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Implementation of the Risk–Need–Responsivity Framework across the Juvenile Justice Agencies in Singapore

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The Risk–Need–Responsivity (RNR) framework is regarded as the forefront of offender rehabilitation in guiding youth offender risk assessment and interventions. This article discusses the juvenile justice system in Singapore and the local research that has been conducted in relation to the RNR framework and the associated Youth Level of Service (YLS) measures. It describes a journey that saw the implementation of the RNR framework across the juvenile justice agencies and highlights the challenges that were faced during the implementation process on the ground. Finally, the article concludes by providing future directions for the implementation of the RNR framework in Singapore.

Key words: at-risk youth; classification; juvenile justice; offender rehabilitation; risk assessment; risk–need–responsivity (RNR); youth offender.

Assessing the risk of recidivism is often conducted by professionals who work within the criminal and juvenile justice systems (Olver, Stockdale, & Wormith, 2009) and these assessments when properly administered, can inform judicial decisions. Decisions made by the criminal and juvenile justice systems reflect the basic values embraced by society (Hoge, 2002), and to some extent, dictate the types of behaviours that are tolerable within society. Nonetheless, juvenile justice systems typically take into consideration the personal and developmental needs of the young person when making sentencing decisions or imploring special conditions (Hoge, 1999, 2002; Young, Moline, Farrell, & Bierie, 2006). These factors then guide judicial decision-making processes to achieve appropriate and fair dispositions, which, in turn, help to promote effective management and rehabilitation of juvenile offenders (Hoge, 1999; Young et al., 2006).

Judicial decisions are formulated based on inferences or judgements made on the information presented about the individual (Hoge, 2002). Such information includes the severity of the offence committed as well as the social environments and developmental needs unique to the youth offender. The risk of recidivism and the presence of criminogenic needs can be inferred from this information, thereby informing the dispositional outcome and rehabilitation efforts (Hoge, 2002).

Risk assessments are intended to predict future antisocial behaviours with the ultimate purpose of managing risk and preventing negative outcomes; such assessments have a role

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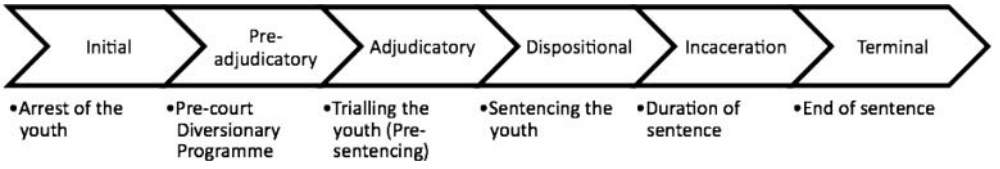

Figure 1. Phases in the Singapore juvenile justice system.

in all decision phases in the juvenile justice system (see Figure 1) (Champion, 1998; Hoge, 2001; Krisberg & Howell, 1998; Melton, Petrila, Poythress, & Slobogin, 2007), and facilitate the formulation of decisions regarding adjudication and interventions efforts (Hoge, 2002). Young and colleagues (2006) highlighted that the juvenile justice systems traditionally relied on unstructured clinical judgements and such a method was demonstrated to have considerable detrimental impact on the accused and the community in that the former is not always consistently dealt with. The extant literature suggest that the indeterminacy of the decision criteria in juvenile justice systems allowed for personal prejudices and biases to influence decision-making processes (Corrado & Turnbull, 1992; Hoge, 2002; Johnson & Secret, 1995; Sanborn, 1996), thereby affecting dispositional outcomes.

Effective youth offender risk assessment is therefore essential to inform decision-making processes and risk classification, especially in view of increasing demands for optimal resource allocation and the need to provide empirical evidence in judiciary processes. In addition, it encourages professionals to be accountable for the efficacy of offender rehabilitation efforts. This can only be made possible by using empirically reliable and valid risk assessment measures that systemically assess the risk and needs of offenders. Furthermore, research has suggested that offender rehabilitation is most effective when interventions are matched to the risk level and needs of the offender, and also take into consideration the individual's responsivity factors (Andrews & Bonta, 2010; Andrews, Bonta, & Wormith, 2011).

