'To predict or not to predict – that is the question' An exploration of risk assessment in the context of South African forensic psychiatry

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In ancient times, events of particular significance to individuals, societies and countries, were mostly considered to be the result of fate, luck or divine intervention. 'Omens', that is signs spontaneously revealed through acts of nature, or elicited from it by the actions of priests and diviners, were in fact an early form of prediction, and great significance was attached to their appearance.

Isaac Newton (1642 – 1727) laid the foundation for an entirely new, and scientific, framework of predictability, and successive scientists portrayed a 'clockwork' world where even the 'celestial mechanics' of astronomical bodies were predicted with breath-taking accuracy. Pierre-Simon Laplace 1749 -1827) postulated that, given enough information, the entire fate of every atom and structure in the universe (and presumably, therefore, all criminal offenders who ever lived) could be predicted.

This Cartesian approach, which is rooted in careful data collection, logical analysis and mathematical rigour has since pervaded the natural and life sciences. It's most successful application, with regard to predicting risk, has probably been in the insurance industry, which assesses probability on the basis of strata of information relevant to the question at hand, but which nevertheless makes no claim to applying the assigned probability to an individual object or person. The risk of car theft, for example, can be ascertained from the make of car, its age, whether it is fitted with an immobilizer and steering lock, whether it is parked in a garage at night, the residential area of the owner, and so on, but a confident prediction that a particular car will be stolen, least of all within a particular time-frame, cannot be made. This insurance-industry type of risk assessment is, of course well-known to psychiatrists as an actuarial one, and will be discussed more fully below.

But car-thefts occur within the relatively stable and simple world of large objects and macro-events. The scientific paradigm on which a reasonably successful model of their predictability was based was stirred, if not out rightly shaken, by two major developments in scientific thought – quantum mechanics, a century ago, and more recently an entire branch of mathematics popularly called 'chaos theory'. The latter, of more relevance to this discussion, was born from an analysis of the unpredictability of weather patterns.[1] Human behaviour is surely at least as complex, and as little understood, as weather systems. Weather prediction, which is based on complicated mathematical models, is only really accurate in the short to medium term. Doing the same to assess the risk of aggression in people, but using simple risk assessment tools, therefore seems to be a quixotic enterprise. Are they truly useful instruments, or are they fruitless experiments in defensive practice, useless paper-exercises that reassure ourselves, and, ultimately, society, that we can confidently release forensic patients back into our communities?

Until about 40 years ago psychiatrists were entrusted with the task of predicting dangerousness, in order to lock up the mentally ill and keep society safe. Then, following the Baxstrom case in the USA, and subsequent systematic investigations, prediction was declared to be a hopeless clinical exercise.[2-4] Prediction was replaced by risk assessment, supposedly a more objective method. If it worked for insurance companies, why not for psychiatrically ill people?[5]

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The risk assessment enterprise

Most clinicians use unstructured informal risk assessment methods. This might typically consist of brief written statements about apparently obvious risks and characteristics in a particular patient that might indicate some future adverse behavior (and the period of this future is hardly ever defined). Some clinicians are very good at this, but unfortunately the major drawback is that these assessments are opinion-based, and often rely on intuition. These methods are difficult to teach, and cannot be studied reliably.[6]

The need for the development of evidence-based instruments began in the 1970's, as increasing numbers of people with serious mental illness were discharged from chronic wards into the community.[7,8] Two types of structured instruments then emerged, actuarial instruments, inspired by those used in the insurance industry, and structured professional judgement (SPJ) instruments.

A simple example of the former is the RRASOR (Rapid Risk Assessment for Sexual Offence Recidivism) actuarial instrument.[9] This is a four-factor instrument which ascertains risk using a tick-box method to score four historical factors, including the age of the offender, a history of past offences, and information about the ages and genders of victims.

An immediate limitation of purely actuarial tools is that no clinical expertise is required to complete them – the information can be obtained from documented historical factors, as would be contained in a folder, and can be completed by a clerk. This is important because of the recognition that current, so-called dynamic factors, play an important role in risk assessment, which does require clinical expertise. Also, there is a wealth of information (not elicited by instruments that rely rigidly on a small sample of pre-selected variables), which may be available to other members of the multi-disciplinary team, and that reveal other facets of a patient's behaviour, his social environment and clinical condition at the time of the assessment, which might not be apparent to a single clinician. There is also evidence to suggest that clinical confidence plays an important role in the validity of risk assessment instruments, significantly improving their accuracy.[10]

A further drawback of actuarial risk assessment tools is that the best probability of risk they provide can only be valid for a particular population, but not necessarily for a specific individual. In pure actuarial instruments there is a complete reliance on historical factors – this is because statistical probabilities, expressed in quantitative terms, can only be formulated from the accumulation of data gained from past events.

