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**ONE DAY SURGERY AND CHALLENGES FOR POST OPERATIVE CARE**

**From nursing student perspective and competences**

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## ABSTRACT

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<p>One day surgery (also known as day surgery or ambulatory surgery) has been the most effective and convenient method of surgery which benefits both patients and hospital administration through cost effectiveness and decreasing number of surgery patient waiting for operation. One day surgery is used in different countries including Finland since 1970.</p> <p>This thesis adapts two objectives on what kind of competences students need for post operative care in one day surgery and what kind of competences student have for post operative care for one day surgery which was analysed, through Likert scale questionnaire survey. The survey was conducted in skills and competences student need/have for post operative care in one day surgery among nursing student of Centria UAS who have English as their main study language. Out of 36 nursing students 78% students took part in our research survey. The quantitative research was conducted among the nursing student at Centria UAS fulfilling ethical guideline of UAS.</p> <p>According to the quantitative survey, nursing students of UAS agreed either totally or partially that they need evaluation for intensive monitoring, post operative pain management, post operative nausea and vomiting, nursing assessment for wound care, fluid balance monitoring and anxiety management and patient education for post operative care of one day surgery patient. In addition, 89% nursing student agree that they have those skills and competences for post operative care. Likewise, 85% nursing student agree that they learned those skills and competences for post operative care in one day surgery during their study period or during their surgical nursing practice. Moreover, our Likert style questionnaire survey results average was below 2, indicating that the nursing student viewed either totally or partially the mentioned skills and competences as challenges which they have, and they agreed they learned those during their study period or in practice.</p>		

### Key words

One day surgery, Post operative care, Nursing student, Skills, and competences

## ABSTRACT

## CONTENTS

<b>1 INTRODUCTION.....</b>	<b>1</b>
<b>2 THEORETICAL FRAMEWORK .....</b>	<b>2</b>
2.1 Day Surgery .....	2
2.2 Importance of Day Surgery .....	3
2.3 Patient Satisfaction in Day Surgery.....	5
2.4 Day Surgeries in Finland .....	6
<b>3 POST OPERATIVE CARE IN DAY SURGERY .....</b>	<b>8</b>
3.1 Intensive Monitoring.....	8
3.2 Post Operative Nausea and Vomiting. ....	9
3.3 Post Operative Pain Management .....	9
3.4 Wound Care.....	11
3.5 Fluid Balance .....	11
3.6 Patient Education and Anxiety Management.....	12
<b>4 AIM, OBJECTIVE AND RESEARCH QUESTIONS .....</b>	<b>13</b>
<b>5 METHODOLOGY .....</b>	<b>14</b>
5.1 Research Method.....	14
5.2 Data Collection and Analysis .....	15
<b>6 ETHICAL CONSIDERATIONS.....</b>	<b>16</b>
<b>7 RESEARCH FINDINGS.....</b>	<b>17</b>
7.1 Background Information on Respondents.....	17
7.2 Nursing Student Challenges towards Post Operative Care in One Day Surgery .....	18
7.3 The Perceived Competences of Nursing Students for Post Operative Care in One Day Surgery.....	19
7.4 Nursing Students Competences for Post Operative Care They Learned During Study Period. 20	
7.5 Nursing Students Competences they learned for Post Operative Care during Surgical Practice. ....	21
<b>8 CONCLUSION AND DISCUSSION .....</b>	<b>23</b>
8.1 Examination of the Research Method .....	23
8.2 Examination of the Results.....	23
8.3 Conclusions .....	24
8.4 Review of the Thesis Process .....	25
<b>REFERENCES.....</b>	<b>26</b>
<b>APPENDICES</b>	

**FIGURES**

FIGURE 1. One day surgery procedure for tonsillectomies surgeries in OECD countries from 2009-2019 .....11

FIGURE 2. Population data and participant according to student group.....22

FIGURE 3. I need following skills and competences for post operative care in one day surgery ..... 23

FIGURE 4. I have following skills and competences for post operative care in one day surgery .....24

