Abstract

Aim
To explore nurses’ use of the WHO safety checklist in the perioperative setting

Background
Promoting quality and safety in health care has received worldwide attention. The WHO surgical safety checklist (2009) is promoted in reducing postoperative morbidity and mortality. The checklist has been introduced in Irish perioperative settings.

Method(s)
A descriptive, qualitative approach was utilised. A purposeful sample of ten nurses participated in individual, semi-structured interviews.

Results
Participants were committed to promoting safety in navigating challenges in introducing, complying and accepting the value of the WHO surgical safety checklist in concordance with best practice. Participants moved from task completion to embracing the checklist as an effective surgical safety checking tool. Challenges were identified around roles and responsibilities in overseeing the completion of the check list.

Conclusion(s)
Management of processes is critical when implementing any safety initiative. This paper highlights the complexity and challenges in implementing the WHO surgical safety checklist, contributing to global discussions around translating policy into practice.

Implications for Nursing Management
Effective implementation of a checklist requires a coordinated management approach in collaboration with team members. These approaches will support learning experiences contributing to a shared understanding of the change being implemented by all team members.

Keywords
WHO Surgical safety checklist, Management, Perioperative nursing.
Introduction

Safety is defined as the control of identified hazards to achieve an acceptable degree of risk (Shorr et al. 2011). Specifically, surgical patient safety is a universal phenomenon that is especially challenging, given constant pressures to maintain effective patient flow, in utilising and optimising operating resources and time (Adams & Korniewicz 2011, Beyea 2008). An estimated 234 million major surgeries are performed worldwide annually representing one surgery per 25 living persons (WHO 2009). Overall 41% of all reported adverse events occur in the perioperative setting and seven million reported cases of surgical related complications and one million surgical related mortalities are recorded annually (de Vries et al. 2008). In such a pressurised technological environment safety is paramount in preventing errors. In addressing these concerns, within the perioperative setting Patel et al. (2014) suggested that the WHO Safety Checklist becomes a mandatory tool. In keeping with international best practice Ireland, too is committed to the provision of safe, high quality health services (HSE 2009). Therefore, it was considered valuable to explore perioperative nurses experiences of using the surgical checklist.

World Health Organisation (WHO) Surgical Safety Checklist

The surgical safety protocol has been introduced by the Joint Commission on Accreditation of Healthcare Organisations (JCAHO 2011) in minimising the potential of adverse events. Subsequently, this protocol has been included in the ‘Safe Surgery Saves Lives’ initiative by the WHO leading to the development of the surgical safety checklist (WHO 2009).

The WHO surgical safety checklist (2009) has been pioneered as a global initiative to develop a checking device in promoting surgical safety by a group of international experts from anaesthesiology, surgery, perioperative nursing, other professions and patients. This checklist aims to improve surgical patient safety universally preventing wrong site, wrong side, wrong procedure and wrong patient surgery (JCAHO 2011). Increased compliance with safety standards, reduces frequency of adverse events, surgical related complications and mortality (Catchpoole et al. 2008, WHO 2009). Implementation of this surgical checklist significantly reduces postoperative morbidity and mortality (Chaudhary et al. 2015, Tang et al. 2014, Haynes, 2011).

The 19 item WHO surgical checklist is undertaken at three critical junctures across the perioperative journey. Checking begins at ‘sign-in’ before patient anaesthetic induction, ‘time-out’ before incision and ‘sign-out’ before the patient leaves the operating room (Panesar et al. 2011). All team members are involved in confirming patient identity, consent, allergies, site, procedure, swab and instrument count, specimen cross checking and labelling. Within an Irish context little research has been conducted focusing on implementing the surgical checklist in practice. This paper reports study findings which contribute to discussions on the use of the surgical check list in promoting quality and minimising risk in the perioperative environment.

Method

A qualitative descriptive research design was chosen to frame an exploration of individual experiences through listening to participants descriptions in everyday terms (Holloway & Wheeler 2009, Lambert & Lambert 2012). Higgs & Cherry (2009) propose that the range of
qualitative research approaches is gaining credibility, contributing to understanding of the complexity within experiences.

