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# Taking Stock and Taking Steps: The Case for an AdolescentVersion of the Short-Assessment of Risk and Treatability

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# Abstract

The field of violence risk assessment has matured considerably, possibly advancing beyond its own adolescence. At this point in the field's evolution, it is more important than ever for the development of any new device to be accompanied by a strong rationale and the capacity to provide a unique contribution. With this issue in mind, we first take stock of the field of adolescent risk assessment in order to describe the rapid progress that this field has made, as well as the gaps that led us to adapt the Short-Term Assessment of Risk and Treatability (START; Webster, Martin, Brink, Nicholls, & Desmarais, 2009) for use with adolescents. We view the Short-Term Assessment of Risk and Treatability: Adolescent Version (START:AV; Nicholls, Viljoen, Cruise, Desmarais, & Webster, 2010; Viljoen, Cruise, Nicholls, Desmarais, & Webster, in progress) as complementing other risk measures in four primary ways: 1) rather than focusing solely on violence risk, it examines broader adverse outcomes to which some adolescents are vulnerable (including self-harm, suicide, victimization, substance abuse, unauthorized leave, selfneglect, general offending); 2) it places a balanced emphasis on adolescents' strengths; 3) it focuses on dynamic factors that are relevant to short-term assessment, risk management, and treatment planning; and 4) it is designed for both mental health and justice populations. We describe the developmentally-informed approach we took in the adaptation of the START for adolescents, and outline future steps for the continuing validation and refinement of the START:AV.

Professionals in justice and mental health settings are frequently asked to assess adolescents' risk of violence towards others and the potential likelihood of other adverse events, such as suicidal or self-harming behaviors (Goldston, 2003; Viljoen, McLachlan, & Vincent, 2010). The challenges inherent in making these judgments are considerable and the consequences of erroneous decisions are often very serious. As such, it is not surprising that professional demand for risk assessment guides and research findings have soared, starting in the 1990s

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and continuing through to the present time (Borum, 1996; Heilbrun, Yasuhara, & Shah, 2010).

Currently, there are well over 120 devices for assessing violence and reoffense risk (Singh, Grann, & Fazel, 2011), the vast majority of which were developed for adult populations. In discussing the field of adult violence risk assessment, Skeem and Monahan (2011, p. 41) aptly cautioned that "[t]he violence risk assessment field may be reaching a point of diminishing returns in instrument development" and that it may be time to shift focus to other timely issues, particularly treatment. On the one hand, recent studies show that many risk assessment guides (adult ones at least) are barely distinguishable in their ability to predict violence (Yang, Wong, & Coid, 2010). On the other hand, measures vary considerably in their relevance to treatment-planning, managing risk, and measuring change (Hart & Logan, in press; Heilbrun, et al., 2010), and while certain risk domains may be blessed with a relative abundance of instruments (e.g., general violence risk assessments schemes for male offenders), a number of areas remain unchartered. Until recently very little work has examined the assessment of protective factors (de Ruiter & Nicholls, 2011) or risks for multiple outcomes, such as self-harm and victimization (Webster, Nicholls, Martin, Desmarais, & Brink, 2006). There have also been relatively few efforts focused on violence risk assessments amongst women and girls (e.g., Garcia-Mansilla, Rosenfeld, & Nicholls, 2009; Penney, Lee, & Moretti, 2010; but see Augimeri, Koegl, Webster, & Levene, 2001a; de Vogel, de Vries Robbé, van Kalmthout, & Place, 2011).

Although *adult* violence risk assessment may be starting to loom with a sense of "diminishing returns" (Skeem & Monahan, 2011, p. 41), this is a far cry from the current state of *adolescent* risk assessment. Far fewer studies have examined risk assessment in adolescents compared to adults. As of the beginning of 2012, fewer than one-fifth of the scholarly articles, chapters, and books on violence risk assessment pertained to adolescent populations.<sup>1</sup> Also, of the more than 120 risk assessment devices in the literature (Singh et al., 2011) only 10 to 20% were developed for adolescents (see Vincent, Terry, & Maney, 2009). While there has been a good uptake of schemes such as the Structured Assessment of Violence Risk in Youth (SAVRY; Borum, Bartel, & Forth, 2006) and the Youth Level of Service/Case Management Inventory 2.0 (YLS/CMI 2.0; Hoge & Andrews, 2011) many agencies continue to rely on "homegrown" decision-enhancing guides that have not been subject to rigorous empirical investigation and thus lack psychometric support (Mulvey & Iselin, 2008; Vincent et al., 2009). As well, nearly all of the adolescent risk assessment measures focus exclusively on violence or reoffense risk, despite evidence that adolescence represents a period of heightened vulnerability to multiple risk behaviours that can carry long-term implications for adolescents' development, health, and well-being (e.g., substance use, self-harm; Boyer, 2006; Steinberg, 2004, 2008).

The evident lag in adolescent risk assessment cannot be remedied simply by the development of more devices. Instead, as experts caution, it is critical that anyone who sets out to develop a new risk guide have a strong and clear rationale for doing so (Nonstad & Webster, 2011; Skeem & Monahan, 2011). With this in mind, the goals of the current article are to 1) take stock of the adolescent risk assessment literature and explain the factors that lead us to develop an adolescent version of the START, 2) describe the steps that we took to adapt the START for adolescents, and 3) outline the next steps in further testing and refining this measure.

<sup>&</sup>lt;sup>1</sup>To derive this estimate, we conducted a search of violence risk assessment in PsychInfo and Medline using the following terms (violence or offend\* or offense\* or offence\*) and risk and assessment.

