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What is the Status Concerning Preoperative Anesthesia Risk Assessment, the View from a Swedish Nurse Anesthetist Perspective? -A National Web-Based Survey

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Abstract

Introduction: The preoperative assessment is essential when evaluating the patients risk factors before anesthesia is administrated. The goal of the evaluation is to minimize the risk of perioperative complications by individualizing the anesthesia method and/or perform a preoperative optimization of the patient.

Purpose: To examine Swedish nurse anesthetists (NA) perception of education and preoperative risk assessment on patients before anesthesia.

Method: A national web survey with questions addressing preoperative risk assessment and risk factors for anesthesia was sent to NA in Sweden.

Results: 469/1480 answers were analyzed. The most common respondent was between 30 to 50 years and had more than seven years of experience as a NA. The responders had experience from different types of anesthesia wards and are spread all over the country. 4/5 of the respondents consider that they had not gained any education around risk assessment since their degree as nurse anesthetists. Nearly half of the respondents don't know or don't think it exists written guidelines regarding preoperative risk assessment and optimization on the anesthesia ward they are employed at. Approximately 3/4 of the NA in this study experience that they meet patients every week who's not sufficiently optimized for anesthesia.

Conclusion: A proportion of patients with complex comorbidity are increasingly seen by NA. Therefore, collaboration between anesthesiologists, NA and the patient to optimize the perioperative course is essential to improve the quality of perioperative care. This will lead to increased patient safety during anesthesia and further involvement of the patient during the perioperative care.

Keywords: Nurse anesthetist; Preoperative risk; Preoperative Evaluation; Monitoring of vital signs; Surgery; General anesthesia

Introduction

Patients without system diseases have a low risk of mortality and complications during elective general anesthesia, but the risk increase with age and comorbidity [1]. A preoperative assessment is nowadays clinical practice in order to assess risk and as far as possible prepare and optimize the patient prior to surgery/anaesthesia. Preoperative assessment should include not only medical history and assessment of vital signs but a preoperative work-up; laboratory tests, consultations with specialists as needed. The assessment should lead to an ASA classification. The

assessment should also include a discussion with patient and surgeon on benefit vs risk associated to the planned procedure and provide a plan for the continued perioperative course. The plan should include a choice of safe anesthetic methods, resources before and during surgery and postoperative care [2,3]. Elderly patients and patients with comorbidity are frequently planed for anesthesia, therefore it is important that preoperative risk assessment and preoperative optimization of these patients is initiated well in advance of surgery [1,4]. Guidelines regarding preoperative risk assessment in specific patient groups is available from European Society of Anaesthesia (ESA), these guidelines describe how the preoperative risk assessment should be implemented and what kind of patients that are considered to have a higher risk of complications during anesthesia. Despite the existence of explicit written guidelines based on research there is a difference how they are being applied between various hospitals and European countries [5]. Risk assessment is a constant process and involve both the nurse anesthetist and the anesthesiologist. The nurse anesthetist is obligated to notice when the planed anesthesia method seems to expose the patient to risks, and/or when the patients status is changed [6]. The purpose of this study is to describe nurse anesthetists' perception of preoperative anesthesia risk assessment of patients.

Method

A national web survey with questions addressing general perception of preoperative risk assessment and risk factors for anesthesia was sent to nurse anesthetists in Sweden who are members of the Swedish Association of Health Professionals. The possible answers to given statements were different alternatives or agree/disagree. The survey started with demographic questions and was sent to 1740 identified email addresses and open between 17th of April – 6th of May 2019, 2 reminders were sent during this time. 469 answers were received, the response rate was 27%, 127 male and 339 female, Table 1. All statistics is presented in percent and numbers.

Table 1: Characteristic data, presents in number(=n) and percent.

Demographic	n= (n=469)	Percent %
Gender		
Female	339	27
Male	127	72
NA	3	1
Age, (yrs.)		
20-30	25	5
30-40	160	34
40-50	130	28
50-60	103	22
60-67	44	9
>68	2	<1
NA	5	1
Working region in Sweden		
North of Sweden*	61	13
Middle of Sweden	185	39
South of Sweden**	221	47
NA	1	1
Work experience, CRNA in yrs		
0-2	74	16
03-Jun	89	19
07-Nov	93	20
Dec-14	38	8
>15	174	37
NA	1	<1

*North of city Uppsala, **South of city Linköping

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Ethical considerations

This article is based on a Master's thesis and ethical positions were taken in the framework of a student thesis at Sahlgrenska Academy, University of Gothenburg. The study met the ethical requirements by the Helsinki Declaration.

