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Preventive risk assessment in forensic child and youth care

Assink, M.

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CHAPTER

General Discussion

6

6.1 Dissertation Objective

In forensic care, the risk-need-responsivity (RNR) model (Andrews & Bonta, 2010; Bonta & Andrews 2007, 2010; Andrews, Bonta, & Hoge, 1990) is the leading model for assessment and treatment and is supported by evidence from a considerable body of research (e.g., Andrews, Zinger, Hoge, Bonta, Gendreau, & Cullen, 1990; Dowden & Andrews, 1999a, 1999b; Koehler, Lösel, Akoensi, & Humphreys, 2012). To successfully bring the risk and need principles of the RNR model into the clinical practice of forensic child and youth care, knowledge on risk factors and their effects as well as the availability of valid and reliable instruments for risk and needs assessment are imperative. In light of this, the objective of the present dissertation was twofold: first, to increase the body of knowledge on risk factors and their effects leading to care needs of specific groups of juveniles in a forensic context; and second, to improve risk assessment procedures of the forensic youth care system by developing and validating two instruments for risk assessment. In pursuing this objective, four studies were conducted that together form the present dissertation. This last chapter highlights the main findings of these studies, discusses methodological strengths and limitations, provides several implications for clinical practice, and closes with suggestions for future research.

6.2 Main Findings

In the first study of this dissertation (**Chapter 2**), the effect of several risk domains for life-course persistent offending relative to adolescence-limited offending was examined. In this meta-analytic review, the largest effects were found for domains comprising risk factors pertaining to a juvenile's criminal history, aggressive behavior, alcohol/drug abuse, deviant sexual behavior, social relationship problems, emotional/behavior problems, and school/employment problems. Relatively small effects were found for family, neurocognitive, and attitude-related risk factors. In general, these results showed that risk factors in multiple domains were more pronounced in life-course persistent offenders relative to adolescence-limited offenders, meaning that life-course persistent offenders experience much more problems in multiple domains than adolescence-limited offenders. Therefore, it is important to differentiate life-course persistent offenders from adolescent-limited offenders and to account for this differentiation in risk assessment strategies as well as in (preventive) forensic child and youth care.

The second study (**Chapter 3**) examined whether a valid and reliable risk screening instrument could be developed to enable police officers in the Netherlands to identify juveniles at risk for becoming delinquent. As a result, the Youth Actuarial Risk

Assessment Tool for First-Time Offending (Y-ARAT-FO) was developed, which is an actuarial instrument that can be used in the initial stage of risk assessment. The Y-ARAT-FO assesses the following five predictive variables that are stored in the registration system of the Dutch police: (1) the total number of previously recorded incidents in which the juvenile had any role other than that of a suspect; (2) the gender of the juvenile; (3) the total number of recorded incidents in which a co-occupant at the juvenile's living address was a suspect; (4) whether or not the juvenile was born in the Netherlands; and (5) the current age of the juvenile. Although the selection of (possible) predictors in developing the Y-ARAT-FO was restricted to variables that were retrievable from the police registration system, the five predictive variables resemble previously well established risk factors for general delinquency such as age of onset, gender, and ethnicity (Ellis, Beaver, & Wright, 2009), as well as having delinquent parents (Bijleveld & Wijkman, 2009) and having delinquent siblings (Slomkowski, Rende, Conger, Simons, & Conger, 2001). The predictive accuracy of the Y-ARAT-FO seemed acceptable in predicting the risk for onset of general delinquency as well as in predicting future violent, property, public order, and other specific offenses. Because the data needed as input for the Y-ARAT-FO can be extracted electronically from the computer system of the Dutch police, the risk can be estimated quickly and consistently for large groups of juveniles without the need to retrieve or examine additional information about these juveniles.

The third study (**Chapter 4**) was aimed at determining the effect of different domains of risk factors for victimization of child sexual abuse by performing a three-level meta-analysis for each risk domain. The 10 risk domains showing the largest effects were "Parental history of abuse", "Prior or concurrent forms of child abuse", "Child has mental, physical, or behavioral problems", "Child is female", "Child has school-related problems", "Problematic family system functioning", "Physical violence in the child's home environment", "Child (periodically) lived away from biological parents", "Interparental problems (e.g., marital conflict)", and "Parental mental or physical problems". Relatively small effects were found for the risk domains "Low family SES", "Parental age factors (child having young or old parents)", "Low parental education", and "Child's substance use". In general, these results indicate that multiple risk domains are involved in the occurrence of victimization of child sexual abuse. The results of moderator analyses showed that mental or physical problems of mothers, contrary to mental or physical problems of fathers, are associated with victimization of child sexual abuse.