A qualitative descriptive research design is inductive and informed by naturalistic inquiry emphasising the study of a phenomena in its natural state and the goal is a comprehensive account (Lambert & Lambert 2012). Such an inductive approach aims to produce findings that generate knowledge enhancing the quality of preoperative checklist practices (Sandelowski 2000). The descriptive approach developed by Sandelowski (2000) is a method of choice when searching for straight forward descriptions that resist classification (Holloway & Wheeler, 2009; Sandelowski, 2010). Remaining close to detailed accounts without abstract conceptualisation aims to provide an understanding of the everyday real life experiences of participants (Denzin 2011). The study uses a qualitative descriptive approach, remaining close to the research aims, methods in generating findings.

Sample
A non-probability purposeful sampling approach was used. Purposive sampling is appropriate within qualitative research when researchers are interested in participants who have the best knowledge of the research topic (Creswell 2013) and in this instance working within the perioperative setting. An open invitation was circulated through the regional electronic network seeking potential participants from 58 nurses in 3 perioperative settings. Ten volunteers contacted the third researcher (SK) and participated in the study. However, there is no way of knowing whether the invitation reached the targeted group or whether time, interest or choice led to the number of volunteers.

Data Collection
Semi-structured interviews were chosen to facilitate data collection. A broad interview guide with open ended questions aiming to generate discussion was utilised (Bulpitt & Martin 2010). Interviews took place at a time and venue chosen by participants. Interviews were conducted by (SK) lasting approximately one hour and were digitally recorded, transcribed verbatim and checked for accuracy. Data collection continued until no new perspectives were evident and data saturation was reached.

Data Analysis
Data analysis was informed by the work of Coliazi, cited in Tobin & Begley (2008). This framework aimed to stay close to the data while providing a rich and accurate representation of participants’ experiences. The process of acquiring a sense of each transcript was achieved through listening to each interview within 24 hours of recording. All data were analysed manually. Transcription and analysis facilitated immersion in the data. Significant statements were then identified and extracted while retaining transcript details (SK). Emergent themes were identified and grouped together by all authors leading to a detailed description. A summary of the emergent themes were verified by participants. Finally all authors discussed, reviewed and agreed three final themes that represented the data.

Drawing on past research studies and considering the approaches to data analysis Guba and Lincoln’s (1989) framework was deemed most suited for assessing the credibility,
dependability, transferability and confirmability of this qualitative descriptive study. Rigour and trustworthiness were assured by staying close to the data.

**Ethical approval**
This study adhered to the principles of beneficence, autonomy and justice (Beauchamp & Childress 2001) and received approval from the Local Regional Research Ethics Committee. Following ethical approval and access, an initial information sheet detailing the purpose and involvement in the study was given to potential volunteers. Prior to participation a consent form was signed. Anonymity and confidentiality were assured and participants were assigned codes to protect identities.

**Findings**
Three main themes, challenges with the checklist, complying with the checklist and concordance with best practice were evident from the data collection process.

**Challenges with the Checklist**
Many participants spoke of challenges initially experienced when implementing the surgical checklist which was a change in safety practice.

*Introducing the Changes*
Implementing the surgical checklist was described as an opportunity to improve safety and practice whereby nurses were expected to introduce with every surgery. Experiences reported varied from individual to individual. Participants described:

“…generally nurses did not have problems with the checklist, because they could see positive parts of the checklist” (Participant 10).

Another noted:

“...the multidisciplinary team members were happy the way things were and wanted to remain with the status quo that they have been used to”(Participant 9).

One participant expanded and described a sense of unfairness regarding the initial lack of involvement in the introduction of the surgical checklist process:

“The checklist was just handed to the nurses and we were told go do it and that was it. It wasn’t fair the way the checklist was done” (Participant 7).

Some participants expressed feelings of unfairness during implementation. A sense of unfairness would have been lessened had the multidisciplinary team been involved during this period. Whereas one participant explained that the surgical team had not been involved in implementing the checklist:

“If the multidisciplinary team had been involved from the beginning they may have wanted to engage with the checklist” (Participant 4).

