HEALTH PSYCHOLOGY
Supporting staff to deliver safer patient care using evidence based approaches
Introduction

Patient Safety and Health Psychology
Applying knowledge of psychology, including theories about behaviour, can help to increase our understanding of how to improve patient safety. Health psychologists apply psychological theories and research to the improvement of patient safety in many different health care contexts. Health psychology theory can help explain behaviour, for instance, by identifying the impact that attitudes, beliefs and perceived control have on intentions and subsequent behaviour, using the Theory of Planned Behaviour (TPB), which underpins much of this work.

This document presents case studies of work which have been carried out in the Psychology Directorate at NHS Education for Scotland (NES), and their relevance for improving health care. These examples clearly demonstrate the ‘added value’ of adopting a psychology-based approach.

What does a health psychology approach add?
- Use of rigorous, mixed methods background work to inform interventions.
- Developing interventions to change behaviour, using an evidenced, theoretical approach.
- Using evidenced assessment techniques for feedback/improvement cycles.
- Tailoring work to develop understanding of individual differences in different contexts.

Patient Safety at NES
The work featured in these case studies is part of the Patient Safety Initiative within NES. Much of this work incorporates a ‘human factors’ approach as it is well recognised that this can promote better and more efficient health care, as well as help to reduce the incidence of error and thus minimise unintentional harm.
Human Factors

One definition of human factors often used is: “Ergonomics (or human factors) is the scientific discipline concerned with the understanding of interactions among humans and other elements of a system, and the profession that applies theory, principles, data and methods to design in order to optimize human well-being and overall system performance” (IEA, 2015).

Or alternatively, in relation to healthcare: “Enhancing clinical performance through an understanding of the effects of teamwork, tasks, equipment, workspace, culture and organisation on human behaviour and abilities and application of that knowledge in clinical settings” (Catchpole 2010).

Put more simply, it’s about “making it easy to do the right thing”.

A human factors approach can enhance the performance and wellbeing of NHS employees as well as benefit the organisation as a whole.

Benefits of a Human Factors approach

‘Human factors’ focuses not only on the individual, but considers the whole system, reducing the tendency to place blame on a single employee. Using a human factors approach can help identify changes that need to be made at multiple levels (e.g. at the team and organisational levels) as well as structural changes (e.g. to workspace and equipment) to enable safe task performance and safer care.

For example, rating scales incorporating non-technical skills (NTS), are a sub-component of human factors (including concepts such as communication, teamwork and leadership), and have been developed and used within acute care settings to enable structured assessment and feedback for staff and trainees, with the goal of improving task performance.

This booklet provides examples of 5 theory driven research projects, which have integrated a human factors and health psychology approach. They also include interventions and training for staff in using behaviour change techniques, which will improve both clinical practice and patient safety.

Hand Hygiene

A pilot study examining the predictors of final year medical students’ hand hygiene practices within a simulated healthcare setting.

Hand hygiene (HH) adherence amongst medical staff is a key behaviour that impacts on Healthcare Associated Infection (HAI) rates. However, adherence is not always equal across NHS staff groups, with nurses and allied health professionals achieving 97% adherence, and medical staff adhering 92% of the time (Health Protection Scotland). Therefore, we undertook a project to investigate why HH practices in doctors may be less consistent than that of nurses and other healthcare professionals.

Health psychology theory was used to investigate the attitudes, beliefs and practices of senior medical students in their final year of training at Dundee University.

We used a mixed methods approach and students were invited to complete a questionnaire based on the Theory of Planned Behaviour (TPB) and the Theoretical Domains Framework (TDF, and BALHHI). Results were then mapped onto a human factors model (SEIPS).

In order to add context to the questionnaire results, we also carried out semi-structured ‘Think Aloud’ interviews where students talked about their HH performance during a clinical based ward simulation exercise (WSE). This method allowed not only an objective observation of HH practice during simulated patient care, but also provided insight into the students’ thought processes in relation to their behaviour during the exercise.
The study showed that:

- Knowledge of HH was high and the questionnaire showed high self-reported HH intentions and behaviour.
- Under simulation, human factors sometimes interrupted adherence to standard clinical HH practice.
- The Think Aloud study highlighted that cognitive load, stress, clinical decision-making and risk assessment dramatically interfered with intended HH compliance.
- This suggests a potential ‘intention-behaviour’ gap existed between self-reported HH practices and actual behaviours within the context of the WSE and that individual human factors can play a role to promote hand hygiene behaviour.

The use of health psychology theory, coupled with a human factors approach supports the need for future development of training interventions to improve and sustain adherent hand hygiene behaviour in the clinical environment, particularly amongst doctors.

Further research is now being undertaken with other clinical skills units from Scottish university medical schools which will further enhance this work.

