

A preliminary study of patients' perceptions on the implementation of the WHO surgical safety checklist in women who had Cesarean sections

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Received: 29 July 2014 / Accepted: 5 October 2014 / Published online: 6 November 2014
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Abstract The surgical safety checklist (SSCL), developed by the World Health Organization, is widely implemented by surgical staff for the improvement of their communication, teamwork, and safety culture in the operating room. However, there is no research available addressing the question of how surgical patients perceive the implementation of the SSCL. In order to address this issue, a questionnaire-based preliminary study was conducted for patients who had undergone elective Cesarean section under awake regional anesthesia. Although most participants had not been informed about the implementation of the SSCL before surgery, all of the patients were aware that the SSCL had been performed in the operating room. Over 80 % of patients answered that the implementation of the SSCL could help to reduce their feelings of anxiety, tension, and fear, as well as enhance their feeling of security. Furthermore, most patients answered that they were able to understand the components as well as the purpose of the SSCL, and considered that the SSCL should be implemented. These results suggest that awake patients undergoing Cesarean section perceive the implementation of the SSCL to be a highly positive aspect of their surgical care.

Keywords Surgical safety · Checklist · Operating room

The surgical safety checklist (SSCL), developed by the World Health Organization (WHO) in 2008 to improve the safety of surgical services, has been adopted in a large number of countries and reported possibly to contribute to the reduction of postoperative complications and mortality rates [1–4]. The SSCL procedure is implemented to achieve appropriate confirmation of surgery-related items, case-specific concerns, as well as teamwork and communication, among all surgical team members. Recently, the authors conducted a before-and-after study of all surgical team members at Kochi Medical School Hospital, and reported improved scores related to teamwork and safety climate in operating rooms following implementation of SSCL [5].

In the operating room, the SSCL is implemented among surgical team members surrounding their patient; however, little is known regarding patients' perception of this procedure. Recently, Corbally et al. reported that parents of pediatric surgical patients considered their involvement in the implementation of SSCL to be important for surgical safety without any added anxiety [6]. Furthermore, Russ et al. showed that surgical patients would have positive attitudes towards the implementation of SSCL, and agree that it would have a positive impact on their safety [7]. Nevertheless, in the WHO guidelines for the SSCL implementation (WHO guidelines for safe surgery 2009; http://whqlibdoc.who.int/publications/2009/9789241598552_eng.pdf), its purposes are not mentioned in relation to patients' psychological aspects. In awake patients, it may be particularly necessary to consider the influences of the SSCL on patients' psychological and mental aspects during implementing it. Therefore, we conducted a preliminary study to examine patients' perception of the SSCL implementation for patients who had undergone elective Cesarean section under awake regional anesthesia.

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Table 1 Adapted WHO surgical safety checklist used at Kochi Medical School Hospital**Sign-in (before induction of anesthesia)**

Patient confirmation (name, blood type), surgical site marking, surgical positioning, allergy history, deep-vein thrombosis prophylaxis, antibiotic prophylaxis, anesthesia machine and medication check, pulse oximeter, difficult airway or aspiration risk, risk of >500 ml blood loss

Time-out (before skin incision)

Surgeon reviews: self-introduction, patient name, surgical procedure, incision site, critical or un-routine steps, operative duration, anticipated blood loss

Anesthesiologist reviews: self-introduction, anesthesia procedure, patients-specific concerns

Nursing reviews: self-introduction, sterility check, equipment issues or concerns, antibiotic

Sign-out (before patient leaves operating room)

The name of the procedure, completion of instrument, sponge and needle counts, specimen labeling, equipment problems

Specific concerns during postoperative periods: surgeon, anesthesiologist, and nurse

Table 2 Summary of responses to the survey on patient perceptions for implementation of the WHO surgical safety checklist ($n = 15$)

Item	Response, n (%)				
	Strongly agree	Agree	Disagree	Strongly disagree	No response
1. Were you aware that the SSCL was performed in the operating room?	12 (80)	3 (20)	0 (0)	0 (0)	0 (0)
2. Did you know that the SSCL was going to be performed?	2 (13.3)	1 (6.7)	5 (33.3)	7 (46.7)	0 (0)
3. Did you know the components of the SSCL?	1 (6.7)	1 (6.7)	4 (26.7)	8 (53.3)	1 (6.7)
4. Did the implementation of the SSCL make you less anxious?	7 (46.7)	5 (33.3)	2 (13.3)	0 (0)	1 (6.7)
5. Did the implementation of the SSCL make you less tense?	7 (46.7)	5 (33.3)	3 (20)	0 (0)	0 (0)
6. Did the implementation of the SSCL make you less fearful?	7 (46.7)	6 (40)	2 (13.3)	0 (0)	0 (0)
7. Did the implementation of the SSCL make you more secure?	8 (53.3)	5 (33.3)	1 (6.7)	0 (0)	1 (6.7)
8. Did you understand the components of the SSCL?	11 (73.3)	3 (20)	1 (6.7)	0 (0)	0 (0)
9. Do you feel that the SSCL is implemented for the safety of the patient?	12 (80)	2 (13.3)	1 (6.7)	0 (0)	0 (0)
10. Do you think that the SSCL should be implemented?	13 (86.7)	1 (6.7)	1 (6.7)	0 (0)	0 (0)

