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Title

Multidisciplinary team perception of games-based therapy in critical care: A Service Evaluation.

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Games-based therapy in critical care.

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Abstract

Background

As survivorship following critical illness improves, there is greater focus on maximising recovery. As well as physical effects, critical illness often results in cognitive impairments such as delirium, anxiety, or disorientation. In other populations, such as dementia, non-pharmacological approaches to manage these conditions are preferred, including re-orientation and ensuring personal care needs are met. Cognitive rehabilitation is also well documented for patients with neuropsychological deficits. Treatments include memory aids, compensation strategies and functional execution. In other hospital populations, games and activities have been utilised to optimise patient engagement, stimulation and aid recovery but it is considered an emerging therapy in intensive care.

Aims

This service evaluation aimed to gather multidisciplinary team members’ perceptions of the use of games-based therapy GBT in critical care, including patient engagement and acceptability in clinical practice.

Study design

A UK-based single centre qualitative service evaluation.

Methods

Purposive sampling was used to identify interviewees within an adult intensive care who had experience of using a recently implemented GBT intervention. Qualitative data were collected through semi-structured interviews which were recorded and transcribed verbatim. Data were analysed using thematic analysis.

Results

Eight staff members across the multidisciplinary team were interviewed. One overarching theme of Humanising Healthcare was identified, with three sub-themes of Enhancing Recovery, Non-Physical Components of Care and Bespoke Tailoring. In addition, further recommendations for development of the service were summarised.

Conclusion

GBT was well received by staff in clinical practice. It was described as a supportive adjunct to traditional care and rehabilitation, enhancing staff-patient relationships. Whilst it was recognised it may not suit all patients, GBT has the potential to enhance cognitive and physical recovery.

What's known:

- Non-pharmacological strategies should be considered as first line treatment of delirium and non-physical morbidity.
- Low fidelity, recreational activities have been utilised in the general inpatient populations to stimulate cognitive function.

What the paper adds:

- In our service evaluation, staff described the use of games based therapy as facilitating humanisation of critically ill patients.
- Staff also identified the potential for games based therapy to aid optimisation of recovery from critical illness in terms of non-physical morbidity and can contribute to physical rehabilitation.

Introduction

As survivorship following critical illness improves, there is greater focus on maximising recovery [1]. Critical illness often results in both physical and cognitive impairments such as delirium, anxiety or disorientation [2,3]. Delirium is commonly exacerbated by environmental factors including sleep deprivation, noise levels and lack of cognitive stimulation[4]. Critical care nurses support patients' care needs at the bedside, ensuring patient centred care and advocating for the patient across the multidisciplinary team (MDT) [5]. They are pivotal in readily recognising changes in patients' clinical status. Critical care physiotherapists work closely with the nursing team to deliver respiratory care and early mobilisation[6], whilst occupational therapists concentrate on cognitive and functional rehabilitation. Together, the MDT aims to optimise biomedical care, restore function, and enhance patient experiences. It is widely recognised that non-pharmacological approaches are the first line to manage delirium by improving cognitive function through cognitive stimulation, memory rehabilitation, orientation and neuropsychological rehabilitation; and specifically improving functioning capacity for patients, such as activities of daily living [7].

In particular, multi-component non-physical interventions were effective in preventing delirium in older patients with focus on staff education and re-orientation protocols [8]. A study inclusive of adults 70 years and older admitted to hospital used orientation and therapeutic orientation as components of an extensive model of care to prevent cognitive decline; but identified this does not need to be undertaken on a dedicated generic unit [9]. Cognitive rehabilitation is also well documented for patients with neuropsychological deficits. These deficits affect memory, attention, spatial perception and language; commonly in patients with stroke or traumatic brain injuries. Traditional treatments include memory aids and compensation strategies with more recent focus being on the transition into functional execution[10–12] . Similar clinical presentations can be experienced by patients during and following critical illness. Few studies have explored recreational games-based therapy (GBT) style interventions. Within ICU, physiotherapists have used interactive video games to optimise balance and endurance, and this is deemed safe[13,14]. In geriatric settings the provision of board games has been shown to be cognitively stimulating and reduce depression[15]. In other hospital populations, games and activities have been utilised to optimise patient engagement, stimulation and aid their recovery but it is considered an emerging therapy in intensive care. To our knowledge, the use of non-technological activities has not previously been evaluated in ICU.

Aims

This service evaluation aimed to explore multidisciplinary team members' perceptions of the use of GBT in critical care, including patient engagement and acceptability in clinical practice, to inform future development of the intervention.