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# Taking Stock: The State of Adolescent Violence and Recidivism Risk Assessment

To date, the field has focused primarily on risk for violence, sexual violence, and broader forms of reoffending in adolescent offenders. Our review focuses therefore on these areas, although we later discuss the need for attention to other adverse outcomes, such as victimization and self-harm, as well as broader populations, such as youth in mental health settings.

#### Strides in Adolescent Violence and Recidivism Risk Assessment

Scholarly work in the area of adolescent violence risk assessments first emerged in the late 1990s and early 2000s (Grisso, 1998). Since that time, the field has made major strides. First, there has been an explosion of publications on this topic. In 2000, there were fewer than 10 published studies on adolescent violence risk assessment (see Cottle, Lee, & Heilbrun, 2001), but as of 2012, this figure had grown to over 50 publications, representing over a 400% increase. Second, a number of measures for assessing violence and reoffense risk in adolescents have been developed since the early 2000s (see Otto & Douglas, 2010 for a review). Leading risk assessment schemes include the SAVRY (Borum et al., 2006) and the YLS/CMI (Hoge & Andrews, 2003, 2011), and in the area of sexual reoffending, the Juvenile Sex Offender Assessment Protocol-II (J-SOAP-II; Prentky & Righthand, 2003) and the Estimate of Risk of Adolescent Sexual Offense Recidivism (ERASOR; Worling & Curwen, 2001).

Third, many studies on adolescent violence risk assessment guides have reported promising results. For instance, meta-analyses have found the predictive validity of schemes such as the SAVRY and YLS/CMI to fall in the moderate range (Edens, Campbell & Weir, 2007; Olver, Stockdale, & Wormith, 2009; Viljoen, Mordell, & Beneteau, 2012). One metaanalysis reported that the SAVRY had higher effect sizes than leading adult risk assessment guides (Singh, Grann, & Fazel, 2010). Fourth, the uptake of adolescent violence risk assessment measures has been remarkable. For instance, a clinician survey found that 97% of forensic psychologists use violence risk assessment tools at least once in a while in their risk assessments of adolescent offenders (Viljoen, McLachlan, & Vincent, 2010; see also McGrath, Cumming, Burchard, Zeoli, & Ellerby, 2010). In addition, in the 1990s, 33% of justice agencies surveyed in the United States reported using formal risk assessment procedures, whereas in 2012, most states use these instruments at some point in legal proceedings (National Center for Juvenile Justice, 2012; Towberman, 1992; see also Hannah-Moffat & Maurutto, 2003). That said, many states do not have state-wide mandates or uniform procedures (National Center for Juvenile Justice, 2012), and many agencies continue to rely on home-grown efforts that have not been validated (Vincent, Terry, & Maney, 2009).

#### Key Themes in the Literature on Adolescent Violence and Recidivism Risk Assessment

The field of adolescent risk assessment is closely intertwined with adult risk assessment, but as we describe below, it has emerged with slightly different themes.

**Dynamic Changes**—A key theme that pervades the field of adolescent violence risk assessment is the recognition that adolescence is a period of extraordinary developmental change. For this reason, a number of scholars have described the assessment of adolescents' risks as being akin to assessing "moving targets" (Borum, 2003; Grisso, 1998; Prentky & Righthand, 2003). As Vincent and Grisso (2005) aptly describe, adolescent assessments may have a shorter "shelf-life" than those designed for adults. Neuroscience research shows that adolescence is marked by rapid brain development, particularly in the frontal lobes, an area

of the brain associated with higher-order cognitive functions such as planning (Giedd et al., 1999; Steinberg, 2008). Additionally, during adolescence individuals gain skills in their ability to control impulses, resist peer influence, and consider the future consequences of their decisions (Steinberg & Cauffman, 1996; Steinberg & Monahan, 2007; Steinberg et al., 2008; Steinberg et al., 2009). In the United States, the American Psychological Association (APA) has written several recent legal briefs that have outlined these types of developmental issues (APA, 2004, 2009, 2012); these briefs have helped to bring about important changes in American laws and policies for adolescent offenders, including the abolishment of the juvenile death penalty (*Roper v. Simmons*, 2005) and greater restrictions regarding the use of life prison sentences with adolescents (*Graham v. Florida*, 2010; *Miller v. Alabama*, 2012).

As described in the APA's recent briefs, the rapid changes that occur during adolescence highlight that risk level may change as individuals develop. While it may be feasible to assess adolescents' violence and violence-related risks over short-term periods, it may be more difficult to assess their long-term risks (Edens & Cahill, 2010). To date, some adolescent studies suggest that short-term assessments are indeed more accurate than long-term assessments (Worling, Bookalam, & Litteljohn, 2012), whereas other studies have indicated that longer-term risk assessments are possible in some cases (Olver, Stockdale, & Wong, 2011). Evidently, further research is still needed to determine the optimal "shelf-life" of adolescent risk assessments.

**Strength or Protective Factors**—A second theme emphasized in the field of adolescent risk assessment is the importance of protective factors. Protective factors have been defined in various ways, and some debate exists regarding the degree to which protective factors are separate and distinct from risk factors (Stouthamer-Loeber, Loeber, Farrington,, & Zhang, 1993; Stouthamer, Wei, Farrington & Wikström, 2002). Also, several different models have been proposed to describe how these factors operate (Fergus & Zimmerman, 2005; Jessor, Van Den Bos, Vanderryn, Costa, & Turbin, 1995; Ullrich & Coid, 2011). In the buffering model, protective factors interact with risk factors to buffer their effects. In the compensatory model, the focus is on variables that directly reduce the risk of problem behavior regardless of risk level; these variables are sometimes referred to as promotive factors to differentiate them from variables that have a buffering or protective effect only in the face of risk (Stouthamer-Loeber et al., 2002). In the current article, we define protective factors broadly to mean strengths or assets within the youth as well as resources within the environment that reduce risk, either directly or indirectly.

