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Physical restraint: experiences, attitudes and opinions of adult intensive care unit nurses

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Abstract

Background: Patients within the Adult Intensive Care Unit have the potential to develop delirium and agitation. This can result in the patient displaying unwanted behaviours such as attempting to remove the medical devices to which they are attached. Some Adult Intensive Care Unit within the United Kingdom are starting to adopt physical restraint as a method of managing unwanted behaviours.

Aim: To determine the experiences, attitudes and opinions of Adult Intensive Care nurses in relation to the application of physical restraint.

Design: Questionnaire survey

Methods: A postal questionnaire was distributed to all nurses (n=192) within two purposefully selected large Adult Intensive Care Units in the United Kingdom.

Results: Data were collected between November 2012 and February 2013. The questionnaire was completed by 38.9% (n=75) of the nurses contacted. All believed that physical restraint had a place, with the majority of the view that the reason for its application was to maintain patient safety. Some expressed discomfort around the use of physical restraint. Nurses were happy to discuss the use of restraint with families. There was a perceived need for training and support for nursing staff as well as the need for medical staff to support the decision-making process.

Conclusion: Nurses require more support and evidence to base their decision-making upon. They require guidance from professional bodies as well as support from medical colleagues. The findings have limited generalisability as they can only be applied to the units accessed and the response rate was poor.

Relevance to clinical practice: Alternative approaches such as pain management, sleep promotion and the involvement of relatives needs to be explored before physical restraint policy can be written.

Further research is required into the safety of physical restraint, alternative methods of managing the risk of agitation and identifying predisposing factors to accidental device removal.

Summary Statement

Why is this research or review needed?

- The use of physical restraint within some Adult Intensive Care settings is increasing in the United Kingdom without a supporting evidence base.
- From the literature it appears that nursing staff are the instigators of physical restraint and yet their opinions of its use not explored.

What are the key findings?

- AICU Nurses believed that physical restraint had a place and most expressed the opinion that the reason for its application was to maintain patient safety.
- AICU Nurses were happy to discuss the use of restraint with families and most had experienced a positive response from families when using physical restraint to manage agitated behaviours.
- There was a perceived need for training and support for nursing staff as well as the need for medical staff to support nurses in the decision making process.

How should the findings be used to influence policy/practice/research/education?

- As the level of education nursing staff receive in relation to physical restraint use has been questioned, further support via policy and education is required.
- Alternative approaches such as pain management, sleep promotion and the involvement of relatives needs to be explored before physical restraint policy can be written in line with evidence base.
- There is need for further research that seeks the patient and family's perspective on the use of physical restraint.

Keywords: Nurses, Opinion, Intensive Care, Physical Restraint, Survey

Introduction

An admission to an Adult Intensive Care Unit (AICU) results in a patient undergoing a number of invasive and often painful treatments (Aitken et al, 2012). To ensure this level of treatment is tolerated, sedation is administered (Nirmalan et al, 2004). This ensures comfort, assists recovery and enables treatment to be carried out in a humane manner (Metha et al, 2009). AICU patients have a high probability of developing delirium due to multi system illness, their comorbidities, age and the use of psychoactive medications (Ely et al, 2001). Managing the patient's agitation whilst preventing interference in treatment can be challenging (Cohen et al, 2002). An agitated patient can inadvertently dislodge their intravenous access lines, arterial lines and remove their artificial airway causing a great deal of harm and even death (Hine, 2007). In some situations where the risk of the patient harming him or herself is high, the AICU team are seemingly left with no option but to re-sedate the patient, which prolongs and complicates the patient's recovery (Mehta, 2007). Historically, in AICUs outside of the United Kingdom (UK), in particular America, Canada and some parts of Europe, the application of physical restraint devices has been commonplace in managing these unwanted behaviours (Hine, 2007).

The justification of applying physical restraint is often cited as an aid to reduce treatment interference whilst lowering the dose of sedation (Martin, 2002). Interestingly, countries where physical restraint is standard practice are conducting studies and generating a body of evidence to support a reduction in the use of restraint, looking towards the UK as an example of restraint-free exemplary practice (Mion, 2008). Within the UK there has been publication of guidance on the rights, risks and responsibilities of professionals using restraint in different clinical settings, including AICU by the Royal College of Nursing (RCN, 2008). In addition, the British Association of Critical Care Nurses (BACCN) published a position statement over 10 years ago on the use of physical restraint emphasising the importance of prevention, causative factors, the appropriate use of sedation and other therapeutic methods before advocating physical restraint (Bray et al, 2004). The paper stressed that nursing staff should be educated regarding the use of both chemical and physical restraint in a way that should incorporate training and competency programmes (Bray et al, 2004). The Nursing and Midwifery Council's code (NMC, 2015) stipulates that nurses need to ensure those who lack capacity are fully safeguarded and that the nurse can demonstrate they have acted in the best interest of the patient.