World Health Organisation – 5 Moments of Hand Hygiene

“Just the thought that someone’s really unwell; I need to get to them as quickly as possible, and I definitely do know that washing your hands is important but it’s … I think it’s a task that’s quite easily forgotten in the scenario of someone being really unwell and you just want to get there and do what you can do quickly”

(Quote from Participant 3)
Medically Unexplained Symptoms

Using health psychology to inform the development, implementation and evaluation of a training programme for GPs working with people with Medically Unexplained Symptoms (MUS)

In 2012 under the Scottish Patient Safety Programme (SPSP) agenda, clinical and health psychologists within the NES Psychology Directorate were tasked with developing training to meet the complex needs of people with MUS (e.g. chronic pain, chronic fatigue). The purpose of this training was to:

1. Provide GPs with the confidence and skills to manage this group of patients within primary care, where appropriate, thus avoiding potential iatrogenic harm associated with repeated secondary care referral and investigation.
2. Enable the person with MUS to self-manage their condition, supported by their GP.

Training was developed based on a ‘four systems’ approach, which outlines the way symptoms, mood, thinking and activity may interact to maintain the patient’s symptoms. The training was piloted with GPs to encourage them to develop a shared understanding of their patients’ symptoms, enabling them to manage these patients within primary care. It was delivered via: 1. An interactive online module; 2. Practice-Based Small Group Learning.

Emphasis is placed on getting a balance between physical and psychological factors, using information from the patient’s experience in a productive and therapeutic manner. Throughout, emphasis is placed on reducing the ‘resistance’ that can develop in a consultation when views opposed to the patient experience are presented, based on a motivational interviewing approach.

Health psychology theories of behaviour change informed the implementation of the training approach and its subsequent evaluation. To support the implementation of the approaches within the training, GPs were encouraged to form ‘implementation intentions’ with specific patients (e.g. the next time Mary comes into my practice with back pain then I will...). The Theory of Planned Behaviour (TPB) was used to identify the impact of the training on GPs’ attitudes and behaviour towards referral and their subsequent referral intentions.

Benefits of the training

Evaluation of the training, suggests there were significant improvements in:

- The likelihood of managing these patients within primary care, rather than referring to specialist services for further investigation.
- Familiarity with and confidence in using the strategies within the training.

This work has implications for future educational interventions targeting the management of people with MUS within primary care, including the use of specific consultation skills with people with MUS.

“I think it’s [the resource] good because it could make patients think a bit differently about things and makes you take a slightly different approach” (GP NHS Ayrshire & Arran)

“I think we were doing some of the stuff informally already, but it was quite helpful to have a way of recording it for the patient and for them to be able to reflect on what they’ve been told about their symptoms and their symptom patterns” (GP NHS Greater Glasgow and Clyde)
Mental Health

Human factors and restraint events within mental health settings

NES health psychology team were invited to work with the Scottish Patient Safety Programme in Mental Health (SPSP-MH) as part of the Restraint & Seclusion work-stream development group and contribute to its overall aim of helping to reduce harm to those using mental health services.

Phase I: A feasibility study was devised to investigate the potential relevance and role of human factors in instances of restraint in acute mental health settings and to explore how human factors in particular could be used to improve patient safety and reduce harm to patients, staff and others.

A human factors approach can explain the interaction between tasks, team, environment, systems, tools and technology as well as individual factors – which is useful in terms of highlighting potential areas for service redesign and quality improvement for NHS Health Boards. The Theoretical Domains Framework (TDF) was used to collect data from three different sources (literature review, NHS restraint data and expert consultation). These findings were used to create a taxonomy that incorporated human factors categories.

This taxonomy outlines the various drivers influencing potential harm in incidences of restraint, and includes the following categories, themes and sub-themes:

Phase II: This work has laid the foundations for further projects. In particular, it has informed work focusing on cultural human factors which may reduce incidences of restraint, and overall harm, shifting from individual factors and a ‘blame’ culture.

A human factors based significant event analysis approach, through the use of a ‘restraint incident learning tool’, is being trialled. This tool can be used by a department or team to structure a group based ‘review’ or ‘learning session’ when a restraint, or similar incident has occurred. This tool will serve to uncover not only what happened, but why it happened, in particular what human factors may be impacting on behaviour. A human factors approach ensures that learning can take place at all levels of the organisation, promoting a strong patient safety culture.
Renal Aseptic Technique

A human factors approach to decreasing risk of blood stream infection in renal dialysis.

Background

Invasive procedures can introduce germs that cause infection. Patients requiring haemodialysis for kidney disease are at serious risk of blood stream infections (BSI) due to frequent medical invasive procedures (e.g. cannulation) that allow the bloodstream to be connected and disconnected to a dialysis machine. NHS Greater Glasgow and Clyde (GGC) performs over 54,600 cannulations per year via 11 renal units, and so it is crucial that procedures in ‘aseptic technique’ (AT) are performed correctly and consistently to prevent BSI. The health psychology team worked in partnership with the NES Healthcare Associated Infection (HAI) team and NHS GGC to examine potential barriers to, and enablers of this crucial staff behaviour in order to improve patient safety.

Approach

To understand the nature of the problem, data was collected from staff focus groups, questionnaires and direct observation of AT by a clinical expert practitioner. This process, called triangulation, helps increase the validity of results. The focus group topic guide and questionnaire were based on health psychology models of behaviour change (Theory of Planned Behaviour, Theoretical Domains Framework) and the results were mapped onto a human factors model and analysed to provide an indication of the human factors relevant to the practise of AT.