Design and methods

To ensure transparency, this service evaluation was reported following the Standards for Quality Improvement Reporting Excellent (SQUIRE) guidelines along with relevant aspects of the Consolidated for Reporting Qualitative Studies (COREQ) guidelines in reference to the qualitative approach taken for this project.

Setting and sample

This service evaluation was conducted in the Adult ICU of a large tertiary referral centre in the UK, admitting patients with medical, surgical and trauma specialities.

Purposive sampling was used to explore the knowledge and experience of those with exposure to GBT[16]. To optimise data richness[17], it was important to understand the thoughts of those who had direct engagement or observation. Therefore, participants from across the MDT were sought. Staff were eligible to participate if they were a member of the ICU team where the service evaluation was based, and had experienced the GBT intervention in clinical practice.

Although no absolute guidelines on qualitative sample sizes exists, guidance suggests a sample of six to ten participants as potentially sufficient for a small, focused single site study[18]. In addition, it was intended that data collection would cease when no new codes were generated for staff interviews. Whilst data saturation is not truly aligned to thematic analysis methodologies, this allowed for a general assessment of the sufficiency of the sample[19].

Trustworthiness

Several approaches were taken to ensure trustworthiness during this project[20]. In conducting qualitative interviews, it is important to consider reflexivity[21]. EK was a critical care physiotherapist seconded to a split clinical and research role at the time of data collection. SV is an experienced critical care nurse researcher who has experience of clinical practice and has a wealth of research training. Researchers provided written reflections after each interview, including observations on rapport, circumstances during the interview and any potential biases. As EK worked directly with all the interviewees, SV conducted three of the interviews with the therapy team, offering an 'outsider' perspective with the aim of ensuring staff felt able to talk honestly about their experiences of GBT[22]. Furthermore, multiple researchers in collecting and analysing the data, and regular team meetings to discuss developing themes and acknowledge potential sources of bias, added to validity of the results. Furthermore, concurrent data collection and analysis allowed identification of data saturations, when no new codes were being identified during analysis.

Intervention

The GBT intervention consisted of jigsaw puzzles, word searches, colouring books, small games and activity cards. The implementation of GBT was promoted through posters, e-mail communication and informal MDT education sessions on the unit. The GBT activities were stored in an accessible location on the ICU and the multidisciplinary team were encouraged

to use them independently. All activities were wiped down with appropriate clinical wipes following use. There were no formal pre-requisites for the patient selection for GBT, but from a practical perspective, they needed be alert and be able to engage. Patients identified as suitable for the therapy were commonly experiencing boredom, symptoms of delirium, and had prolonged ICU stays.

Data collection

Semi-structured interviews were conducted to explore staff experiences of GBT. Use of a topic guide allowed exploration of key questions related to GBT implementation whilst allowing participants to discuss what was important or relevant to them, see supplementary material. The topic guide was developed using a five step framework ensuring methodological robustness[23]. Piper et al. (2018) advocated semi-structured interviews as a powerful tool for examining practice approaches within critical care research[24], reflecting the aim of this service evaluation.

Eligible staff were invited to participate through team e-mails, posters and approach by researchers. It was made clear that participation was voluntary. All interviews were conducted in a quiet room away from the ICU and lasted between 10 and 33 minutes. Reflexive notes were taken during and after the interviews. Recordings were transcribed verbatim and anonymised.

Data analysis

Thematic analysis was selected as the most appropriate approach for the pragmatic aims of this service evaluation, and followed the six phases outlined by Braun and Clark[25]. Thematic analysis allows for the identification of themes and patterns of meaning across the data[18]. Importantly, it is considered as an active process as the codes and then the themes are developed and refined. Analysis of interview transcripts was supported by NVivo 11 (NVivo qualitative data analysis software; QSR International Pty Ltd. Version 11). In phase one -familiarisation with the data – EK listened to and transcribed each recording. Analysis then proceeded to phase two, with EK examining a portion of the transcripts (with guidance from SV,) and assigning codes to portions of the text which identified an aspect relevant to the project aim. These initial codes were discussed between the research team and developed into a preliminary coding tree of five parent and 23 child nodes. Through peer view of the coding tree EK along with SV, OG and TJ developed and agreed on the initial themes (phase four). Coding continued for the remaining transcripts and themes were further developed,

refined and finalised within the team (phrases four and five). A report of themes and sub-themes was written by EK and SV, and refined by the whole team (phrase six).

