Violence risk assessment and management in mental health: a conceptual, empirical and practice critique

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Abstract

Background

The increasing focus on risk assessment and management to tackle violence in mental health is fraught with empirical, conceptual and practical concerns.

Aim

This paper examines empirical, epistemological and conceptual challenges, and clinical narratives in the application of risk assessment and management in mental health.

Methods

The authors used a narrative review of empirical, conceptual and clinical literature.

Findings

The worldwide prevalence of violence in mental health settings remains high. Risk assessment and management approaches, while well intentioned as an attempt to reduce harm and increase people's safety, have negligible effect on both. They are invariably individual-centric, ignore wider environmental, societal and behavioural influences that foment violence, and have a stigmatising effect on people using mental health services. They also reinforce the myth that people who are mentally unwell threaten society and that through current risk assessment and management approaches we can minimise this threat.

Conclusion

The practice of risk assessment and management in mental health is marred by an overuse of risk assessment measures that are limited in their predictive efficacy. As a result, they have little value in preventing, reducing and/or managing harm. The language of risk punishes and stigmatizes service users and reinforces the image of menace. An alternative language of safety may nourish and protect. A collaborative approach to safety assessment based upon recovery-focussed principles and practices may fuse professionals and service users' horizons. Combining service users' self-perception, professionals' sound clinical judgement, assisted by electronically derived risk algorithms and followed by evidence-based risk management interventions, may

lessen the threat to service users, reduce harm and transform the practice of violence risk assessment and management.

Introduction

Risk is the likelihood of behaviour that may be harmful or beneficial to oneself or to others. Risk assessment involves analysing potential outcomes of this behaviour; risk management involves devising a plan to minimize harmful behaviour and maximize beneficial behaviour (Callaghan, 2015).

Despite progress in the care and treatment of mental health problems, the worldwide prevalence of violence directed at self or others remains high in mental health settings. Subsequently, the last 20 years has seen increasing attention to risk assessment and management in mental health using professional clinical judgement, the application of actuarial measures, or a combination of both.

The aim of this paper is to examine violence risk assessment and management in mental health. In particular, the authors examine the use of actuarial measures and clinical judgement and the combination of both in risk assessment and management and consider empirical, epistemological and conceptual challenges in risk narratives. Our focus is on the process of risk assessment and management. We are less concerned with interventions to reduce, minimise or manage violence; this is well covered in the literature, but do consider what role risk assessment and management processes have on this.

The prevalence of violence in mental health

Violence remains a problem in mental health settings in different parts of the world. Prevalence data show violent events per 100 admissions per month range from around 9 in Italy to 460 in Norway; Sweden, the UK and Australia report the highest proportion of

patient-related incidents; the lowest rates appear in Germany, Israel and Italy (Bowers et al, 2011).

Violence rates in the National Health Service (NHS in England in 2015/16 showed the number of assaults increased by around 5% to 70,555 involving 1.34 million staff with 53 assaults per 1000 staff. Of these incidents, the vast majority, 46107, were in mental health units with 191 assaults per 1000 staff – almost four times more than the average across all settings (NHS Business Services Authority, 2016).

The 2016 UK National Confidential Inquiry into Homicide and Suicide in people with mental illness (University of Manchester, 2016) reports 870 (11%) of homicides in the UK were by mental health patients between 2004 and 2014. In the same period 18,172 of suicides were by mental health patients, 28% of whom were in contact with mental health services. These data show mental health patients are twice as likely to harm themselves as others.

The reliability of prevalence data is limited by variations in the definition and classification of violence, reported under and over estimations of incident rates, a tendency to capture more serious incidents, those directed against staff or acts of physical violence at the expense of other types, such as verbal abuse and variation in methods used to capture data from counts of reported incidents to the use of measurement scales.   Notwithstanding these limitations, they confirm a recurring pattern of violence directed at self or others that shows little sign of receding significantly, and which often has serious and alarming consequences.

