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Holistic Assessment in School-based, Developmental Prevention

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This is an electronic version of an article published in:

Malti, T., Liu, C. H. J., & Noam, G. G. (2010). Holistic assessment in school-based, developmental prevention. *Journal of Prevention and Intervention in the Community, 38,* 244-259.

The Journal of Prevention and Intervention in the Community is available online at: www.tandfonline.com. The final version can be retrieved using the following link: http://www.tandfonline.com/doi/abs/10.1080/10852352.2010.486306

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Abstract

Developmental research in the social-cognitive tradition has provided ample evidence for systematic relations between adolescent's social-cognitive development and mental health problems; both are set within an adolescent's ecology. However, appropriate assessment procedures for school-based prevention reflecting this differential knowledge are largely absent. The aim of this article is to outline the development and application of a new, holistic assessment procedure for youth that includes indicators of adolescents' social-cognitive development and related resiliencies, risks, and relationships. Using quantitative and qualitative data from the ongoing, school-based RALLY prevention program, we illustrate the development and efficiency of this holistic assessment tool within a developmental-ecological framework. This paper argues a holistic assessment tool can guide the prevention services to address the individual needs of adolescents and to ideally support their developmental and learning capacity. Finally, the implications for practitioners are discussed.

Key words: Holistic Assessment, Social-Cognitive Theory, Developmental Prevention, Ecological Model, Youth

Holistic Assessment in School-based, Developmental Prevention

Research has shown that at least 20% of U.S. children and youth suffer from significant social and emotional problems and are at risk for failure in school (e.g., Costello et al., 1996, 2005; Howell, 2004). As urban youth are frequently exposed to high stress in chaotic surrounding communities, their psychological problems are likely to be more severe than those in the normal adolescent population (e.g., Duckworth, Hale, Clair, & Adams, 2001); in fact, there is evidence of elevated social and emotional problems in low-income, urban youth (Grant et al., 2004). In particular, a recent longitudinal study by Masten and colleagues (2005) showed that overt behavioral or emotional problems evident in urban samples of early adolescents predicted poor academic achievement in later adolescence, which in turn was associated with problems such as anxious or depressed mood in young adulthood. These psychological risks are aggravated by the social inequality evident in American society nowadays: An increasing loss of social structures and related decrease of social support in the most important contexts such as the family, school and community corroborate feelings of disaffection and low self-esteem in youth (Edelstein, 2005).

Although it is widely accepted that early intervention can de facto prevent maladaptive developmental pathways (e.g., Luthar & Cicchetti, 2000), the question of *how* such services work to improve program effectiveness has not often been addressed (Granger, Durlak, Yohalem, & Reisner, 2007); more importantly, high rates of adolescents with social and emotional problems and associated learning difficulties do not receive services at all (U.S. Public Health Service, 2000). One reason for this gap of need for and use of prevention services may be the absence of appropriate screening and assessment procedures that can be used for prevention purposes (Lochman, 2006).

In the research presented here, we aim to partially fill this conceptual gap and describe first steps towards the development of a holistic assessment tool, which is developmentally driven and provides integrative diagnostic information for school-based prevention. As such diagnostic information usually has far-reaching implications for selecting preventive services, the present analysis provides new impetus for evidence-based practice.

The Need for Holistic Assessment in Youth

In this research, we define holistic assessment as an integrative approach to understanding youth's functioning from a developmental perspective. Thus, this approach considers the role of resiliencies, risks, and social relationships in adolescent's social and emotional functioning from a developmental perspective.[1]

Why do we need this holistic perspective for designing assessment tools?

Traditional psychological assessment procedures focus frequently on the most dominant risk factors in youth, such as aggressive behaviors, depression or anxiety. Notably, the current Diagnostic and Statistical Manual excludes developmental considerations and associated developmental resiliencies, such as the ability to empathize with others or to gain the support of peers (APA, 2004). Furthermore, contextual risk factors and supportive relationships are usually not explicitly considered for diagnostic purposes either, nor are they being systematically related to individual development and risks. Although this traditional approach certainly provides us with important information on specific adolescent social and emotional problems, it usually underestimates the complexity of the developmental picture and does not sufficiently situate adolescent's development and risks in social context (Achenbach & Rescorla, 2006). For instance, Generalized Anxiety Disorder (GAD) is characterized by excessive uncontrollable worry or anxiety across a number of situations and events (APA, 2004). As youth face changes in relationships with peers and family during the transition to adulthood, anxieties are very likely and normal to occur. For this reason, it can be very difficult to detect what is considered regressive for the adolescent's development and the extent that the anxiety would be worrying. On the other hand, anxieties may express realistic worries about an unsafe community, a destructive parent-child relationship, or a loosely structured school system failing to scaffold development of autonomy, thereby pointing to the inevitable embeddedness of individual development in relationships and social structure. Thus, we need to critically scrutinize whether traditional diagnostic information provides a sufficient basis for designing developmental prevention treatments, particularly in adolescents with high and complex needs.