Results

Four hundred sixty-nine nurse anesthetist (27%) were responded and found to be eligible for participation in this web-survey study. Demographics of the responders is presented in Table 1. Approximately 20% of the respondent nurse anesthetists experienced that patients who are planned for anesthesia are being preoperative risk evaluated insufficient. However, 71% think that patients are being evaluated sufficient or good enough, and 9% had no opinion (Figure 1). More than half (60%) of the respondents experience that they are comfortable with independently evaluating patients' risk factors before anesthesia (Figure 2). The experience of comfortability was higher in the group with 15 years of work experience or more (82%), than the group with 0-2 years of experience (42%). Approximately 65% of the participants that didn't experience comfortable with risk evaluation had 7 or more years of work experience (Figure 2). Regarding knowledge in preoperative risk assessment, the majority of the nurse anesthetists experience that they have enough knowledge themselves to perform risk assessments on the patients they meet before anesthesia, approximately 10% think that they don't have enough knowledge. In the group with 15 years of work experience or more 7% didn't know if it exists written guidelines for preoperative risk assessment or not, on their current workplace. In the rest of the groups with shorter work experience this rate was 20% (Figure 3). Of the participants who were between 20-30 years old, approximately 33% don't know if it exists written guidelines, in the group between 50-60 years old 9% didn't know (Figure 4 & 5). More than 75% agree that high risk patients who not are optimized should be informed of potential risks before anesthesia, only 5% does not agree with this (Figure 6). Approximately 25% of the nurse anesthetists in the group with 0-2 years of work experience think that they meet non optimized patients or patients with risk factors every 14th (Figure 7). day or more rarely. More than 40% of the nurse anesthetists who had 12-14 years of work experience agreed with this (Figure 8).

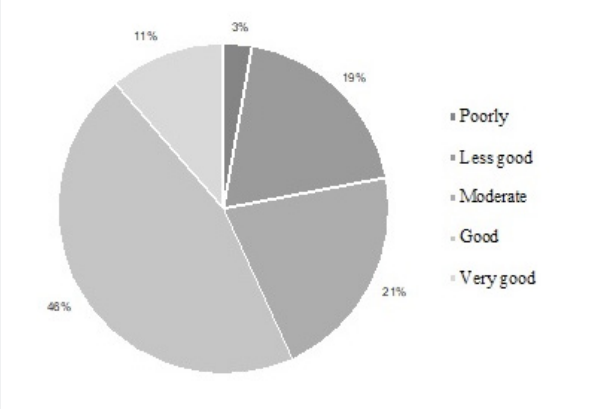

Figure 1: How do you experience that patients who are planned for anesthesia are being risk assessed preoperatively today? (n=468)

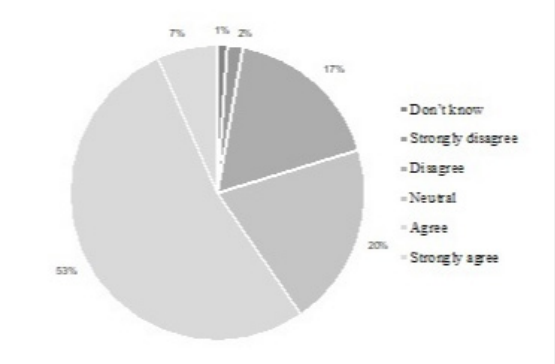

Figure 2: Illustrates responses of the question "I feel comfortable with independently making risk assessments on patients planed for anesthesia." based on experience.

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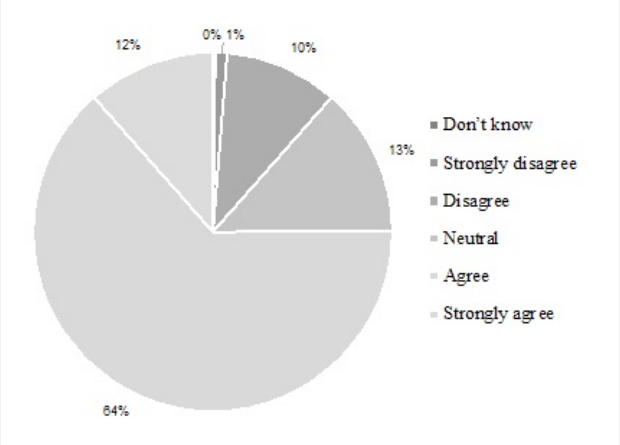

Figure 3: Illustrates responses of the question "It exists distinct written guidelines for preoperative risk assessment on my current place of work." based on experience.

