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# MENTAL HEALTH PROFESSIONALS AND VIOLENCE RISK ASSESSMENTS

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There has been a gradual evolution in the provision of forensic mental health services in England and Wales over the past forty years following recommendations of the Butler and Glancy reports in the 1970s, the Reed Report in the 1990s, the Bradley Report in 2009 as well as other Departmental of Health and Home Office reviews and reports. Forensic psychiatrists involved in physical and sexual violence risk assessments are increasingly acting as ”gate-keepers” of potentially violent people from the community (Scott 1974; Bluglass 1990; Rose 2008). This may take place for various reasons such as for the purpose of advising the Courts with regards to the risk considerations of allowing bail, the necessity of involuntary detention in the interests of public safety or it may occur as a part of a comprehensive assessment within the criminal justice system to determine the suitability of an offender for parole or release from custody (Maden 2003; Mills 2011).

The prediction of the future occurrence of physical violence by an individual is probably one of the most ethically, clinically and practically challenging responsibilities faced by mental health professionals (Grisso 1992; Szmukler, 2001). Physical violence risk assessments often lead to dichotomous decisions, such as the continued incarceration of an offender who is assessed to be dangerous or his discharge into the community should he be deemed to be at low risk of committing future violent acts.

Inaccurate risk appraisal may result in unnecessary curtailment of an individual’s freedom, this occurs in the event where the assessment outcome is a false positive (Steadman 1974). On the other hand, inaccurate risk appraisal may result in serious or even fatal consequences, this occurs in the event where the assessment outcome is a false negative (Ritchie 1994). Physical violence risk assessments lead to decisions which have great impact for both the offender and the community. This has resulted in mental health professionals being increasingly held accountable and responsible for their decisions should undesirable consequences happen as a result of their decisions (Tarasoff 1976; Holloway 2002; Rose 1996).

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In the unfortunate case involving Christopher Clunis, a gentleman with paranoid schizophrenia who had stabbed to death Jonathan Zito, a commuter on the London underground, Christopher Clunis was floridly psychotic at the time of the offence whilst he was living in the community (Coid 1994). The resulting lengthy public enquiry scrutinized for lapses in the chain of service provision as well as the rationale and scientific evidence behind the decision making process which had led to his release from hospital care (Ritchie 1994). With such high stakes involved in violence risk assessments, the advent of actuarial and structured professional judgment provide the much needed evidence-based decisions and assessment framework for the making of informed, focused clinical decisions that can stand up better to legal, professional and public scrutiny (Monahan, 2005; Mossman 2006).

## EMPIRICAL CLINICAL JUDGMENT

Empirical clinical judgment had been the ”traditonal” way by which clinicians practised violence risk assessments before the validation and widespread use of actuarial and structured professional judgment tools (Monahan 1984; Hilton 2001). The accuracy and reliability of such an approach in violence risk assesssment was scrutinised in the 1970s following the Baxstrom versus Herald (1966) ruling in the United States. Follow-up of the 900 over prisoners (who were previously assessed to be dangerous and violent) after they were transfered out of maximum security hospitals showed that the majority of these prisoners did not subsequently reoffend violently (Steadman 1974; Steadman 1977).

Several other studies replicated the findings of Steadman above and showed that even with the conscientious involvement of multi-disciplinary teams, forensic mental health professionals who relied on unstructured clinical approach were highly inaccurate (Cocozza 1976; Thornberry 1979). In simulated studies on the predictive validity of empirical clinical judgments, psychiatrists and non mental health workers such as teachers and judges were found to have weighted available information in the same manner and showed little differences in their predictive accuracy from one another (Quinsey 1979; Webster 1984). Clinicians who relied on empirical clinical judgment as their way of assessing violence risk were found to be subjected to the same errors and biases as lay persons. This is not surprising

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as psychology research had demonstrated the common development of associations between both valid and invalid variables with the outcome measured when one uses the unstructured empirical judgment approach (Chapman 1969; Fischoff 1975).