FIGURE 5. Skills and competences learned during study period ..... 25

FIGURE 6. Skills and competences learned during surgical nursing practice.....26

**TABLES**

TABLE 1. Elements of post-operative pain assessment ..... 14

TABLE 2. Age group, population size, surgical nursing practice/course during school period .....21

## 1 INTRODUCTION

One day surgery (also known as day surgery or ambulatory surgery) has been the most effective and convenient method of surgery among others which help health care administration to decrease loads of surgery patients and at the same time give multiple advantage to the patient and their family. Though surgical operations have been performed a long time ago, the first day surgery was primarily introduced in 1909 by a doctor from Britain. After many successful surgeries and more than 8000 paediatric surgical cases Dr. Nicoll understood the importance of one day surgery for the future prospective in the healthcare industry. Further development can be seen in 1916 by Ralph Walters through his clinic in Iowa for dental and minor surgeries. (McCabe & Timmins 2009, 5-9.)

The motivation to explore the future about the day surgery and challenges arouse while doing practical training in surgical ward at Central hospital in Kokkola, SOITE. Day surgery requires careful planning and careful patient guidance so that patient can be prepare for surgery from home. Though one day surgery is performed in a day and patient go home within 12-23 hours after coming to hospital, the procedure follows different stages such as: preoperative, peri operative and post operative. Roles and responsibilities from surgical nurse or nurses where authors are interested to explore them more. In case of post operative complication patient stay at the hospital for at least 72 hours though it is also described as one day surgery (International Ambulatory Association Surgery 2003.)

A day surgery can be carried out with general anaesthesia or local anaesthesia and surgery are mainly selective i.e., patient is considered for one day surgery if patient is stable, and he/she is able to take care of preparations and post operative care at home independently or with relatives (TAYS 2020). This procedure passes through different processes from laboratory tests, medication, fasting and washing where nurses have different but important challenges to make day surgery possible. This thesis research deeply the challenges for post operative care surgical nursing for day surgery patient and outcomes of nursing student competences and perspective to encounter post operative care for day surgery patient so that patient can go home on same day after surgery.

## **2 THEORETICAL FRAMEWORK**

Theoretical framework provides research regarding the topic which is done by previous researcher and theorists. A framework gives its structure, acts as a frame of references, guide and direct the study as well as helps to make meaningful interpretation of the study. The theoretical framework covers day surgery definition and the important of day surgery and roles of nurses in day surgery.

### **2.1 Day Surgery**

Surgery is the procedure which will alleviate disabilities and reduce risk from death through common conditions. In 1909 Dr James Nicoll introduced day surgery. Day surgery is the procedure in which a patient gets discharged from hospital within a day. Over the last three decades, globally day surgery procedures have increased in the number and create low risk surgery among the patients. Similarly, day surgery procedures have been performed on the wider group of patients with more complications and problems and who often need more care during the postoperative phase. (Rosen 2011.) Day surgery provides safe health care and cost-effectiveness. Due to financial benefits, the government, and other agencies support day surgery. (Lemos, Jarrett & Philips 2006, 23-24).

Day surgery is also known as ambulatory surgery or day case surgery. In day surgery patients are not required to stay in hospital for night. (Bailey, Ahuja, Bartholomew, Bew, Forbes, Lipp, Montgomery, Russon, Potparic & Stocker 2019). In 1970 the first day surgery model was introduced in Finland in Helsinki and Kuopio University Hospitals. (Lahtinen, Alanki, Korttila, Laatikainen, Nenonen, Permi, Punnonen, Rihkanen, Tenhunen, & Toivonen 1998). In 2009, Finland performed 50% of its total surgeries were as elective one day surgery procedure. (Mattila & Hynynen 2009). The procedure in day surgery does not need continuous observation in the postoperative phase. The postoperative pain management can be manageable with regional anaesthesia techniques. Normally, the patient can return to their normal activities sooner after the surgery. (Quemby & Stocker 2013.) The surgical procedures performed in a day surgery usually have low risk of intraoperative and postoperative complications and hence do not need to stay for observation in the hospital.