Overall, the adolescent risk assessment field has developed with greater attention paid to protective factors than its adult counterpart. To our knowledge, the very first Structured Professional Judgment (SPJ) risk assessment guide (adult or adolescent) to include a dedicated section on protective factors was the SAVRY (Borum et al., 2006), and a recent survey found that forensic psychologists are more likely to routinely discuss protective factors in risk assessments of adolescents than of adults (Viljoen et al., 2010). This may be due to the rich literature on resilience, protective factors, and developmental assets in adolescents (Fergus & Zimmerman, 2005; Jessor et al., 1995; Leffert, Benson, Scales, Sharma, Drake & Blyth, 1998; Rutter, 1987; Stouthamer et al., 2002); indeed, far more research has examined resilience in youth than in adults (Ong, Bergeman, & Boker, 2009). Moreover, clinicians who work with adolescents often report significant concerns about negative labels (Viljoen et al., 2010), and as such, they may be drawn to strength-oriented approaches to avoid such labels. The emphasis on strengths in adolescents may also reflect the belief that adolescents have a particularly high capacity for change and treatment.

**Treatment**—A final theme that is prominent in the adolescent violence risk assessment field is the importance of treatment. Early youth justice systems in the United States and elsewhere were first developed with a rehabilitative focus (Scott & Steinberg, 2008). Although this rehabilitative focus has diminished somewhat in some places, rehabilitation remains a goal of most juvenile justice systems in industrialized societies (Bala, Hornick, Snyder, & Paetsch, 2002; Winterdyk, 2002). For example, while the American public is often portrayed as being notoriously punishment-supportive, a recent public survey found greater support for dedicating tax dollars to juvenile offender rehabilitative programs than to incarceration (Piquero & Steinberg, 2010).

Given the greater focus on rehabilitation in the youth justice system compared to the adult criminal justice system, adolescent violence risk assessments appear to have evolved with a somewhat greater emphasis on informing treatment (Viljoen et al., 2010). This treatment focus is also consistent with developmental research, which highlights that adolescence is characterized by heightened plasticity and malleability, and thus may potentially represent a period during which individuals are particularly amenable to change (see Holmbeck et al., 2012; Toth & Cicchetti, 1999).

#### Gaps in Adolescent Risk Assessment and the Potential Value of an Adolescent START

The adolescent risk assessment field has made great strides, including the development and validation of several risk guides and a surge of research. The field's focus on dynamic factors, protective factors, and treatment is consistent with the rehabilitative-oriented contexts in which adolescent violence risk assessments occur and with developmental research. However, a number of gaps remain. In particular, most research has focused on adolescents' risk of violence rather than the broader adverse outcomes that adolescents may experience, and has been conducted in youth justice settings rather than other settings in which risk assessments occur (e.g., forensic or general psychiatric facilities, schools). Yet, despite the recognition that it is especially important to examine dynamic factors in adolescents, few schemes aim to assess short-term risks (for an exception see Lewis, Wong, & Gordon, 2004).

As we describe below, the START (Webster et al., 2004, 2009) may provide a model to help address some of these gaps. The START is a SPJ device that is designed to assess risk for multiple adverse outcomes in adults. It emphasizes short-term assessment and treatment-planning, and places a heavy emphasis on dynamic and strength factors in addition to vulnerabilities or risk factors. A growing body of research supports the reliability, validity, and clinical utility of START assessments (e.g., Chu, Thomas, Ogloff, & Daffern, 2011; Desmarais, Nicholls, Wilson, & Brink, 2012; Desmarais, Collins, Nicholls, & Brink, 2011; Gray et al., 2011; Nicholls, Brink, Desmarais, Webster & Martin, 2006). Also, the START has received quick international uptake; in its brief history, it has already been translated into four languages, with four additional translations underway (Nicholls, Petersen, Brink, & Webster, 2011). Although the START was developed for adults, it may provide a useful *model* for an adolescent risk assessment guide, particularly as it is consistent with the focus on dynamic factors, strengths, and treatment that is emphasized in the adolescent risk assessment field.

#### **Multiple Adverse Outcomes**

**The gaps:** In our view, one of the most notable gaps in adolescent risk assessments is the nearly exclusive focus on adolescent offenders' risk for violence towards others and the relative absence of attention to broader risks, such as suicidal behaviors, nonsuicidal self injury (NSSI), substance use, and victimization. For several reasons, it is critical for practitioners now to think more broadly than before about the risks that adolescents face.

First, broad risk behaviors are common in adolescents. Despite justice settings' tendency to focus on risk to others, adolescents in the justice system engage in high rates of suicidal behaviors, NSSI, and substance use, and many have experienced victimization (Morris, Harrison, Knox, & Tromanhauser, 1995; Penn, Esposito, Schaeffer, Fritz, & Spirito, 2003). In contrast, in mental health settings, the focus is often on adolescents' risk of suicide and self-harm; however, studies report that 25% to 90% of adolescent psychiatric inpatients also exhibit aggressive behavior (Connor, 2002). In fact, adolescence is a developmental period that is characterized by a particularly heightened risk for multiple risk-related outcomes (Boyer, 2006; Steinberg, 2004, 2010). Compared to adults, adolescents experience heightened rates of alcohol and drug use (Chen & Kandel, 1995), NSSI (Moran et al., 2012), and criminal behavior (Farrington et al., 2005). In addition, they are more likely than adults to experience violent victimization (Hashima & Finkelhor, 1999; MacMillan, 2001).