Research studies have yet to prove which mode of restraint, whether chemical or physical, is in the patient's best interest. The nurse has a duty of care to choose the correct, least restrictive method of restraint while ensuring patient safety, with minimal guidance to support their decision-making. The aim of this study was to establish the experiences, attitudes and opinions of Intensive Care nurses in relation to the application of physical restraint within two U.K. AICUs. The study was conducted as a component of a Masters of Clinical Research (MRes) programme undertaken at the University of Manchester.

Prior to the study a literature search was carried out via the electronic databases CINAHL, OVID and MEDLINE. The key words used were restraint and/or physical and/or intensive care and/or critical care. The search yielded 30 papers. In the literature the terms intensive care and critical care are used interchangeably and

subsequently both terms were included in the search strategy. There is a substantial body of literature relating to mental health, care of the elderly and the use of restraint however due to the specialism of the AICU environment the evidence provided by these papers is not transferable. The search was refined by filtering using only English text and only adult patients. Articles related to accident and emergency, theatres or the transfer of patients between departments were removed. This resulted in 22 related papers; only 16 papers explored restraint use directly, with the majority of papers exploring sedation practice, delirium and the accidental removal by the patient of medical devices. A further two papers were included following the review of previously selected articles. This resulted in a final total of 18 papers with dates of publication ranging from 2000 to 2012. A flow diagram to illustrate the search and selection of papers is provided below (Figure 1). As the search was limited English language publications some relevant studies may be missed. The 18 papers selected were reviewed utilising the principles outlined in the Critical Appraisal Skills Programme (CASP). CASP provides eight appraisal tools to structure and assist in judging the quality of a piece of evidence (Burls, 2009). The eight checklists provided by CASP are for different study approaches and are all based on three fundamental themes of; validity, the results of the study and the clinical relevance of the study (Burls, 2009). The appropriate CASP tool was selected to aid the review of each paper and when a specific tool was not available for the paper, the three key elements highlighted above were explored.

Insert figure one here

What constitutes restraint?

A clear, consistent, single definition of what constitutes physical restraint is lacking across the papers reviewed, with some papers failing to offer a definition. A paper that provided a definition was the Martin and Mathisen (2005) study. Physical restraint is clearly defined as, 'all patient articles, straps, bed linen and vest, used as an intervention to restrict a person's freedom of movement or access to their own body' (Martin and Mathisen, 2005 pg 134) and they stipulate that the patient bed rails were not, for the purposes of their study, classed as restraints. This definition was replicated in a national prevalence study of patient initiated device removal conducted by Mion et al (2007). They defined physical restraint as any device which was attached to the patient for the purpose of limiting voluntary movement with the explicit inclusion of wrist and chest restraints, mittens and elbow splints, as well as bed sheet whilst excluding the use of bedside rails as a form of restraint (Mion et al, 2007).. The focus of the above definitions fails to reflect the process of restraining patients via chemical means, as ensuring compliance with treatment by increasing sedation need to be acknowledged as a form of restraint. Conversely, both Hofso and Coyer's (2007) review and the study by Martin (2002) outlined restraint as a means of controlling unwanted behaviour whether by chemical or physical measures. Increasing sedation to restrict the patient movement and avoid treatment interference has been suggested as a more acceptable way of managing an agitated patient than applying physical restraint (Nirmalan et al, 2004). Patient deception has also been documented within the literature to aid compliance with treatment (Hine, 2007). Happ (2000) also proposes a third notion of restraint, that when a patient believes they are restrained then they are restrained, albeit psychologically.

For this study the term physical restraint referred to the application of restraints, which are purpose made, such as hand ties or gloves.

The emergent themes from the literature reviewed were that the use of physical restraint lacks a scientific evidence base and the benefits of its use are questioned (Maccioli et al 2003; Bray et al., 2004; Martin and Mathisen, 2005; Hurlock-Chorostecki and Kielb, 2006; Royal Collage of Nursing, 2008, Langley et al, 2011; Benbenbishty et al 2010; Kandeel and Attia, 2012). Additionally, there have been incidences across various health care settings where injury has been sustained as a result of restraint yet despite this potential risk of harm to patient, and possible ineffectiveness, the rationale for restraint use found in a number of studies was safety; preventing the removal of treatment devices or falling (Bray et al., 2004, Hurlock-Chorostecki and Kielb, 2006; Royal Collage of Nursing, 2008, Benbenbishty et al 2010; Langley et al., 2011; Kandeel and Attia, 2012). Across the body of literature nursing staff appear to be the instigators of the use of physical restraint, (Benbenbishty et al 2010, Langley et al., 2011; Kandeel and Attia, 2012) yet exploration of what opinions nurses hold in relation to the topic is lacking.