Clinicians developed SPJ's to address these two limitations – they are patient-based, and they include an assessment of dynamic and situational factors, respective examples being (at the time of the assessment), the severity of symptoms of mental illness, and other risk factors, such as the availability and use of weapons. In addition, SPJ's are, as the name suggests, structured, as they consist of a formal lay-out of factors that have to be considered before their completion.

There are now over 400 SPJ's in existence, and, by way of example, a well-known one is the Historical-Clinical-Risk Management-20, or HCR-20 instrument.[11] Its 20 items include 10 'historical, static' factors, whilst the remaining 10 dynamic items have been divided temporally into 5 'present, clinical' items and 5 'future, risk' items. It is important to note that SPJ's also have actuarial components, as the HCR-20 shows. Whichever scale is used, each produces a score that can be translated into a probability of risk.

A related model, has been proposed by Monahan, in which he identifies four categories of empirically valid risk factors that are common to many SPJ tools. These can be explored by asking the following questions: what the person is, what the person has, what the person has done, and what has been done to the person. Age, gender and social class relate to the first question, mental disorders (including substance abuse) and personality factors to the second, historical factors to the third, and developmental factors, viz. a pathological family environment and a history of abuse, to the fourth.[12]

What is wrong with current Risk Assessment methods?

Firstly, risk assessment actually is a form of weighted prediction, which is more valid for groups and not individuals. This is not good enough for making important decisions, especially if there are thresholds for allowing or restricting someone's freedom. For example, using actuarial models, at which point do clinicians draw the line at, say, curbing a patient's leave in the face of predicted violence? At 100% probability, yes certainly, but what about at 80%, or 50%, etc.?[13]

These instruments do not differentiate between the types of violence an individual may commit, or really under what circumstances. There are some who recommend that a better approach would be to use risk categorization, not prediction. This would enable clinicians to focus on managing patients, rather than labeling them high risk, which implies long term, expensive stays in maximum secure units.[13,14] Even the most reliable risk assessments are probably not valid for longer than a few months, and produce at least 25% of false positives and negatives (regardless of which instrument was used), which should heighten our caution in depending on these instruments either to deny someone freedom or to expose others to harm.[15,16]

Whenever clinicians make confident predictions they have to take responsibility for adverse consequences. This includes restricting the rights of those who ultimately never cause harm, and for the consequences of harm caused by individuals deemed to pose low risk to others. Current risk assessment tools and methods, therefore, trap clinicians by their very imperfections, and possibly make them unfairly responsible for not knowing what actually may be unknowable. This is compounded in South Africa as we endeavor to use instruments developed elsewhere, as they may not also capture culture-specific variables.

Nevertheless, one must be cognisant of the following: nothing has changed the old dictum of forensic psychiatry that a prior history of violence is an important marker of potential future violence.[17] Although recent meta-analyses

have confirmed that actuarial methods are consistently superior to clinical evaluations (albeit a modest superiority) we still lack the tools to make long term assessments.[18] It is therefore in the short-term prediction of risk that most value may lie, and a recent study showed that short-term risk assessments in an acute ward setting reduced aggression and seclusion.[19] An informal enquiry, by the authors, at the recent South African Forensic Psychiatry Conference, held in Cape Town in 2011, revealed that SPJ tools are not routinely used by South African forensic psychiatrists, although some units have had occasion to use the HCR-20 and PCL-R (Psychopathy Checklist – Revised). At Valkenberg Hospital the authors have been piloting the START (Short-Term Assessment of Risk and Treatment) instrument, an SPJ which was developed during the mid-1990's in British Columbia, Canada. The instrument has been extensively researched by its developers, and good structural and inter-rater reliability, as well as good convergent, divergent and predictive reliability, has been shown.[20]