A second reason for practitioners to consider broad risk behaviors is that risk behaviors are often intricately intertwined. Risk behaviors such as offending, violence, and substance use share many overlapping predictors (Allen, Leadbeater, & Aber, 1994; Ferguson, Horwood & Lynskey, 1994; Racz, McMahon, & Luthar, 2011), and thus may be understood as a problem behavior syndrome comprising multiple behaviors (Donovan & Jessor, 1985). Risk-related events or behaviors are also intertwined in the sense that one risk behavior may predict or lead to other risk behaviors. For instance, victimization is a risk factor for suicidal behaviour, NSSI, substance use, and aggression (Anda, Butchart, Felitti, & Brown, 2010).

A final reason for practitioners to consider multiple risk behaviors is that doing so often falls within the specific mandates or goals of the systems within which they work. Juvenile justice systems, for instance, carry responsibilities in preventing suicide of detainees and providing an environment in which adolescents are safe from victimization (e.g., *Farrell v. Harper*, 2003; New South Wales Department of Juvenile Justice, 2002; Youth Criminal Justice Act, 2002). In addition, professionals in mental health settings are mandated to consider adolescents' risk of harm to self or others, as well as adolescents' risk of harm *from* others, consistent with laws regarding child protection (Subotsky, 2003).

**Potential value of an adolescent START:** Despite the importance of understanding risks for multiple adverse events in adolescents (e.g., suicide risk, non-suicidal self-harm, victimization, substance abuse), professionals have limited resources to assist with the integrative assessment and management of these risks. Given the overlap in risk and protective factors for multiple adverse outcomes, scholars have argued that a single risk guide may be able to assess risks for multiple adverse outcomes (Kooyman, Dean, Harvey, & Walsh, 2007; Webster et al., 2006). Such a measure could not only be more feasible, cost-effective, and efficient than having many separate measures for each type of outcome, but it would also provide a more integrated perspective.

To address this goal, the START was designed to assess risk for seven adverse outcomes to which adults in mental health and justice settings are vulnerable: violence towards others, victimization, self-harm, suicide, substance abuse, unauthorized leave, and self-neglect. The authors of the START observed that these outcomes frequently co-occur and are predicted by overlapping risk factors (Webster et al., 2004, 2009). Thus, they selected items such as impulse control and substance abuse, which have been found to predict multiple outcomes, for inclusion in the START. Although there is overlap in strengths and vulnerabilities across outcomes, predictors of these outcomes do not overlap entirely. However, the SPJ approach affords flexibility in making final judgments regarding risk; within this model, evaluators can place weight on items that are especially relevant to particular risk domains.

Research shows that both START total scores and overall risk estimates predict aggression towards others, including physical aggression and violence, verbal aggression, aggression towards objects, and sexually inappropriate behavior (Braithwaite, Charette, Crocker, & Reyes, 2010; Chu, Thomas, Ogloff, & Daffern, 2011; Desmarais, Nicholls, Wilson, & Brink, 2012; Gray et al., 2011; Nonstad et al., 2010; Nicholls et al., 2006; Wilson, Desmarais, Nicholls, & Brink, 2010). Moreover, they also have been shown to predict a broader range of outcomes, such as self-harm (Gray et al., 2011; Nicholls et al., 2006), substance use (Braithwaite et al., 2010), victimization (Gray et al., 2011), self-neglect (Gray et al., 2011), and unauthorized leave (Braithwaite et al., 2010; see also Nicholls et al., 2006). Therefore, the START may also provide a useful model for assessing multiple risks among adolescents.

#### **Broader Populations and Settings**

**The gaps:** A second gap in the adolescent risk assessment research is a neglect of the diverse populations and settings in which adolescent risk assessments occur. Most adolescent research on *suicide* risk assessment has been conducted in psychiatric settings, and the vast majority of studies on *violence* risk assessment have focused on justice settings. Similarly, thus far, studies on the assessment of risk of *victimization* have focused only on child welfare and protection settings (e.g., Baird & Wagner, 2000; Camasso & Jagannathan, 2000; Johnson, 2011; Price-Robertson & Bromfield, 2011).

However, despite the tendency to compartmentalize risk by setting, risk assessments for violence, suicide, victimization, and other adverse events are relevant to *multiple* settings. Juvenile justice, mental health, child welfare, and alternative education systems often serve an overlapping pool of adolescents who have similar needs and risks, including high rates of mental disorders, violence, abuse, and self-harm (Chavira et al., 2010; Garland et al., 2001; Lauritsen, Sampson, & Laub, 1991; Katz et al., 2011; Veysey, 2008). At the present time, the similarities *between* the youth served in these settings often go unrecognized. At the same time, there is limited attention to diversity *within* adolescents in these settings. For instance, little research has compared the accuracy of violence risk assessment measures in adolescents from different racial and ethnic groups (Gammelgård, Koivisto, Eronen, & Kaltiala-Heino, 2008; Odgers, Moretti, & Reppucci, 2005; Olver et al., 2011; Schwalbe, 2008).

**Potential value of an adolescent START:** The START was originally designed primarily for individuals with mental illnesses in forensic and general psychiatric settings (Webster et al., 2004, 2009). It has obtained research support for its use in forensic as well as general civil psychiatric settings (e.g., Chu et al., 2011; Gray et al., 2011; Nicholls et al., 2006). In addition, there is growing evidence for its use in broader criminal justice contexts. For instance, Desmarais and colleagues found support for the use of the START in the context of a jail diversion program, suggesting that it has broad transportability (Desmarais, Van Dorn, Telford, Petrila, & Coffey, 2012). With respect to gender, studies have reported strong psychometric properties for female as well as male clients (e.g., Desmarais et al., 2012; Nicholls et al., 2011; Viljoen, Nicholls, Greaves, de Ruiter, & Brink, 2011). At the same time, studies highlight some important differences in the risk and strength profiles of men and women (e.g., higher rates of past victimization and self-harm for women, Nicholls et al., 2011).