The Rationale for Assessing Social-Cognitive Development, Resiliencies, Risks, and Relationships

From a developmental perspective, risk factors such as aggressive behavior are a necessary but insufficient precondition for the development of appropriate assessment procedures within a school-based, developmental prevention practice. Rather, information on social-cognitive development, related strengths, and supportive relationships available to an individual adolescent, tells us how we might change the way he or she relates to others and makes sense of his/her experiences in the world. This differential knowledge may help to enhance the adolescent's inherent ability to further develop and use his or her self-actualizing potential for developing, learning and achieving.

But how can we understand adolescent's development? Social-cognitive developmental theory has provided us with differentiated insights into adolescent's thoughts, emotions, and self-understanding at different levels of their development. Accordingly, adolescents are able to change and revise their cognitive and emotional schemata and to actively construct more mature self-concepts (Noam, 1992; Vygotsky, 1978). Development during late childhood to middle adolescence can be described as a three-level process that reflects a particular kind of social-cognitive development and related self-complexity (Noam, 1992; Loevinger, 1976). The three levels are the subjective-physical, the reciprocal-instrumental and the mutual-overinclusive. The subjective-physical level describes a concrete and frequently impulsive thinking style and related self-understanding, in which the self is not yet differentiated from others; actions are evaluated in terms of consequences. The reciprocal-instrumental level is characterized by an individualistic cognitive thinking style, in which the self is not yet related closely to others. In contrast, at the mutual-inclusive level the identity is related strongly to others and to seeking their approval (Noam, 1999). The developmental levels typically follow each other, although the model assumes regression of capacities as well as development in only some domains and allows for more flexibility than traditional Piagetian stage theories. The developmental expressions of social-cognitive- and self-understanding and related resiliencies are systematically linked to typical vulnerabilities such as internalizing and externalizing problems (see Table 1; Noam, Chandler, & LaLonde, 1995; Noam et al., 1999; Selman, 1980).

Insert Table 1 Here

More than 30 years ago, Kohlberg, LaCrosse, and Ricks (1972) documented in a review that the absence of mental illness and maladjustment in adulthood is predicted by social-cognitive development and ego maturity in childhood and adolescence. More recent research supports the view that risks and developmental levels of social cognition and self-complexity are interrelated. For example, it has been shown that ego development is negatively related to externalizing symptoms in adolescents and adults (see Noam et al., 2006, for a review). Externalizing symptoms were also found to be negatively associated with social-cognitive and moral development and ego functioning in childhood and adolescence (Krettenauer, Ulrich, Hofmann, & Edelstein, 2003; Malti & Keller, in press; Lochman & Wells, 2002; Stams et al., 2006). In contrast, Noam, Paget, Valiant, Borst, and Bartok (1994) found that ego development was related to an increase in symptoms of depression and in suicides.

Social-cognitive development is linked not only to typical risks but inevitably to specific resiliencies as well. For example, the mutual-overinclusive level of development incorporates the asset of empathy towards other. Substantial attention has focused on resiliency in relation to (mal) adaptive functioning (Luthar & Cicchetti, 2000; Masten, 1998, 2001, 2007); researchers have argued that enhancing resiliencies in a developmentally differentiated way is a powerful strategy for ameliorating psychological problems (Daniel & Wassell, 2002; Masten, Burt, & Coatsworth, 2006; Masten & Coatsworth, 1998; Noam, 1992; Weissberg, Klumpfer, & Seligman, 2003). As resiliency is considered to be a normative process that exists in each individual (Masten, 2001), it provides key information on individual strengths and social support systems that need to be included in prevention services, as they are inherently linked to both social-cognitive development and problems (Masten, 2007). The conceptual overlap between social-cognitive theory and resilience research strongly suggests different windows of vulnerability at different levels of social-cognitive development and related resiliencies (Cicchetti, Rappaport, Sandler, & Weissberg, 2000; Masten, 2007).

Social-cognitive theory and resilience models have increasingly shifted towards an ecological view. This developmental-ecological perspective acknowledges the

continuous relationships between development, resiliencies, risks, and social context (Kurtines et al., 2008; Luthar, 2006; Masten & Curtis, 2000). An ecological framework is also essential for the development of a holistic assessment tool, as typical risks are systematically linked to adolescent's social-cognitive development. On the other hand, adolescent's developmental and learning potential is set within his or her ecology. For example, risk and protective factors in the community, school, and family such as nonresponsive parenting or low social cohesion in the community are linked to adolescent's problems such as aggressive behavior and poor academic achievement (Lochman, 2006). On the other hand, supportive relationships are an essential element for enhancing adolescent's developmental growth and learning potential (Noam & Hermann, 2002). Taken together, this knowledge calls for an integrated system of psychological, social and academic supports that interconnects the school level, afterschool, family and community (see Durlak et al, 2007, for a review). New, holistic assessment procedures that reflect this differential knowledge and (a) explicitly consider social-cognitive development in relation to risks and resiliencies (b) acknowledge the significance of social support systems in the school, family, and community have thus the potential to substantially improve the effectiveness of developmental prevention practice.

