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Commentary: Risk Assessment in the Age of Evidence-Based Practice and Policy

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Abstract

Risk assessment has come to be recognized as a key component of evidence-based practice and policy in psychiatric and correctional agencies. At the same time, however, there is significant debate in scientific, policy, and public arenas regarding the role of risk assessment instruments in mental health and criminal justice decision-making, and questions regarding the level of evidence supporting their usefulness. It is in light of these conflicting realities that the current commentary considers Williams, Wormith, Bonta and Sitarenios' (2017) re-examination of the Singh, Grann, and Fazel (2011) meta-analysis and recommendations made in "The Use of Meta-Analysis to Compare and Select Offender Risk Instruments." Additional limitations in the extant risk assessment research are identified and their implications for evidence-based practice and policy are discussed.

In "The Use of Meta-Analysis to Compare and Select Offender Risk Instruments", Williams, Wormith, Bonta and Sitarenios (2017) present compelling arguments regarding methodological problems that may occur in meta-analyses examining the predictive validity of risk assessment instruments and offer some suggestions for researchers and decision-makers with regard to comparing and selecting risk assessment instruments, respectively. Their commentary is timely. Risk assessment has come to be recognized as a key component of evidence-based practice and policy in psychiatric and correctional agencies (Casey, Warren, & Elek, 2011). At the same time, there has been recent discussion in scientific, policy, and public arenas regarding the role of risk assessment instruments in mental health and criminal justice decision-making (Hamilton, 2015; Holder, 2014; Monahan & Skeem, 2016; Roychowdhury & Adshead, 2014; Scurich & Monahan, 2016; Starr, 2014) and questions regarding the level of evidence supporting their usefulness (Broughton, 2014; Large, 2010; Wand & Large, 2013). With policies, legislation, and other mandates requiring the use of structured risk assessment instruments (Skeem & Monahan, 2011), practitioners, administrators, and other decision-makers face mounting pressures to select from among hundreds of risk assessment instruments while balancing concerns regarding the impact of risk assessment instruments on criminal justice decision-making. In this context, the influence of meta-analytic findings on psychiatric and correctional practice and policy will continue to grow.

In contrast with the conclusions of Singh and colleagues (2011), Williams et al.'s (2017) re-examination is consistent with the conclusions of other meta-analytic research demonstrating comparable predictive validity across risk assessment instruments overall (Campbell, French, & Gendreau, 2009; Yang, Wong, & Coid, 2010). Their re-examination additionally shows that risk assessment instruments typically demonstrate better predictive accuracy for the outcomes they were developed to assess and in the populations they were intended to be administered (see also Desmarais, Johnson, & Singh, 2016; Fazel, Singh, Doll, & Grann, 2012). Consequently, other prominent meta-analyses of risk assessment instruments may similarly have been comparing apples to oranges, at least to some degree. In particular, researchers have often included the Psychopathy Checklist instruments in their meta-analytic comparisons of violence risk assessment instruments (Campbell et al., 2009; Fazel et al., 2012; Yang et al., 2010) though these measure psychopathic traits and not violence or offending risk, *per se*.

Yet, whether such comparisons are fundamentally inappropriate is debatable. The comparisons may be quite reasonable if the intended focus is instruments *commonly used* to assess violence risk *in practice*. Indeed, surveys of practitioners in mental health and correctional settings reveal the Psychopathy Checklist to be one of the most commonly used "risk assessment" instruments (Singh, Desmarais, Hurducas, et al., 2014; Viljoen, McLachlan, & Vincent, 2010). Similar (mis)application of adult risk assessment instruments in adolescent populations and vice versa in practice can be reasonably assumed. As one example, the adaption of the Short-Term Assessment of Risk and Treatability (START, Webster, Martin, Brink, Nicholls, & Desmarais, 2009) for adolescents (START:AV, Viljoen, Cruise, Nicholls, Desmarais, & Webster, 2014) was prompted, in part, by reports that clinicians were using the START with adolescents (Viljoen, Cruise, Nicholls, Desmarais, & Webster, 2012). So, should researchers only examine and compare performance of risk assessment instruments as they were intended to be used or consider how they are actually being used in practice? Investigations – meta-analytic or otherwise – addressing both the intended and actual use of risk assessment instruments in the field would yield information with the potential to inform policy and practice, though recommendations should center on the appropriate and evidence-based implementation of a given risk assessment instrument (AERA, APA, & NCME, 2014).

Beyond the issues identified by Williams et al. (2017), meta-analytic investigations of risk assessment instruments frequently fail to account for other factors that may impact predictive validity. For instance, there have been (some) efforts to account for time at risk and length of follow-up. There also have been efforts to account for characteristics of assessors and settings. However, there has been limited consideration of the interventions that are deployed to prevent risk identified in the context of routine practice. For clinical, ethical, and policy reasons, steps must be taken to prevent an identified risk from unfolding, even though such steps will likely alter the outcome of interest (Douglas, Otto, Desmarais, & Borum, 2012). Still, these interventions are rarely accounted for in analytic models. In this way, researchers have (inadvertently) contributed to the construction of risk as being static in nature and impervious to intervention, despite increasing evidence that risk can change over time (e.g., de Vries Robbé, de Vogel, Douglas, & Nijman, 2015; Penney, Marshall, & Simpson, 2016; Wilson, Desmarais, Nicholls, Hart, & Brink, 2013). Review of research

published in other fields, such as mental health services, may elucidate strategies that can be used to effectively measure and model intervention effects in risk assessment research (e.g., Van Dorn, Desmarais, Petrila, Singh, & Haynes, 2013).