Statistically, empirical clinical approach towards violence risk assessment was found to have low inter-rater reliability (Mossman 1994; Bonta 1998). With regards to its predictive validity, it often resulted in an over-estimation of dangerousness thus resulting in unnecessary restrictions being imposed on offenders (Grisso 1992). Clinician's predictions of violent behavior based on subjective judgment among institutionalized mentally disordered people were found to be accurate at best about one-third of the time (Monahan 1984). The lack of transparency behind the decision making process of unstructured violence assessment had been highlighted and criticised, resulting in doubts being raised about the suitability of its use in Courts and criminal justice proceedings (Monahan 1994; Moris 1985). These findings with regards to the lack of accuracy and reliabilty of "traditional" unstructured subjective clinical risk assessments have propelled the urgency and intensity behind the research and development for more reliable and accurate violence risk assessment tools witnessed in the 1990s.

## THE ACTUARIAL APPROACH IN PHYSICAL VIOLENCE RISK ASSESSMENT

Actuarial risk assessment tools are psychological tests which were developed from data collated from known groups of recidivistic and non-recidivistic violent offenders and patients. For example, the Violence Risk Appraisal Guide (VRAG) was developed from data of patients from Oak Ridge, a maximum-security forensic psychiatric hospital in Ontario, Canada (Quinsey 1998) while the Static-99 was developed from data collated from offenders and forensic psychiatric patients from institutions across the United Kingdom and Canada (Hanson 1999). These data are then analysed using actuarial algorithms, such as logistic regression or event history analysis, for significant associations. Factors found to be significant are amulgated and developed into predictive, prognostic assessment tools. The statistical characteristics and predictive validity of these assessment tools are analysed and validated in subsequent studies among different groups of individuals before they are used as

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physical violence risk assessment tools for specified population groups (Quinsey 1998; Hanson 1999; Mills 2011).

The actuarial approach removes human factors in the risk assessment process that may affect the accuracy of judgments such as the assessor's biasness, fatique, pressure to make politically-motivated decisions or the inevitable random fluctuations in human judgment. It relies solely on statistical analysis based on the established relations between available historical demographic, social, clinical data with the occurrence of physical violence (Quinsey 1998; Hanson 1999).

VRAG and other Actuarial Tools for Physical Violence Risk Assessment

The Violence Risk Appraisal Guide (VRAG) is a 12-item test designed to assess risk for general violence over periods of 7–10 years. It was developed from data collated from a sample of about 600 patients who had been assessed or treated at a maximum-security forensic psychiatric hospital. The 12 items were selected based on statistical calculations of the item's ability to differentiate between recidivists and non-recidivists. Among them, positive finding in Hare Psychopathy Checklist-Revised (PCL-R) was found to bear the strongest actuarial correlations with future violence risk (Harris 1993; Harris 2002;Quinsey 1998).

Statistically, the VRAG was found to have good inter-rater correlations (Rice 1990; Rice 1992) and intra-class correlation (Kroner 2001). It demonstrated predictive accuracy in the moderate to high range for various groups of offenders and patients in its area under curve (AUC) measurement. The AUC is a statistic of receiver operating characteristic (ROC), a statistical method which has allowed the confounding effects of low and changing base rates in violence recidivism to be overcome (Mills 2011).Recent meta-analysis studies have affirmed VRAG's predictive validity of physical violence to be in the medium to high range with median AUC value of 0.68 (Yang 2010) and 0.74 (Singh 2011).

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The population groups tested where VRAG has been validated include forensic inpatients (Harris 1993; Grann 2000), correctional offenders (Barbaree 2001), sex offenders (Langton 2007), psychiatric patients with learning disabilities (Quinsey 2004) and civilly committed psychiatric patients (Harris 2004). However, there were studies which showed limitations of the VRAG in violence risk assessment. Among female forensic patients, the VRAG was found not to be predictive (Harris 2002), in another study, only 5 out of the 12 VRAG items were found to be able to distinguish between recidivists and non-recidivists (Mills 2007).

The successful validation of the VRAG has heralded an increase in the number and intensity of research into the actuarial approach towards risk assessment in the 1990s. More actuarial tools have since been developed for physical violence risk assessments such as the Static-99 (Hanson 1999), Risk Matrix 2000 (Thornton 2005) and Static-2002 (Hanson 2003).

## CLINICAL CONTRIBUTIONS OF ACTUARIAL RISK ASSESSMENTS

a. Greater Transparency and Defensibility of Decision

In my opinion, the ease of use and the availability of the VRAG had allowed forensic clinicians to make physical violence risk assessments that are based on sound statistical evidence and supported by validation studies is one of the most important clinical contributions of the actuarial approach towards physical violence risk assessment. The appropriate application of such tools has empowered forensic clinicians to present their recommendations more confidently and defend them more robustly in Courts and parole boards. In addition, should any undesirable consequences occur because of the decision, the responsible clinician would be able to exhibit the transparency of his decision making process and explain the clear rationale behind the decision to the enquiry.