SSCL surgical safety checklist

The present study was approved by the Ethics Committee of Kochi Medical School Hospital. In September 2012, the hospital adopted the SSCL in accordance with the WHO implementation manual (2009, <http://www.safe-surg.org/implementation-manual.html>), which was implemented for all operations. All of the steps and checklist items recommended by WHO were included, and some modifications were made to fit our institution (Table 1). The SSCL was carried out by all surgical team members (surgeons, anesthesiologists, nurses, clinical engineers, and other involved employees) in three stages; sign-in (before induction of anesthesia), time-out (before skin incision), and sign-out (before patient leaves operating room). In the present study, the patients who had undergone elective Cesarean section under regional anesthesia without sedation were consecutively recruited during October 2013 to March 2014. The Cesarean section surgery was selected for this study because it generally requires a number of precautions and active communication among surgical staff members in the operating room. Inclusion criteria were agreement to participate, no adverse events during surgery,

and no previous experience of the SSCL. All participants signed a written informed consent form when responding to the questionnaire.

An anonymous study questionnaire was developed by hospital team members of the Medical Safety Management Center to assess patients' perceptions with respect to the implementation of the SSCL over two pages. The questionnaire consisted of ten statements, which were divided into three dimensions: recognition of the SSCL (No. 1–3); influence on patients' feelings of anxiety, tension, fear, and security (No. 4, 5, 6, 7, respectively); and understanding of the SSCL (No. 8–10 in Table 2). Responses were reported on a four-point Likert scale with response categories consisting of strongly agree, agree, disagree, and strongly disagree. Free comments were also encouraged. Each subject was given the questionnaire by hand on the second day after surgery. The participants filled in the questionnaire voluntarily. The research assistants collected the questionnaires by the time of hospital discharge. The outcomes measured were the interpretations of perception reported using the Likert scales by the participants.

Of the 18 patients recruited, a total of 15 completed the study (response rate, 83.3 %). The age range of the respondents was between 23 and 39 years, with a mean age of 27.6 years. The indication of Cesarean section was previous Cesarean section (66.7 %), suspected fetal compromise (20 %), and breech presentation (13.3 %). The responses to each of the Likert-scale items are summarized in Table 2.

Regarding the recognition of the SSCL, all participants were aware of the implementation of the SSCL, with a combined positive response (“strongly agree” and “agree”) rate of 100 %. On the other hand, the majority of the participating patients had not been sufficiently informed about the implementation of the SSCL and its content: positive response rates of 20 and 13.3 %, respectively. Assessments of the effect of the implementation of the SSCL on patients’ feelings of anxiety, tension, fear, and security found that over 80 % of them responded positively using the Likert scale. Although a few patients responded “disagree”, none of the participants responded “strongly disagree” to these items. The assessment of patients’ understanding of the implementation of the SSCL found that most of them answered that they were able to understand the components as well as the purpose of the SSCL, and considered that the SSCL should be implemented (a positive response rate of 93.3 %). A total of 14 free comments were provided, all of which were positive: 12 general comments included appreciation of the medical staff and two specific comments indicated a better understanding of the roles of the numerous staff members in the operating room.

The results of this preliminary study indicate that surgical patients appropriately recognized and positively perceived the SSCL implemented in the operating room. Furthermore, the SSCL implementation may alleviate anxiety, tension, and fear, as well as create a sense of security, in patients undergoing Cesarean section. These results may reflect that the implementation of SSCL in the operating room could contribute to manage patients’ expectation for high-quality and safe surgical care. Accordingly, while the SSCL has to date mainly addressed the improvement of communication among surgical staff members and safety awareness [8–10], our findings indicate its potential for also positively impacting the trust relationship between surgical team and patients in the operating room.

As part of the SSCL, surgical team members introduce themselves before surgery to confirm each member’s role; this process is important for the promotion of teamwork and communication among them. In the present study, it was suggested that medical professionals’ self-introduction may also be important for communication between them and patients. In Cesarean sections, a large number of specialized staff members, including obstetricians, anesthesiologists, pediatricians, and perioperative and PICU nurses, cooperate with each other in the operating room. By being

informed of each medical member’s role before surgery, patients become more easily able to imagine actions they can adopt, such as expressing their physical or emotional needs or asking questions. These effects may also contribute to reduce anxiety and promote the development of a sense of security. These findings imply that it may be possible to provide more patient-centered, safer, and higher-quality surgical services by establishing systems to share information not only among surgical team members, but also with patients.

In the present study, the majority of the participating patients had not previously been provided with explanations regarding the SSCL. In the author’s hospital, the SSCL had been implemented without standardized explanations. Unlike medical practices, there seems to be no accountability for the SSCL implementation. However, it may be possible that patients’ perceptions of the SSCL implementation further improve through preoperative explanations regarding its purpose and content. Therefore, further research is needed to optimize the patient-centric aspects of surgical patient safety care for effective implantation of SSCL.

In conclusion, the present preliminary report indicates that most patients who had undergone elective Cesarean section under awake regional anesthesia had positive perceptions on the implementation of the SSCL. In addition to the improvement of safe attitudes within the surgical team, effective implementation of the SSCL could contribute to enhance the patient-medical staff relationship.

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