This article discusses the juvenile justice system in Singapore, the journey that the juvenile justice agencies in Singapore embarked upon to adopt the Risk–Need–Responsivity (RNR) framework, and the associated risk assessment measure that facilitated the systematic evaluation of youth offenders. Later sections document the implementation of the theoretical framework across the juvenile justice sector and reveal the challenges faced. Finally, the article concludes with discussion on the future directions of implementing the RNR framework and the need to enforce adherence to the model throughout the sector.

Juvenile Justice in Singapore

Singapore is an independent island-state in South East Asia with a total resident population of 5.4 million (Singapore Department of Statistics, 2013). Pertaining to crime statistics, youth arrests account for approximately 10% of all arrests in Singapore (Singapore Police Force, 2013). The Juvenile Court of Singapore was created with the passing of the Children and Young Persons Ordinance in 1949 (The Subordinate Courts of Singapore, 2004, 2006). The Children and Young Persons Act (Chapter 38) (CYPA) is the legislation that governs the proceedings in the Juvenile Court for youth aged 7 to under 16 years (Kamal, 2002; The Subordinate Courts of Singapore, 2004). The amended CYPA has been revised several times since 2001 to encompass more non-custodial options as well as to provide enhanced community orders to meet the various rehabilitation needs of juveniles (Kamal, 2002). The Magistrate of the Juvenile Court is assisted by a Panel of Advisers (which comprises

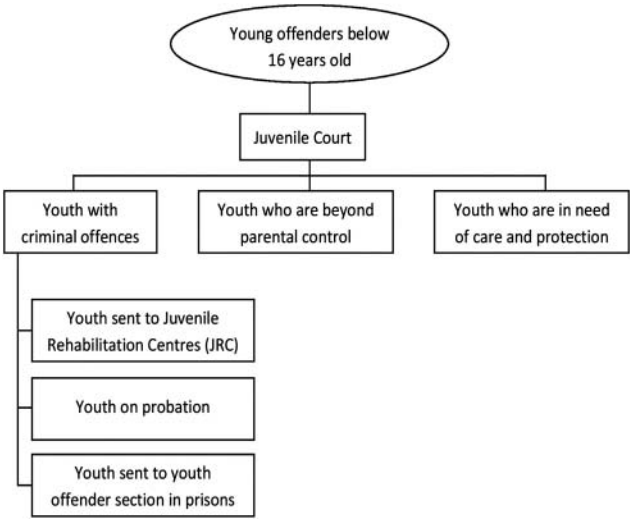

Figure 2. Category of cases dealt by the Juvenile Court (The Subordinate Courts of Singapore, 2004).

court volunteers) and is supported by the Juvenile Probation Case Committee to provide a more comprehensive analysis of the issues presented by each youth (The Subordinate Courts of Singapore, 2001). The Magistrate also considers social investigation or pre-sentencing reports to provide basis for dispositions. The Juvenile Court deals with three case types, as shown in Figure 2.

In accordance with the principles of restorative justice, the Juvenile Court acknowledges the potential for positive change and seeks to reintegrate youth offenders into society (The Subordinate Courts of Singapore, 2001, 2010). Youth offenders are made accountable for their offending behaviours and are asked to take responsibility for their actions and their consequences. Victims are also allowed to seek redress with the offender to increase the offender's awareness of the extent of harm caused by their misdeeds through victim–offender mediation. This aims to be a rehabilitation opportunity because it allows the offender to repair the harm and restore the relationship with the victim(s). The Juvenile Court also seeks to empower parents to play a greater role in their child's rehabilitation and parents are given opportunities to take responsibility for their child's behaviours (The Subordinate Courts of Singapore, 2001, 2010). The Juvenile Court has a unique role of pursuing a fine balance between the youth's welfare and its duty to uphold law and order (Kamal, 2002; The Subordinate Courts of Singapore, 2001, 2004, 2010). The former was previously largely evaluated using the Juvenile Offending Behaviour (JOB) criteria, whereas the latter makes reference to the penal code.