The Present Study

The aim of this paper is to describe preliminary efforts to design and apply a holistic assessment procedure, which reflects the theoretical framework described above. Accordingly, an adequate assessment should include indicators of social-cognitive development, risks, and supportive relationships. To the best of our knowledge, no systematic assessment based on a comprehensive developmental theory and ecological model currently exists. We measured constructs central to the social-cognitive developmental perspective, choosing measures that we felt were appropriate for our population of study. As we are proposing a conceptual model rather than a standardized assessment battery, the measures are by no means the only measures to use. Rather, this paper provides a model for creating an assessment that is guided by the principles of social-cognitive developmental theory and the ecological model.

In sum, we investigate the implementation of a holistic assessment tool in a school-based prevention program and qualitatively explore if it improves the quality of a selected intervention and related student outcomes.

Method

Data Source

The data were collected from the ongoing RALLY prevention program, which utilizes a developmental framework and is currently being implemented in a Boston urban middle school. The program adopts an innovative, school-based prevention and early intervention model (Noam et al., 1999; Noam & Hermann, 2002) that emphasizes the interaction between school, after-school, community, and family in the amelioration of psychological risks and promotion of development and educational achievement in adolescents; supportive relationships are assumed to be highly relevant for achieving these goals (Erikson, 1963). Central to the program are "prevention practitioners," a professional role that aims to support young adolescents identified as being at-risk for psychological problems and school failure. Prevention practitioners are trained to form relationships with students to support them socially, emotionally, and academically, both in the school setting, but also across community settings. Prevention practitioners aim to reinforce any identified resiliency factors appropriate to their developmental level, to help improve their development and academic functioning. Previous evaluations of RALLY have shown that it improves mental health and educational functioning in at-risk adolescents. For example, by the end of the program the students were rated as having improved their school functioning, social competence, and relationship skills, as well as having ameliorated their externalizing problems (Maike & Nixon, 2007).

Participants

RALLY participants were from a middle school with about 597 students. 92 students in grades 7 and 8 in the 2007 school term participated. There were 44 girls (48%) and 48 boys (52%) with a mean age of 13.7 years (SD = 0.78). The breakdown of race overall for the school is as follows: Hispanic (65%), Black (27%), White (5%), Asian (2%), and Unspecified (1%). The test scores of all students across grades 6 through 8 in this school are well below average compared to the state of the school. For example, in the current 7^{th} grade class, only 37% scored above proficient in language arts (state average: 67%),

and 23% scored above proficient in math (state average: 52%) during testing in their 6th grade year. Approximately 83% of all students are eligible for the free lunch program.

Description of Community

The students from our sample came from a diverse neighborhood in the greater Boston area, and many of them live in neighborhoods with primarily Latino and Black families. There are 25% more African Americans living in this particular city than the U.S. average, and more than twice as many Latinos. Even compared to a diverse city such as Boston, the city is dramatically more Latino; Boston mimics the national average at only 14% Latino. Many of the students live in housing projects situated within the poorer areas of the neighborhood, where an increase in crime has been observe and documented by several Boston newspaper articles. However, several community organizations established in the neighborhood provide before and afterschool activities. Due to local activism, there are now plans to create mixed income housing, a youth center, a recreation center, and retail/commercial space on a plot of land that had been unused for many years.

Measures

Measurement Rationale

We decided to use a standardized and validated self-report measure to assess adolescent's problems (the Youth Self Report), because we wanted to include a reliable measure of the most common symptoms in the sample as conceptualized in standard clinical manuals such as the DSM-IV. Regarding social-cognitive development, a measure on moral development was chosen, because it is an age-adequate and feasible instrument to derive scores on adolescent's social-cognitive developmental levels. For reasons of efficiency, a short, self-created scale was used to measure resiliency and supportive relationships. This scale included key dimensions of resiliencies and social support and was thus well suited to explore the utility of the concepts. However, the instrument was clearly limited and exploratory. As this was a pilot study, we wanted to assess development and symptoms in depth to ensure the validity of interrelations between these two concepts. On the other hand, it seemed essential to accomplish the assessment within a reasonable amount of time. In future research, it would be important to select key dimensions of development

and risks to be able to include more extensive measures of resiliency and relationships/context indicators.

Child Questionnaire

Symptoms. The Youth Self Report (YSR) was administered to assess the behavioral and emotional functioning of adolescents (Achenbach & Edelbrock, 1987). It is designed for use with adolescents between the ages of 12 and 18. It contains a total of 112 items in eight subscales: withdrawn, somatic complaints, anxiety and depression, social problems, thought problems, attention problems, aggressive behavior, and delinquent behaviors. The first three subscales are referred to as internalizing and the last three as externalizing. The items are also independently assigned to six subscales, which are similar to the following diagnoses provided by the Diagnostic and Statistical Manual (DSM-IV): affective problems, anxiety problems, somatic problems, attention problems, oppositional defiant behavior, and conduct problem behavior. Respondents mark each item for how much it applies to them now and within the past six months, using a three-point, from 0 (*not true*) to 2 (*often true*). The raw scores for both sets of scales were converted to T scores for analysis.