The treatment in a day surgery optimises both the patient's care and health care resources. Most of the surgical procedures are elective surgical care in a day surgery. Day care surgery has access to surgical care in a controlled environment compared to a regular hospital stay. (Reiter 2014) Due to advances in

surgical techniques and technology, use of regional anaesthesia, financial considerations, short-acting medication, lifestyle changes and the patient satisfaction has seen an increase in the numbers and complexities of procedures being performed day surgery globally. (Ng & Mercer 2014). Likewise, many countries have developed their own guidelines for day surgery. Ambulatory surgery took several years to establish in a hospital environment. In day surgery, more patients can be treated at once with more effectively and efficiently. Similarly, day surgery has been accepted globally as a high-quality procedure. Day surgeries are cost-effective and increase patient satisfaction with low rates of infection. In one day surgery, patients are provided information regarding surgical procedure pros and cons forthcoming complication, if any. This will help patient to cope with psychological factors, for instance prolong hospital stay and normal routine medication like before. (Lemos et al. 2006, 23-24.)

Generally, after the surgery, the patient needs to stay in the hospital for recovery from anaesthesia and operation. After the invention of day surgery, there was no need to stay in the hospital during the recovery period. Day surgery is the advanced technology in the health sector which has dramatically helped to reduce length of hospitalisation. (Bellani 2008). Similarly, day surgery has the potential to be more cost-effective than inpatient surgery. Patients are more satisfied with day surgery due to minimal side effects and get discharged on the same day after the surgery. Day surgery has minimal disruption in their daily life. Due to effective information provision in one day surgery and psychological preparation to the patient by enough information helped patient to cope the situation faster and increase patient satisfaction. (Jaensson, Dahlberg & Nilsson 2019.)

## **2.2 Importance of Day Surgery**

In day surgery patients are selected carefully to reduce the intra-operative complications and postoperative complications. It also minimises long stay in hospital. So firstly, in perioperative assessment, it is crucial to identify medical, surgical, social, physical, and environmental problems of the patient. In day surgery, there are the least disruptions in a patient's everyday life because the patient can return home the same day after surgical procedure has been performed. In day surgery, there is limited time spent in hospital as the surgical procedures are safe and of high quality which lower the mortality rates and postoperative complications (Verma 2011; Shepperd 2013; Goncalves-Bradley 2016; International Association for Ambulatory Surgery 2014.)

Similarly, patients in day surgery will return to their normal life earlier by avoiding troublesome nights in hospital, it also shortens the separation time from family members and children. Day surgery is of

public interest and demand, surgeon satisfaction, and cost-effectiveness. Day surgery is increasing rapidly due to cost-effectiveness and usefulness accepted throughout the world by government and private agencies. In day surgery, less staff members are needed compared to the in-patient ward which lowers the costs of hiring more healthcare professionals. Therefore, the client gets properly managed health care services with productivity of staff and equipment. (Shepperd 2013; International Association for Ambulatory Surgery 2014; Goncalves-Bradley 2016; Reinhart 2018.)

Furthermore, day surgery provides a cost-effective quality of care to the patient as well as fast recovery procedure which may affect patient's expectations for recovery time. The information given to the patient regarding surgery is limited as results increase anxiety levels of the patient. (Gilmartin & Wright 2007). It also takes a long time to resume daily function. Similarly, postoperative symptoms such as vomiting and nausea are adverse effects in patient experience. Due to pain, patients need prolonged hospital stay when not managed actively and properly (Buckley 2010; Shnaider 2006; Mayo 2019). Further, we should also give attention to some of psychological issues such as anxiety and its management. One day surgical procedures are safe, efficient, economical, and offer speedy recovery from surgical interventions as well as minimal stay in hospital. Due to lack of adequate information regarding surgery, patients may suffer from anxiety. On the other hand, empirical evidence shows the sufficient information and support from both health care professional and relatives of patient helps patient reduce anxiety and feel safe. (Dahlberg, Jaensson, Nilsson, Eriksson & Odencrants 2018).