In addition to intervention effects, there has been relatively limited consideration of the strategies that were used to implement risk assessment instruments. Even the most reliable and well-validated risk assessment instrument will fail to produce the desired results if not implemented with fidelity in a way that meaningfully informs practice. This raises three distinct but related issues. First, many factors may affect the implementation of risk assessment instruments with fidelity in practice. A recent systematic review of 11 studies evaluating the implementation of violence risk assessment instruments in psychiatric and correctional settings identified four broad categories of factors that affect implementation outcomes: 1) characteristics of the risk assessment instrument (e.g., adaptability, perceived clinical utility); 2) characteristics of the assessors (e.g., knowledge, attitudes, and beliefs); 3) characteristics of the setting (e.g., size and complexity of the organization, turnover); and 4) the implementation process (e.g., implementation plan, stakeholder engagement, implementation leaders) (Levin, Nilsen, Bendsten, & Bulow, 2015). The review also raised concerns about the quality of implementation studies: only two of the 11 studies were rated as having “good” evidence, with most rated as inconsistent or poor in quality. Thus, strategies that promote successful implementation of risk assessment instruments in the field remains an important area for continued research, practice, and policy (Nonstad & Webster, 2011).

Second is the notion of informing practice. The American Psychiatric Association Work Group on Violence Risk Assessment identified the inability of risk assessment instruments to provide information that can be used to inform clinical practice as one of the main barriers to their widespread adoption (Buchanan, Binder, Norko, & Swartz, 2012). Surveys have explored perceived clinical utility (e.g., Khiroya, Weaver, & Maden, 2009; Singh et al., 2014), but few studies have examined whether use of risk assessment instruments is associated with changes in practice. Results suggest that implementation of risk assessment instruments can be associated with reductions in use of coercive measures and seclusion in inpatient settings (Abderhalden et al., 2008; Needham et al., 2004; van de Sande et al., 2011) and increases in more appropriate allocation of resources to risk level in youth probation services (Vincent, Guy, Gershenson, & McCabe, 2012; Vincent, Paiva-Salisbury, Cook, Guy, & Perrault, 2012), although the latter was observed only with high fidelity implementation. A handful of other investigations have demonstrated that the degree of match between identified risks/needs and interventions are associated with risk for adverse outcomes, but also found that increased match was not uniformly associated with implementation of a risk assessment instrument (e.g., Singh, Desmarais, Sellers, et al., 2014; Vieira, Skilling, & Peterson-Badali, 2009).

Closely related to the second point is the third, and perhaps most important, issue: the effectiveness of risk assessment instruments in reducing risk. Indeed, the empirical evidence, or the lack thereof, is a common critique of violence risk assessment (Broughton, 2014; Large, 2010; Wand & Large, 2013). There have been just five studies examining the effectiveness of violence risk assessment instruments in reducing violence in psychiatric

settings. Four of these studies examined their effectiveness in reducing inpatient aggression, the findings of which yielded positive but not always statistically significant results (Abderhalden et al., 2008; Kling, Yassi, Smailes, Lovato, & Koehoorn, 2011; Needham et al., 2004; van de Sande et al., 2011). The fifth study conducted in outpatient forensic clinics failed to find reductions in community violence associated with structured risk assessment, but suffered from methodological issues, including a large number of clients (35%) in the intervention group for whom risk assessments were not completed (Troquete et al., 2013). Additionally, this investigation did not disentangle the effects of the risk assessment from the effects of shared care planning, which were implemented concurrently in the intervention groups. There are efforts under way to summarize the effects of violence risk assessment on aggressive behavior in patients with schizophrenia (Välimäki, Lantta, Hätönen, Kontio, & Zhang, 2016), but the current evidence supporting risk assessment as an intervention in and of itself is limited.

A final comment on the use of meta-analytic findings to compare and select risk assessment instruments. In this age of evidence-based practice and policy, there is a need for strategies to synthesize research findings. The Williams et al (2017) commentary mirrors those in other fields that have similarly questioned methodological decisions and findings of meta-analytic investigations (e.g., van Elk, Matzke, Gronau, Guan, Vandekerckhove, & Wagenmakers, 2015). Though meta-analysis is the dominant research synthesis approach and one of the principal methods of evidence-based practice and policy (Bohlin, 2012), there are alternatives that may address at least some of these limitations, including data integration (Curran & Hussong, 2009). Instead of analyzing reported effect sizes, data integration involves analyzing raw data from several studies, which affords the ability to account for study design features, such as the number and timing of assessments, and other relevant covariates (Van Dorn et al., in press). Data integration also increases statistical power to examine subgroup effects, which are evaluated infrequently in predictive validity studies (Desmarais et al., 2016). For these reasons, data integration may represent an advantageous, albeit resource intensive, strategy for examining and comparing the predicting validity of risk assessment instruments across multiple studies. Even then, if the goal is risk reduction, risk assessment research must move away from predictive validity toward examining the effectiveness of risk assessment instruments in randomized controlled trials.

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