The Study

Aim

The aim of the study was to establish the experiences, attitudes and opinions of Intensive Care nurses in relation to the application of physical restraint within two United Kingdom (U.K.) AICUs

The specific objectives were:

- To understand nursing staff experiences, attitudes and opinions on the effectiveness of physical restraint as opposed to alternative methods
- To generate knowledge about nursing staff experiences, attitudes and opinions related to the potential risks involved in the application of physical restraint
- To explore the difference between these experiences, attitudes and opinions in relation to seniority, number of years' experience
- To explore if the presence of a policy and training programme influenced nursing staff experiences, attitudes and opinions.

Design

A survey design was selected, using postal questionnaires to collect the data. This method was selected due to the sensitive, ethical debate attached to the topic as this methodological approach ensures the potential influence of an interviewer removed and anonymity ensured (Bryman, 2004).

Study Sites and Sample

For pragmatic reasons two study sites in North West England were selected by non-random methods, neither site chosen was the work place of the researcher. One AICU had an established policy and education pack around the use of physical restraint. At the time of selection the other site chosen did not have a policy in place,

but implemented one prior to data collection. This still allowed exploration of any correlations between experiences, attitudes and opinions and the impact of the presence of a policy or an education package. Both departments are general, non-specialist, intensive care units within the North West of England and are the same size in relation to bed numbers (14-16 Level 3 beds available). All nursing staff (n=192) within the two departments were sent a postal questionnaire and invited to participate. The return of a completed questionnaire was assumed as consent to participate in the study. Staff excluded from the study were: non-qualified support staff, other professional groups and nursing staff not involved in direct patient care such as managers, educational staff and researchers.

Data collection

Questionnaire tools have been generated related to this topic and are used in two previous studies (Kandeel and Attia, 2013, Hurlock-Chorostecki and Kielb, 2006) however, these tools are observational, checklists being used to note the characteristics of patients who were physically restrained and questions directed at the staff relating to the practicality of the application. Additionally, they have been designed and are utilised in countries where physical restraint use is common practice and not suitable to answer the research questions of this study. Therefore, a questionnaire was developed to gather data to address the study aim.

To develop the questionnaire there was a review of the literature, which resulted in identifying several key questions. These questions formed the basis of discussion with a small focus group of expert AICU clinicians to assist with further development of the questionnaire. The questionnaire was then further refined and reviewed by an academic expert experienced in questionnaire design. The questionnaire was piloted on 10 individuals to assess the clarity of the questions and ease and time of completion.

To address the study's specific objectives the questionnaire consisted of four parts, sections A, B, C and D.

Section A asked demographic questions such as the number of years working with AICU, nursing grade/band of respondents. Data from the focus group revealed nurse demographic factors might influence the decision-making related to the use of physical restraint.

Section B asked questions relating to training and support nursing staff need plus family involvement around restraint use, with open questions providing the respondent opportunities to expand on these areas.

Section C consisted of 12 statements using a Likert-type scale to gather opinions on how decisions were made to use physical restraint, who out of the clinical team made these decisions and what other factors may impact the application of physical restraint. The respondents were presented with a series of statements and were asked to identify how much they 'agreed' or 'disagreed' with each statement.

Section D offered opportunity to comment further and respondents were given the opportunity to expand on any previous questions and had three prompt questions:

- What do you think about the use of physical restraint in critical care?

- What would be their preferred method of managing agitated patients?
- Are there any issue related to the use of physical restraint you would like to highlight?

Data were collected between November 2012 and February 2013

Ethical Considerations

Ethical approval was obtained and the study allocated a reference number for tracking purposes. The main ethical concern was that respondents might disclose poor or unsafe practice. Therefore, the participant information leaflet explicitly outlined there were limits to confidentiality. If any response revealed that there might be evidence of poor patient care this would be fed back to the manager of the department as a general issue ensuring anonymity. The need to feed this information back may have resulted in a reduction of questionnaires returned or edited responses.