Juvenile Offending Behaviour Criteria

The JOB criteria were developed for the pre-sentencing phase to provide the Juvenile Court of Singapore with a framework for individualized and objective sentencing for youth offenders (Ozawa, 2001). Social investigation for young offenders was thus aligned to the JOB criteria. It entails evaluative processes in the judicial system to provide differential assessments for individuals, through the incorporation of facets of developmental psychology and criminology (Ozawa, 2001). The JOB criteria were conceptualized using developmental theories of antisocial

behaviours, specifically adolescence-limited and life-course-persistent antisocial behaviours (Moffitt, 1993; Nagin, Farrington, & Moffitt, 1995). This was meant to assist in the formulation of individualized rehabilitation plans by focusing treatment efforts on meeting the specific needs of each youth. Moreover, the JOB criteria are consistent with the notion of restorative justice, which aims to balance deterrence and punishment with rehabilitation and restoration (Ozawa, 2001).

The factors evaluated by the JOB criteria include the severity of the offence, risk levels and proximate variables (Ozawa, 2001). First, the seriousness of offences is determined with reference to the Singapore Penal Code. Next, static and dynamic risk factors are assessed because these factors are deemed to be indicative of the risk of recidivism. Finally, information pertaining to the youth's environment and history is assessed because such situational influences will also affect the dispositional outcome of the case (Ozawa, 2001). These are subsequently reinforced by collective professional expertise, which culminates in individualized rehabilitation plans and encourages informed decisions for appropriate dispositions.

Although the JOB criteria take into consideration various aspects of the youth offender history and psychosocial functioning, they are considered a first-generation offender risk assessment (Bonta, 1996) because the assessment largely depended on unstructured professional judgements and intuition (Andrews, Bonta, & Wormith, 2006; Young et al., 2006). Unstructured professional judgement has been shown to be inaccurate for assessing risk and this approach has much less utility than structured risk assessments that include actuarial and structured professional judgement (Monahan, 1981). In particular, an unstructured risk assessment approach is likely to be plagued by poor inter-rater reliability due to the subjectivity involved. Moreover, it is not empirically supported by research, thus rendering the findings from such an approach less legally defensible under cross-examination or when the findings are challenged in court (Chu, Teoh, et al., 2012). The following sections document the process of implementing the RNR framework (Andrews & Bonta, 2010) along with the different Youth Level of Service (YLS) measures within the Singapore juvenile justice system. It also highlights some of the challenges faced during the implementation process.

Risk–Need–Responsivity Framework

Underpinned by general personality and cognitive social learning (GPCSL) theoretical perspectives, the RNR framework (Andrews & Bonta, 2010) posits that effective offender rehabilitation requires an accurate classification of the offender's level of risk and needs. When the risk and needs of the offender are accurately identified and classified, clinicians can make informed decisions about the levels of supervision, as well as the type and intensity of the treatment interventions that should be provided. The risk principle states that the levels of treatment and supervision should be matched with the risk of the offender (Andrews, Bonta, & Hoge, 1990). In other words, low-risk offenders should not be provided with intensive interventions so that interactions with higher risk offenders are minimized (Andrews, Bonta, Wormith, Guzzo et al., 2011). This is because there is evidence to suggest that providing intensive rehabilitative programmes and supervision to low-risk offenders may actually increase their risk of recidivism (Andrews & Friesen, 1987; Lowenkamp & Latessa, 2004). As such, the risk principle has implications at the level of service delivery as well as usage and prioritization of scarce resources. The need principle states that offender rehabilitation programmes or interventions should target dynamic criminogenic needs that are functionally related to criminal behaviour so as to reduce the risk of recidivating (Hoge, 2002). In addition, the responsivity principle articulates that the style and mode of intervention

should match the offender's abilities and learning style. Pertaining to offender rehabilitation, interventions that adhere to all three RNR principles have been associated with significant reductions in recidivism rates, whereas those interventions that did not adhere to the RNR principles have poorer outcomes in terms of the reduction in recidivism rates (Andrews & Dowden, 2005).