Likewise, the timely and appropriate provision in different levels of information should be given to the patient, which helps to tolerate the situation occurring before and after the surgery. Preoperative is the first step for day surgery in which patients are prepared physically and psychologically for surgery before and after the surgery. The preoperative phase ensures proper preparation of the patient for the surgery with facilitating a successful postoperative outcome. Patients and their relatives are educating about day surgery. Similarly verbal or written information is provided about operations, and it also identifies medical risk. This strategy also involved patients being prepared for probable outcomes. Likewise, the family members are also prepared for the situation that might occur during or after the surgery. So, there will not occur any situation for cancellations or delay for the surgery. It also makes the patient psychologically ready for the surgery and improves the experience of the day surgery. (International Association for Ambulatory Surgery 2014.)

Intraoperative strategy is the second step, and it aims to provide guidelines in which the patients should have fluid balance management. Intraoperative phase starts with the arrival of the patient to the operation



room and it last when the patient is transferred to the postsurgical care. In postsurgical care unit, the patient is monitored and prepared for the procedure to be performed for discharge when patient have lack of complications. Likewise, patient safety, prevention of infection, emotional support and surgical intervention are focused during nursing activities. (Goodman & Spry 2014, 2-3).

Post operative strategy is the last step in day surgery. It includes the post anaesthetic care given to the patient and discharge from the hospital. In ambulatory surgery patients are almost ready to get discharge after the post anaesthetic care unit. Similarly, in day surgery postoperative nurses provide care in the operating room. On the day of discharge, verbal and written instructions are provided to the patients and educate them any symptoms that may be experienced during post care (International Association for Ambulatory Surgery 2014). Despite the instruction on how to take care of patient and probable upcoming scenario on few days; patient still feels lonely and lack of support after discharged which emphasizes the importance on the follow up call to the patients or relatives in the beginning of first few days after surgery. Many countries do not have system of calling patient few countries like Nordic countries such as Finland follow up patient through telephone after discharge in day surgery. (Dahlberg et al. 2018).

### **2.3 Patient Satisfaction in Day Surgery**

Patient education and treatment should go hand in hand. Tremendous development and progress had been seen in the past decades in the field of technology. This is the time of the digital era where technology should be used in the healthcare field for better results and taking care of patients. In the past patient education provided information which consisted of caution to patients to adhere to hygienic or therapeutic measures when needed. Nowadays patient education has become an integral part of the healthcare system and patient guidance has become one of the core elements of healthcare policy. In addition, patient education provides confidence to nurses who take care of patient regardless of their disease, outcomes and procedure which takes to care for patient. (Leino, Johansson, Heikkinen, Kaljonen, Virtanen & Salanterä 2005, 307). Moreover, effective patient education gives nurses a chance to provide a set of planned educational activities to patients which provides patients knowledge, signs, symptoms, and treatment of disease which decreases patients' anxiety and reduces complications of disease. (Bastable 2017, 9-10). Eventual development of anaesthetic techniques and continuous education to nurses helps to minimise anxiety in nurses who work and educate patients in surgical wards.

## 2.4 Day Surgeries in Finland

Day surgery, also called ambulatory surgery, is meant to be surgical procedure in which patient discharged on the same working day. According to Tampere university hospital in Finland day surgery requires advance planning and hence patient are invited preliminary assessment or receives preliminary information form which patient need to complete and sent to hospital. Similarly, at the same time patient receive instruction about how patient himself/herself to-do list before coming for surgery such as laboratory test, medication and fasting. (TAYS 2020.) In addition, in Finland day surgery is considered to be eligible only when patient's mental health status is stable, and patient can take care of preparations for surgery and post operative care at home. Once day surgery is performed patient is transfer to recovery room where post operative care is provided by nurses. When pain comes under control and nurse provide home care instruction to the patient, he/she can go home with one accompanying to patient for 24 hours. (TAYS 2020). Further, in some cases this day surgery is also possible to transferred to short stay surgery where patient is transferred to inpatient ward for further assessment if problems is detected during surgery or in recovery room. (TAYS 2020).