Data Analysis

The quantitative data were analysed using the Statistical Package for Social Scientists (SPSS™ 20). The main purpose of the statistical analysis was to identify and measure potential associations between variables (Walliman, 2011). The level of significance was set at $p < 0.05$. Fisher's exact test was utilised to identify significant differences in the distribution of responses in relation to the respondents years or experience, nursing band and which Hospital they worked within. The cross tabulation of this data showed no comparison could be drawn and therefore the data set from this section were analysed as one

The free text comments were analysed via thematic content analysis, an approach used to analyse the content of the discursive text seeking to quantify the text into meaningful categories or themes (Bryman, 2004). Analysis of the free text comments was undertaken; each response was coded and emergent themes grouped into categories

Results and Findings

Section A

Of the 192 questionnaires distributed, 75 were returned giving an overall response rate of 38.9% (n=75) (Hospital 1: 58.7% (n=44); Hospital 2: 41.3% (n=31)). The distribution of bands of nursing, seniority and years of experience was well represented across the questionnaires returned, as outlined in table one.

Please insert table one here

For those who had noted a policy in place in Hospital 1, 78.4% (n = 29) had read all the policy, 13.5% (n=5) reading some of the policy and 8.1% (n=3) had read none of the policy. In Hospital 2, 70.4% (n=19) of participants had read all the policy, 18.5 (n=5) reading some and 11.1% (n=3) had not read the policy.

Section B

In this section the participants were asked questions which related to training in the assessment and application of physical restraint, please see table two which outlined the response to these questions.

Please insert table two here

Additional comments by respondents relating to the training in the assessment of need for physical restraint indicated that the assessment tool used (CAM-ICU, (Ely et al. 2001) in both departments was self-explanatory and easy to use. Many participants documented that they were not formally taught and the assessment skills and use of the tool was something that, *'you pick it up as you go along'* (ID 7, 10, 21). In both Hospitals, the majority of staff had received training on communicating with families in relation to the use of physical restraint and they considered that the training was adequate.

The open comments revealed that the majority of staff identified a need for education and support about the actual application of physical restraint devices from Hospital 1. These staff had been provided with a video link, which did not appear to address the staff need. A number of respondents noted that due to infrequent use of restraint the type of knot used and how the restraints are applied could be forgotten. One participant from Hospital 2 however noted that *'boxing gloves are easy to apply, why would I need training?'*(ID 55). A number of respondents expressed some concern about their lack of training in the application with 10 participants documenting that they need a practical demonstration of how to apply physical restraint, likening this need to other mandatory skill training undertaken. The main concern expressed was how to apply the restraint to ensure a quick release. One participant said, *'what force is allowed to apply them? Do you sedate before putting on? Some staff don't realise they can be dangerous.'* (ID 43).

There appeared to be no consensus about the length of time that a patient could be physically restrained for. When asked if the length of time patients were physical restrained for was ever exceeded, only 16 participants across the two Hospitals responded to this question, eight from Hospital 1 and eight from Hospital 2, the data are presented together. The responses stated that time was exceeded 'yes often' 12.5% (n=2), 'yes sometimes' 56.2% (n=9) or 'no never' 31.2% (n=5) either often or sometimes by 11 of the participants with only five participants stating time was never exceeded.

The free text comments in relation to length of time of physical restraint supported this lack of consensus. The re-assessment of a patient who was physically restrained varied from the start of shift, once a shift, and every 8 hours to hour by hour or as the patient condition changed. One participant said, *'patients hands are assessed every two hours, remove mitts every 4 hours and assess for 10 min before re-applying but a patient can be restrained for three days!'* (ID 39). Two other participants noted that sometimes the time of assessment or restraint applied was exceeded due to poor staff to patient ratios.

All respondents felt they were happy to discuss the use of physical restraint with families and/or visitors and staff expressed confidence in discussing the matter with family and visitors. There was a strong suggestion that families generally understand, one participant noting, *'it's not unknown for the family to ask you to do it (apply restraint)'* (ID 62). Many respondents justified the use of restraint as an aid to

patient safety. *'if patients are a harm to themselves ... attempting to pull out lines, being delirious .. it wouldn't be acceptable to leave them in that state and this has to be explained to relatives'* (ID 25). Some nurses, however had some negative experiences due to how severe physical restraint can appear. One nurse expressed anxiety in appearing *'nasty'* to relatives (ID 15). Another participant recounted a situation where physical restraint had been agreed by the family and assessed as appropriate but once applied, *'they (the family) left during visiting because they found it too distressing'* (ID 35).

Section C

The results generated from section C is outlined in table three.