Because adolescent violence risk assessment has focused primarily on *male* adolescent *offenders*, we reasoned that the START's expanded focus on diverse populations may be helpful in assessing diverse youth, such as adolescents in psychiatric settings and female

adolescents. However, this is an area that merits further attention and thus, the authors of the START (and START:AV) are committed to further research regarding the use of these tools with diverse populations (e.g., Desmarais et al., under review).

#### Short-Term Assessment (and Reassessment) of Dynamic Factors

**The gaps:** Though the vast majority of adolescent risk assessment devices include dynamic or changeable factors, such as antisocial attitudes and peer delinquency, in addition to static or historical factors, such as past history of offending (see Borum et al., 2006; Hoge et al., 2011; Worling & Curwen, 2001; Prentky & Righthand, 2003), they provide little guidance regarding how frequently risk should be reassessed or the timeframe that should be considered in coding particular items. Furthermore, they typically do not aim specifically to assess short-term dynamic risk (i.e., over period of several months or shorter). Experts in *suicide* risk assessment have also lamented the tendency to focus on static conceptualizations (Bostwick, 2011; Cassells, Paterson, Dowding, & Morrison, 2005).

The development of short-term dynamic tools may be a valuable addition to the field of adolescent risk assessment. It is well-established that adolescence is a period of enormous change, and certain factors such as peer relationships (Poulin & Chan, 2010) and mood states (Larson, Csikszentmihalyi, & Graef 1980) do in fact appear to fluctuate more rapidly during early adolescence compared to older ages. Short-term dynamic measures might therefore improve the assessment of adolescents' risks for adverse outcomes, assist in treatment planning and the measurement treatment progress, and encourage routine reassessment. Such tools could also facilitate research on dynamic change.

**Potential value of an adolescent START:** The START focuses on short-term assessment of dynamic factors, and is thus designed to be re-administered at least every three months or more often as needed (Webster et al., 2004, 2009). Although historical information is considered in generating risk estimates, the START items themselves are all dynamic factors that are rated based on the past three months or since the last assessment. The authors of the START selected this approach based on a view that a narrow and explicit timeframe of three months might improve our ability to document changes in functioning relevant to short-term risk management and treatment planning. The short-term timeframe reinforces the need for regular attention to the systematic review of vulnerabilities and strengths. Even small increases or decreases in item scores could signal the need to enhance communication regarding risk states and/or necessitate changes in treatment or management approaches.

A handful of studies indicate that START assessments are able to capture dynamic changes in strengths and vulnerabilities. Nonstad et al. (2010) found that patients showed increases in strengths and decreases in vulnerability over the course of treatment. In addition, Wilson et al. (2010) found that START scores performed particularly well in predicting aggression over periods of nine months or less compared to a longer-term period of 12 months. These findings support regular reassessments at short-term intervals. Given that risk may be particularly dynamic during adolescence, the short-term dynamic focus adopted by the START may be useful.

#### Increased Attention to Protective Factors or Strengths

**The gaps:** While the field of adolescent risk assessment has endeavoured to consider adolescents' protective factors, assessment approaches integrating strengths remain limited. Few suicide risk assessment devices or child abuse risk assessment tools contain protective factors (Berry, Cash, & Mathieson, 2003; Turnell & Edwards, 1999; Goldston, 2003; Gutierrez, 2006). Although researchers have reported a number of positive findings for the protective factors section of the SAVRY (Lodewijks, de Ruiter, & Doreleijers, 2010; Rennie

& Dolan, 2010), a recent study found that very few adolescents in a high-risk sample were identified as having any protective factors (Penney et al., 2010; see also Rennie & Dolan, 2010). Its authors suggested that the SAVRY may not be sufficiently sensitive to detect strengths in very high risk populations because it includes only six factors rated dichotomously as present or absent.

In addition, researchers and test developers have provided fairly limited guidance regarding how to integrate protective factors into their risk assessments. For instance, although researchers often sum total scores on protective factors, it is unclear whether simple additive or numerical models provide the best approach to score and interpret protective factors. Another approach that has been sometimes used is to subtract protective factors from risk factors to develop final risk estimates (see de Vries, de Vogel, & de Spa, 2011). In order to advance the assessment of protective factors, there is a need for risk assessment guides that a) place added emphasis on protective factors, and b) provide guidance regarding how protective factors should be integrated into risk formulations.

**Potential value of an adolescent START:** The START is unique in its approach to rating strengths; specifically, the 20 START items are rated for *both* strengths *and* vulnerabilities using separate 3-point scales. The START authors contend that strengths may be "qualitatively different" from vulnerabilities (Desmarais, et al., 2012, p. 11; see Webster et al., 2006). Thus, this approach enables raters to code an individual as having high strengths <u>and</u> risks on a particular item (or vice versa). In addition, the START authors expressed concern that a single continuous scale (e.g., from -2 for vulnerabilities to +2 for strengths) may lead to diminished attention to strengths in comparison to a scaling format that allows for items to be rated on both strength and vulnerability dimensions (Webster et al., 2006, 2009).

A number of studies have investigated START strength ratings. In general, studies have found that START total scores on strengths and vulnerabilities show high inverse correlations (Braithwaite et al., 2010; Desmarais et al., 2012; Viljoen, Nicholls, Greaves, de Ruiter, & Brink, 2010; Wilson et al., 2010; for an exception see Desmarais et al., under review). However, correlations vary considerably at an item-level. For some items, strength and vulnerability scores have relatively low correlations, suggesting that they are tapping into different constructs rather than acting as opposite poles of the same factor (Braithwaite et al., 2010; Desmarais, et al., 2012; Desmarais et al., under review). Further, strength total scores on the START have been found inversely to predict violence and verbal aggression (Braithwaite et al., 2010; Chu et al., 2011; Desmarais et al., 2012; Gray et al., 2011; Viljoen et al., 2010; Wilson et al., 2010), as well as self-neglect (Gray et al., 2011), unauthorized leave (Braithwaite et at., 2010), and substance use (Braithwaite et al., 2010). Desmarais et al. (2012) found that strength total scores provided incremental validity over vulnerability total scores in the prediction of physical aggression. However, other studies reported that while the strength total scores predicted outcomes, they did not add incremental validity (Viljoen et al., 2010; Wilson et al., 2010).