Social-cognitive development. The Sociomoral Reflection Measure – Short From (SRM-SF; Gibbs et al., 1992) is a group administered, pencil-and-paper instrument designed to assess the developmental status of an individual's moral judgment. The items tap sociomoral values by using lead-in questions such as, ''Think about when you've made a promise to a friend of yours. How important is it for people to keep promises, if they can, to friends?'' The answers are coded according to complexity of moral argumentation, and a level score for each argument is coded. The mean of the ratings is referred to as the Sociomoral Reflection Maturity Score (SRMS). These scores are then converted into scores representing the developmental levels as proposed within cognitive-developmental theory (Kohlberg, 1969; Piaget, 1965).

Resiliency. A scale was developed by the authors to assess resiliency. The items were designed to measure developmental assets, and selected resiliency factors that are basic to human adaptation (Masten, 2001, 2004; Masten & Oradovic, 2006). Learning interest, empathy (Zhou et al., 2003), control and communication of emotions, trust, and conflict resolution skills were the constructs measured. Learning interest was measured

with 4 items (α = .61) and empathy with 3 items (α = .79). Single items were used to measure trust, emotional control and communication. The question on conflict resolution skills was open-ended: "If you had an argument or fight with a friend, what would you do?" Responses were assigned to one of the following four categories: constructive (e.g., "I talk to him"), passive/avoidance (e.g., "I would run away"), aggressive (e.g., "I would fight"), and emotion regulation (e.g., "I try to calm down").

Relationships. The scale measured the quality of relationships with peers, teachers, and family. Single items were used to measure these items. Responses were marked on a 4-point scale, from 0 (*not at all*) to 3(*almost always*).

Interviews

Interviews with the adolescents and the practitioners included open-ended questions on the adolescent's resiliencies and needs regarding mental health and educational achievement.

Exemplary Group Intervention

An 8-week, after-school group intervention was implemented during February to April 2008. Eight girls participated in this group, lead by the RALLY director of clinical services and a prevention practitioner. The intervention was designed specifically for children at the mutual-inclusive developmental level with an aim to strengthen expression of own emotions, feelings of self-worth, and the ability to assert oneself. As each developmental level has specific implications for effective after-school activities and guidance for practitioners on relationship building and the promotion of development, the present group contained several practices and including expressive techniques such as art to promote the development of trust, the creation of community, self-assertion and expression of one's emotions. These goals are the ones, which can enable the child at the mutual-inclusive developmental level to further develop and to strengthen his or her resiliencies.

Procedure

The assessments were conducted before the school program began. The first step was interviews with the adolescents conducted by the practitioners, which lasted approximately 1 hour. In addition to serving as a data source, the interviews provided an opportunity to become acquainted with the students. Second, the students filled in the

questionnaires described above, which lasted about an hour and were administered in school. Third, interviews were conducted with the practitioners by the first author, who work with the adolescents at school and integrate their various support systems.
Based on the assessment findings as well as conjoint group discussions in the RALLY team, selected participants were then individually assigned to treatment services at different levels of the adolescent's ecology. Given that this was the first year of piloting the referral procedure however, we restricted this referral procedure to selected students. In this research, we will therefore describe one exemplary case study to illustrate the outcomes of the after-school group intervention to explore the efficiency of the assessment tool. After the last session of the group intervention, the group participants and leaders filled out a short questionnaire on student's outcomes and satisfaction evaluation questions.

Results

We first present the descriptive statistics for symptoms, social-cognitive developmental level and resiliencies, and social support in the overall sample. By providing this background knowledge, we aim to describe the adolescents in this population and their specific vulnerabilities, social-cognitive development and resiliencies, and relationships. Next, we rely on children's and practitioner's responses in the open-ended interviews in describing two prototypical case studies, which illustrate in more depth how the assessment procedure integrates information on social-cognitive development and related strengths, risks, and relationships with the ultimate goal of creating an efficient, developmentally differentiated individualized treatment plan.

Descriptive Statistics

Overall, no age- and gender differences in symptoms and social-cognitive development occurred. However, girls reported more empathy, $t(87) = -2.36$, $p < .05$, and less emotion control than boys, $t(87) = 3.27$, $p < .01$.
Regarding symptoms, 17% of the adolescents showed a clinical level of internalizing symptoms, and 18% showed a clinical level of externalizing symptoms. Moreover, 15% of the sample showed internalizing symptoms, and 12% externalizing symptoms, that were borderline (or subclinical).

Insert Figure 1 Here

Almost one-third of the children reported somatic problems, followed by conduct problems and affective problems. Around 16% of the children reported ADHD symptoms, 13% oppositional-defiant symptoms, and 9% anxiety symptoms. The frequencies of the developmental levels are displayed in Figure 2.