The consequences of violence

Violence towards staff is an occupational and public health issue and a serious threat to health services' attempts to deliver quality care. Bowers et al's (2011) rubric derived from a thematic analysis of the consequences of violence identified that staff suffer a

range of physical injuries and psychological symptoms and experienced a range of behavioural outcomes such as increasing their use of tobacco and alcohol, strained family relations, attended counselling, and resigned their job. Consequences for patients included the imposition of restrictive practices or being transferred to other services, including jail and being prosecuted, often leading to criminal conviction.

In sum, the worldwide prevalence of violence towards self and others in mental health settings remains high with significant consequences for staff, organisations and people using services. Risk assessment and management are crucial processes through which services seek to prevent, minimise or manage violence (Yang et al, 2011) and is a key feature of national and international guidelines (National Institute of Health and Care Excellence, 2015; World Health Organisation, 2010). Data from the International Risk Survey (Singh et al 2016) show that 2135 respondents in 44 countries across 6 continents reported using risk assessment instruments in the previous 12 months.

Violence risk assessment and management

Risk assessment is a widely-used method of seeking to predict future violence with a view to preventing and minimising its occurrence and managing people whose behaviour is deemed harmful (Singh et al, 2011; Yang et al, 2010). This approach is referred to as the assessment-prediction-intervention model (Yang et al, 2010). Risk assessment generally takes three forms: unstructured clinical professional judgement is a process whereby a healthcare professional uses his/her clinical judgement to decide on the level of risk. Actuarial measures are specially developed scales offering the possibility of making accurate risk predictions. Structured clinical professional judgement is the use of actuarial measures to supplement professional judgement (Roychowdary & Adshead, 2014). All three methods are used in many parts of the world with most mental health communities increasingly relying on structured professional judgement (Singh, et al, 2011; Yang et al, 2010).

Actuarial measures allow the categorisation of risk, commonly as low, moderate or high by calculating two key statistics, the Positive Predictive Value (PPV) and the Receiver Operating Characteristic (ROC) and Area Under the Curve (AUC). The PPV shows the ratio that an actuarial measure identifies people as high risk and who are violent. The ROC plots a true positive rate on the y-axis of a graph; this refers to the measure's sensitivity against the false positive rate, which is shown on the x-axis. The AUC shows the actual predictive accuracy of the measure from 0 (no predictive efficacy) to 1 perfect predictive efficacy with an AUC score of 0.70 representing a high effect size, i.e. if a person is identified as at high risk, there is a 70% chance that the measure will identify this (Roychowdary & Adshead, 2014). Widely used actuarial measures and their predictive efficacy drawn from the two most recently published meta-analyses (Singh et al, 2011; Yang et al, 2010) show them to be better than chance (0.50) at predicting risk and similar in their predictive efficacy when using pooled AUCs.

However, the pooled AUC is limited in meta-analyses as predictive efficacy is inflated spuriously (Sjostedt & Grann, 2002), each score is weighted equally (Singh et al, 2011), and it is difficult to investigate how using continuous measures like actuarial measures influence actual effect sizes (Thompson & Higgins, 2002). More fine grained analyses using pooled diagnostic odds ratios (DOR) – the odds of a true positive versus the odds of a false positive in predicting violence – address the limitations in using AUC scores. When reporting DOR Singh et al (2011) found major variations in the predictive efficacy of different measures. Both meta-analyses, i.e. Singh et al (2011) and Yang et al (2010) showed that the predictive efficacy of actuarial measures varied depending on gender, type of violent behaviour, outcome, pattern of violence and severity.

AUC scores may predict the likelihood of harm. Given that harm to self or others linked to mental health problems may subject people to legal detention in many jurisdictions (Katona et al, 2008), there may be clinical utility in determining the number of people who need to be detained to prevent at least one harmful act, known as numbers needed

to detain [NND] (Buchanan, 2008). However, AUC scores are limited in this respect. Using NND derived from the AUC scores of a widely-used risk measure – VRAG: the Violence Risk Appraisal Guide, Buchanan found 5 people would need to be detained to prevent 1 act; with chance prediction, an AUC score of 0.50, 10 people would require detention to prevent one act of harm. Therefore, calculation of the NND using the AUC score would lend more clinical utility to risk assessment measures. The NND is thus a measure of clinical effectiveness, similar to numbers needed to treat (NNT) that is used extensively to determine the effectiveness of clinical interventions.