Similarly, since the starting of one day surgery in 1970, one day surgery are in increasing trends in which Finland performed 50% of total surgeries as elective one day surgery procedure in 2009 among which tonsillectomies surgeries are mostly selected as one day surgery (Mattila 2010, Ambulatory Surgery 2021). Cataract surgeries are the next most common surgery Finland performed in one day surgery procedure. Besides these Finland carried out myringotomy with tube insertion, surgical removal of teeth, disc surgery and transurethral resection of the prostate with overall 31 surgeries in one day surgery procedure. (Mattila 2010).

The Organization for Economic Co-operation and Development (OECD hereafter) believes that one day surgery can be milestone to save important resources by avoiding adverse effects on quality of care provided by its member countries. Further, one day surgery helps to frees up capacity of hospital in its member countries so that they can focus on more complex cases at the same time reduce waiting list of people to hospital. Finland being one of the member countries of OECD applied one day surgery procedure more than high among average of the OECD member countries. Furthermore, Finland performed 97.3% of cataract surgeries and 87.7% tonsillectomies surgeries in one day procedure make itself one of the top countries who use one day surgery for their citizen without compromising quality of care to the people. (Ambulatory surgery 2023). The figure below provides one day surgery model used for tonsillectomies being highest in OECD countries.

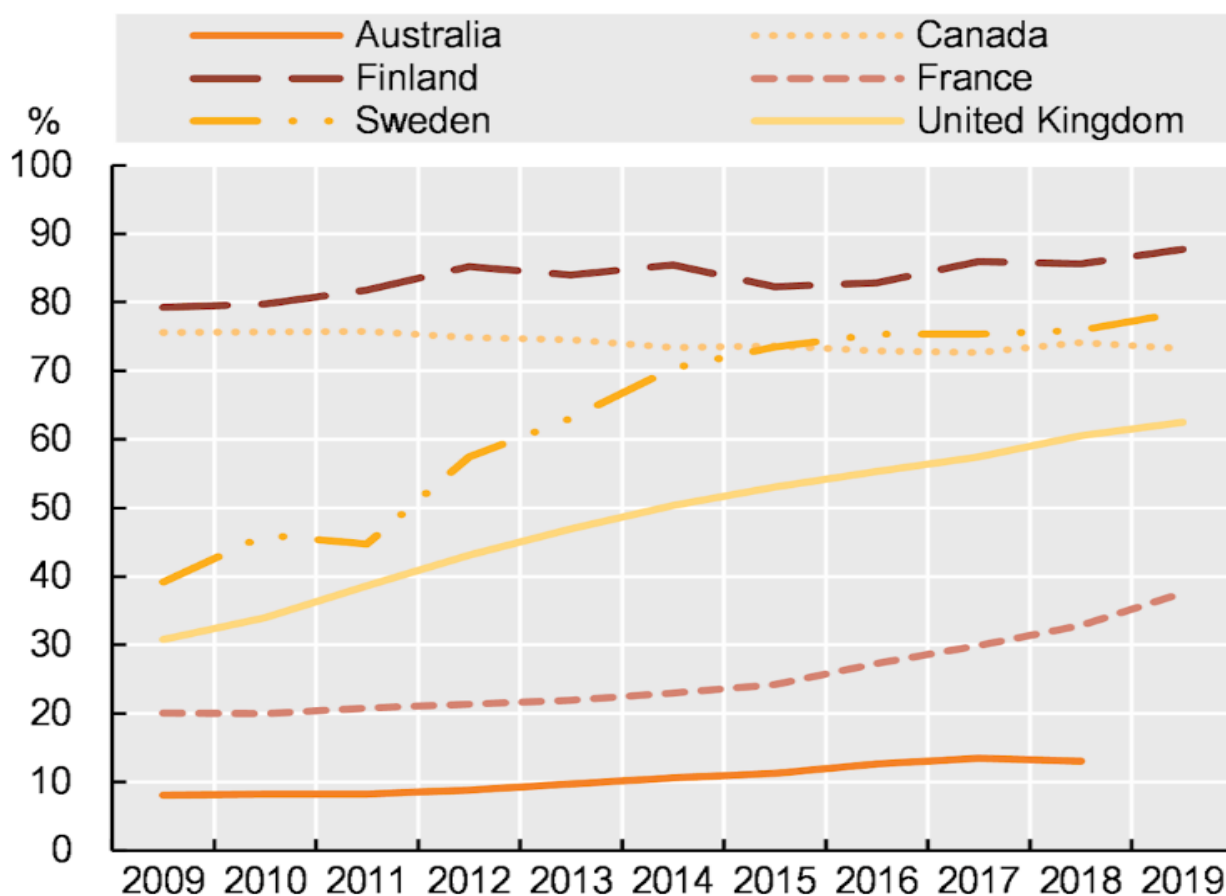


FIGURE 1. One day surgery procedure for tonsillectomies surgeries in OECD countries from 2009-2019 (Adapted from OECD Health Statistics 2021)

The above FIGURE 1 shows the trends of Finland using one day surgery for tonsillectomies surgery. Finland applied around 80% of tonsillectomies surgeries as one day surgery in 2009. The increasing trend until 2019 up to 87.7% clearly shows important and emphasis given by Finnish health care services for one day surgery to give quality of service to their people and minimize long waiting list for hospital. Though Finland perform one of the highest number of surgeries in one day procedure Finland waited long years to make 49% of its surgical in one day surgical procedure until 2008. (Perhoniemi et al. 2008).

### **3 POST OPERATIVE CARE IN DAY SURGERY**

Post operative care in day surgery starts from the awaking of patients, controlling protective airway reflex and pain which should be carried out with good competitive manpower. (Bailey et al. 2019). The objective of patient post operative care needs to be free from symptoms of complication so that patient can be discharge from hospital to home or transfer to ward for further assessment before patient can go home. (Mohamed 2017). This helps increase patient safety as well as incidence of early post operative complications and hospital stay