Participants unanimously commented on their lack of involvement with the WHO process
until the implementation stage. Some participants commented that introducing this change in the early stages had created some tension within the perioperative environment. One participant conveyed this but commented that over time opposition had lessened.

“...it was awful in the beginning but using the checklist now is not bad” (Participant 8).

**Increasing Workload**

When the surgical checklist was initially introduced participants were given the responsibility of documenting the checklist. Participants were instructed to conduct the checklist at the three specific time phases which was a change to standard practice procedures. Participants expressed concern that the checklist lead to an increase in workload, as one participant said:

“...oh no not more paperwork, not another checklist, not something else for the nurse to do...” (Participant 2).

One participant noted that the checklist increased workload and added extra pressure:

“...the checklist is time, the checklist is an extra job, extra pressure especially on a busy list, the checklist is something else the nurses have got to think of ...” (Participant 8).

However, not all participants viewed the surgical checklist as an increasing workload. One participant commented that the checklist is simply a document which provides confirmation of adherence to safety protocol and best practice:

“...the checklist makes sure that what nurses were doing already is now documented...” (Participant 4).

The findings suggest that all participants experienced challenges when introducing the surgical checklist initially. Many commented that they had little or no involvement in the initial stages of the WHO process. Many participants expressed the view that the introduction of the checklist led to an increase work load.

**Complying with the Checklist**

The surgical checklist was introduced with an expected outcome that all members of the multidisciplinary would comply with the protocol. Participants described feeling frustrated when first using the checklist.

**Feeling Frustrated**

Feelings of frustration were expressed by participants during the introduction of this new safety initiative. As one participant spoke about her perception and feelings of frustration whilst carrying out the checklist:

“In the beginning when the checklist was introduced, I would have done anything to avoid being involved in using this new document. It just seemed like another demand on my time when I was already very busy” (Participant 4).
Another participant noted:

“...it can be really, really frustrating when you are trying to go about your job and using the new checklist tool to the best of your ability and you are meeting a brick wall from other members of the multidisciplinary team…” (Participant 6).

Initially when participants were performing the checklist and asking questions required for documentation not all people wanted to engage in this new process. One participant described the non-verbal responses she experienced from non-nursing colleagues whilst conducting her assigned duty:

“When we began to ask the checklist questions, we were met with stony silence; nobody answered from the surgical team ...” (Participant 5).

Many participants commented that the surgical checklist was nurse led and this may have attributed somewhat to the nature of the responses encountered from colleagues. One participant said:

“I think the consultants felt that nurses were questioning them on what they were doing as opposed to what the procedure was really about, or what other nurses were doing”(Participant 10).

**Over time** participants found that using the checklist as a safety tool had become less frustrating. One participant said:

“The checklist is much easier now you do not even think about the checklist to be honest it is just part of the norm but I wish some of the team members would just answer questions asked the first time” (Participant 7).

These feelings experienced by participants in the early stages of implementations seemed to have lessened considerably.

**Using the Check List**
Gradedly people became familiar and adapted to the new checklist. This subtheme was broadly described across elective and emergency surgical situations.

Participants expressed the view that using the checklist was more straightforward in elective surgery:

“Well elective surgery obviously is much easier because we have plenty of time to think of all the different nursing duties” (Participant 8).

Many participants spoke about colleagues who were familiar with using the checklist in other institutions. *Familiarity with the checklist helped compliance.* A participant spoke about the support from surgeons who had previously used and were familiar with the checklist:
“...I found that a lot of the surgeons who had come from other hospitals who were using the checklist were very keen to take the checklist on board” (Participant 1).

However the unplanned nature and complexity of emergency surgeries was identified as less straightforward. As a participant commented:

“...Carrying out the checklist is not smooth when doing an emergency procedure where speed is of the essence and there are many unknowns about the patient history...” (Participant 2).

Participants appreciated the importance of communication within the multidisciplinary team within emergency cases as described by one participant:

“I realise that the surgical checklist is there to enhance patient safety through good communication within the multidisciplinary team avoiding more stressful situations when everything is happening at once” (Participant 9).

Progressively participants’ became more familiar and at ease with the surgical checklist in both elective and emergency surgical situations.