Risk assessment measures have several advantages: they identify factors, social support for example, and these allow clinicians develop interventions that might reduce risk (Yang et al, 2010); Budde and Schene (2004) found increasing social networks reduced harm. While risk is linked to decisions around legal detention, mental health practitioners with the powers to detain people involuntarily may benefit from access to the best available risk assessment measures. There is a growing body of evidence to suggest that service users themselves can accurately predict future risk, and that service users' self-perceptions could add predictive utility to existing measures of risk and emphasise the importance of talking to the service user about risk. There is some evidence that service users are willing and able to provide sensitive information about themselves in order to inform clinical assessment (Peterson 2011).

Even with the application of sophisticated statistical modelling techniques the relationship between risk instruments and the likelihood of future harm is essentially one of correlation, which tells us little about causation. Causation can only be tested in well-designed studies showing what factors cause harm, investigating interventions that address these factors and thus reduce the harm (Buchanan, 2008; Wong & Gordon, 2006; Yang et al 2010).

The predictive efficacy of risk assessment measures is shown to be vulnerable to the measures of actual harm being predicted (Buchanan, 2008; Dolan & Doyle, 2000; Mossman, 1994; Singh et al, 2011; Yang et al, 2010). The harm that confronts clinicians in health settings comes in many shapes and sizes from verbal abuse through threats to actual, sometimes serious, assaults (NHS Business Services Authority, 2016). If a particular measure is to be adopted routinely into practice it must be capable of addressing the different forms that harm takes in practice. It is not clear from the evidence reviewed thus far what such a measure might look like as some (VRAG, for example) focus on static predictors, others (HCR-20, for example) have dynamic/interchangeable predictors while the PCL-R is designed for a particular personality variable. Those, like the HCR-20 may have more value in general psychiatric wards.

Actuarial measures often exceed chance in their predictive efficacy (Buchanan, 2008; Singh et al, 2011; Yang et al, 2010), but so do routine clinical assessments, (Cole-King & Lepping, 2010; Roychowdary & Adshead, 2014), questioning the added value of actuarial measures. Clinical utility is a crucial issue of whether research knowledge can translate easily into practice; effect sizes, odds ratios, NNT and confidence intervals provide such measures. Rice and Harris (2005) calculated effect size equivalents for AUC scores using Cohen's (1992) d statistic – a measure of the size of the effect in outcomes achieved when comparing one intervention with another or with treatment as usual. Effect sizes are often reported as small, medium or large. In Cohen's estimates an effect size of around 0.20 is small, 0.50 medium and 0.80 large. Using effect sizes, and pooled DOR, Singh et al (2011) reported measures had more clinical utility than AUC scores show, but they do not eliminate the limitations around correlation inherent in the predictive efficacy algorithm from which the clinical utility measures originally derived.

Unlike most actuarial and other risk assessment methods, the START - Short-Term Assessment of Risk and Treatability method (Webster et al, 2009) takes a dual pronged

approach focussing on individuals' vulnerabilities to risk and protective factors that may

buffer them against the risk, or reduce it, and has been used widely. Like other actuarial

measures START has been tested in a systematic and meta-analytic review (O'Shea &

Dickens, 2014) and in a (pseudo) prospective evaluation (O'Shea et al, 2016). The

review, which was concerned largely with appraising and confirming the psychometric

properties of START, also showed it was no better than standard care when using it in an

intervention to reduce violence in a forensic psychiatric outpatient unit, showed strong

predictive validity for various aggressive outcomes and good predictive validity for self-

harm; predictive validity for self-neglect and victimization was no better than chance. In

the prospective evaluation, the authors tested the predictive validity of START against

verbal and physical aggression, self-harm/suicide, absconding, self-neglect, vulnerability

and substance misuse in a secure psychiatric setting, in particular comparing the

predictive validity of the strengths and vulnerability scales. In addition, the authors

tested the predictive effect of specific risk estimates (SREs) – low, moderate or high - on

outcomes. Overall, the results showed START predicted aggression, but no better than

other actuarial risk assessment measures. SREs predicted aggression, self-harm/suicide

and victimisation. The strengths scale was a better overall predictor than the

vulnerabilities scale, reinforcing the value of including measures of this construct in risk

assessment scales.