Please insert Table three here

The majority of respondents perceived that families did not appear to mind the use of physical restraint with their relative. There was also overwhelming consensus to the statement 'K- I do not believe in the use of physical restraints with patients in ICU'. No other statement replicated this but as seen in table one there was a general census of opinion each statement apart from statements F, statement I and statement J as the responses to these statements were dispersed across the scale. There was a strong majority disagreement with statement 'h- Physical restraint is used more when we are short staffed' and statement 'e- Physical restraint is prescribed and applied unnecessarily'.

Section D: Qualitative Findings

Some respondents used terms such as *'essential'* or *'necessary'* when referring to the use of physical restraint however the majority of respondents had the additional caveat of *'only for patient safety'* and if used in the patient *'best interest'* following adequate assessment. There was a consistent agreement that physical restraint was preferable to chemical restraint with a number of respondents noting the risks of over sedation. The next largest theme to emerge when exploring alternatives to physical restraint was talking to the patient, orientation and hand holding. This seems to be something the respondents felt nursing staff should be doing, with comments relating to the need for additional staff to carry this out one comment being, *'sitting with the patient not always (or never) possible due to staffing'*(ID 12). Only four respondents mentioned the involvement of a family member to sit and reassure their relative. Many respondents mentioned relatives but in the context of how distressing physical restraint can appear and how important communication with the family is. One noted, *'in some cases it seems drastic to relatives but they almost always understand especially if they have witnessed dangerous behaviour'* (ID 19). Noted by a number of respondents was the fact that physical restraint can sometimes make the situation worse, exacerbating the patient's confusion. Only two respondents however commented on the importance of finding the underlying cause of the delirium or distress. There were several references to staffing levels and how stressful caring for an agitated ICU patient can be. One respondent wrote *'the nurse in charge should arrange breaks from the patient... to ensure no one loses their cool'* (ID 8).

A frequent finding was that the respondents felt that colleagues lacked knowledge about the risk of restraint, how to apply and document accurately. One respondent noted, *'staff seem to lack training, don't re-assess or look for alternatives or underlying causes'* (ID 6). Another commented that there was, *'poor non-restraint*

knowledge amongst staff (ID 53). Many respondents highlighted gaps in their own knowledge with concerns around which method to choose: chemical or physical, the length of time and assessment of pressure areas when a patient is physically restrained. One respondent asked *'how much force am I allowed to apply?'* (ID 7), another respondent asking for *'a rational [sic] for using restraint'* (ID 14) and ID 63 stating *'I would welcome suggestion on which patient would benefit from which type of restraint. The rationale for choosing chemical or physical and vice versa is rarely clear'*.

An emergent theme across the responses was that the nursing staff need medical support when deciding to use physical restraint with one commenting that, *'the nurse is by the bedside 24 hours a day and can readily assess the need. However, there are lots of personal view for Drs 'they are cruel' or 'it's not my thing'*(ID 43). Another participant noted that *'Drs need to be involved and supportive of such measures'* (ID 27). The last theme was that some respondents had worked in units without physical restraints and the patient were managed by nursing staff holding the patient which they deemed to be more unsafe and more distressing for the patient, family and the staff involved.

Discussion

The aim of the study was to establish the experiences, attitudes and opinions of Adult Intensive Care nurses in relation to the application of physical restraint. The respondents in this study reflected the views expressed in the study by Langley et al (2010) finding that physical restraint has a place in the management of agitated AICU patients. The rationale for the use of physical restraint offered in the literature is for patient safety (Bray et al., 2004, Hurlock-Chorostecki and Kielb, 2006; Royal Collage of Nursing, 2008, Benbenbishty et al 2010; Langley et al., 2011; Kandeel and Attia, 2012) a sentiment that was also reflected in the study findings. Participants appear to be in agreement with the opinion that physical restraint can aid the reduction of a patient's sedation and is preferable to increasing sedation. The rationale for use was not only reflected in the free text comments but within the response to the statement *'By using physical restraint a patients sedation can be reduced more safely'*. There was acknowledgment that the application of physical restraint was not without risk and this concurred with several other studies (Tung et al, 2001; Evans et al, 2003; Birkett et al, 2004; Mion et al, 2007). Some respondents intimated that this was due to poor staff understanding or knowledge and poor documentation. The lack of adequate documentation was evident in the findings of Kandeel and Attia's (2012) study as, although staff stated they frequently observed the restraint site, the analyses of the patient's notes did not reflect this activity as there was no reference to this assessment occurring.