Checklist Concordance
Concordance with best practice in translating, valuing and accepting the standard use of the new surgical checklist emerged over time. Leadership and responsibility for the implementation was unclear when introducing this new protocol. The interrelationship between leading and accepting the change was evident.

Valuing the Checklist
Accepting the value of the checklist in daily practice within the perioperative setting was described by participants. One participant explained the overall benefit to quality patient care and promotion of safety within the perioperative area by the checklist:

“Since its introduction, it helps to give structure to the safety aspects of patient assessments and the planning of patient care” (Participant 9).

The benefits for the patient and the team were identified.

“The checklist is a vital tool, there to protect the multidisciplinary team as well as the patient ...” (Participant 3).
While another participant commented on the efficient use of the checklist for the team as:

“...now the surgical checklist only takes 2 to 3 minutes to complete” (Participant 2)

Participants shared that the checklist was now largely accepted as a valuable surgical checking tool in current protocol and practice. One participant said:

“There is no question about how valuable the surgical checklist is for all in reducing risk in the perioperative setting” (Participant 10).
Participants saw the potential for the development and expanded use of the checklist within perioperative care. One participant said:

“...I feel, down the line different checklists for different surgical procedures would help” (Participant 4).

**Taking a Lead**

Nurses were given responsibility for introducing the surgical checklist. Participants described varying approaches to leading the checklist:

“I feel that it has been left to nurses’ to do it, to make sure that the checklist is done properly” (Participant 5).

Participants varied greatly as to which nursing role was best positioned to lead the completion of the checklist:

“...the anaesthetic nursing role because they have brought the patient into theatre” (Participant 10).

Another suggested:

“The circulation nurse should lead it” (Participant 9).

Whilst recounting their experiences of using the checklist many focused upon a lead role in sustaining surgical patient safety. One participant commented:

“I believe that one particular person should be allocated to the role of completing the checklist...” (Participant 2).

This was challenging, regardless of who leads the checklist the person needs to be as confident and assertive when conducting the checklist. One participant commented:

“...it was difficult to feel assertive and confident enough to stop the surgical procedure to ask questions ...” (Participant 1).

All participants spoke about the necessity for an individual to lead and take responsibility for completing the checklist. Many commented that the checklist may be useful in promoting a team approach to surgical safety as distinct from traditional hierarchies. As a participant elaborates:

“...Once surgeons, anaesthetists and nurses understand the reasons for using the checklist it will lead to breakdown of the hierarchy that is traditional in theatre” (Participant 8).

**Accepting Change**

Many participants spoke about the change in practice when using new safety protocol documentation.
Over time the new checklist superseded previous processes used prior to introducing and implementing the surgical checklist into practice.

Responsibility for completing the surgical checklist demands an individualised and collaborative approach across teams. This is critical in promoting the effectiveness of this safety tool. Gradually participants described an increased familiarity and understanding in the use of the checklist.

“Change takes time” (Participant 9).

And

“New tools or protocols involve understanding for acceptance to occur…” (Participant 3).

The importance of evaluating the effectiveness of checklist use and practice was identified as one participant suggested:

“...that, down the road if management could do an audit of checklist use. I think that would be helpful” (Participant 7).

However, referring to the implementation stage most participants shared the view that the responsibility for change had not been shared equally among the stakeholders. One participant said:

“... I feel that implementing the checklist was not a joint effort. The checklist was very much nurse lead...” (Participant 1).

Many spoke about the need for buy-in among all stakeholders. One participant said:

“...all stakeholders must be on board with the checklist” (Participant 4).

Participants appreciated the importance of multidisciplinary collaboration in implementing the surgical checklist effectively in practice. This participant notes:

“The checklist takes a multidisciplinary approach at all levels” (Participant 6).

Participants described maintaining safety through the use of the checklist is a positive, valuable and acceptable practice. The question of leadership was raised throughout the interview data. Formal lines of responsibility were less than clear.