The aim of the fourth study (**Chapter 5**) was to examine whether a valid and reliable risk screening instrument could be developed to enable police officers in the Netherlands to identify juveniles who are at risk for involvement in child welfare because of care needs (i.e., problems in the child-rearing environment). This study

yielded the Youth Actuarial Care Needs Assessment Tool for Non-Offenders (Y-ACNAT-NO) that can be used by Dutch police officers as an initial screening instrument. The Y-ACNAT-NO was developed using the actuarial approach and is based on six predictive variables that are stored in the computer system of the Dutch police: (1) The number of recorded incidents of domestic violence at the juvenile's living address; (2) the number of recorded incidents of domestic strife in which the juvenile and/or a co-occupant of the juvenile was a victim; (3) the number of recorded incidents in which a co-occupant of the juvenile was a suspect; (4) the number of recorded incidents in which the juvenile was involved (not as a suspect); (5) the current age of the juvenile; and (6) the number of recorded incidents in which a co-occupant of the juvenile was a victim of conflicts. These six variables mainly concern violence and conflict situations in the home environment of the juvenile as well as family members of the juvenile being criminal, and reflect risk factors at the first level of analysis (i.e., ontogenetic development) as well as the second level (i.e., the microsystem) in the ecological model of Belsky (1980, 1993). The results showed that the predictive accuracy of the Y-ACNAT-NO in terms of discrimination and calibration was sufficient to justify its use as an initial screening instrument when a decision is needed about referring a juvenile for further assessment of care needs. Similar to the Y-ARAT-FO, the Y-ACNAT-NO enables a quick and consistent estimation of the risk for future care needs for large groups of juveniles, without the need to retrieve or examine additional information about the juveniles.

Taking into account the results of the four studies, the present dissertation contributes to risk assessment in forensic child and youth care in two important ways. First, the meta-analytic reviews presented in chapters 2 and 4 quantitatively revealed differences in effects of risk domains, providing insight into the risk domains that are most influential in the development of persistent delinquency and the occurrence of victimization of child sexual abuse, respectively. Concerning these results, it is important to recognize that each risk domain with a significant positive effect may play a part in the development of persistent delinquency and the occurrence of child sexual abuse victimization, even though the risk domains with the largest effects play the most prominent roles. After all, an accumulation of risks, rather than the presence of single risk factors, is the major contributor to juvenile delinquency (Loeber, Burke, & Pardini, 2009; Loeber, Farrington, Stouthamer-Loeber, & White, 2008; Sameroff, Bartko, Baldwin, Baldwin, & Seifer, 1998) and victimization of child abuse (Belsky, 1980, 1993; Cicchetti, Toth, & Maughan, 2000; MacKenzie, Kotch, & Lee, 2011). The results also underline the importance of examining the etiology of persistent delinquent behavior as well as the etiology of child sexual abuse victimization from a developmental-ecological perspective as outlined by Bronfenbrenner (1979; Bronfenbrenner & Morris, 1998) and Belsky (1980, 1993), as in both reviews significant effects were found for risk factors

operating at multiple levels of analysis. Furthermore, the reviews revealed not only that different risk factors are important for life-course persistent offending and victimization of child sexual abuse, but also that risk factors are differentially associated with these forensic problems. This implies that risk factors are not equally salient across forensic outcomes and, therefore, it is important to study (effects of) risk factors separately for different forensic outcomes.

Second, the Y-ARAT-FO and the Y-ACNAT-NO greatly enhance (preventive) forensic youth care delivery by enabling Dutch police officers to timely, efficiently, and cost-effectively identify juveniles who are in need of care. This is of great value, since large numbers of juveniles (either as an offender or as a non-offender) come into contact with the police, being an important agency in the chain of forensic youth care organizations. Therefore, the availability of the Y-ARAT-FO and the Y-ACNAT-NO contributes to strengthening forensic youth care in the Netherlands.

