

Improving mental health risk assessment using web-based decision support

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Researchers have created a web-based decision-support system that can help frontline NHS staff to recognise risks to patients with mental health problems. Christopher Buckingham explains.

NHS policy¹ emphasises the need for early identification of mental ill health and the associated risks of suicide, self-harm, harm to others and self-neglect. All these risks are linked to a high prevalence of undiagnosed disorders and hence unmet psychiatric needs. They can be reduced by more effective dissemination of mental health knowledge to the general public, and to the frontline agencies where people often present, such as the criminal justice system, social services, emergency services and primary care. This requires sharing information about what constitute mental health risk factors, how to recognise them and what to do about them at an early stage to ensure timely help is given.

Developing GRiST

At present, assessing risks associated with mental health problems is not well understood, and many different risk assessment tools are used across the UK. Joint research by the School of Engineering and Applied Science at Aston University and the University of Warwick Medical School has been addressing these issues by developing the Galatean Risk Screening Tool, GRiST, a web-based decision-support system for assessing risk. This provides advice based on the validated expertise of multidisciplinary practitioners (see box 1).

It is hoped that for service-users, the benefits of GRiST will be:

- earlier detection of their mental health problems;
- improved risk assessment experiences;
- more timely interventions;
- appropriately targeted referrals;
- the ability to use GRiST for self-assessment; and
- potential long-term improvements in mental health status and social integration.

For the NHS, the tool offers a standardised web-based approach to mental health risk management that provides a record of the information underpinning decisions and a clear explanation of how it generated the risk assessments, both of which will aid clinical governance. It also offers:

- improved dissemination of risk knowledge and expertise across disciplines and services and improved collaboration;
- better use of care resources, permitting, for example, non-professional staff such as those in the Supporting People Programme to assess mental health risks using GRiST;
- a significant training and educational resource for staff;
- improved ability to deliver patient-centred care; and
- a reduction in adverse events occurring from a failure to recognise the risks associated with mental health problems.

The most represented group of people involved with the project and wishing to use GRiST are clinicians within mental health services, but we have also received enquiries and representation from GPs, emergency services (fire, ambulance) and charities. GRiST should also have a useful role within NHS emergency departments, where people with mental health problems often present.

GRiST can be used for shared decision making and help to empower service-users. Its knowledge hierarchy and software graphically display the links between factors that relate directly to service-users and the associated risks. It can show how risks increase or decrease and help service-users identify those parts of their lives and circumstances that need most attention.

Difficulties with acceptance of computer systems

The full benefits of GRiST depend on its information technology (IT) being integrated with existing risk assessment processes, and whether it is adopted will be determined by how well it meshes with the workplace. In our market research we discovered a fear of

BOX 1: CONTENT OF GRiST

The heart of GRiST is a validated psychological model of classification² that encapsulates the way multidisciplinary clinicians classify the risks associated with mental health problems. Its creation was conducted in two stages: the first one identified the low-level risk data or “cues” that can be recognised and recorded by people without a mental health background; the second quantified the relationships between these cues and their associated levels of risks. Both stages involved eliciting knowledge from a panel of mental health practitioners representing a range of disciplines and backgrounds. A panel of service-users was involved in a parallel process to help validate the emerging knowledge and ensure it incorporated their perspectives appropriately.

The result of the first elicitation stage was a hierarchical model of mental health knowledge that defines how top-level risks like suicide are composed of underlying subconcepts, such as depression, which are themselves deconstructed right down to the fundamental cues used to assess them. For example, one of depression’s most important subcomponents is hopelessness, involving cues such as “having no plans for the future” and “feeling life is not worth living”. Almost anyone would be able to identify these cues if they listened carefully enough.

The second stage of developing GRiST provided mechanisms for quantifying risks associated with a service-user’s pattern of cues. GRiST can display precisely how mental health experts assess low-level cues and evaluate their impact on the top-level risk categories.

implementing changes, particularly those involving IT, despite dissatisfaction with current risk assessment processes across health- and social care. Clearly, any reorganisation is a major undertaking that must incorporate the views of those who will be most affected by it. GRiST hopes to get over this by offering a flexible system. For example, its software allows assessors to gather service-user data in any order. The focus of enquiries is guided by what is termed the “hierarchical” structure of the software, effectively a tree structure where the trunk is the top-level risk and its branches are subcomponents of the risk (eg previous risk episodes), which continue to branch out until they reach the leaves, which represent the service-user cues. Users can navigate the tree and if one of the branches is selected, such as previous episodes of attempted suicide, then all the questions associated with it are displayed in a window alongside. The assessor has complete control over when to provide GRiST with any particular pieces of data. Risk quantifications associated with the current set of data can be generated throughout the assessment, causing the leaves and branches to be coloured according to the level of risk. It highlights those data and risks that are of most concern and helps direct assessors to the issues that should be explored next.