**Discussion**

Findings show a commitment to promoting safety, nevertheless, the reality of bringing about change was problematic. De Lorenzo (2005) argues commitment and compliance to change is difficult without planning. Challenges in effecting change management are dependent upon early team involvement, leadership, support, planning and readiness for change (Sullivan and Garland 2013).
Significantly, participants report a lack of involvement from the beginning of the initiative and identified that early input would have enhanced compliance. Many participants spoke about a sense of unfairness and described an increasing workload adding to a sense of frustration. Paying attention to the psychological dimensions of change has been identified as critical to the process. As Amos et al. (2012) argue change which is imposed upon people may contribute to feelings of ‘no control’ and may inevitably create opposition. A management approach whereby change is enforced upon an established culture irrespective of the need for change may not be successful (Larsen et al. 2011). Team collaboration in change processes contributes to minimising the potential for conflict and opposition which may have a negative impact on safety initiatives in complying with recommended checklist standards (Sullivan and Garland 2013). Therefore, healthcare professionals need to take responsibility to challenge any opposition to change (Cunnington 2006).

Planning is an essential part of any change process (Amos et al. 2012, McConnell et al. 2012). Similarly to our findings, Hales et al. (2006) identify that a failure to work through roles in managing change lead to tension among teams when using checklists. Furthermore, Andreasson et al. (2016) conclude that successful implementation of protocols aiming to improve care requires consideration of leadership roles. Designated roles and responsibilities in coordinating teams in overseeing new initiatives are essential (Sullivan and Garland 2013). While the WHO (2009) policy document refers to team involvement, this was not to the forefront of introducing the surgical checklist initiative within this study. Findings demonstrate that as participants became familiar with using the checklist collaborating with surgical teams’, concordance with international practice standards was achieved. Concordance in using the checklist requires readiness of organisations and teams to engage in change (Lusardi 2012). Monitoring processes ensuring that concordance with best practice is critical to long term success (Sullivan & Garland 2013). Education and training requirement is essential (Sendlhofer et al. 2015). Findings describe processes whereby initially the emphasis was on the checklist tool as distinct from collaborating with teams in introducing change to standard practice.

Limitations
Clearly there are limitations to a small qualitative study conducted in a region in Ireland, involving ten participants and findings are not intended to be generalisable. Nevertheless, findings offer a view of the implementation of the surgical checklist in the perioperative setting. They are significant in generating discussion worthy of further exploration in any subsequent research.

Conclusion(s)
The themes illustrate an individual response to change. They plot a journey of challenges in working through uncertainty and frustration to eventually accepting and using the surgical checklist in daily practice. The surgical checklist is a relatively new concept within the perioperative environment. Participants portrayed a commitment to the surgical checklist as an acceptable surgical safety checking tool for use in the perioperative setting. Participants initially perceived the checklist as an additional task. Gradually increased understanding and familiarity of checklist use led to compliance and subsequent concordance with best surgical safety practice.
This research contributes to discussions around implementing and translating policy into reality. It highlights the complexity in moving from an international perspective to a specific regional context in an ever changing and demanding practice world. It offers a snap shot of participants’ movement from completing a task to embracing the value and contribution of the check list globally in promoting safety and minimising risk in a perioperative setting. It is timely to encourage dialogue with teams in continuing a process that began in 2009 which today is still fraught with challenges in use. Further opportunities to enhance the quality of care for individuals undergoing surgery will always be a continuing endeavour.

Implications
The findings can be used to enhance understanding around the challenges of implementing a new quality tool. Bringing about successful change requires management at strategic and operational levels. It appears that the gap is widening between strategic policy makers and the reality of the practice on the ground. Development of an audit tool examining concordance with WHO standards will inform local practice guidelines.

The complexity and pace of introducing any new policy requires a shift in planning and implementations approaches. Creating structures that support the implementation of new standards and guidelines in practice needs to be emphasised. Effective implementation of the WHO surgical checklist is therefore, maximised by effective management and leadership. These approaches will support and lead to learning experiences contributing to shared understandings of any change being implemented.

References


McConnell D. J. Fargen K. M. & Mocco J. (2012) Surgical checklists: a detailed review of their emergence, development, and relevance to neurosurgical practice. Surgical Neurology International 3(1) 6-14