Insert Figure 2 Here

More than two-third of the adolescents were classified as being at the reciprocal-instrumental level, one quarter of the adolescents was categorized as being at the mutual-overinclusive level, and eight percent of the adolescents were classified as being at the subjective-physical level.

Regarding the resiliency and relationship scales, adolescents reported in average to be often interested in learning (M = 2.18, SD = 0.56), being able to control emotions (M = 2.02, SD = 0.95) and being empathic (M = 1.81, SD = 0.76). In contrast, they said that they only sometimes can communicate their emotions (M = 1.34, SD = 0.97) and trust others (M = 1.33, SD = 0.77). Regarding relationships, peer- and family relationships were rated as well in average (Peers: M = 2.24, SD = 0.88; Family: M = 2.51, SD = 0.77), whereas quality of teacher-relationships was rated somewhat lower (M = 1.74, SD = 0.90).

Case Studies

First, we describe two selected case studies, which represent prototypes of adolescents who are at the two most common developmental levels: the mutual-overinclusive and the reciprocal-instrumental level. Below, we illustrate how these developmental levels are linked to risks, resiliencies, and relationships. Second, we describe outcomes of a case study to illustrate the efficiency of the assessment tool within a developmentally differentiated intervention.

Assessment of an Adolescent At the Mutual-Overinclusive Developmental Level

S., a 13-year-old Hispanic girl in the 7th grade lives with her mother and two older half-brothers. Because her mother suffers from a physical disability, S. helps her with

household chores. She describes her brothers as overprotective, and they do not allow her to leave home except to go to school. S. is not doing well academically, particularly in math. She tends to be very quiet in the company of her peers and seems to be victimized by other girls at school. In contrast, the practitioner found S. to be engaging and talkative. S. likes cheerleading and likes to play sports after school. The diagnostic assessments revealed that S. has almost borderline or borderline clinical levels of internalizing symptoms, including feelings of anxiety, withdrawal, somatic problems (e.g., frequent headaches), and social problems (e.g., rejection by others, clumsiness). Developmentally, S. is at the mutual-overinclusive level, which reflects the ability to cognitively and emotionally take the perspective of (close) others. S. has many strengths, and she says she is supported by her family, is motivated to learn, and has good control of her emotions. She acknowledges difficulties in communicating her emotions, reports low trust in others, and poor relationships with her teachers. Her assessment profile is illustrated in Figure 3 exemplary.

Insert Figure 3 Here

In sum, the assessment shows that S. is at risk for internalizing problems. Developmentally, she is at the mutual-overinclusive level, and her strong outlook regarding helpfulness and empathy, when juxtaposed to her decreased ability to communicate her emotions, is of concern. However, at an age where individuation from family and the establishment of peer relationships and autonomy are integral for adaptive social and emotional functioning, S. may need both support regarding her development (i.e., learning how to assert and express her own needs) and social support (i.e., more autonomy in the family, more peer and teacher support) to facilitate this developmental progression.

Assessment of An Adolescent at the Reciprocal-Instrumental Developmental Level

M., a 13-year-old Dominican American girl in the 7th grade lives with her mother and two older brothers; her father lives nearby. The practitioner describes her as being full of energy, but being considered mean by her peers because she laughs at others and spreads rumors. In addition, she is disruptive in class. She performs at an average level

academically, but reports low motivation for schoolwork and has difficulty concentrating. Her structured assessment indicated externalizing problems at a borderline clinical level. In particular, M. reported acting out aggressively through arguing, screaming, and changing her mood suddenly. She also reported being louder and more stubborn than most kids, as well as being suspicious of others. Developmentally, she is at the reciprocal-instrumental level. She feels that she has low empathy and no control over her emotions but can communicate them. M. says she has high family support in her efforts to achieve.

In sum, the information provided by the assessment shows that M. is at risk for developing externalizing problems. Developmentally, she is at the reciprocal-instrumental level, which is characterized by low ability to take the perspective of others and empathize with them. She is full of energy, has leadership potential and feels supported by her family, but reports low academic motivation. Helping her learn to cognitively and emotionally take the perspective of others, in combination with academic support in after-school may support her further development. Likewise, classroom strategies to decrease her disruptiveness and leadership opportunities in after-school may be a reasonable way to support her leadership potential and strength.

Intervention Outcomes for an Adolescent at the Mutual-Inclusive Developmental Level

S. is a 14-year-old girl in the 8th grade. Her assessment profile at the beginning of the program year revealed that she is at the mutual-inclusive developmental level, and she reported high levels of empathy. She also described her peer- and family relationships as supportive and reported no elevated levels of emotional problems. However, the assessment findings revealed low resiliencies in specific areas: S. said to have low trust in others, to possess low constructive conflict resolution skills, and to have experienced negative life events during the last year. Based on these assessment findings, the girl was thought to benefit from the after-school intervention to strengthen her resiliencies, particularly trust in self and others and self-assertion, as well as from the establishment of a supportive relationship to the practitioner. Both the practitioner work and the group intervention proofed to be beneficial for her: After the intervention, she reported to have learnt about her feelings, to being able to better express her feelings, to assert herself, and to have learnt to feel good about herself. Furthermore, she showed an increased trust in

others, reflected in reporting that she felt safe in the group and felt more connected to others after the group than in the beginning. She also reported overall high satisfaction with the after-school group. In addition, the group leader supported this view by reporting that group participants were able to express their needs and emotions and to identify positive aspects of the self better after the intervention.