The GPCSL approach posits that the criminal conduct of individuals is heavily influenced by the "Big Four" variables of antisocial cognition, past antisocial behaviour, antisocial personality patterns and antisocial associates. In addition to these four variables, difficulties pertaining to substance use, family and marital relationships, education and/or employment, and leisure activities make up the "Central Eight" variables that are implicated in criminal offending behaviour according to the GPCSL perspectives (Andrews & Bonta, 2010). Meta-analyses of risk factors and criminogenic needs with various offender groups have improved our understanding of the risk factors for reoffending (e.g., Bonta, Law, & Hanson, 1998; Gendreau, Little, & Goggin, 1996; Hanson & Morton-Bourgon, 2005; Lipsey & Derzon, 1998), and have provided empirical support for "Big Four" as well as "Central Eight" risk and need factors (see Andrews & Bonta, 2010; McGuire, 2004 for a review).

RNR principles have been shown to be vital in both the assessment and rehabilitation aspects of offender management and the suite of Level of Service risk assessment measures is the most widely used products associated with the RNR framework (Andrews, Bonta, & Wormith, 2010). Specifically, the Level of Service Inventory (LSI; Andrews, 1982), Level of Service – Revised (LSI-R; Andrews & Bonta, 1995), Level of Service/Case Management Inventory (LS/CMI; Andrews, Bonta, & Wormith, 2004), Level of Service: Risk–Need–Responsivity (LS/RNR; Andrews, Bonta, & Wormith, 2008), Youth Level of Service Inventory (YLSI; Andrews, Robinson, & Hoge, 1984) and Youth Level of Service/Case Management Inventory (YLS/CMI; Hoge & Andrews, 2002, 2011). In the past, assessments of risk and needs were often based on unstructured clinical judgements, and such a decision-making approach was criticized as being inaccurate and biased (Ægisdóttir et al., 2006; Grove, Zald, Lebow, Snitz, & Nelson, 2000; Monahan, 1981). Fortunately, with the advancement of risk assessment practices over the past three decades, there has been a consensus among professionals to adopt risk assessment measures that are structured and empirically based. These structured risk assessment measures clearly provide a more valid and consistent assessment of risk for future offending behaviour and potential treatment needs (Hoge, 2002) and reduce the potential for biases and unreliability. The YLS measures have been used in a variety of juvenile justice systems and correctional settings in different jurisdictions for assessing the risk of general recidivism and criminogenic needs in youth offenders, so as to guide judicial dispositions and make informed decisions regarding programme placements.

Youth Level of Service Measures

Developed in Canada and successfully adapted for use in other international jurisdictions, the YLS measures are objective and standardized actuarial measures that aim to meet the dual goals of assessing criminogenic risk and needs as well as guiding the formulation of appropriate case management plans (Hoge & Andrews, 2006). To enhance the measure's utility for assessing and managing youth offenders, the YLS/CMI has included several culturally informed items as responsivity factors in Part III: Assessment of Other Needs and Special Considerations–Youth (Hoge & Andrews, 2010). In addition, a substantial sample of minorities was included in the normative sample for the YLS/CMI. Specifically, over one-third of the sample is non-White, and is compromised of African American, Latino/a,

Asian, Aboriginal and other multiracial groups (Hoge & Andrews, 2010).

Notably, there is a growing body of research on the predictive validity of the YLS measures among various youth offender populations. The YLS measures have been validated on male and female youth in both community and institutional settings, as well as among various races, ethnicities and indigenous populations (Andrews & Bonta, 2010; Brumbaugh, Hardison Walters, & Winterfield, 2009; Jung & Rawana, 1999; Matthews & Hubbard, 2008; Schwalbe, 2008). To date, most findings have consistently shown that the YLS measures are robust risk assessment instruments in predicting various outcomes including rearrests, as well as general and violent recidivism (Catchpole & Gretton, 2003; Flores, Travis, & Latessa, 2004; Hoge & Andrews, 2006; Jung & Rawana, 1999; Upperton & Thompson, 2007; Welsh, Schmidt, McKinnon, Chattha, & Meyers, 2008).