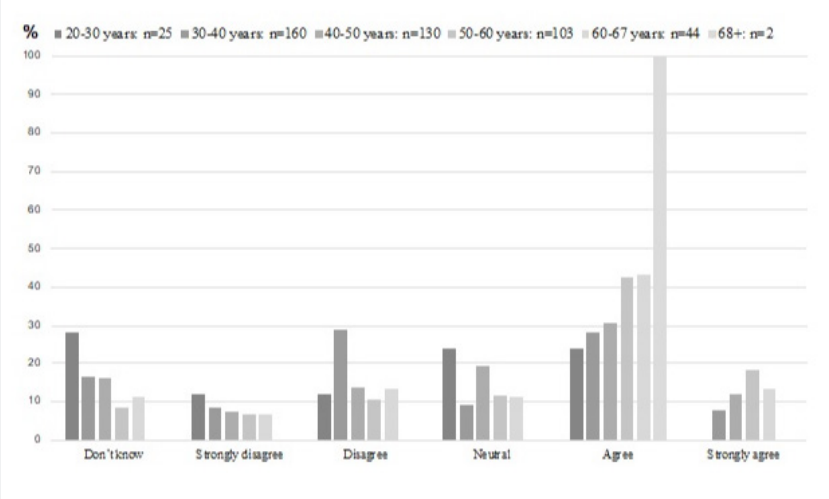

Figure 4: Illustrates responses of the question "It exists distinct written guidelines for preoperative risk assessment on my current place of work." based on age.

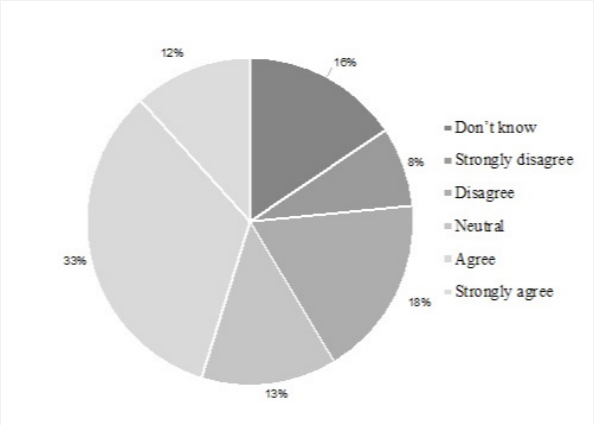

Figure 5: It exists distinct written guidelines for preoperative risk assessment on my current place of work. (n=469).

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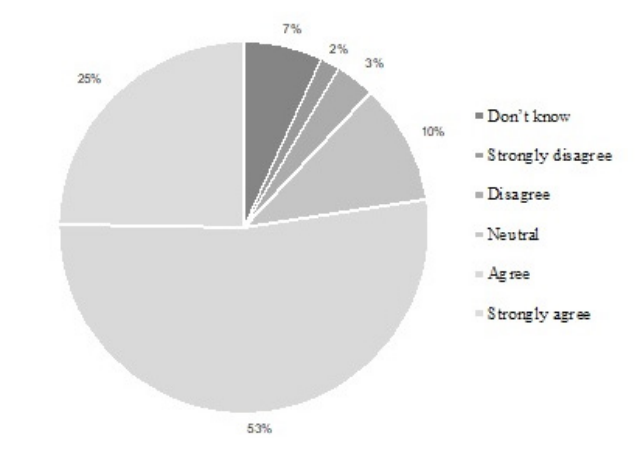

Figure 6: Patients who according to guidelines are considered to have higher risk factors should be informed of the potential risks this person might be exposed to if anesthesia is initiated without preoperative optimization (Patients should be informed preoperative before arriving in the operating ward). (n=465)

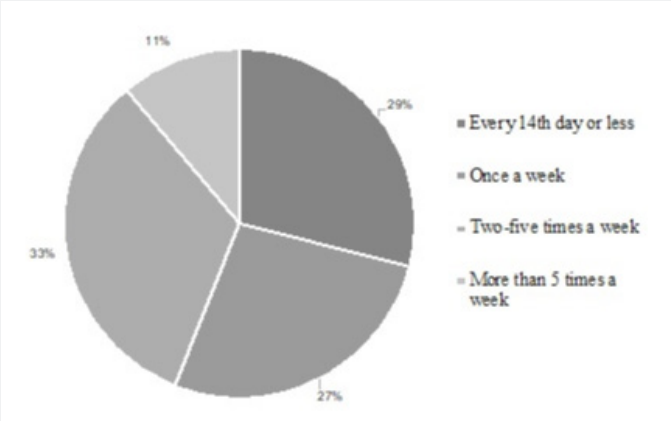

Figure 7: How often do you meet non optimized patients or patients with one or more risk factors? (n=466).