Conceptual issues in risk assessment and management

Actuarial measures of risk assume a positivistic ontology and epistemological framework

(Benton & Craib 2001) in which risk is understood as a phenomenon that can be

objectively observed and measured, depending on how one operationally defines it. It

assumes that 'risk' exists independently of ourselves and that our observation of the

phenomenon is value-free; the observer's perspective being irrelevant to the topic of

study (Chalmers 1999). However, social constructionists, such as Berger and Luckmann

(1967), posit that the external world makes no demands as to how it is to be described

and thus there is no single social reality; arguably, we all create or construct our own

view of the world. Furthermore, standpoint epistemologists, who grant epistemic privilege to marginalised voices (Harstock 1983), emphasise the role that power plays in the social construction of 'risk' (Kendra 2007). The discourse of risk has been used to marginalise certain social groups on the basis of their 'otherness', which is conceptualised as a perceived 'danger' or 'threat' (Lupton 2013). 'Risk' has become embodied in the 'mentally ill' person who is seen as the chief actor in creating 'dangerous' events (Coffey 2016). The construction of 'risk' thus has the potential to stigmatise and discriminate.

Previous work on 'risk' in different social settings has shown how fruitful it can be when the topic is approached as a 'social construct' (Kendra, 2007; Boholm & Corvellec, 2011), including in the field of mental health (Corbett & Westwood, 2005; Felton, 2015), where it is argued that, through the process of 'objectification' and 'othering', mental health service users come to be seen as 'risk objects' and mental health professionals as 'risk managers' (Felton, 2015). Whilst previous work has focussed on how mental health professionals construct 'risk objects' in the course of their work (Felton, 2015), there is little published work on service user perspectives in relation to 'risk' and 'risk assessment' – the work of Langan and Lindow (2004) is an exception. Thus, there are conceptual and contestable issues in the use of risk assessment and management in mental health. Other evidence also identifies significant ethical issues

Ethical issues in risk assessment and management

As we have shown above, despite the violent risk of people with mental illness being small (11%) when compared with those people who do not have a known mental illness where the risk is 89%, it can lead to involuntary detention for the former, but not the latter, despite their increased risk. Therefore, risk appraisals discriminate against the small number of people who have a mental illness and are risky, an example of preventive detention that is ethically questionable (Szmukler, 2010).

Other ethical concerns associated with risk assessment concern access to services; people assessed as low risk struggle to get treatment, (Large et al, 2008). Risk appraisals also undermine people's choice of treatment as the result arising from the assessments might be imposed against the will of the person (Mossman, 2006). Risk assessments often disrupt professionals' attempts to work collaboratively with people seeking mental health care (Langan, 2010) and, create tensions for health care professionals attempting to choose between the wellbeing of the individual and others (Roychowdary & Ahshead, 2014). On the basis of the limitations of the predictive efficacy of actuarial measures, it is ethically dubious to subject people to interventions with limited benefits, a point the World Medical Association [WMA] noted in 1965 (WMA, 1965). Risk assessments can lead to serious consequences for people using mental health services, for example involuntary detention, or a false negative leading to a serious act of self-harm. Yet they are often conducted without the express consent of the service user, even when the person has demonstrable capacity. In acute care, procedures that pose serious risks often require the written consent of the patient prior to being carried out (Roychowdary & Adshead, 2014).

Service users construct 'risk' in broader terms than mental health professionals (Ryan 1998). Harm around mental health issues is linked to environmental factors such as the use of physical restraint and seclusion, overcrowding or over occupancy as it is sometimes called, staff-patient ratios, ward rules and staff characteristics like the frequency, nature and characteristics of interactions staff has with service users. Yet, risk measures seldom include such factors; they are almost without exception, individual centric. This person-centric approach helps explain why many service users do not engage with risk assessment, consider the process stigmatising and disempowering and may conceal information during risk assessment interviews to effect the least aversive outcomes to themselves (O'Rourke & Bird, 2001). A consequence of this approach is that risk assessment measures lack credibility in the eyes of many service users for whom risk is something that is done to them, rather than with them.