which gives economic advantage for both patient and hospital. Likewise, the decrease of intensive care unit for patient also depends on the availability of post operative care unit in the hospital. The identification and treatment of adverse effect after surgery can be diagnosed and treated in post operative care unit such as airway obstruction, aspiration, nausea and vomiting after surgery, pain, hypothermia, anxiety, and renal complication if occur after surgery. (Mohamed 2017). In short, post operative care unit can reduce most of the complication after surgery which will reduce mortality rate and increase patient satisfaction through shared decision-making process with patient where patient receive sufficient preoperative and postoperative care information. (Dahlberg et al. 2019).

#### **3.1 Intensive Monitoring**

During surgical procedure patient body undergoes thorough physiological changes and hence be in the risk of haemorrhage and shock and therefore hemodynamic stability should be included in monitoring patient. (Hughes 2004). Though day surgeries are elective surgery and preoperative characteristic patient determine the preassessment in need of intensive care. Studies conducted on intensive care unit after surgery have unanimous results on intensive care, a most expensive care due to tools used in that unit such as mechanical ventilation and require more intensive nursing care. (Dasta, McLaughlin, Mody & Piech 2005). Vital signs are taken every hour in intensive care such as blood pressure, blood glucose, abdominal compartment pressure to prevent complication than to treating them too late before patient is transferred to ward or discharge to home. (Nesbitt 2006). Nurses should keep in mind that proper anaesthetic management and perioperative setting with short term effect of anaesthetic agents which made patient zero pain however, awake patients, alert with no nausea and vomiting, and limited bleeding during perioperative time can bypass the requirement of intensive care in one day surgery. (Apfelbaum et al. 2002).

### **3.2 Post Operative Nausea and Vomiting.**

Nausea and vomiting are the most common complication for patient and common challenges for nurses in post operative care because it is the side effects induced from anaesthesia medication. (Whitlock 2022). Nausea and vomiting must be avoided because it put more stress in surgical site of patient. Post Operative Nausea and Vomiting (PONV hereafter) is very common with anaesthesia practice, yet complex and significant problem, where study found PONV was in the increasing trends in one day surgeries. (Shaikh, Nagarekha, Hegade & Marutheesh 2016). Studies suggest that 27.1% of the patient face PONV within 24h of surgery and the study conducted in 1100 hospital patients. Likewise, it was found that female gender, patient previously having motion sickness, general anaesthesia and nasogastric insertion patient are more likely having PONV. (Son & Yoon 2017).