Nursing staff felt adequately trained especially in the assessment of the need for physical restraint. Yet when nurses were asked to expand on training issues, the open comments contradicted this, indicating that there are some gaps in knowledge or in the knowledge of colleagues. There were several references to poor documentation, resulting in poor re-assessment of the patient and the site where the restraint was applied, for example, the wrist. This apparent uncertainty and lack of supporting documentation was highlighted in the Hurlock-Chorosteck and Kielb

(2006) study in which the authors subsequently devised an aid to decision-making and criteria around adequate documentation.

The literature implies that physical restraint is instigated by nursing staff not medical staff (Kandeel and Attia, 2012). The data from this study does not clarify this. One may deduce that it is the nursing staff who are more keen to suggest the use of physical restraint yet there were conflicting responses and when presented with the statement 'Physical restraint as a management option has to be suggested as medical staff would not think of it'. This apparent contradiction may be due to problems with the design of the questionnaire, as these statements were in a section where the individual had to score with a Likert-type scale with no scope to expand their answer.

An anomaly within the data was around the link between staffing levels and the use of physical restraint. A number of respondents noted that the use of physical restraint was linked to staffing levels. Options such as hand holding or sitting with the patient were not viable due to low staffing levels, contradicting the data generated from the Likert-type scale statement, 'physical restraint is used more when we are short staffed'. This lack of clarity is also reflected in the unproven hypothesis expressed by Martin and Mathesin (2005) and Kandeel and Attia (2012).

The implied purpose of physical restraint use in AICU is to manage unwanted behaviour whilst reducing the patient's sedation. In Micek et al's (2005) study they found that those patients experiencing delirium, as established by the CAM-ICU (Ely et al. 2001) tool, had a statistically increased use of physical restraint as well as an increased use of continual sedation therapy. The respondents within the study also implied that physical restraint use did not have the desired effect of reducing sedation requirement. There was also acknowledgment that physical restraint is not without it risks and staff noted that it sometimes makes the patient worse. This observation was also highlighted in Kandeel and Attia (2012) study noting increased agitation, fear and frustration and the possible longer-term impact in relation to post-traumatic stress disorder.

The most fervent of themes and comments emerged from the final question, which asked if there were any issues related to the use of physical restraint the respondent would like to highlight. There was an overwhelming sense that the nursing staff needed the support of medical colleagues. Irrespective of the fact that both units accessed had a written policy it is evident that personal opinion is guiding practice decisions rather than evidence base. This potential tension between the nurse and doctor has been previously highlighted in the literature. The primary responsibility for maintaining the invasive devices, such as an artificial airway or central venous catheter, required in AICU is the nurse's (Happ, 2000) however, insertion or re-insertion of these devices is the responsibility of the doctor, causing potential friction between the two staff involved. Happ's (2000) paper highlighted the challenging dynamic as a core problem. She proposed that the nursing staff were socialised into protecting the invasive devices and bore the consequences when they were accidentally removed. This sentiment was also reflected in the Micek et al (2005) paper, which reported that the instigator of physical restraint was the nursing staff. Happ (2000) used a case study to highlight the point; a nurse reported a patient had

purposefully removed the nasogastric tube but the nurses response was that the '*Dr was really mad...*' Even when nursing staff expressed reservations about physical restraint use they felt they had to apply them to prevent device removal (Kandeel and Attia, 2012).

Limitations

As there was no existing questionnaire that adequately addressed the aim of the study, a questionnaire was developed. The questionnaire designed was pre-tested via a small but comparable sample group. Revisions following this process were undertaken. The data returned following the final version questionnaire resulted in two cases of missing data due to one section being missed however whether this was due to poor design is unclear.

Although the study aim was to establish nurses' experiences, attitudes and opinions this in itself could be deemed a limiting factor as it only focuses on the nurse's perspective. The findings do highlight the need for medical staff involvement in the decision-making. What is required is a large study of nursing and medical staff, patient and relative perspective to provide a more rounded view of physical restraint use. The findings are not generalisable due to the fact that only two AICUs were accessed in one region of the UK.

Some of the objectives of the study were not met. The assumption that a comparison could be drawn between Hospitals was possibly affected by Hospital 2, who had been approached due to the fact they had yet to implement a policy on restraint. However, between the initial discussion with the department and the months processing the study via the Research and Development departments, Hospital 2 had implemented a policy on restraint use possibly raising awareness of the policy around physical restraint in Hospital 2

Another fundamental limitation is the low response rate, which is a potential flaw of questionnaire surveys as this has the potential to introduce bias (Edwards et al, 2002). Strategies employed to improve response rate were the accompanying letter which was personal and hand signed, there was provision of a stamped addressed envelope and the questionnaire took a relatively short time to complete. However due to the approach taken individual reminders were not possible.