Mental health professionals are increasingly being seen as 'risk managers', responsible for assessing and managing the 'risk' to and from mental health service users (O'Rourke & Bird, 2001). This has three effects: first, that risk assessment practice becomes concerned only with risks for which workers will be held accountable, thereby narrowing the focus of assessments. This creates a deficit model of practice, focussing on hazards or problems with no space for acknowledging opportunities, strengths, and assets. Second, the locus of control in making decisions about whether a discussion of 'risk' will be too distressing for the service user, or whether the individual might be too unwell to engage with the process, lies with the professional, thereby fostering paternalism (Langan 2004). Third, and more importantly, service users come to be seen as 'risk objects' (Felton, 2015) – risk being embodied in the mentally ill person who is seen as the chief actor in creating dangerous events, thereby impacting on their character and identity.

Risk assessments are seldom followed by effective risk management approaches (DH, 2007; O'Rourke & Bird, 2001) other than simplistic restrictive methods with the least effective impact (Nijman et al, 2011). Consequently, service users have developed informal risk management strategies, but report that these are not taught by mental health professionals (Ryan 2000). Risk assessments are rarely linked to improved therapeutic outcomes, marginalise already disenfranchised groups and focus on labelling people (low, moderate or high risk), identify and control problems, but seldom resolve them through fostering recovery, for example (Callaghan, 2017; Silver & Miller, 2002). They tend to reinforce stigma by classifying individuals as risky, sanctioning society's prejudices and fear through scientific authority (Walker, 1998). Marginalised groups such as those with mental illness are further burdened as they often live in communities associated with recurrent harm and crime (Silver, 2001).

If the ultimate aim of risk assessment is to prevent, reduce and/or manage harm and improve people's safety, there are more effective means by which to achieve this desirable goal. Although the vast majority of evidence citing the 'efficacy' of risk assessment is from studies testing the predictive efficacy algorithm, several studies have tested risk assessments using controlled interventions that have better elucidated cause and effect.

Using a clustered randomised controlled trial of the effect of a structured risk assessment in nine acute psychiatric wards in Switzerland, Abderhalden et al (2008) reported a statistically significant reduction in the number of violent incidents in the intervention wards, but without matching the intervention and control wards for baseline harm levels.

As shown earlier, when utilising START in an intervention trial it did not perform better than standard care in reducing violence in forensic psychiatry (O'Shea & Dickens, 2014).

Steinert et al (2008) used an in-patient crisis intervention approach consisting of three modules: frequent observation, psychotherapeutic interventions and discharge planning in a before and after case control study in Germany and reported a 50% decrease in violent behaviours after the introduction of the crisis intervention approach.

In the largest trial of its nature, Bowers et al (2015) tested the effect of a 'Safewards' intervention over a three-month period in 31 psychiatric wards in 15 hospitals in England. The Safewards model comprised ten interventions designed to reduce conflict (including aggression) and containment – measures staff use to contain conflict - rates using the Patient-Staff Conflict Checklist as the primary outcome. Results show the Safewards model reduced conflict rates by 15% and containment events by 26.4% when compared with a control intervention aimed at improving staff physical health.

In sum, violence in mental health settings remains an ongoing concern. Overall, the predictive validity of actuarial risk assessment tools performs better than chance in predicting risk, but their clinical utility is limited, as even when combined with structured clinical judgement, there is little evidence that they reduce violence in mental health settings. Yet their reported use is widespread across all continents (Singh et al, 2016).

Interventions arising from formal risk assessments are scarce in the published literature and when tested show mixed results in reducing or preventing violence. The nature and conduct of risk assessment in mental health is cited as problematic as it often excludes people using services in the process and alienates and stigmatises them. It is often cited as a tool to inflict social control on already disenfranchised individuals and groups. There is professional sensitivity around the language of 'risk', which could be hindering service user involvement in risk assessment, even when this involvement may lead to more accurate assessments (Langan, 2004). It is time to reconsider how the process of risk assessment and management might be improved.