In addition, being one of the challenges for surgical nurses in post operative care nurses can use Apfel simplified scoring system for assessing risk of PONV which basically based in four independent risk predictors. Moreover, Nurses should have pharmacological as well as non-pharmacological knowledge to helps patients to overcome from this post operative challenges. For instance, nurses can use antiemetic drugs as Ondansetron, granisetron, dolasetron steroids, phenothiazines, butyrophenones and benzamides etc to prevent and reduce risk of PONV in one day surgical patient as well as phycological intervention and therapeutic measures as non-pharmacological measures to reduce PONV in one day surgeries. (Shaikh et al. 2016).

### **3.3 Post Operative Pain Management**

Post operative pain management is the most obvious challenges faced by surgical nurses in one day surgery. It is one of the most common adverse events take place after one day surgery where incidence of moderate to severe postoperative pain reached to 25-30% (McGrath, Chung & Curti 2004). Nurses should very carefully deal with post operative pain because it can induce other post operative symptom to patient including PONV, disturbance of sleep and delay in post operative recovery. (Tharakan & Faber 2015). Pain relief is the milestone to achieve good mental and physical health and hence surgical nurses keep good care of patient to speedup recovery from surgery and decrease likelihood of post operative pain to chronic post-surgical pain. (Nielsen, Rudin & Werner 2007). In addition, the post operative pain management is most obvious in one day surgery the additional challenges are from the patient who have high anxiety, chronic pain, and tolerance with opioids. (Tharakan et al. 2015).

In surgical care most of the post operative care of patient is for pain management after surgery. Nevertheless, evidence found that nearly half of the patient poorly received management of their pain after surgery. Those patients whose pain management was not done properly had effect on quality of life and functional recovery inviting post-surgical complication for the patient and at the end the persistent post-surgical pain to the patient. (Chou et al. 2016). In addition, one-third of the day surgery patient express moderate to severe stage of post-operative pain (Tharakan et al. 2015) in which up to three day of post operative care especially pain management is very crucial and therefore, specialist suggest patient to become “couch potato” i.e. rest for at least two to three days and then if possible from third day to begin normal standing, sitting and walking around. (Penta 2022). Therefore, post-operative pain management should be maintained by every health care organization and surgical health care nurse should have knowledge and competence while taking care of surgical patients. Further, below is the questions nurses can use to assess the patient pain level.

TABLE 1. Elements of post-operative pain assessment (Adapted from Chou at al. 2016)

Elements	Questions used for pain assessment
Onset and pattern	When did the pain start? How often does it come? Changes in Intensity?
Location	Where is the pain? Is it in the surgical site or elsewhere?
Quality of pain	What does the pain feel like?
Intensity	How severe is the pain? What is the score in pain measuring scale?
Aggravating and relieving factors	What makes the pain better or worse?
Treatment history	How does the pain affect physically, mentally?
Barriers to pain assessment	What factors might affect in the accuracy while assessing pain? (Such as communicational problem, misconception about interventions).

The above TABLE 1 shows the question surgical nurse can use to access the pain level of patient who undergo one day surgery in post-operative care. This is one obvious skill surgical nurse should be in competence with for post-operative care of patient. These general questions will help nurse to effectively take care of patient pain management, documenting of pain level for further assessment if needed. Fur-

thermore, study conducted by Lundeberg and Lönnqvist (2004) demand pharmacological and non-pharmacological intervention for good pain management. Pharmacological way of managing pain includes nonopioids such as paracetamol, Non-steroidal Anti-Inflammatory Drug (NSAIDs), clonidine and opioids medication such as morphine, meperidine, and hydromorphone. Non-pharmacological pain management includes Transcutaneous Electrical Nerve Stimulation (TENS), acupuncture and physical therapy. Mostly, non-pharmacological pain management is making distraction to the patient from the pain.