Regardless, a consideration of strengths may offer a more balanced perspective on patients than is usual (Desmarais et al., 2012; Rogers, 2000; Webster et al., 2006), consistent with guidelines in mental health and patient care (e.g., American Psychological Association, 2007; American Psychological Association Task Force on Evidence-Based Practice for Children and Adolescents, 2008; Royal College of Psychiatrists, 2008). In addition, attending to strengths may help facilitate therapeutic alliances (Desmarais et al., 2012; de Ruiter & Nicholls, 2011). In summary, the START's particular approach to assessing strengths—namely, the equivalent emphasis placed on strengths in addition to vulnerabilities

and its capacity to identify both strengths and vulnerabilities for a single area of functioning, is an idea which might now be extended to adolescents.

# Taking Steps: Adapting the START for Adolescents Through a Developmentally-Informed Approach

A primary impetus that led us to consider adapting the START for adolescents was the conclusion that the START could provide a useful model for addressing gaps in adolescent risk assessment, particularly with respect to its emphasis on multiple adverse outcomes, short-term assessments, dynamic factors, and strengths. However, an equally important motivation was clinical interest and demand. Commensurate with the quick uptake of the START in practice and promising results with adult samples, the START authors received numerous queries pertaining to the use of the instrument with adolescents; they responded by emphasizing that extant research could not be generalized to adolescents, and that the application of the START to adolescents would require careful consideration, adaptation as necessary, and validation. Nonetheless, we learned of some cases in which the START was being used with adolescents, and by offering assessors a version of the START adapted for adolescents we hope to provide professionals with a developmentally-appropriate alternative.

The challenge we faced was how to adapt the START for adolescents in a manner that attended to key developmental issues. Although many test developers have adapted adult measures for adolescents (e.g., Minnesota Multiphasic Personality Inventory – Adolescent: Butcher et al., 1992; Personality Assessment Inventory – Adolescent: Morey, 2007; Youth Level of Service/Case Management Inventory: Hoge & Andrews, 2003, 2011; Psychopathy Checklist: Youth Version: Forth, Kosson, & Hare, 2003), there are no well agreed upon models for adapting adult measures for adolescents. Oftentimes, the strategies adopted are not explained in much detail by test developers. As well, adolescent-adapted devices sometimes make only very minimal revisions to adult ones rather than utilizing a developmentally-informed perspective. For these reasons, we aimed to develop a scheme that was both developmentally-informed and evidence-based (e.g., manualized, empirically-supported factors, reliability and validity of assessments; see Hunsley & Mash, 2007; Vincent et al., 2009).

#### Step 1: Established a Team with Expertise in Adolescent Populations

To develop an adolescent version of the START, we first established a team which brought together individuals whose research and clinical work focuses on adolescent populations, along with some of the authors of the original START. To complement the expertise of this core team, we consulted both with professionals and researchers who possessed expertise in adolescent populations.

#### Step 2: Evaluated the Potential Value of an Adolescent START

As described earlier, we conducted a review of existing risk schemes to determine if the START:AV could provide a noteworthy contribution, and based on this review, we concluded it might help to address some gaps. Although several treatment-planning schemes, such as the Child and Adolescent Functional Assessment Scale (Hodges & Wong, 1996) and Child and Adolescent Needs and Strengths (Lyons, 1999), examine a youth's history of violence towards others, self-harm, and victimization but these measures do not aim to generate estimates regarding subsequent risk or to identify risk factors. The Massachusetts Youth Screening Instrument: Version 2 (MAYSI–2; Grisso & Barnum, 2006) is a self-report screening tool designed to identify to identify mental health needs of adolescents in juvenile justice settings (e.g., traumatic experiences, anger-irritability, suicide

ideation). While it is widely used (Grisso & Quinlan, 2005) and has strong psychometric support as a mental health screening tool (Archer et al., 2010), it was not designed to assess to be used as a risk assessment guide.

Numerous gaps in tools also exist in specific risk domains. For instance, although scholars have asserted that there is a need for a clinical scheme that compiles risk factors for adolescent substance use, such devices do not appear to exist as of yet (Corrigan, Loneck, Videka, & Brown, 2007). In addition, while some measures have been developed to assess risk of child abuse (Price-Robertson & Bromfield, 2011), very little work has examined clinical instruments to assess risk for broader forms of victimization (e.g., peer victimization). Moreover, few measures are designed to assess short-term risk of *multiple* adverse outcomes in adolescents involved in mental health and/or justice systems. Based on our review, we therefore concluded that a device like the START:AV did not already exist and that such a scheme could fill a niche in its focus on the *short-term* assessment of vulnerability and *strength* factors for *multiple* adverse outcomes.

#### Step 3: Adapted START for Adolescents Using Developmentally-Informed Principles

As a next step, we established a set of developmentally-informed principles to guide the START:AV development. We drew from the literatures on developmental psychopathology (Cicchetti, 1993; Rutter & Sroufe, 2000), and developmental criminology (Farrington, 2003, 2005; Moffit, 1993; Sampson & Laub, 2005; Thornberry, Terence, Marvin & Krohn, 2005). Also, we examined the approaches used by other test developers (e.g., Grisso, 2005).