Ethical approval

Advice was sought from the Research and Development department of the local NHS trust who confirmed this was a service evaluation requiring local registration rather than ethical board review, in accordance with guidelines from the UK Health Research Authority. The project was therefore registered locally as a service evaluation project with reference Datix 5571. Interviewees were aware participation was voluntary, and agreed in writing to be audio recorded and for the potential publication of anonymised quotes. All data analysed and presented was anonymised at the point of transcription and participants assigned reference numbers to maintain confidentiality.

Results

Eight MDT staff members across the ICU team described their experiences of the use of GBT in critical care. Half of the participants were therapy staff: (n=4), two physiotherapists, one rehabilitation assistant and one occupational therapy student whilst the other half of the sample included nurses (n=2), one nursing assistants and one medical consultant. Five staff participants were female and duration in role ranged from 2 months to 13 years. Individual participant characteristics have not been presented here to ensure anonymity.

One overarching theme of Humanising Healthcare was identified from the interviews, which described the impact of GBT on how staff perceived their interactions with patients. Three sub-themes were also identified: Non-Physical Components of Care; Enhancing Recovery; and Bespoke Tailoring. The reception of GBT and recommendations for change were also summarised to inform future service development.

Overarching Theme: Humanising Healthcare

The use of GBT was identified by several staff members as facilitating strong patient/staff relationships. Some staff members described developing a personal relationship, building rapport and recognising each other as more than purely patient and staff members, but as individuals.

‘I think they may realise as well that you are actually quite down to earth . . . not just nursing staff . . . we are people as well’ (S001, nurse assistant).

‘[Using GBT made the patient] feel a bit more human than a hospital number’ (S003, physiotherapist).

In addition, some staff members recognised GBT may offer opportunities to engage with the patient beyond their medical needs, allowing some respite from their acute caseload. In contrast, most staff members recognised limitations, and one even reported discomfort at performing the activities while their colleagues were busy. This suggests GBT was not perceived as part of standard clinical care but as an optional addition when there was time.

‘[GBT allows] your mind to shift for at least 15 minutes while you play so it’s kind of like a break while you play.’ (S005, nurse).

‘. . .it felt a bit inappropriate to my colleagues because let’s say they are doing rolls [repositioning a patient in bed] . . . and I was playing ludo with the patient.’ (S005, nurse).

By understanding the patient’s interests, several staff members described GBT as facilitating an individualised approach to patient care. This was described as being particularly useful if the GBT interventions available reassembled activities patients would perform at home and could even foster a more pleasant hospital stay.

‘you might just have that one game that they play every Sunday at home.’ (S002, rehabilitation assistant).

‘Hopefully it [GBT] will make their stay a little nicer.’ (S003, physiotherapist).

Several staff members described GBT as a method of distraction from the clinical environment, recognising ICU as a difficult place to spend prolonged time. Additionally, GBT may provide an opportunity to relieve boredom, perhaps even encouraging an element of competition.

‘It [GBT] gives a distraction, a more normalising approach to a stay in somewhere that is [as] abnormal as ITU.’ (S006, nurse).

Previous research has suggested family members visiting the bedside of their loved ones in intensive care often feel limited in the support they are able to give[26]. Some staff members described GBT as providing family members with some ownership in supporting the patient, rather than simply watching the nurse providing care.

‘I think it was also nice for them that they spend some quality time with the patient and do something different than just sit around the bedside.’ (S005, nurse).

In this theme, the performance of GBT was identified as enhancing staff/patient relationships and supporting patients to be cared for as an individual. The provision of a distraction from such a difficult clinical setting was strongly valued, offering a means of normalising the environment whilst enabling family members to contribute to their loved one’s recovery.

Sub-Theme: Non-Physical Components of Care

Staff also described implementation of GBT as improving non-physical components of care. Several staff members highlighted some environmental risk factors of critical care that can contribute to non-physical morbidity, such as artificial lighting and a lack of sleep. Most staff members recognised GBT could strongly support engagement in daytime activities to aid day and night cycles. It was perceived that enhancing daytime stimulation might aid natural sleep overnight.

‘...promoting a day and night cycle for them is important... [to] reset the body clock.’ (S002, physiotherapist).

Some staff members highlighted GBT as a useful tool in providing structure and re-orientation. Cognition can often be impacted by sedation or analgesia leading to disorientation, confusion and poor attention. One staff member highlighted the benefit of familiarity of games from childhood, which could aid in recognition and engagement.

‘The games are stuff they have grown up with . . . relatively straight forward things that they probably recognise from a long-term memory point of view.’ (S008, medical consultant)

Staff generally placed strong emphasis on GBT as a positive adjunct to minimise the risks of non-physical morbidity through enhancing daytime stimulation and enabling re-orientation. This was described as enhancing non-physical recovery from critical illness alongside physical recovery.