Third, the studies describing the development and validation of the Y-ARAT-FO and the Y-ACNAT-NO showed that the use of data mining (i.e., actuarial) techniques is a fruitful approach to risk assessment in a forensic youth care context. For both instruments, the results yielded a discriminative accuracy comparing favorably to the accuracy of other forensic risk assessment instruments as examined in meta-analytic research by Schwalbe (2007) and Fazel et al. (2012). Notwithstanding the fact that risk assessment instruments used specifically in child protection practice have often not been properly evaluated (see also Barlow, Fisher, & Jones, 2010; Knoke & Trocmé, 2005), there is an abundance of empirical evidence showing that, generally, actuarial methods for risk assessment are superior to both clinical judgment and to methods based on a combination of clinical judgment and the use of assessment instruments (e.g., Ægisdóttir et al., 2006; Baird & Wagner, 2000; Dawes et al., 1989; Grove & Meehl, 1996; Hanson & Morton-Bourgon, 2009; Meehl, 1954, 1986; Van der Put et al., 2016). The present findings together with previous empirical evidence indicate that the actuarial approach to risk assessment is not only very promising, but also that it is to be preferred above clinical or semi-clinical methods. This implies that a risk estimate should primarily be based on the outcome of an actuarial risk assessment instrument that has been properly developed and validated. If clinical professionals feel the urge to deviate from risks produced by such instruments and to rely on their own reasoning, this should only be done with strong and proper argumentation that is preferably grounded in empirical evidence.

6.3 Methodological Strengths and Limitations

A methodological strength of the studies described in chapters 3 and 5 is that separate samples were used for the construction and validation of the Y-ARAT-FO and Y-ACNAT-NO. In this way, the findings on the performance of both instruments are more reliable than when only one sample would have been used for construction and validation. In addition, the period in which the dependent variable (i.e., onset of delinquency as assessed by the Y-ARAT-FO and care needs as assessed by the Y-ACNAT-NO) was measured, is relatively long, so that rather firm conclusions on the performance of the instruments can be drawn. A further strength is the choice for the actuarial approach in developing the two risk assessment instruments. This is not only because there is ample empirical evidence that actuarial prediction of risk outperforms clinical judgment (e.g., Ægisdóttir et al., 2006; Meehl, 1954, 1986; Dawes et al., 1989; Grove & Meehl, 1996; Grove, Zald, Lebow, Snitz, & Nelson, 2000; Hanson & Morton-Bourgon, 2009), but also because an actuarial instrument can easily be implemented in the computer system of the Dutch police. In this way, large numbers of juveniles can be automatically and rapidly assessed without the need for police officers to retrieve additional information about juveniles that is not stored in the computer system. The meta-analytic reviews presented in chapters 2 and 4 break new ground, since these reviews are the first to provide a systematic, quantitative summary of the effects of all different kinds of risk factors for persistent delinquency and victimization of child sexual abuse. Furthermore, a relatively new and advanced statistical approach was used in these studies, making it possible to extract multiple effect sizes from the same primary studies, so that all relevant information described in primary studies could be preserved and maximum statistical power could be achieved.

Besides enumerating strengths of the studies, attention to methodological limitations is needed. First, the Y-ARAT-FO and the Y-ACNAT-NO were constructed using only data on variables that are stored in the computer system of the Dutch police. This means that a number of important variables predictive of onset of general delinquency (e.g., being associated with deviant friends, having a low IQ, and poor school performance) and/or problems in the child-rearing environment (e.g., parental history of abuse, interparental problems, and parental mental or physical problems; see also the results of Chapter 4) are not part of these instruments, simply because such variables are not (thoroughly) assessed by police officers. As a result, the predictive accuracy of the Y-ARAT-FO and Y-ACNAT-NO is limited. The generalizability of the predictive models to other countries than the Netherlands is also somewhat limited. If policies abroad are aimed at strengthening the role of police agencies in preventive risk assessment strategies, which is seemingly a promising opportunity to improve

child welfare systems, it is advisable to validate (and perhaps modify) the Y-ARAT-FO and Y-ACNAT-NO using local data. Another limitation is the fact that incidents recorded by the police are an underestimation of the true prevalence of incidents, simply because not all incidents come to the attention of the police. Consequently, the validity of risk assessment instruments developed using only official police records is negatively affected. A further point of attention concerns the size of the samples that were used for the development of the instruments. Although the samples were sufficiently large for splitting them in a construction and validation sample, a number of child nodes produced by the CHAID analyses were based on relatively small subgroups. Therefore, it is advisable to replicate the findings in larger samples.

Regarding the meta-analytic reviews, there are also limitations noteworthy. First, several risk domains were based on a rather small number of effect sizes, limiting the ability to draw firm conclusions on the significance and magnitude of the estimated overall effects of these domains. Second, and related to this, rather few effect sizes were available for several potential moderating variables. It was therefore decided not to examine multiple moderator models. A final limitation concerns the quality of the primary studies included in the reviews. Logically, the quality of a systematic review is greatly determined by the quality of the included studies. After finishing the literature search and the gathering of information from the retrieved studies, it seemed that studies reporting on risks for (life-course-persistent) delinquency are in general superior to studies reporting on risks for victimization of child sexual abuse with respect to study design, statistical analyses, and reporting quality. Consequently, the overall quality of the review on risk factors for victimization of child sexual abuse is affected by this caveat, even though all primary studies were critically assessed in light of the stipulated criteria for inclusion. To improve the quality of studies in the field of child abuse, researchers should stimulate and challenge their peers to be rigorous in their research. However, balancing all methodological strengths and limitations mentioned above, the studies comprising this dissertation justify the formulation of a number of implications for clinical practice.