Discussion

In this paper we described, both quantitatively and qualitatively, our first attempt towards a new, holistic assessment procedure for youth that is based on developmental theory. Accordingly, levels of social-cognitive development are systematically connected to risks and resiliencies at a given time and are inevitably embedded into the child's ecology. We have argued that critically scrutinizing traditional assessments may improve existing school-based, developmental prevention programs, because holistic assessment approaches have the potential to provide distinctive insights into the needs and strengths of adolescents at risk for psychological symptoms. These insights could potentially be used to improve referral procedures that help adolescents overcome their vulnerabilities and support their social-cognitive development by combining intervention strategies in different social contexts, such as school and after-school. Few of the existing intervention programs for youth are grounded in and sufficiently translate knowledge provided by developmental theory and research. Thus, they do not systematically link diagnostic procedures to developmental processes, resiliencies, and supportive relationships.

The quantitative findings demonstrated that adolescents were predominantly at the reciprocal-instrumental level of social-cognitive development, which is characterized by thinking in individualistic terms. This finding shows that the adolescents in the sample are in average rather delayed in development, which may be linked to insufficient opportunities for communication and participation in everyday live. The fact that more than one third of the adolescents in our sample showed elevated levels of internalizing and/or externalizing symptoms points to the high needs of this sample. Adolescents also reported about specific resiliencies and supportive relationships, which can be used to plan systematic intervention. Given the narrow age range of our sample, no age differences in social-cognitive development, risks and resiliencies were expected, which was confirmed by the findings. We also found few gender differences. Other studies

reported similar prevalence rates of internalizing symptoms for male and female adolescents (Elster & Marcell, 2003), and our findings show that the population under study generally suffers from high levels of vulnerabilities. Further, girls reported higher empathy than boys, which resonates with previous research (Malti, Kriesi, & Buchmann, in press). They also reported lower control of emotions than boys. This may relate to findings showing that parents encourage greater emotional awareness in daughters (Belenky et al., 1986).

As the quantitative findings are exploratory sui generis and predominantly served to illustrate the complex needs of the population under study, we further illustrated our idea of a holistic assessment procedure by presenting assessments of two prototypical case studies. They describe adolescents at two different developmental levels the reciprocal-instrumental or mutual-overinclusive, respectively, and their relationship to risks, resiliencies, and relationships. This combined diagnostic information differs significantly from more traditional psychological test batteries, such as neuropsychological testing, as it is grounded in developmental assumptions on logical interrelations between the assessment dimensions. It can thus help to choose an optimal combination of treatment strategies that are based on the assumptions of -developmental theory. For example, one of the adolescent girls was at the mutual-overinclusive level of development, which is related to a strong ability to understand and empathize with others. However, she was at risk for emotional problems and did not pay enough attention to her own needs. She could likely reduce her vulnerability by discovering and satisfying her needs, and by expressing anger if they are not met (cf. Izard, 2002). After-school activities, such as being a buddy to a younger child, could be particularly effective in promoting her specific resiliencies (i.e., being helpful and responsible) and would likely increase her self-esteem and assertiveness. Furthermore, a supportive relationship with the practitioner could support the goal of her learning how to assert and express herself in relating to others, while at the same time providing feelings of security resulting from a sense of belonging and awareness that others care about her. Finally, a group intervention at the school, including expressive techniques such as art and poetry could help her to learn how to express own emotions. We have illustrated that such a developmentally differential intervention was beneficial for another girl, who was also at the mutual-

overinclusive developmental level and reported low trust in others and low conflict resolution skills. The findings showed that the intervention increased her emotion expression ability and self-assertion as well as her self-worth and trust in others.

In sum, we believe that developmental theory can help expand our understanding of how to assess adolescents at risk for social and emotional problems. This is why the RALLY prevention program has chosen to implement this new assessment as a vehicle for referring adolescents with internalizing and/or externalizing symptoms to combined treatment services including the classroom, school, after-school, and community level. The current data from reviewing this 1st year pilot is promising, and we are eager to examine closely, outcomes that extend into the 2nd year of the implementation of this study.