Sub-Theme: Enhancing Recovery

Implementation of GBT was intended to provide additional therapeutic interventions to enhance patient care and rehabilitation. Several staff considered it added to the wealth of therapeutic interventions available to patients, whilst focusing on specific aspects of recovery, such as dexterity. Some staff members suggested GBT could be viewed as a supplement to traditional therapies, with one staff member suggesting it also aided staff engagement with rehabilitation.

‘I think it prompts us to think a little bit more about other aspects of their mobility or rehab[ilitation] that we can challenge or look at.’ (S007, nurse).

‘[GBT] adds a bit of interest and that makes it more stimulating for us.’ (S007, nurse).

There was a perception amongst some staff members that GBT had the potential to be implemented as a strategy to focus on rehabilitation, and potentially accelerate recovery. It was suggested that if recovery could be optimised in critical care, this may aid patients to become more independent with self-care once transferred to the wards[27]. This has potential benefits given the well-recognised impact of the change in patient to staff ratios on wards compared with ICU[28].

In this service evaluation, staff described GBT as a positive adjunct to traditional care and therapies, optimising recovery from critical illness, whilst encompassing therapeutic aims. It was suggested this may contribute to supporting restoration of independence and improving patient experience.

Sub-Theme: Bespoke Tailoring

To optimise the success of GBT, most staff members identified the need to tailor activities to individual patients. Accordingly, there is a spectrum of patient engagement in GBT, which was recognised by most staff.

‘I had both extremes. People that didn’t want to engage . . . [and] I’ve seen patients engage really well with it’ (S002, rehabilitation assistant).

‘there is probably . . . the middle grey area... the ones that just ignore it... and ones that really enjoy it’ (S005, nurse).

The promotion of GBT was recognised by several staff as requiring specific tailoring to individual patient’s interests, abilities, and stage of recovery. Some staff members identified barriers to engagement from a patient perspective, such as negative perceptions of the activities, and identified a link with wider reluctance to engage with healthcare.

‘We colloquially think of it as childhood but could be seen as a bit paternalistic... or patronising as you are now sitting and playing a kids’ game.’ (S008, medical consultant).

‘I think often their attitude to therapy we are offering in general, often, mirrors the engagement with games, so the patients that are generally reluctant to have nursing interventions, are refusing medications.’ (S002, rehabilitation assistant).

Staff members identified several practical limitations, such as busy caseloads, and limited storage or environmental supports such as tables that would need to be overcome to optimally facilitate GBT.

‘I think storage of stuff is quite difficult as well. They cannot be [as] readily on display as you would want it to be’ (S005, nurse).

It was widely recognised that to be successful, GBT requires bespoke tailoring in terms of activity selection and therapeutic delivery. Interviewees emphasised not all patients will be willing to engage and benefit from this practice, and it may not suit everyone.

Recommendations for future development

As part of the aims of this service evaluation to explore implementation and support ongoing development, several recommendations for practice were also discussed. GBT was described as having been warmly adopted by the MDT across the ICU. In keeping with the introduction of a new tool it has been steadily developed based on feedback from users.

Looking to future development opportunities, staff members recommended refining the selection of activities to suit a wider population. Some staff recommended exploring delivery with more independence for patients and within peer groups. In addition, staff recommended formalising an educational package as part of promotion and delivery, to enhance staff understanding of the rationale and benefits of GBT. The overall consensus was positive and several staff stated they hoped GBT would be adopted as a standard aspect of care rather than a supplementary adjunct.

Discussion

This is the first study to our knowledge to explore the acceptability of GBT by the MDT for ICU patients. The over-arching theme Humanising Healthcare highlighted that despite the challenges of high acuity and pressurised nursing and therapist workloads in ICUs, GBT can facilitate individualised care and support development of strong rapport between patients and staff. Furthermore, during periods of frustration due to reduced autonomy associated with critical illness, GBT may offer some light relief and distraction for patients.

The first sub-theme identified GBT as supporting non-physical components of care with particular reference to optimising cognitive re-orientation and day and night patterns. The implications of this on recovery were explored in the second sub-theme, Enhancing Recovery, identifying GBT as providing additional interventions beyond traditional nursing and therapist approaches to rehabilitation. The third sub-theme identified the need for bespoke tailoring whereby promotion, selection and delivery of GBT needs to be individualised. It was considered GBT would suit a proportion of the patient population but may not be for everyone.