6.4 Implications of the Findings

One of the prevailing concepts in general public health and in forensic youth care specifically is that prevention is to be preferred over intensive and enduring treatment due to the emergence of severe problems. For effective prevention, all organizations that come into contact with large groups of juveniles, and together form the system of forensic youth care, must be able to timely and accurately identify juveniles with future care needs by using valid and reliable instruments for risk assessment. The Y-ARAT-FO

and the Y-ACNAT-NO that were developed and validated as described in chapters 3 and 5 respectively, further strengthen the ability of the Dutch police to screen large groups of juveniles in the initial stage of risk assessment and to refer juveniles in need of care to specialized youth care agencies. The Y-ARAT-FO and the Y-ACNAT-NO complement the Youth Actuarial Risk Assessment Tool (Y-ARAT; Van der Put, 2014) and the Youth Offender Care Needs Assessment Tool (YO-CNAT; Van der Put & Stams, 2013), which are actuarial instruments for risk assessment that were also developed using only data that are retrievable from the computer system of the Dutch police. The former two instruments can be used for estimating the risk for onset of delinquency (Y-ARAT-FO) and problems in the child-rearing environment (Y-ACNAT-NO) in juvenile *non*-offenders (i.e., juveniles registered by the Dutch police not in the role of a suspect), whereas the latter two can be used for estimating the risk for recidivism (Y-ARAT) and problems in the child-rearing environment (YO-CNAT) in juvenile offenders (i.e., juveniles registered by the Dutch police in the role of a suspect). As for the Y-ARAT-FO and Y-ACNAT-NO, there are currently no other instruments available that can be used by Dutch police officers for the same assessment purpose. Therefore, implementing the Y-ARAT-FO and the Y-ACNAT-NO is highly recommended.

The meta-analytic reviews presented in chapters 2 and 4 are the first to provide a comprehensive statistical summary of the effects of risk domains for life-course persistent offending (relative to adolescence-limited offending) and victimization of child sexual abuse, respectively. Because these reviews examined effects of the broadest possible range of risk domains, important implications for clinical practice can be derived from the results. First, life-course persistent offending and victimization of child sexual abuse are both more or less associated with risk factors in different domains, implying that a multifactorial approach to risk assessment is needed in determining the risk of juveniles. In risk assessment instruments, risk factors showing larger effects should be weighted more heavily than factors showing smaller effects, so that risks are properly assessed. However, the latter type of risk factors should not be ignored, since it is the cumulative effect of risk factors rather than the effect of single risk factors that contributes to care needs of juveniles in a forensic context.

Second, and consistent with the former implication, (preventive) interventions aimed at reducing the risk for life-course persistent offending or victimization of child sexual abuse must be multifaceted by targeting problems in multiple risk domains. It is important that proper needs assessment be conducted using actuarial instruments assessing the dynamic risk factors (i.e., care needs) that are associated with either life-course persistent offending or victimization of child sexual abuse. In case of the former, the dynamic risk factors that need to be addressed in forensic care are often at the individual level of analysis, whereas in case of the latter, the dynamic risk factors can

often be found in the juvenile as well as in social structures surrounding the juvenile, such as the parents, the broader family system, and the community in which the juvenile is living. The intensity of care, whether offered in a criminal law or civil law context, should match the risk as estimated by actuarial risk assessment instruments, so that high-risk juveniles receive more intensive treatment relative to low-risk juveniles who should receive less intensive treatment, or no treatment at all. In this way, the risk and need principles of the RNR model (Andrews & Bonta, 2010; Bonta & Andrews, 2007, 2010; Andrews, Bonta, & Hoge 1990) are successfully applied to forensic care either in a criminal law or civil law context.

A third implication is that implementing general risk and needs assessment instruments for different populations of juveniles may lead to suboptimal assessments, since the reviews revealed that risk factors are not equally salient across forensic outcomes. Furthermore, moderating effects of gender, age, and sample composition in several risk domains were found. Consequently, it is advisable to tailor risk and needs assessment instruments to different groups of juveniles after conducting proper validation research. This assures that in each population, risk and needs assessment is based on relevant risk factors that are properly weighed, so that an optimal risk estimate is produced.