Another impacting factor on response rates may have been the subject matter. The use of physical restraint and the ethical debate of its use cannot be removed. Nurses may have felt unsure and even with the assurance of anonymity not felt able to respond.

Conclusion

The study has made a unique contribution to the small body of knowledge around nurses' experiences, attitudes and opinions of the use of physical restraint in AICU within the UK. The nurses' knowledge of the application of physical restraint and their experiences, attitudes and opinions in relation to physical restraint have been explored. The level of education or support nursing staff receive in relation to physical restraint has also been questioned with potential gaps in nurses knowledge

also exposed. These study data support the finding within the existing knowledge base in relation to the use of physical restraint in AICU.

Further research is needed to explore the risk factors of treatment interference and the use or non-use of physical restraint. Alternative measures to reduce AICU delirium and aid patient comfort such as pain management, sleep promotion, management of the withdrawal of sedation and medical devices and the involvement of relatives also needs to be explored before physical restraint policy can be written in line with evidence base. The potential conflict between nursing and doctors in relation to the application of restraint requires exploration ensuring decision-making is based on evidence rather than personal view.

An aspect, yet to be explored, is the experience of those in AICU who wake up physically restrained and the physiological impact this may have and the long-term effect on those who survive AICU. There is a need for further research that directly seeks the patient's perspective.

What is known about the subject?

Within the AICU environment managing a patient's agitation whilst preventing interference in treatment can be challenging. In some situations physical restraint may be applied to protect therapeutic devices. There appears to be an overwhelming sense of unease around restraint and justification of its use based on a small body of knowledge in this area of practice

What this paper contributes?

This paper presents the finding of a study that aimed to establish the experiences, attitudes and opinions of Intensive Care nurses in relation to the application of physical restraint within two United Kingdom (U.K.) AICUs.

The key findings:

- ICU Nurses believed that physical restraint had a place and most expressed the opinion that the reason for its application was to maintain patient safety.
- ICU Nurses were happy to discuss the use of restraint with families and most had experienced a positive response from families when using physical restraint to manage agitated behaviours.
- There was a perceived need for training and support for nursing staff as well as the need for medical staff to support nurses in the decision making process.

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Figure one:

Figure 1: A Flow chart to illustrate the search and selection of core articles

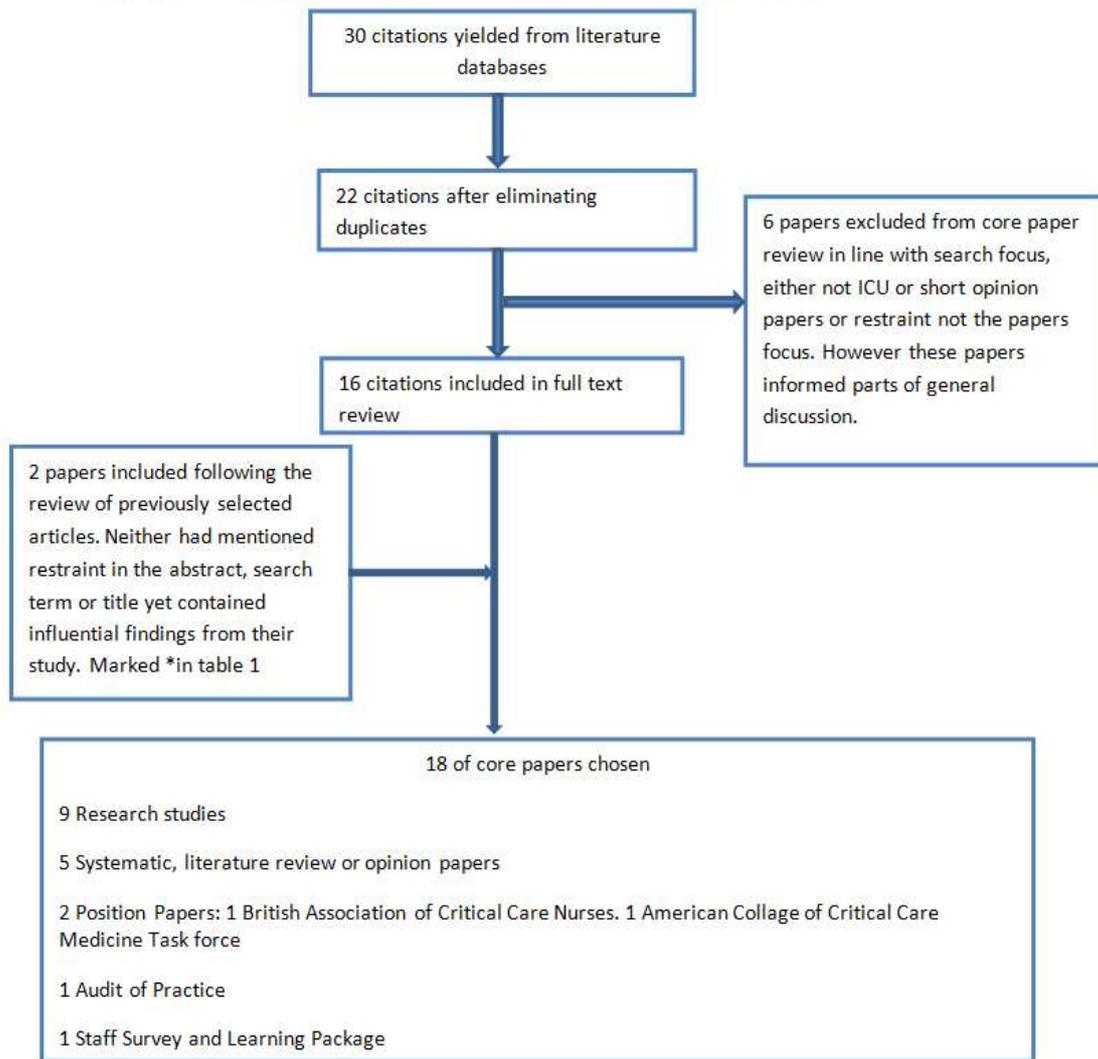


Table One: A Table Illustrating the Distribution of Years of Experience Across the Nursing Bands within the Two Units Accessed.

Nurse bands split into hospital 1 or 2						
	Band 5		Band 6		Band 7	
Range of years of experience	0.5 to 27.0 years	0.5 to 20 years	5.0 to 27.0 years	5.0 to 20 years	12.0 to 29.0 years	15.0 to 21.0 years
Mean Years of experience	8.7 years	6.3 years	15.6 years	12.3 years	19.0 years	18.0 years

Table Two: A Table outlining the responses to questions related to training in the assessment and application of physical restraint

		Hospital 1	Hospital 2	Total
Have you had any training in assessing the need for the application of physical restraint?	No	30.8% (n=12)	41.4% (n=12)	35.3% (n=24)
	Yes	69.2% (n=27)	58.6% (n=17)	64.7% (n=44)
Have you had any training in assessing the need for the application of physical restraint?	No	30.8% (n=12)	41.4% (n=12)	35.3% (n=24)
	Yes	69.2% (n=27)	58.6% (n=17)	64.7% (n=44)

Table Three: Experiences, attitudes and opinions on the use of physical restraint

Statement	Strongly agree and agree	Neither agree nor Disagree	Strongly disagree and disagree
a. By using physical restraint a patient's sedation can be reduced more safely	57.5% (n=42)	27.4% (n=20)	15.1% (n=11)
b. It is preferable to use physical restraint rather than increase the patient's sedation	52.1% (n=38)	31.5% (n=23)	16.4% (n=12)
c. The use of physical restraint allows for other duties to be completed	35.6% (n=26)	13.7% (n=10)	50.6% (n=37)
d. Medical staff are more keen to suggest the use of restraint than the nursing staff.	1.4%(n=1)	39.7% (n=29)	58.9% (n=43)
e. Physical restraint is prescribed and applied unnecessarily	5.5%(n=4)	11.0% (n=8)	83.6% (n=61)
f. Getting a colleague to hold the patient's hand is preferable to using physical restraint when nursing care is required	46.5% (n=34)	31.5% (n=23)	21.9% (n=16)
g. Physical restraint as a management option has to be suggested as medical staff would not think of it	19.2% (n=14)	30.1% (n=22)	50.7% (n=37)
h. Physical restraint is used more when we are short staffed	12.3% (n=9)	15.1(n=11)	72.6% (n=53)
i. Physical restraint is sometime applied without prescription	28.8% (n=21)	24.7%(n=18)	46.6% (n=34)
j. Patients sometimes end up re-sedated even when we use physical restraint	50.6% (n=37)	34.2% (n=25)	15.1% (n=11)
k. Families don't appear to mind the use of physical restraint as they know it's for the patient's safety	76.7% (n=56)	23.3% (n=17)	0%
l. I do not believe in the use of physical restraints with patients in ICU	0%(n=0)	11.0% (n=8)	89.0% (n=65)