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b. Increased Fairness For the Offender

For the offender, the use of actuarial risk assessment tools will likely result in a decrease in the number of offenders are detained unnecessarily because of the high false positives associated with unstructured, empirical judgment (Steadman 1974). In my opinion, this is an extremely important clinical contribution to society because such unnecessary detention of these offenders due to the inaccurate empirical judgments of their clinicians may be considered infringements of their fundamental human rights.

c. Increased Confidence Among Forensic Mental Health Professionals

The availability of VRAG, a physical risk assessment tool which is evidence-based has probably alleviated the dread, uncertainty and even reluctance among forensic clinicians who were tasked with the risk assessment of physical violence among offenders. The knowledge that they are using an assessment tool which can stand up to close scrutiny has probably alleviated their burden somewhat of being the onerous "gate-keeper" of deciding who are the dangerous offenders to be kept from society. This development in the late 1990s would have likely come as a welcome change from the empirical clinical judgment approach towards physical violence risk assessment which had been found to be unreliable and inaccurate in studies conducted in the 1970s and 1980s.

SUMMARY

Actuarial approach to physical violence risk assessment has surpassed empirical clinical judgments in predictive accuracy, inter-rater's reliability and intra-class correlations. When used appropriately, actuarial risk assessments can result in substantial time and budgetary savings. However its usage should only be applied for population groups and clinical settings where the actuarial tests had been validated in (Dawes 1989).

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THE STRUCTURED PROFESSIONAL JUDGMENT APPROACH

The structured professional judgment (SPJ) approach towards physical violence risk assessment is one where the responsible mental health clinician is systemically guided through a series of static and dynamic risk factors. The items in SPJ tools reflect current views of best practice such as the factors that have the greatest influence on physical violence recidivism. The clinician, usually with the input of his/her multidisciplinary team, has to code if the risk factors are present, absent or possibly present in the client and elaborate on the details behind the coding decision for each risk factor (Gray 2010; Mills 2011). In a recent large scale meta-analysis involving over 25,000 participants, several SPJ tools commonly used for the assessment of physical violence such as the HCR-20, the Structured Assessment of Violence Risk in Youth (SAVRY) and the Spousal Assault Risk Assessment (SARA) had median AUC score of above 0.70 range indicating high predictive validity (Singh 2011).

Many tools using the SPJ approach (HCR-20, SAVRY, SARA) also focus on risk management of the individual client from the start and involve risk scenarios planning where the responsible clinician and the multidisciplinary team anticipate the situations which could lead to the reoccurrence of physical violence in the client. Each possible scenario is analysed for associated key features such as the severity, imminence, nature, likelihood or frequency of these scenarios occurring. There is also proactive planning by methodically going through the key aspects of monitoring, treatment, supervision and victim safety planning for each scenario. The final step in SPJ comprises the summary judgments where other relevant key subject areas such as date of the next planned review are documented.

The SPJ approach towards physical violence risk assessment goes beyond an actuarial or descriptive assessment of the probability of violence recidivism within the community. Many SPJ tools also involve the identification of dynamic factors such as at-risk psychological states, scenario planning and a proactive approach in planning for contingency responses as part of its framework. This comprehensive approach towards risk assessment and management are key features which correspond to current best practices of physical violence risk assessments (Haque & Cree 2007).

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HCR-20

The most widely used SPJ tool for the risk assessment of physical violence is the HCR-20 which was developed by the Mental Health, Law and Policy Institute of Simon Fraser University, Canada in the 1990s. It comprises 10 historical (H) items, 5 clinical (C) items and 5 risk (R) management items. The items selected for inclusion in the HCR-20 are those that have demonstrated good evidence in differentiating between recidivists and non-recidivist. The 10 historical items comprise one item based on the Hare PCL-R score while the other historical factors are based on actuarial evidence, many of which correspond with items in the VRAG. The 5 clinical items are made up of ongoing conditions such as insightfulness, severity of psychiatric symptoms, impulsivity, treatability, and attitudinal issues while the 5 risk management items are future-directed and consider factors such as the extent to which the client can care for himself, comply with medication, follow treatment plans, likelihood of exposure to stressors and coping abilities (Webster 1997).