6.5 Future Directions

It is important to recognize that risk assessment in general is fallible and prone to error in risk estimation, since a certain degree of over- or under-estimation of risk can never be ruled out. Nevertheless, risk assessment is a critical first step in determining the proper approach to intervention in a forensic context, as the decision in clinical practice on the intensity of any intervention should be based on the risk level of clients as prescribed by the risk principle of the RNR model (Andrews & Bonta, 2010; Bonta & Andrews, 2007, 2010; Andrews, Bonta, & Hoge 1990). Therefore, research into further improving risk assessment is highly relevant and a number of future directions can be pursued for further improvement.

First, the availability of the Y-ARAT-FO and Y-ACNAT-NO strengthens the role of the Dutch police in timely identifying juveniles with forensic care needs, but considering the preventive perspective, it may be very promising to improve the involvement of other key agencies in this process. For instance, research has shown a rather strong association between school attendance problems, such as truancy and dropout, and juvenile delinquency (e.g., Aloise-Young, Cruickshank, & Chaves, 2002; Fagan & Pabon, 1990; Farrington, 1989; Harlow, 2003; Voelkl, Welte, & Wiczorek, 1999). Therefore, the development of actuarial risk assessment instruments for estimating the risk for truancy

or school drop-out using only data available to schools enables school staff to fulfill a major and important role in preventive risk assessment. In this way, a juvenile's need for intensive and enduring forensic care may be prevented.

Further, the findings of the meta-analytic review on effects of risk factors for victimization of child sexual abuse can be used to develop or improve instruments for estimating the risk for victimization of child sexual abuse. At present, there is no validated and reliable instrument available for this purpose, and designing such an instrument based on the risk factors examined in our review would be a good first step towards an actuarial risk assessment instrument with sound psychometric properties. In the Netherlands, the SGOG (*Risicotaxatie Seksueel Grensoverschrijdend Gedrag*) (Eijgenraam, Bartelink, Daru, Van Gastel, & Kooijman, 2014) is available for assessing the risk for victimization of child sexual abuse, but when using this instrument, the final assessment of risk is based on the clinical judgment of the professional. Moreover, important risk factors identified in our review are not part of this instrument.

A methodological suggestion for improving studies on risk assessment instruments is to make use of survival analysis techniques in validation research, provided that data on survival times of participants is available. Intuitively, it may make sense to assume that groups of high risk participants have shorter survival times than groups of low risk participants, because the accumulation of risk will be more present in the former than in the latter group. However, this is rarely studied and by using survival analysis, the validity of this assumption can be tested. The results can be very informative for clinical professionals, as they provide insight in the optimal timing of (preventive) intervention strategies for participants with different risk estimates.

Another future line of research could focus on meta-analytically summarizing the effects of risk factors for victimization of other types of child abuse than sexual abuse, such as physical abuse and neglect. Stith and colleagues (2009) conducted a meta-analytic review of risk factors for child abuse and neglect, but only studies published until 2003 were included in this review. Moreover, the methods and statistics used by these researchers were not as rigorous as those employed in the meta-analytic reviews that are part of the present dissertation. Now, a decade later than the publication of Stith et al., it is important to update the overview of risk factors described in the child abuse literature. In addition, a closer examination of individual risk factors is warranted to further increase our knowledge. It is, for instance, relevant to ask whether effects of risk factors related to the occurrence of a negative life-event in the parent's and/or juvenile's life decrease as more time passes by since the event.

As a final remark in this dissertation, it is important that policies on risk assessment in forensic youth care stimulate the use of actuarial instruments in favor of clinical methods. Until today, a substantial body of research has provided evidence for the

outperformance of actuarial methods relative to clinical judgment in different situations in which a risk estimate must be based on multiple factors (e.g., Ægisdóttir et al., 2006; Baird & Wagner, 2000; Dawes et al., 1989; Grove & Meehl, 1996; Grove et al., 2000; Hanson & Morton-Bourgon, 2009; Leschied et al., 2003; Meehl, 1954, 1986). Several studies have even shown that a number of widely used clinical judgment instruments do not perform better than chance (Baird & Wagner, 2000; Barber, Shlonsky, Black, Goodman, & Trocmé, 2008), which has serious consequences in clinical practice. By incorporating actuarial instruments in standard risk assessment procedures, better insight can be gained into which juveniles are in need of care as well as into what care intensity is appropriate. As a consequence, the overall quality of forensic youth care will be improved.