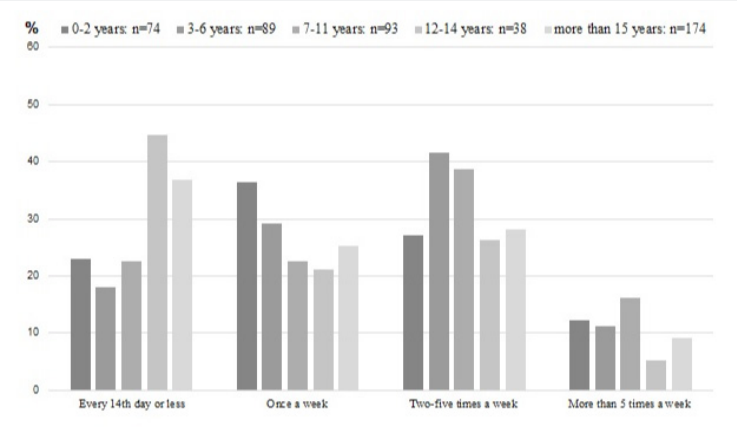

Figure 8: Illustrates responses of the question "How often do you meet non optimized patients or patients with one or more risk factors?" based on experience.

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Discussion

The result show that it exists different opinions on how well patients planned for anesthesia are risk assessed. 70% of the nurse anesthetists thought that patients are being evaluated optimal or very optimal. The question, not asked in this survey, is what kind of patients do not have sufficient preoperative evaluation. patients with risk factors and higher ASA grade should be risk evaluated according to guidelines for preoperative assessment published by ESA [5]. According to SPOR [1] the risk of complications and mortality is higher with patients classified as ASA 3-4, the risk also increase with elderly. De Hert [5] state it's possible to minimize the risk of complications during anesthesia with preoperative risk assessment and optimization. Since patients not always are conscious of their own risk factors these may not always be described in the preoperative health declaration, often self-assessed by the patient [7]. Therefore identification of newly arise patients' risk factors by the nurse anesthetist prior to anesthesia is important as well as preoperative evaluation of patients with possible risk factors. Inadequate assessment of patients could possibly lead to situations with non-optimized patients care during surgery and risk taking during anesthesia. Therefore a critical part of patient safe care during anesthesia is to preoperatively update and identify potential risk factors. (National society of nurse anesthesia and intensive care, 2012). The nurse anesthetists have an important role as the patients´ advocate to update patient status and provide a basis for the choice of best anesthesia method [8]. This requires a close cooperation with good communication between the nurse anesthetist and anesthesiologist. It contributes to safer preoperative risk assessments and also different perspectives on how to plan and tailor made anesthesia which lead to a precise control and decreases risk for critical situations to occur during clinical anesthesia care.