#### Principle 1: Adolescent risk assessment guides should include

**developmentally-appropriate risk and protective factors**—Studies show that many of the risk and protective factors that are relevant to adults are also relevant to adolescents. For instance, offense history, antisocial companions, family factors, and substance abuse predict reoffending in both adolescents (Cottle, Lee, & Heilbrun, 2001; Herrenkohl et al., 2000) and adults (Gendreau, Little, & Goggin, 1996). Similarly, emotional difficulties such as depression have strong ties to suicidal behavior across age groups (Brent, Baugher, Bridge, Chen, & Chiapetta, 1999).

That said, certain factors may become particularly important during specific developmental periods, suggesting that some factors should be given special emphasis in adolescent risk assessments. For instance, although family factors are also predictive of delinquency, their effect sizes are smaller for adolescents than children (Hoeve et al., 2009), whereas peer factors become especially important (Lipsey & Derzon, 1998). Suicide researchers have similarly found that certain risk factors (e.g., impulsivity) may be especially strong predictors of suicides in youth (McGirr et al., 2008; see also Brent et al., 1999). Also, an understanding of developmental trajectories is critical to risk assessment. For instance, early onset of substance use and offending is often linked to a more prolonged and serious course than later onset behaviors (Chassin, Pitts, & Prost, 2002; Moffit, 1993).

To ensure the adolescent version of the START included developmentally-relevant factors, we undertook an extensive <u>literature review</u> to evaluate whether each of the factors on the START was an empirically-supported risk/protective factor for adolescent populations. All of the START items were found to have empirical support with adolescents, and because of this, they were retained in the START:AV. However, we <u>adjusted item anchors and added coding instructions</u> to describe how risk and protective factors might manifest in adolescents, and added several new items (described below). In addition, we integrated a discussion of <u>developmental trajectories</u> into the manual to help guide risk estimates.

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Principle 2: Adolescent risk assessments should capture the multiple systems that adolescents are embedded in, as well as adolescents' lesser autonomy—Adolescents are embedded in multiple, overlapping systems, such as families, peer groups, schools, and communities (Boyce et al., 1998; Bronfenbrenner, 1979; Steinberg & Avenevoli, 2000). While contextual influences are also important for adults, adolescents are often more "contextually bound" than adults (Hoagwood, Burns, Kiser, Ringeisen, & Schoenwald, 2001, p. 1181); that is, they have less freedom and are less able to change their contexts. Further, adolescents' social contexts differ from those of adults; most live with their parents or other caregivers rather than independently, and attend school rather than holding full-time employment.

Given the importance of contextual influences in adolescent risk behaviors, a social ecological model (Bronfenbrenner, 1979) is often used as a framework to conceptualize risk and protective factors for experiences such as offending (Department of Health and Human Services, 2001), substance use (Hawkins, Catalano, & Miller, 1992), peer victimization (Espelage & Swearer, 2004), and child maltreatment (Belsky, 1980). Accordingly, child and adolescent violence risk assessment devices, such as the Early Assessment Risk List for Boys (Augimeri et al., 2001a), the Early Assessment Risk List for Girls, (EARL-20B) (Augimeri et al., 2001b), and the SAVRY (Borum et al., 2006), are often organized to include both individual and social-contextual domains.

Throughout the development of the START:AV, we endeavoured to ensure that items captured not only individual factors but also the systems that adolescents are embedded in, and adolescents' lesser autonomy. First, we added a new item: Parenting and Home Environment. Second, we disaggregated two items into sub-items for caretakers/other adults and peers: we separated a) Relationships into Relationships with Caretakers/Other Adults and Relationships with Peers, and b) Social Support into Social Support from Caretakers/ Other Adults, and Social Supports from Peers. Research indicates that while both parents and peers are important, they can exert different types of influences (e.g., Simons-Morton, Haynie, Crump, Eitel & Saylor, 2001). Third, we adjusted item anchors to better align items with adolescents' contexts. For instance, we revised the item School and Work (referred to as "Occupational" in the adult START) to place a greater focus on educational pursuits, and adjusted the item Material Resources to examine not only the youth's own resources, but also those of his or her family. Finally, we adjusted the risk estimates (outcomes) to reflect age-appropriate descriptors. For the Victimization outcome, we consider both abuse perpetrated by adults (i.e., child abuse) as well as by peers (e.g., bullying), and redefined Unauthorized Leave to include running away from home/living situations and school truancy/drop-out. We added General Offending as an outcome to increase the START:AV's relevance to settings in which general delinquency is a concern; this outcome will likely be added in future revisions of the adult START as well (see Desmarais et al., 2012) and is supported by research demonstrating that violence and general offending are predicted by similar factors (Olver et al., 2009).

Principle 3: To assess risk in adolescents, it is important to consider normative adolescent development, such as psychosocial and cognitive development, and developmental transitions—As emphasized in the field of developmental psychopathology, atypical or problematic development cannot be easily understood without an understanding of what is typical or normative (Rutter & Sroufe, 2000; Steinberg, 2002). For instance, given that many adolescents engage in some risk behaviors such as experimentation with substance use or minor delinquent acts, minor risk behaviors might be considered relatively normative (Jessor, 1991; Moffit, 1993). As adolescents mature and develop improved capacities to resist peer influence and control impulses, problem behaviors such as aggression, offending, and substance use therefore

often decline (Modecki, 2008; Moffit, 1993; Monahan, Steinberg, Cauffman, & Mulvey, 2009).