Despite its novel approach, the present study has obvious limitations. As a first attempt to develop holistic assessment procedures designed to inform school-based prevention programs the study was exploratory. Validation studies with rigorous research designs are needed to show if the assessment model can be generalized to other circumstances. Second, our measures were used for exploratory purpose, and we only included self- and practitioner-reports. In-depth studies using multiple informants and multiple measures may help to validate the current assessment procedure. As we proposed an assessment model rather than a test battery, type of concrete measure is not fixed, unless the most reliable and efficient measures on symptoms, social-cognitive development, and internal and external resiliencies are confirmed. Nonetheless, the qualitative analyses of this study provide preliminary support for the theoretically expected relationships between social-cognitive developmental levels, risks, and resiliencies. Third, we did not consider comorbidities in the present analyses, although research suggests high rates of comorbidity between symptoms such as depressive mood and aggression in urban youth (Grant et al., 2004). Future studies need to consider these comorbidities, particularly in relation to adolescent social-cognitive development and social support systems.

Implications for practitioners

By providing diagnostic information on social-cognitive development, risks, resiliencies, and supportive social relationships, the assessment procedure proposed in

this paper is genuinely integrative and has the potential to provide important insights on how to intervene. There are several reasons why this holistic, integrative diagnostic approach has important implications for practitioners. First and foremost, the introduction of developmental considerations into traditional clinical assessments helps practitioners choose the best combination of support systems to facilitate developmental progress and not only a decline of symptoms. Second, the consideration of developmental resiliencies helps practitioners' focus on an adolescent's strengths and how these can be used for intervention (Masten & Obradovic, 2006). For example, a child suffering from depression may still be able to take the perspective of others and strongly empathize with them; these strengths can assist the adolescent to take successful advantage of leadership opportunities, which in turn gives them self-confidence. Third, the assessment procedure addresses not only resiliencies, but also supportive social relationships in various contexts. Information about these supportive social relationships can then be used to promote development and academic success.

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Footnotes

[1]We did not include indicators of academic functioning, because this information can be obtained from the school.

Table 1

Social-Cognitive Development and Related Risks

Developmental Level and Typical Strengths	Risks
Subjective-Physical: thinking in egocentric and impulsive terms; behavior defined in terms of consequences *Strengths:* active, spontaneous, curious	*Problems with behavior control*: Impulsivity and attention problems, hyperactivity
Reciprocal-Instrumental: thinking in individualistic terms; proper behavior defined by what is best for the self Strengths: leadership-qualities, power-oriented; boundaried	*Externalizing problems*: Antisocial and aggressive behavior; violence as revenge; proneness to drug and alcohol experimentation
Mutual-Overinclusive: ability to take others' perspectives; seeking the approval of others; Conformist attitude Strengths: Sensitive, empathic, prosocial	*Internalizing problems*: Feelings of depression and hopelessness; loneliness and social anxiety

Figure Captions

Figure 1. Frequencies of (Sub)Clinical Symptoms According to the DSM-IV-oriented Scales