Recent meta-analytic studies on the YLS measures have indicated that the measure has modest to moderate predictive validity for general recidivism. In particular, Schwalbe (2008) found a mean-weighted area under curve (AUC) value of .641 based on a review of 11 YLS studies. In an overlapping but larger sample of 19 studies, the mean-weighted correlation between YLS total scores and general recidivism was .32 (Olver, Stockdale, & Wormith, 2009). In their meta-analysis, Olver and colleagues (2009) reported that the YLS measures had lower predictive validity for general recidivism when they were used in other western jurisdictions outside of Canada (mean-weighted correlation of .26 versus .35). Olver and colleagues suggested that, "'international' differences contributed to the variability across studies" (p. 348).

Implementation of the RNR Framework in Singapore

Although the JOB criteria provided some guidance for assessing risk at the pre-sentencing phase (Ozawa, 2001), several limitations were observed with this approach. Risk assessments referencing the JOB criteria hinged on the experience and competency of the professionals involved. As such, there might be caveats relating to the reliability and validity of the risk assessment outcomes and recommendations, and these issues might have been accentuated when the practitioner's experience was limited. In addition to the lack of empirical evidence for the JOB criteria, the presence of biases that are inherent in unstructured decision-making processes was another significant limitation (Hoge, 2002). Hence, it was imperative to adopt an evidence-based framework and a structured risk assessment measure (that is empirically supported) for assessing our youth offenders in Singapore.

An extensive review of the literature on existing offender rehabilitation frameworks and structured youth offender risk assessment measures was undertaken in 2001. The RNR framework was subsequently identified as the offender rehabilitation framework adopted for use in the Ministry of Social and Family Development (MSF; then Ministry of Community Development and Sports) in 2003 (Chu, Teoh, et al., 2012). This framework was intended to introduce a structured system in which there is a more systematic assessment of risk and needs for the youth offenders who were the purview of MSF (these included youth probationers and youth offenders who were ordered to reside in Juvenile Rehabilitation Centres), and also to facilitate a common understanding of risk, needs and responsivity factors between various professionals. Along with the implementation of the RNR framework, the YLS/CMI was also introduced as the principal risk assessment (and case management) measure that MSF professionals use when working with youth offenders aged between 12 and below 19 years. Importantly, this move greatly contributed to more focused and empirical-based interventions for the youth offenders (Chu, Teoh, et al., 2012).

With the support gained from the MSF senior management team to implement the use of the RNR framework and the associated YLS/CMI risk assessment tool, the implementation team worked closely with Professor Hoge to localize the YLS/CMI scoring guidelines so that the instrument would be culturally relevant and sensitive to the Singapore youth offender population. Professor Hoge was also instrumental in developing and conducting a series of workshops for the professionals working in the juvenile justice system.

Two different types of training workshops were conducted; one was to train qualified users and the other was a more intensive train-the-trainers course. In order to be certified in the use of the YLS/CMI, users were required to attend a $2\frac{1}{2}$-day training programme, in which the participants were equipped with: knowledge of the RNR framework and its research; the principles of interviewing, scoring and developing a case management plan using the YLS/CMI; and hands-on scoring opportunities. At the end of the training programme, participants had to complete an examination that measured their knowledge of the RNR framework and the YLS/CMI instrument and had to pass with a score of 80% or higher. They were also required to score a valid YLS/CMI assessment using a test vignette with six or fewer scoring errors and then develop an appropriate case management plan linking the relevant risk and need factors. Regardless of the examination result, participants received individualized feedback from the trainers. For those who have failed, additional support and coaching were provided before they attempted to score another YLS/CMI assessment using a different test vignette. Once this was completed, the participant would be certified as a qualified YLS/CMI user and could conduct YLS/CMI assessments independently. Nonetheless, participants were encouraged to consult with more experienced YLS/CMI users should they encounter any difficulties.