Findings

Awareness of AT was high amongst the staff surveyed, but there was a significant difference between awareness of connection versus disconnection procedures. Perceived barriers to good performance were low. However, despite the majority of nurses believing that they ‘always’ practised AT, independent observations highlighted that certain steps were not always performed correctly.

Focus group interviews in 3 renal units highlighted potential barriers to AT in ‘person’, ‘task’, ‘tools and technology’, ‘environment and organisational factors’, such as the increased number of elderly patients who have multiple health conditions, ‘time pressures’ caused by staffing levels and ‘patient behaviours’. Increased interruptions during AT procedures due to these pressures and increased cognitive load resulting from clinical risk decision making all have the potential to impact on the successful completion of the task.
Moving forward
NES HAI education will now focus on reinforcing consistent messages across clinical procedures to increase adherence to all steps. Behaviour change interventions to improve staff and patient hand hygiene behaviour as well as staff stress management are recommended. Further investigation using task analysis would unpick the specific impact of human factors on AT behaviour in different ward systems and environments (e.g. from inpatient/outpatient settings and different units).

“Since the patients that we have are now much older and frailer, that has an extra stress because nearly every session one of the patients will be ill, you’ll have to try and get medical staff”
(Focus Group 6)

“You’ve got the time pressure that if you don’t get (the patient) on in time (to the machine), you won’t have time to complete the treatment... so you’re constantly looking at the clocks”
(Focus Group 2)

Rural and Remote Pre-Hospital Emergency Care
A health psychology informed approach to improving the non-technical skills (NTS) of rural and remote pre-hospital care responders during emergency situations
Most rural/remote practitioners manage serious illness and injury on an infrequent and unplanned basis. The need to have and maintain the relevant knowledge and technical skills (i.e. knowing how to medically treat a casualty’s condition) to resuscitate and stabilise a seriously ill patient is well recognised. Effective pre-hospital care (emergency care that takes place outside of a hospital) also necessitates a high level of other skills such as decision-making, and teamwork, referred to as non-technical skills.
Research suggests that even a high level of technical skill is insufficient to ensure adverse events are avoided during crises, thus NTS are crucial for ensuring optimal care is provided. For instance, technical skills may enable a person to secure a casualty’s airway, but their NTS would enable them to know when to insert that airway and which approach they should use to secure the airway.
Phase I

A health psychology informed patient safety behaviour rating scale (IMCBRS) featuring NTS, was developed for use within training courses and other resources for remote and rural practitioners. The IMCBRS was developed based on consultation with experts, a literature review and observation of an Immediate Medical Care (IMC) course. The scale features ‘situation awareness’, ‘communication and teamwork’ and ‘decision-making and leadership’.

The rating scale was tested at IMC courses to see whether its items were observable. Questionnaires were also completed to identify factors (attitudes, beliefs and intentions) that influence use of NTS within an emergency.

Items from the IMCBRS were observed 28-62% of the time, with ‘communication and teamwork’ skills demonstrated least often. Factors that influenced use of these skills included believing that colleagues would use them, as well as their perceived relevance during an emergency.

Phase II

Training for BASICS trainers

Training incorporated behaviour change techniques (BCTs) to enable trainers to encourage candidates to use NTS during the course. BCTs are the smallest components of behaviour change interventions that on their own can bring about change. Example scenarios were included to show how BCTs could be incorporated into the training (e.g. instructing trainers to encourage a struggling candidate to problem-solve what actions they should take).

Trainers were observed and rated during the course by a health psychologist to identify their use of BCTs within their training. A significant increase in the use of BCTs by trainers was noted following the training.

Training for BASICS IMC course candidates

Training was developed based on the content of the IMCBRS and embedded within IMC courses. The training provided information about NTS, highlighting their relevance to pre-hospital care and encouraged candidates to employ them by including BCTs (e.g. asking them to plan what they would do if a certain approach wasn’t working). Case studies were included to provide examples of how NTS can be used in practice.

Final scenarios were filmed and rated using the IMCBRS to identify the use of NTS by candidates. A significant increase in the use of some NTS was noted, including those relating to communication and teamwork.

Conclusion

Use of health psychology theory alongside a core set of BCTs to inform training focusing on use of NTS within rural and remote settings may improve use of NTS, which may have implications for their use in emergency situations and thus patient safety.

This project was carried out in collaboration with BASICS Scotland
References:


Contact us:

For more information about health psychology or any of the case studies listed in this booklet, please contact us at psychology@nes.scot.nhs.uk

See also, Health Psychology at NES: Improving physical health in Scotland. (NES Leaflet, March 2015)

Other resources:

NES Psychology
http://www.nes.scot.nhs.uk/education-and-training/by-discipline/psychology.aspx

NES Patient Safety and Clinical Skills

Human Factors
http://www.iea.cc/whats/index.html

Scottish Patient Safety Programme
http://www.scottishpatientsafetyprogramme.scot.nhs.uk/programmes/mental-health

BASICS
http://www.basics.org.uk/

NES Healthcare Associated Infection