Hence, GRiST can be used both within and outside mental health services, by people in frontline agencies and, with suitably adapted interfaces, by the general public.

Communicating across boundaries and NPfIT

The objective for GRiST is to straddle different services and ensure the seamless transference of information between them. To do so, it needs to overcome two perennial problems. One is the difficulty in communicating across service boundaries, especially when there is no integrated electronic risk management system to help. The Connecting for Health National Programme for IT (NPfIT) has recently focused minds on how this can be resolved. It is attempting to ensure patient data is nationally available in a standard format that can be understood wherever a service-user presents. Currently, mental health IT systems are acknowledged as “rudimentary”¹, lacking sophisticated data collection or decision-support functions, and unconnected with outside systems. It was a concern for NPfIT’s mental health risk data subgroup, charged with recommending the format for recording risk data on what is termed the national data “spine”, that there is a lack of any standards either for what information is collected or how it is stored. This means national recommendations could be difficult to comply with locally, potentially causing non-cooperation.

The second related problem is the lack of a universally comprehensible risk language. This not only affects communications across IT systems, but is also an important issue in sharing risk information with patients and carers.

GRiST can provide a vehicle for resolving both problems. Its advice is grounded in psychological processes intended to be intuitively understood, and thus not wedded to particular professional hierarchies or clinical disciplines. Coupled with its universally available web-based resources, its mental health expertise can be made accessible to all interested parties, including the general public (using controlled access and ensuring full data security and confidentiality).

GRiST accords with recent NHS policy concerning mental health promotion, based on choice in how service-users manage their own long-term health problems, with swifter access to specialist expertise closer to home. This will be further enhanced by GRiST’s potential influence on workforce deployment, supporting non-professional staff and carers in undertaking risk assessments in the community, thus freeing up professional staff for more contact time with service-users³. Specifically, GRiST implements NHS policy designed to increase risk

KEY POINTS

- Recognising mental health risk factors is vital to ensure timely help is given and to avoid adverse events.
- A web-based decision-support tool has been developed that provides advice based on practitioners’ expertise.
- The tool can be used by frontline NHS staff in a variety of settings – from mental healthcare to emergency departments and primary care.
- The tool is being piloted so as to fit in with the reality of everyday practice.

assessment competence throughout the mental health workforce, as well as among frontline professionals who do not have a mental health background¹.

Minimising workplace disruption

At the time of writing, GRiST has two data-gathering tools freely available on the project website, one for use within mental health services (currently being piloted) and the other for frontline services. Software for collecting service-user data and providing comprehensive risk assessments is fully implemented and the aim is to pilot the complete web-based decision-support system over the next year. If GRiST is taken up, it will maintain a database of service-user information and associated mathematical tools for analysing it that will complement and help validate its existing expertise.

Whether GRiST, or any other mental health IT system, is adopted will partly depend on how the role of IT is perceived within mental health services. However, NPfIT will be making increasing demands on the storage and communication of health data, including that pertaining to risk, and trusts will inevitably need some form of electronic risk-data handling if they are to comply.

A major concern will be the possibility that IT systems cause an increased workload. In theory, they should not, because there will be less paperwork and data handling. In practice, new systems increase workload until they are understood and accepted. To minimise this, we must ensure that systems meet the requirements of clinicians, rather than forcing clinicians to meet the system’s requirements.

A key objective for piloting GRiST will be to ensure that its flexibility is fully exploited to minimise workplace disruption and maximise efficiency; we would welcome any readers who might be interested in helping with this (see www.galassify.org/grist). It will involve determining whether the software simulations are effective in their explanations of how risks accumulate from service-user cues and that they enhance communications during assessments in practice. We are hopeful that this has been achieved because GRiST uses a psychological representation of risk assessment that was intended to ensure advice and explanations resonate with ordinary thinking processes. These intuitive qualities mean it is ideally suited for use within the assessment process, and the upshot should be risk assessments that improve clinical governance and the experiences of both service-users and their assessors. HCRR

References

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