Statistically, it has demonstrated good inter-rater reliability and intra-class validity among various study populations (Douglas 1999; Gray 2007; Kroner 2001). The HCR-20's predictive accuracy in differentiating between those who will be physically violent and those who will not be physically violent has been validated among offenders (Kroner 2001), forensic psychiatric offenders (de Vogel 2005), civilly committed patients (Nicholls 2004) and psychiatric inpatients (Gray 2003).

Recent meta-analysis studies of the predictive validity of the HCR-20 have shown that it demonstrates a high level of efficiency in its predictive validity (Yang 2010; Singh 2011). In the meta-analysis study by Yang et.al, HCR-20 had AUC value of 0.71, correlation of 0.37 and effect size of 0.79 giving it the best predictive validity among the 9 risk assessment tools being studied. The HCR-20 was found to be significantly better than PCL-R in predicting violence recidivism among men in this meta-analysis (Yang 2010).

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PCL-R

The Psychopathy Checklist, another well-known SPJ tool (Hare 1991; Singh 2011), was developed as a diagnostic tool to aid in the diagnosis of psychopathy based on the structured assessment of an individual's behaviour and personality traits. It was later revised as Psychopathy Checklist–revised (PCL-R) (Hare 1991). Its structure follows the SPJ approach comprising 20 items which the clinician has to systematically go through and determine if these items were present, absent or probably present in the individual.

The PCL-R has been found to have good level of inter-rater reliability and validity in a range of clinical and correctional settings (Hare et al., 1990) across different communities of psychopaths in various countries (Cooke 2001; Molto 2000; Pham 1998). Its use for the assessment of psychopathy demonstrated medium level of predictive validity with an AUC score of 0.66, Singh et. al. commented that this was remarkable considering the nature of many items within the PCL-R scale which involved the assessment of personality traits (Singh 2011). The PCL-R is the current gold standard in terms of validity and reliability for the assessment of psychopathic tendencies.

LSI-R

The Level of Service Inventory-revised (LSI-R) (Andrews 1995) was an SPJ tool designed to aid clinicians in physical violence risk predictions at parole boards. It includes dynamic risk factors among its variables such as employment status, current substance misuse, presence of emotional or personal stressors, accommodation issues and social support. Changes in these dynamic factors will lead to corresponding changes in the risk level predicted by these tools and it may thus be used for monitoring changing risk profiles at regular periods.

CONTRIBUTIONS OF SPJ IN PHYSICAL VIOLENCE RISK ASSESSMENT

a. Greater Transparency and Accountability of Decision

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Compared to empirical clinical judgment, the SPJ approach guides clinicians to evaluate a similar set of variables which have been validated to impact recidivism risks instead of using the clinician's own set of variables which are susceptible to biases. More importantly, it allows greater transparency in the decision making process of the clinician.

b. Tools for Monitoring and Supervision

The use of the HCR-20 is not only limited to its usage as a risk assessment tool. The presence of dynamic clinical and risk management variables makes it suitable for use in the monitoring of changes of risk levels over time. Via the framework for risk scenarios and contingency planning, the HCR-20 promotes proactive planning for at-risk scenarios and risk management strategies by the multidisciplinary team.

c. Comprehensive Approach Towards Risk Assessment

The SPJ approach towards physical violence risk assessment is line with the recent best practices guideline published by the Department of Health for the assessment and management of risks (Department of Health 2007). The philosophy promoted in this guideline includes having "positive risk management" which advocates proactive planning for contingencies instead of reactive responses, "collaboration with the service user and others involved in care" which emphasizes a multi-disciplinary team approach among others. These principles are evidently present among SPJ tools.

d. Increased Awareness of Proactive Risk Management

The use of SPJ in risk assessment has also promulgated the concept that proactive planning to avert violence is possible with the use of appropriate assessment tool and framework together with collaboration of involved care-providers. This culture change towards holistic risk assessment and management in the psychiatric and legal community is consistent with the principles spelt out in the 2007 revision of the Mental Health Act (Maden 2010).

e. Compliance with Principles of 2007 Revision of Mental Health Act

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Many of the principles of risk assessment echoed in the 2007 revision of the Mental Health Act are covered by the HCR-20's framework of assessment. For example, the principle of "the past is the best guide to the future" is reflected in HCR-20's inclusion of historical factors, ""risk changes with time" is reflected in HCR-20's inclusion of dynamic risk factors, "risk is multidimensional" is reflected in HCR-20's framework of scenario planning with multidimensional considerations of the nature, immediacy, severity, likelihood and frequency of physical violence. This legislature also states the principle that "relative estimates of risks are better than absolute measures", this removes the mathematical numbers which are often the fixations of the media. Instead the 2007 revision of the Mental Health Act draws attention to the awareness of the fluctuating nature of risk estimates and the steps that can be undertaken to minimize them.