Within the theme Humanising Healthcare, developing strong rapport between staff and patients was identified as essential in promoting empathy and a sense of security for patients

during periods of vulnerability and disability. This is pivotal as the culture of intensive care has shifted from merely ensuring survival to restoring quality of life[29]. Beyond cognitive and physical recovery, patients should be empowered to restore their sense of identity[30]. These findings are echoed by Kitwood's description of person-centred care in their work with patients with dementia [31]. They state that principles of comfort, attachment, inclusion, occupation and identity which encompass the essence of care giving. In summary, Humanising Healthcare signifies the importance of patient centred care.

As part of non-physical components of care, MDT staff should undertake holistic assessments which detail physical and non-physical risks[32]. Non-physical complications can vary in severity but it is widely recognised that non-pharmacological management should be fundamental within the management package[33]. GBT is a nice illustration of how non-pharmacological management can be utilised to aid re-orientation and aid cognitive stimulation.

Within the sub-theme Enhancing Recovery, some staff suggested GBT may contribute to accelerating physical recovery from critical illness, but this would need to be further investigated in future research, and was not examined in this service evaluation. Staff also spoke positively about how GBT promoted staff engagement with rehabilitation and enhanced staff/patient interactions. It is widely documented that the acuity and highly pressurised working environment of critical care can lead to emotional stresses, and risks staff burnout[34]. The institutional environment is recognised as a component of Canadian Model Of Performance – Environment (CMOP) for patients[35] but can be extended to staff too. Therefore, staff wellbeing and satisfaction are vital to foster to a cohesive workforce and minimise turnover, and promoting therapeutic relationships between staff and patients may contribute to this[36]. If staff are invested in providing the best care and rehabilitation they can, it will contribute to supporting patients with their optimal recovery.

The importance of bespoke tailoring of activities was emphasised by several staff. Whilst trying to individualise promotion and engagement with GBT, it may also be beneficial to revisit offering GBT throughout individual patients' critical care stay. As their health stabilises, the principles of habituation and volition from the Model of Human Occupation (MOHO) may change and therefore their engagement might be enhanced[37]. The MDT staff supporting GBT need to invest thought, even subconsciously, into establishing how best to

understand what patients may be interested in and enjoy engaging with. Future development of GBT could explore the use of the MOHO Interest Checklists to support the MDT in tailoring GBT to individual patient needs. These are models of how individuals can generate and modify their occupations based on the environment and the desired action. Attention should be given to the time and use of interest checklists to establish which activities are best suited to individual patients. Consideration should be given to performance strategies such as supervised versus more independent activities; time of implementation; and enhanced education.

Limitations

There were limitations to this service evaluation. It was conducted at a single site in the UK with a relatively small sample size. Despite this, purposive sampling ensured representation of experiences from across the MDT. The sample size was considered appropriate for the aim of this service evaluation to assess local implementation of GBT. Furthermore, data collection ceased when the team agreed that data saturation had been reached, and no new codes were being generated. The research team intended to interview family members as well as staff, to understand their perceptions of GBT. However, several challenges, including the limited timeframe for data collection in context of EK's secondment, the caseload of the ICU at the time, and difficulty in identifying family members willing to participate. Furthermore, a pragmatic decision was made during the design of this service evaluation not to interview patients about their experiences of GBT. Given the high acuity and prevalence of delirium in patients most commonly eligible for the intervention it was anticipated that patients may not have been able or willing to recall their experiences within the limited timeframe of the project. However, the lack of patient and family member perspectives is a significant limitation to this work and should be addressed in future research where a wider timeframe may allow recruitment of patients at a point further into their recovery when they may be more able to engage in the research process. Finally, despite not being within the scope of this service evaluation, future research evaluating clinical benefits of GBT for recovery, impact on length of stay and cost effectiveness of GBT could be explored.

Conclusion

This qualitative service evaluation has demonstrated the implementation of a new GBT intervention as well received by staff in clinical practice. GBT was perceived by staff to

encourage humanisation of critically ill patients, and aid optimisation of recovery. In the future, it may be beneficial to refine the activities with an emphasis on physical and non-physical therapy without losing the recreational aspects. Furthermore, thought should be given the delivery to maximise successful implementation and patient engagement.

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Supplementary material

Topic guide: Staff

1. Can you tell me about your (nursing/physiotherapy/job) experience to date please?
2. Can you tell me about your experience with supporting patients +/- their families with games based therapy?

Games used Implementation

3. What do you feel the limitations or benefits of providing games based therapy are?
Patients

Relatives, Staff, Environment

4. Do you think games based therapy has influenced patient experience?
5. Do you think games based therapy has influenced patient engagement?
6. How could we further improve the implementation of games based therapy?
Different games?

Communication with implementation