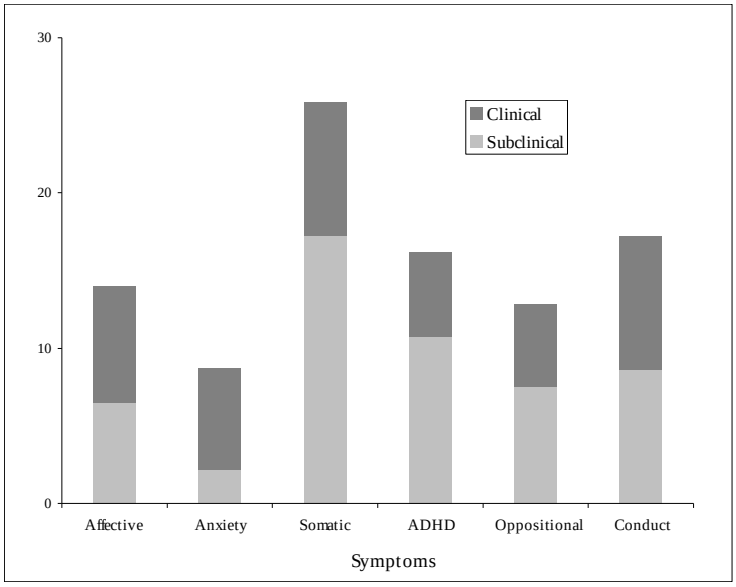


Figure 2. Frequencies of Social-Cognitive Developmental Levels

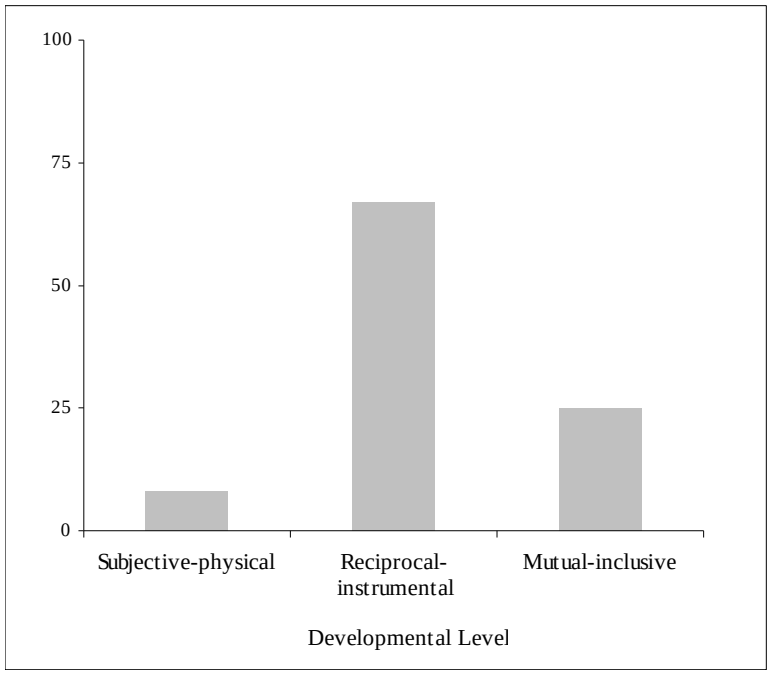
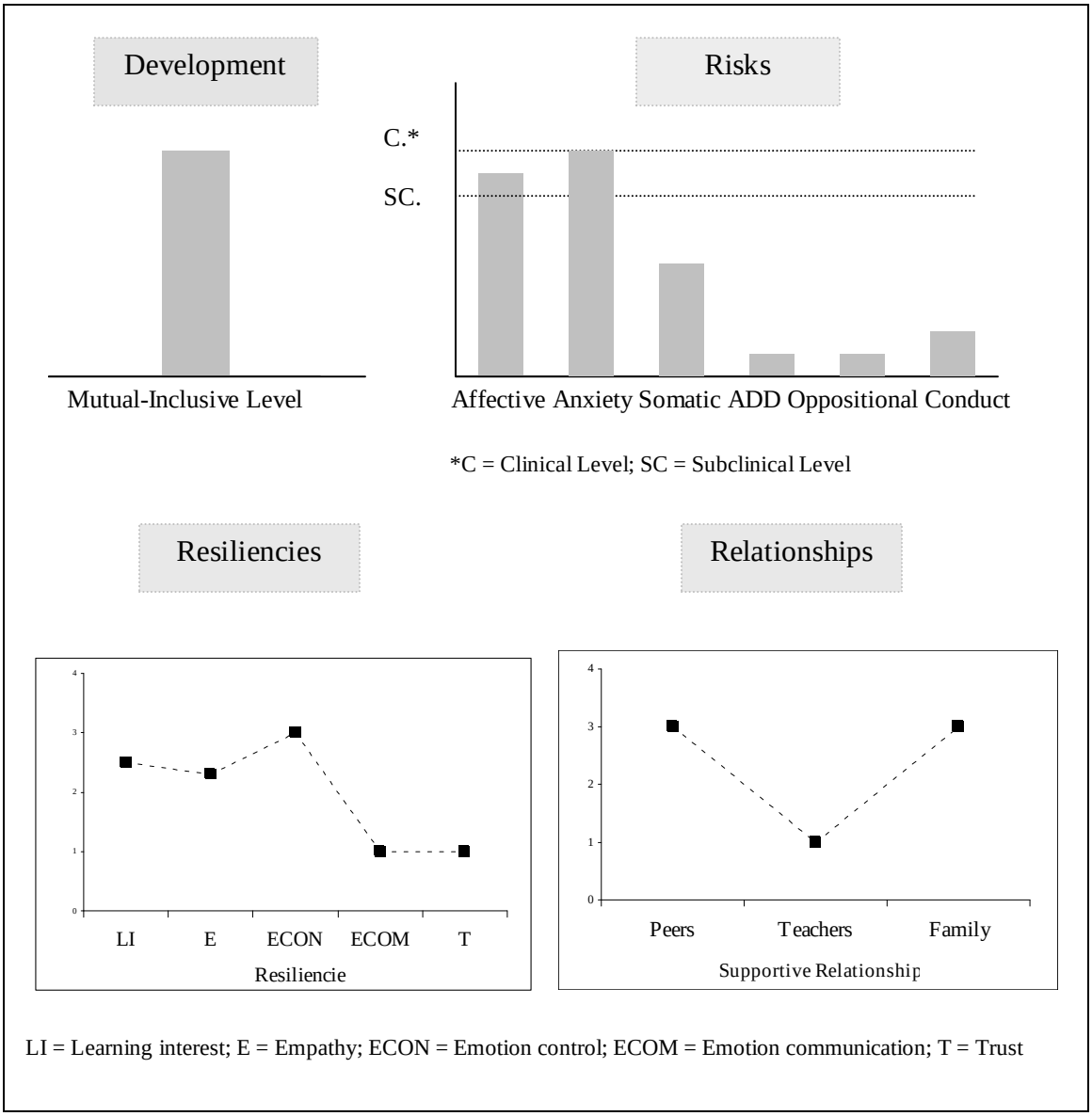


Figure 3. Example: Assessment Profile



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The authors would like to express their sincere thanks to the adolescents for participating in the RALLY program. Moreover, the authors are grateful to the RALLY practitioners and the RALLY school team for thoughtful comments and help in data collection.

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