Qualified YLS/CMI users were selected to attend the more intensive train-the-trainer course conducted by Professor Robert Hoge. This training provided an in-depth examination of the RNR framework and its research, hands-on scoring opportunities, as well as knowledge and practice on the delivery of the YLS/CMI training programme for users. In addition, the trainers had to submit two YLS/CMI assessments and corresponding case management plans (deidentified because they were real-life cases) to Professor Hoge for his feedback. These trainers are responsible for conducting future YLS/CMI trainings for users within the Singapore juvenile justice system when needed.

For the long-term support of the implementation of the RNR framework and use of the YLS/CMI in the juvenile offender rehabilitation sector, the implementation team is responsible for co-ordinating the on-going training and research efforts, using local YLS/CMI research data (discussed below) to inform trainers of the training needs, dissemination of local YLS/CMI research findings to users, looking into leveraging on technology to develop a more sustainable model of training and data collection, as well as maintaining the quality of the YLS/CMI risk assessments.

Juvenile Offenders

In 2003, the Probation Services Branch was the first to implement the RNR framework in their assessments at the pre-sentencing phase of the juvenile justice system (see Figure 1). Probation officers prepared pre-sentencing reports for the Court using the YLS/CMI to assess the risk and needs of the youth offender. The measure assists probation officers to predict the youth offenders' risk of recidivism, as well as to inform intervention and supervision intensity. Probation officers were better able to better provide dispositional recommendations and directions for specific areas to focus on during intervention and case management. Furthermore, with the

introduction of the YLS/CMI, the Juvenile Court moved away from relying on the JOB criteria for risk assessments of the offenders.

The RNR framework was subsequently introduced into community-based juvenile justice services such as youth placed in Voluntary Children's Homes (VCHs) or on home supervision (Chu, Teoh, et al., 2012). The risk and needs of these youth are assessed at the commencement and end of their court orders and they are reassessed every six months or when summoned for court reviews. In instances when youths commit violations during their orders or when significant changes in a youth's circumstances are observed, their risk and needs would be assessed again using the YLS/CMI. This allowed the practitioners to monitor the progress of youths during rehabilitation (Barnoski, 1998; Bonta, 2002), and if necessary, modify the case management plans and/or interventions to address their criminogenic needs.

The Central Narcotics Bureau (CNB) similarly adopted the RNR framework and the use of the YLS/CMI measure to assist their officers in classifying youth who have been arrested for drug-related offences (e.g., misuse of drugs) and thereafter, to guide their decision as to whether to divert the juvenile from the Courts. Supporting this change is the new Enhanced Supervision Scheme, which requires the evaluation of risk levels of the youth drug offender and appropriateness of intervention services. This would allow authorities to determine if the youth should receive low-intensity (e.g., community-based counselling and supervision) or high-intensity (e.g., being remanded in Drug Rehabilitation Centre) interventions.

In 2011, the RNR framework and the use of the YLS/CMI were successfully introduced to the Juvenile Rehabilitation Centres which included youth correctional facilities such as the Singapore Boys' Home and the Singapore Girls' Home (Chu, Teoh, et al., 2012). This provides more systematic assessments for youth offenders with higher levels of risk and criminogenic needs. Similarly, it allows the caseworkers at the Juvenile Rehabilitation Centres to monitor the youth's progress and if necessary, modify the case management plan and/or intervention to address the youth's criminogenic needs. Similarly, the Singapore Prison Service also adopted the RNR framework for the management and rehabilitation of the offenders in their care in 2001; however, they did not fully implement the YLS/CMI as the primary risk assessment measure for their youth offenders incarcerated in the Reformative Training Centre until 2007.

