencies (e.g., National Institute of Mental Health) select which intervention studies should be funded (i.e., the current focus on ameliorating mental illness), and how educators conceptualize which children are ready to perform best at school.

Limitations and Suggestions for Future Research

The current study is limited to a convenience sample of students from one community who attend a single school. The active consent procedures contributed to a response rate of only 40% and some demographic groups were underrepresented, which may have affected the results in unexpected ways. For instance, students from low SES families were somewhat underrepresented in the sample, and the low SES students at the school who did participate were particularly likely to be in the troubled group. Additional research with representative samples of economically diverse youth (as well as students from different communities) is needed to test generalizability of the current findings. Additional research is also needed with high school students, to determine if a dual-factor model of mental health exists in older adolescents. Another limitation of the current study is the cross-sectional design; variables referred to as "outcomes" could actually either precede or result from adolescents' mental health status. A longitudinal design that tracks student characteristics over time would help clarify the development of SWB. The current study is also limited by its reliance on self-report data to assess all social and physical health outcomes. Future research should include teacher,

peer, and parent appraisals of student interpersonal functioning, as well as augment the scant literature on the relationship between physical health and mental health in youth by examining objective indicators of physical health (e.g., frequency of visits to physician, body mass index levels, heart rates), to reduce any bias associated with student self-report. Given that the current study underscored the salience of high SWB to students' functioning, well-designed intervention studies are needed to determine how mental health professionals can improve children and adolescents' SWB. Long-term follow-up studies should determine the effects of such interventions on students' functioning at school, interpersonal relationships, and physical health.

Despite the limitations enumerated, the current study advances the literature by providing the first known test of a dual-factor model of mental health in adolescents. Results illustrate the notion that subjective well-being and mental illness are not opposite ends of the same continuum. Instead, approximately 25% of adolescents report quality of life that is counterintuitive to what may be expected based solely on knowledge of their psychopathology. Identifying and understanding these subgroups of vulnerable and symptomatic but content children is important because of the differences in educational, social, and physical health adjustment they experience relative to their peers with comparable levels of mental illness. Results of the current study suggest that the simple absence of clinical levels of problems is not sufficient to guarantee the best adjustment in areas of life central to healthy child development.

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