A new START

START aims to assess risk across six domains, viz. violence, self-harm, suicide, unauthorised leave, substance abuse, self-neglect and being victimised. Evaluations of risk across these domains, and documented in a THREAT box, are made of Threats of Harm that are Real, Enactable, Acute and Targetable. Risk is assessed in the short term (several weeks to three months, or sooner if the patient's condition changes significantly), and START goes beyond other SPJ's in identifying patient strengths (an important factor given current interest in so-called 'positive psychology'), and in assisting the formulation of treatment plans. It also aims to be user-friendly, and to be able to be completed by either an individual, or a multidisciplinary team (MDT), in a short space of time (within half-an-hour). Although it has actuarial elements, it is a qualitative instrument which weighs strengths and vulnerabilities across more than 20 items, spanning six dimensions: mental/emotional state, physical health, substance use, social/ vocational/leisure skills, community living skills/ ADL's (activities of daily living), and reintegration risks.

Our experience of START, which we have been using as a pilot project since 2010, has been that doing the assessments has been a rewarding and enriching experience for the MDT. Significant knowledge of patients' functioning and personalities is required, and this requires equal input from all members of the MDT. Although user-friendly, we have found that it cannot be ideally completed by one clinician only, and it is time-consuming, in that each assessment takes at least half-an-hour, sometimes extending to beyond an hour. Its greatest value, to date, has been in enabling us to understand our patients better, and in encouraging us to systematically work through the risk domains, and ultimately to encapsulate and tabulate identified risks in pithy statements in the short space provided for a summary of the entire risk evaluation. It's value, then, is not in making predictions, but in determining the strengths and vulnerabilities of individual patients that can be addressed or enhanced. This is true risk management.

We turn now to recommendations that can be made, in general, about the clinical evaluation of risk in South African psychiatric practice. The 'frightening enormity' of the complexity of human behaviour can, thankfully, be reduced to a handful of factors that as clinicians we want to evaluate the risk for (such as violence, suicide etc.), and indeed the evidence is that structured risk evaluations are empirically useful. Whilst we hope to have demonstrated this, we realise that the largest factors mitigating against their standard use in our country are those of time, and human resources – assessment tools are time-consuming and labour-intensive, and our everyday experience is that our clinical teams are already stretched to capacity, with full wards and long waiting lists for admission. Whilst this is certainly true in the state sector, it would be interesting to know how risk is assessed in the private sector, where most of the psychiatrists in South Africa practice.

Nevertheless, using the following points we argue that at least some form of risk assessment, other than unstructured ones, should be used. Firstly, given the evidence for their usefulness, is it ethical to continue to use informal and intuitive approaches? Secondly (and this is of particular relevance to forensic psychiatry), we live in an era of burgeoning political accountability – this is, of course, not limited to South Africa, as recent global events have shown, yet in our country our criminal justice, law enforcement and correctional service systems have come under particular scrutiny. In addition we live in an exceptionally violent society, and there is a public clamouring for solutions to this. Add to this mix varying degrees of hostility towards psychiatry, both within and outside of the medical community, stigmatisation of psychiatric patients, and an often-held perception that they are much more dangerous than the general population, and it then seems important that, as part of good clinical governance and practice, we endeavour to set our assessments of risk on firmer footing. The increasing advocacy of patient rights, and the role of Mental Health Review Boards in this regard, would also suggest that we should be able to justify clinical decisions regarding ongoing detention of dangerous patients in psychiatric hospitals. Highly publicised cases of murders committed by schizophrenics in the UK, in the last decade or so, accentuated political and health system accountability, and, without becoming overly defensive, it would be prudent for us to anticipate similar occurrences in South Africa Thirdly, in an increasingly litigious world, in which the decisions of clinicians might be questioned from a dual perspective – from one where dangerous patients are kept away from society, and from one where people are the unexpected victims of patients deemed to be at low risk of violence – clinicians should be able to document that their decisions, with regard to detention and freedom respectively, were made using evidence-based SPJ's.

Finally, and self-evidently, for the purposes of research and teaching at our academic institutions, SPJ tools are superior to non-structured assessments.

What recommendations, then, can be made about the

use and development of a more formal use of risk assessment in the South African setting? In forensic units, where the assessment of dangerousness is pertinent, the routine use of less time and labour-intensive tools than START, such as the HCR-20, can be piloted.

Conclusion

Clinicians will always be tempted to make predictions, and will have to take responsibility when wrong. Perhaps the better approach would be to regard risk management as our primary endeavor, driven by iterative rounds of risk assessment and monitoring.

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