Enhancing risk assessment and management in mental health

A helpful starting point to enhancing risk assessment and management in mental health is to rethink the concept of risk to others. This was the focus of a Royal College of Psychiatrists [RCP] Report in the UK (RCP, 2008) and endorsed five key findings, including recognising the limitations of risk assessment. Shifting focus towards assessing risk as a 'current' situation rather than an event that can readily be predicted is recommended in the RCP report.

Further re-thinking of risk must involve overturning what Coffey et al (2016) found to be professionals and service users' 'accepted fictions'. The former is apparent from an acceptance of the uncontested validity may lead to involuntary detention. With this certainty, professionals are then less likely to involve service users in their own risk assessments, despite their willingness to do so. As a result, their autonomy is

emasculated. Approaches such as Shared Decision Making as a means of enhancing 'autonomy support' (Deci & Ryan, 2010) may enhance the self-determination of service users to participate in risk assessments.

Increasing focus on assessing service users' strengths and protective factors in risk assessments has promise and have recently become more common as clinicians and researchers depart from a deficit model of risk. The START researchers were early adopters of this approach and their work has shown these factors have greater validity in predicting risk.

Good practice in risk assessment ensures that sound interpersonal skills remain paramount. This issue is highlighted repeatedly in a British Psychological Society [BPS] Briefing Paper (O'Rourke & Bailes, 2006). Risk assessment has technical elements, especially when actuarial measures are used, jointly or otherwise with other methods. It is essential that the technical elements are not privileged over others in the process.

One way to address many of the pitfalls in risk assessment and management practices in mental health is to focus on the issue of safety. The language of safety nourishes and protects. A combined approach to safety assessment that uses individual self-perception, actuarial measures and sound clinical judgement may be helpful. Evidence-based interventions that minimise, prevent or eliminate harm and promote safety are warranted.

Re-framing narratives from risk to safety may seem at odds with a recovery-focussed approach, but such an stance could help transform risk assessment in several ways. First, it could lead to an end of the stigmatising language of menace and threat around risk as it becomes re-defined in terms that are meaningful to the service user. Second, a collaborative approach focussed on shared decision-making that seeks to enhance autonomy support may foster a spirit of openness in which the 'accepted fictions' to

which professionals and service users seem prone might dissipate, and create an open dialogue around risk, free of threat. Third, a recovery-focussed approach may be more conducive to active service user engagement in the risk assessment process as it may create a 'fusion of horizons' (Wright et al, 2011) whereby two parties with different standpoints based upon their particular backgrounds clash. In the risk assessment dyad, the powerful, knowledgeable professional and the disenfranchised service user can lead to prejudice and bias. The fusion occurs with a reconciliation of the differences; both acknowledge their different fictions and 'fuse' an alternative narrative that nurtures and protects rather than threatens.

We have identified the limitations of actuarial approaches to risk assessment, the focus of which are testing *risk factors*. But risk is a complex business with numerous interacting factors. Improvements in the use of such approaches might benefit from the use of electronically derived *risk algorithms* to assist health and social care professionals, service users, their carers and their respective agencies in making more accurate safety judgements. This recommendation arose from Franklin et al (2017) to overcome some of the methodological limitations in typical actuarial risk assessment studies in the last 50 years.

A collaborative, therapeutic alliance between clinicians and service users is important when conducting risk assessments. Given that discussing safety issues is a sensitive topic, it is strongly recommended that this discussion is integrated into general assessment interviews that create conditions where safety issues are discussed in a collaborative, open, transparent manner that allows service users to contribute to processes and outcomes that will identify harm and manage this harm to everyone's benefit.

Conclusions

The practice of risk assessment and management in mental health is marred by an overuse of risk assessment measures that are limited in their predictive efficacy. As a result, they have little value in preventing, reducing and/or managing harm. The language of risk punishes and stigmatizes service users and reinforces the image of menace. The language of safety nourishes and protects. A collaborative approach to safety assessment based upon recovery-focussed principles and practices may fuse professionals and service users' horizons. Combining service users' self-perception, professionals' sound clinical judgement, assisted by electronically derived algorithms and followed by evidence-based interventions, may lessen the threat to service users, reduce harm and transform the practice of violence risk assessment and management.

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