To help ground ratings in an understanding of normative adolescent development, each item description in the START:AV manual includes a section on <u>Developmental Relevance and</u> <u>Course</u>, outlining research findings and developmental changes, and what might be considered normative for adolescents when research clearly supports normative differences by age, gender, and context (e.g., clinical versus community). In addition, whereas the adult START directs assessors to rate strength and vulnerability for each START item in comparison to the normal population as a reference point, the START:AV directs assessors to rate items using <u>same-aged adolescents from the general population as the reference group</u>. For example, to determine if an adolescent presents with vulnerabilities in their Impulse Control, evaluators should consider whether the adolescents rather than adults. Information in the developmental relevance section guides evaluators to consider empirically supported findings about normative patterns within the adolescent period (i.e., gender and age differences) so as to further assist evaluators in making individual ratings developmentally informed.

**Summary of changes**—In sum, although the START:AV continues to share most features with the adult START, it differs from the START in a number of important ways. In particular, we: 1) included a new item on Parenting and Home Environment; 2) included four new sub-items focused on relationships and social support from adults and peers; 3) revised the item, Occupational, to School/Work; d) revised the item anchors for each item to take into account adolescents' contexts and lesser maturity compared to adults (such as their more limited autonomy, future orientation, and impulse control); 4) revised the outcomes to include risk behaviors relevant to adolescents (e.g., included school truancy and running away from home as "unauthorized leaves"); and 5) wrote a new manual describing adolescent-specific research and highlighting developmental issues.

#### Step 4: Developed Abbreviated Manual and Launched Preliminary Studies

After completing a pilot version of the START:AV, we focused our efforts on evaluating the psychometric properties of this pilot device. To facilitate research, we developed an abbreviated manual for the START:AV, which included items anchors and risk estimate definitions (Nicholls, Viljoen, Cruise, Desmarais, & Webster, 2010). We also developed training materials, including didactic training slides as well a series of practice cases with consensus ratings. Our team members then launched two validation studies. The first study is a prospective validation study with Canadian male and female adolescent offenders in the community (Viljoen et al., in press). The second study is a field or implementation study of the START:AV in three residential correctional facilities in the southern United States (Desmarais et al., in press). These studies of adolescent offenders are complemented by research initiated by our colleagues. For instance, Sher and colleagues (2011) have examined the START:AV in a secure psychiatric hospital in the United Kingdom.

#### Step 5: Continued Refinement of the START:AV

We consider the START:AV a work in progress. Based on findings of research in progress (including some of the data described in the current issue) and consultation with others, we will continue to refine the START:AV. Thus far, the clinicians and professionals with whom we have consulted indicate that the START:AV has face validity and includes items that they consider important in risk management and treatment-planning. At this point, our primary task is to complete the full version for the START:AV manual (Viljoen, Cruise,

Nicholls, Desmarais, & Webster, in progress), and to refine the START:AV based on research findings.

# Next Steps for the START: AV: Research and Clinical Applications

While initial research on the START:AV provides preliminary empirical support (Viljoen et al., 2012), research is at a very early stage and a strong need for caution remains. We recommend that those considering implementing the START:AV in clinical practice a) supplement it with additional evidence-based approaches, rather than relying on the START:AV as a sole assessment device; b) monitor new research findings as they become available and adjust practices accordingly; c) evaluate basic psychometric properties of assessments completed at their own site; and d) carefully communicate the limitations and early stage of the START:AV in their work.

Several additional lines of research on the START:AV are needed. First, now that preliminary research conducted by the START:AV authors supports the utility, reliability, and validity of START:AV assessments, a strong need exists for continued evaluation by independent researchers. Also, current research has relied only on the abbreviated manual, as the full manual is not yet finalized. This may affect findings regarding psychometric properties, and future research should therefore explicitly communicate which version of the manual (i.e., abbreviated or full manual) was used to train staff and inform assessments.

Second, as research on the START:AV progresses, we recommend a combination of controlled research studies in which START:AV assessments are completed by research assistants as well as field studies in which START:AV assessments are completed under conditions that reflect real-world practices. Both designs have strengths and limitations and can provide a different lens through which to evaluate the reliability, validity and clinical utility of a risk assessment guide (e.g., Murrie, Boccaccini, Johnson, & Janke, 2008; Nicholls et al., 2006; Vincent, Guy, Fusco, & Gershenson, 2011).

Third, researchers should employ rigorous research methodologies to evaluate the START:AV. Though most risk assessment studies have relied on pseudo-prospective designs, there is now a shift towards more rigorous designs, such as prospective designs that measure reoffending using multiple sources of information (Douglas, Otto, Desmarais, & Borum, in press). The START:AV's emphasis on assessing risk for multiple adverse outcomes also necessitates that future studies move beyond the focus on violence to carefully and critically evaluating concurrent and predictive validity for the other risk domains (e.g., self-harm, victimization). Researchers should also pay attention to fidelity in the implementation of measures such as the START:AV by collecting data on variables such as the specific sources of information raters accessed and the time spent completing each assessment, as well as the specific procedures used to establish inter-rater reliability. While fidelity issues have become a major focus of treatment studies (e.g., Borrelli et al., 2005; Henggeler, Melton, Brondino, Scherer, & Hanley, 1997; Moncher & Prinz, 1991), to date, they have been almost entirely overlooked in research on risk assessment guides (Crocker et al., 2011; Hilterman, 2011).

Fourth, while interrater reliability and predictive validity are clearly important, it will be essential to evaluate the clinical utility of the START:AV, examining, for example, whether START:AV assessments contribute to more comprehensive treatment and risk management plans, better linkages between assessment and treatment, or a greater balance between strengths and risks in assessments.

We hope that this special section will set the stage for new research on these and other topics. In developing the START:AV, our goals were to help enable greater attention to

adolescents' multiple risks and needs, their strengths in addition to their vulnerabilities, and the dynamic changes that adolescents undergo. However, it is only through a marriage of research and practice that we will understand how these goals may best be realized.

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