At-Risk Youth

Under the purview of the CYPA, parents or guardians of juveniles may lodge a complaint against their children who they deem are unmanageable (The Subordinate Courts of Singapore, 2006). The RNR framework was introduced in 2013 for these juveniles who exhibited delinquent behaviours. It facilitated placement decisions as well as the administration of appropriate interventions for these youth (Andrews et al., 1990; Funk, 1999; Hoge, 1999, 2002).

Comprehensive and standardized assessments would effectively identify at-risk youth's level of risk and facilitate recommendations for placement in VCHs. This ensures that such youth are admitted to VCHs only when their risk of offending is significant. It minimizes the interaction of lower risk with higher risk youths because the literature suggested detrimental impacts for the former in such circumstances. These decisions were aligned with the risk principle, in appropriately matching the youth's level of risk with the intensity of intervention.

Although the Singapore Police Force (SPF) did not adopt the RNR framework, it did collaborate with the Probation Services Branch to use one of the YLS measures in 2012 to assess youth at the point of arrest; the screening version of the YLS/CMI was piloted at two police land division units. This arrangement facilitated processing of the

youth: specifically, either to place the youth in pre-Court diversionary programmes or charge them for their offences on the basis of consideration of the severity of their offences and level of risk. The use of standardized assessment instruments such as the YLS/CMI-SV increases the accountability of staff in managing youth who have committed crimes, promotes consistency in interventions and minimizes the disparity in culminating to a decision (Hoge, 2002; Jones, Harris, Fader, & Grubstein, 2001; Wiebush, Baird, Krisberg, & Onek, 1995).

Policy Changes and Programme Development

The RNR framework has enhanced transparency and consistency of policy and decision-making processes during the various phases. It has facilitated a common understanding of risk, needs and responsivity through the juvenile justice system, thereby encouraging consistency in the management and rehabilitation of these at-risk youth and youth offenders. Such evidence-based endeavour and close interagency collaboration could inform policies and resource allocation, as well as the management and rehabilitation of this population for therapeutic intervention. It also guides the development and improvement of various programmes to target the specific criminogenic risk and needs of the youth population. Moreover, the various juvenile justice agencies also came together to deliberate over the coding criteria as well as sharing data to develop more appropriate norms for the various populations. Importantly, there is a conscious effort across the agencies to share research findings and update each other pertaining to implementation of the framework in the respective agencies.

Research on the YLS Measures in Singapore

Notwithstanding possible differences across international jurisdictions, empirical studies have demonstrated the utility of the YLS measures within the Singaporean context. Notably, Neo (2009) first developed norms for male youth offenders within the Singapore context, and Chu and colleagues (Chu, Lee, et al., 2013) have shown that the YLS/CMI have moderate predictive validity (AUC = .66) for general recidivism when used to assess youth offenders in Singapore. In addition, the risk cut-offs were useful in distinguishing among low-, moderate- and high-risk community-based youth offenders in terms of time to recidivism, and the norms for the community-based male (i.e., YLS/CMI total score: 0−10 = Low risk, 11−19 = Moderate risk, 20−26 = High risk and 27−42 = Very High risk) and female offenders (i.e., YLS/CMI: 0−12 = Low risk, 13−19 = Moderate risk, and 20−42 = High risk) in Singapore were developed. The findings suggested that strengths and other special needs are also important in the assessment of the youth offenders. Moreover, Zeng and Chu (2013) also revealed gender differences for criminogenic risk and needs in general as well as in specific domains.

In another study, Chu and colleagues (Chu, Ng, Fong, & Teoh, 2012) found that the YLS/CMI, although useful for predicting non-sexual recidivism in youth who sexually offended, did not have utility for assessing the risk of sexual recidivism. Similarly, Tan (2012) investigated a sample of youth-at-risk deemed to be beyond parental control and found that the YLS/CMI was also predictive of offending behaviour in the future for this population (AUC = .65). In addition, local norms for this at-risk youth population were developed. Furthermore, Chu, Yu, Lee, and Zeng (2014) investigated the suitability of using the screening version of the YLS/CMI in the local context, and the YLS/CMI-SV has been shown to have adequate predictive validity for general, non-violent and violent recidivism (AUC = .64, .63 and .61, respectively). At present, there are research programmes investigating risk and needs specifically in female offenders, norms for

institutionalized youth offenders, as well as the implementation issues of the RNR framework in Singapore.