Approximately 45% of the participants are of the opinion that it exists written guidelines for preoperative risk assessment in their current workplace, nearly 16% don't know. The guidelines from ESA for safe anesthesia [9] address the importance of a continuously improvement in the anesthesia care to promote patient safety. The guidelines for preoperative risk assessment is updated regularly and based on current research and are being applied in different ways in different countries which could lead to an adaptation of only the convenient parts [5]. Participants in this study, aged 20-30 years (28% "don't know") have less knowledge whether it exist written guidelines for preoperative risk assessment on their workplace or not, while participants aged 50-60 years have more knowledge about this (9% don't know). This needs to be paid more attention. 78% of the nurse anesthetists in this study have not received any education in preoperative risk assessment since their exam and 7,7% received education more than five years ago. This could explain why 19,7% of the participants do not feel comfortable to accomplish preoperative risk evaluation. The ability to identify risk varies between professionals and is dependent on both experience and theoretical knowledge. According to the competence description for the nurse anesthetist in Sweden [6] the nurse anesthetist is obligated to work preventive and identify abnormal events during the perioperative phase. No formal requirement on further education for nurse anesthetist regarding preoperative risk assessment exists, in the same time the Swedish competence description for nurse anesthetists [6] and the patient safety law in Sweden [10] highlight the importance to manage a patient safe care. 76% of the participants thought that patients should be informed preoperative about potential risks if the anesthesia is administrated without preoperative optimization. De Hert et al also describe this [5] and recommend preoperative information to all patients regarding potential risks before anesthesia is initiated. The younger participants experienced to a less degree the importance to inform patients about potential risks A potential cause to this might be that the younger participants feel unsure how detailed information the patient should receive and how to responding to patients' questions. In the same time Swedish healthcare law highlight the importance of the patients to be able to make informed decision [11]. Many of the participants experienced that they meet patients who are not optimized or have risk factors for safe anesthesia, 32% met these patients two-five times a week and 11% more than five times a week and participants with more than 15 years' work experience more often. Since it's common that anesthesia is planed based on a health declaration and not in conjunction with meeting the patient, new risk factors may have occurred if the timespan between the first risk assessment and surgery is long. This indicate the need to update the patient's status and the importance of communication between the nurse anesthetist and the anesthesiologist before surgery. The impact of work experience may be understood similar to Dracup and Bryan-Brown [12] who describe experienced nurse anesthetists to a higher degree base their decisions on an intuitive understanding for the situation in opposition to nurse anesthetists with shorter experience who's decisions more often are based on guidelines. Finally, there is a great importance that nurse anesthesia personnel are updated concerning the latest news involving anesthesia risk assessment. There are however some limitations in the study, we really don´t know if we reach out to all available respondents in Sweden by using a register for only members in Swedish Association of Health Professionals. There were 27% responders in the study, which are a lower number in this kind of used method. Also, some of the questions could be in more detail. We had predefined response alternatives, which may have had a limiting effect; some responders may not have been fully comfortable with any of the alternatives given.

Conclusion

The results from this study indicate that nurse anesthesia professionals in Sweden every week meet some patients for elective surgery which are insufficient preoperative evaluated for risk factors. Implementing structured evidence based

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preoperative risk assessment and facilitate the team work between nurse anesthetists and anesthesiologists has obvious potentials in improving quality of perioperative care. There is also a need to involve the patient in the anesthesia team. Those items will lead to increased patient safety in an anesthesia care environment and maintenance of person-centered care according to national guidelines.

Acknowledgement

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Conflict of Interest

None of the authors have any conflict of interest. Funding, this research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

References

1. (2017) Swedish perioperative register.
2. Apfelbaum JL, Connis RT, Nickinovich DG, Pasternak LR, Arens JF (2012) Practice advisory for preanesthesia evaluation: an updated report by the American Society of Anesthesiologists Task Force on Preanesthesia Evaluation. Anesthesiology 116(3): 522-538.
3. Pritchard MJ (2012) Pre-operative assessment of elective surgical patients. Nursing Standard 26(30): 51-56.
4. Fitz-Henry J (2011) The ASA classification and peri-operative risk. Annals of the Royal College of Surgeons of England 93(3): 185-187.
5. De Hert S, Staender S, Fritsch G, Hinkelbein J, Afshari A, Bettelli G, et al. (2018) Pre-operative evaluation of adults undergoing elective noncardiac surgery: Updated guideline from the European Society of Anaesthesiology. European Journal of Anaesthesiology (EJA) 35(6): 407-465.
6. (2012) Riksföreningen för Anestesi och Intensivvård & Svensk Sjuksköterskeförening.
7. Scharwachter WH, Keet SW, Stoecklein K, Loer SA, Boer C (2016) Health risk factors in the anesthesia population. J Clin Anesth 32: 33-39.
8. Munday J, Kynoch K, Hines S (2015) Nurses' experiences of advocacy in the perioperative department: a systematic review. JBI Database System Rev Implement Rep 13(8): 146-189.
9. (2010) Svensk Förening för Anestesi och Intensivvård. The Helsinki Declaration on Patient Safety in Anaesthesiology.
10. Patient Safety Law. SFS 2010: 659.
11. Health Care Law. SFS 1982: 763.
12. Dracup K, Bryan-Brown CW (2004) From novice to expert to mentor: shaping the future. American journal of critical care: an official publication. American Association of Critical-Care Nurses 13(6): 448.

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