In my opinion, the validation of SPJ's predictive accuracy and its widespread acceptance and use by the psychiatric and legal community both in Europe, Canada and America have played a large part in the bureaucracy's awareness of the advancement made in risk assessments which has now been reflected in the 2007 revision of the Mental Health Act.

SUMMARY

CONTRIBUTIONS OF ACTUARIAL AND SPJ TOOLS

The actuarial and SPJ approaches towards physical violence risk assessment have both tremendously increased the transparency behind the physical risk assessment decision making process. This is in stark contrast to the arbitrariness and subjectivity seen in the empirical clinical approach. This transparency has increased the robustness of decisions made by the Courts and parole board reviews with regards to the involuntary detention of high risk offenders in the interest of public safety (Maden 2010). Various actuarial and SPJ physical violence risk assessment tools have good predictive validity and statistical characteristics (Singh 2011; Yang 2010). This has moved the standard of practice in risk assessment towards a more evidence-based approach from the days of empirical clinical judgment. More importantly, it minimizes the risk of false positives and decreases the number of unnecessary

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prolonged detention. This is fairer to the assessed individual, safeguards his human rights and also helps decrease the cost to the criminal justice system.

The development of the VRAG and HCR-20 in the 1990s have stimulated and hastened the pace of research and development of new actuarial tools (e.g. Static-99, Static 2002, Risk Matrix 2000) and new SPJ tools (e.g. SAVRY, SARA, LSI-R) over the past twenty years. Recent research directions of SPJ points to the development and validation of SPJ tools such as the Short-Term Assessment of Risk and Treatability (START), which has more dynamic factors (stable and acute) when compared to the HCR-20. This will allow better monitoring of an individual's changing risk level corresponding to his changing dynamic risk factors profile (Webster 2006). The recognition of the value of "protective" factors have also led to the development of new SPJ tool such as the Structured Assessment of PROtective Factors for Violence Risk (SAPROF) (Vogel 2007), this approach will enable a balanced view of both at-risk and protective factors in determining an individual's dynamic risk profile.

## KEY DIFFERENCES BETWEEN ACTUARIAL AND SPJ TOOLS

The actuarial approach to physical violence risk assessment works via determining the group level risk and translating this risk into focused risk for an individual (Hart 2007). Actuarial tools are prone to "group error", where findings from a study sample are used to draw inferences about the population parameter, as well as "individual error", where the actuarial analysis based on a study population is now translated and focused to become an individual's risk. Studies have found margins of "group" and "individual" errors sufficiently high such that they affect the certainty of reasonable and legally defensible decisions to be made (Heilbrun, 1992; Litwack 2001). Its usage should thus be only applied for population groups and clinical settings where the actuarial tests had been validated in (Dawes 1989). The application of actuarial tools for physical violence risk assessments do not require the participation of multi-disciplinary teams or involve risk management, this falls short of the current best practices and principles in violence risk assessment (Hague & Cree 2007; Maden 2010).

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The SPJ approach does not start by focusing on the group risk, instead it begins with the identification of risk variables in individuals which are then discussed among a multi-disciplinary team. It focuses on the individual patients with proactive planning for at risk scenarios. Once the scenarios have been developed and agreed upon by the multi-disciplinary team, the relevant risk factors can be used to identify and construct risk management strategies. These include monitoring, supervision, treatment or rehabilitation, and victim safety planning. The aim for SPJ tools in physical risk assessment is for the establishment of a clear link between each identified risk factor with a deliberated, defined risk management measure, thus achieving proactive planning for the purpose of minimizing recidivism.

## CONCLUSION

The chain of reactions set in place by the Baxstrom versus Herald trial in 1966 has pushed the science and art of violence risk assessment into unchartered waters. Mental health workers have however created a new frontier in scientific and research excellence in the field of violence risk assessment out of this challenge. Continued progress in SPJ and actuarial tools research will hopefully translate to tangible decrease in violence recidivism rates in the years to come.

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