Overall, it is clear that the YLS measures are suitable for use within the juvenile justice system in Singapore. The aforementioned studies strengthen the implementation of the RNR framework for offender rehabilitation and promote evidence-based practice that is grounded in the nuances of the local setting. Such empirical endeavour presents evidence to support the effectiveness in systematically assessing risk, as well as in formulating case management plans. Hence, judicial decisions pertaining to youth offenders have the potential to be enhanced by reason of being the product of consistent and unbiased data best positioned to identify appropriate interventions suited to their criminogenic needs. In the next section, we describe the challenges with regard to implementation of the RNR framework in Singapore.

Challenges in Implementing the RNR Framework

Although the RNR framework is theoretically based and provides systematic assessment of risk and needs in youth offenders, the implementation process was not without challenges. The implementation process consisted of many stages, which included the consultation and sharing of information with the stakeholders across the juvenile justice agencies and also persuading management that there is a necessity and importantly, benefits to the organizations, staff and clients in doing so. Subsequently, there was a need to devise a change management process involving the usage of the YLS measures. Adoption of the YLS measures as part of the assessment and review processes was perceived to be challenging the professionals' clinical skills. Many practitioners mentioned that the instrument appeared to diminish the importance of their clinical skills and was perceived to be replacing their professional judgement. Some practitioners reported the scoring of the YLS/CMI to be time consuming and tedious to complete, therefore perceiving the use of the instrument as additional paperwork (Neo, 2013). However, it was emphasized that the RNR framework for offender rehabilitation was intended to facilitate such decision-making processes and to provide some structure to complement clinical judgements. The RNR framework also required practitioners to consider the resources available to better match or to develop a specific intervention programme to address the needs of the youth. Importantly, there was also the need to ensure that the practitioners used other sections of the YLS/CMI and were not preoccupied with the indices for risk level; there is also a need to rate the strengths and other needs. Lastly, the fidelity of the ratings for the YLS measures also needed to be randomly audited to ensure that both the training programme and the operations are in order. Overall, the implementation of the RNR framework presented several difficulties, which mainly involved managing the anxiety and resistance of the practitioners, as well as convincing the relevant decision-makers that there are obvious benefits in implementing such a framework.

Conclusions and Moving Forward

The RNR framework of offender rehabilitation had been successfully implemented in various phases of the juvenile justice system in Singapore (Figure 2). We believe that this is a significant milestone given the comprehensiveness of the implementation across the juvenile justice agencies in a non-Western context. Moreover, Singapore is probably one of the first non-Western countries to do so. First, at the pre-sentencing phase, the implementation of the RNR framework and the adoption of YLS measures allowed professionals to systematically assess the youth offender's level of risk, thus effectively predicting the future occurrence of antisocial behaviours and arriving at a consistent custodial decision (Funk, 1999; Hoge, 1999).

Moreover, the framework and structured assessment measures also helped professionals identify the youth's criminogenic needs for targeted rehabilitation interventions to reduce their risk of recidivism. Second, the RNR framework facilitated placement decisions for the youth's level of risk to be appropriately matched with the intensity of intervention. Third, the RNR framework, along with the YLS measures, facilitate tracking of the offenders' rehabilitation progress, as well as effectiveness of intervention strategies (Barnoski, 1998; Bonta, 2002), thus promoting better management and treatment of these youth.

Future directions in the implementation of the RNR framework should examine how we can effectively screen these youths and where appropriate, place them on pre-Court diversionary programmes rather than proceeding to the Juvenile Court. As such, more empirical research would be needed in this aspect. In addition, it would be useful to investigate the impact of long-term outcomes of clients should there be adherence to the RNR principles.

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