### **3.4 Wound Care**

Wound is a disruption to our skin that leaves our body pain and infection if not cared for properly. Indeed, skin is the largest organ of our body and plays crucial roles in protection, maintaining our body temperature, helping in our metabolism, excretion and cosmetic roles as well. Post-operative care of patient also includes wound care of patient and wound healing goes through different phases from hemostasis, inflammation, proliferation and tissue remodelling phase where surgical nurse should remember these phases for proper healing of wound and avoid infection. (Guo & DiPietro 2010). In addition, surgical site infection is one of the most serious post-operative complications where outcomes can be unpredictable. Therefore, surgical wound care guideline should be in aseptic technique compliance with either sterile or clean technique because both sterile or clean technique makes no difference in wound healing. (Stotts et al. 2004). Despite wound care guideline post operative wound care is challenge for surgical nurse as study suggest nurses' involvement in patient education for overall sustain recovery home issue than one issue in one day surgery. (Odom, Reed & Rush 2017).

### **3.5 Fluid Balance**

The fluid balance in surgical patient basically meaning the maintaining hemostatic of the body through cells of our body. Post operative care should include fluid balance of patient and nurse can balance fluid balance through 0.9% sodium chloride, 5% dextrose or hartman's solution such as Ringer's lactate solution or plasmalyte as prescribe by doctor involved in the team of surgery. (Hughes, 2004). The goals of one day surgery are to avoid or decrease post operative complications and at the same time to facilitate fast recovery after surgery. Study suggest that proper management of fluid balance reduce almost 50% of post-operative complication. (Miller, Roche & Mythen 2014). Proper fluid balance during surgery procedure in pre-operative, peri-operative and post operative care helps to reduce the risk of infection and hospital stay of the patient and hence early feeding and drinking to the patient should be encourage by nurse. Moreover, if intravenous fluid therapy is required after surgery low-sodium and low volume

should be given as patient after surgery will not have same ability to excrete sodium and chloride which helps to make adequate fluid balance. (Miller et al. 2014). Further, the excessive blood loss needs to be restored with blood transfusion during perioperative and postoperative care. (Hughes 2004).

### **3.6 Patient Education and Anxiety Management**

Technological improvement in health care sector and surgical technology over the past decades improve the ability to perform different surgery, even complex surgery on spine, in enhance recovery program with the advantage of few likelihoods in morbidity outcomes. (York, Gang & Qureshi 2019). This changes the surgical nursing practice in health care system and demand important roles of nurses in day surgery procedure educating patient before and after of the surgery. The patient education should ensure patient-centred approach in care where surgical nurses should give verbal as well as written instruction to patient and their family for any possible symptoms they might experience during few days after surgery. In a meantime how patient family can support patient during post operative problems at home are another crucial topic in patient education. (Berg, Arestedt & Kjellgren 2013).

In addition, the poor management of pain by nurses have directly proportional in recovery pace of the patient after surgery and increase anxiety in patient and family. Anxiety management should be core element of patient education part in which nurses inform normal ranges of recovery and management of self-care following the specific surgery procedure they went through. (Berg et al. 2013). Patient education should be simple, easy to follow and procedure-specific post operative instruction which is necessary to follow on possible upcoming circumstances. This makes hospital admission decrease after surgery if anxiety management to patient and family is endorsed. (York et al. 2019). Moreover, anxiety in patient becomes more challenging for nurses in educating patient (Rajala, Kaakinen, Fordell & Kääriänen 2018) as patient think massive post- operative responsibility at home and therefore nurses should use multiple platforms such as one on one education, group lecture and encourage patient participating in asking question as much as possible. Further, limited contact time with patient gives more challenges for nurses to provide effective education besides other above-mentioned challenges nonetheless nurses also have responsibility to inform and educate patient that day surgery is not minor surgery and therefore it need long time for recovery. (Mottram 2011).



#### **4 AIM, OBJECTIVE AND RESEARCH QUESTIONS**

The aim of this thesis is to describe one day surgery and the challenges for post operative care in one day surgery. Indeed, day surgery is one of the economic and reliable methods for doing surgery these days. The primary objective of this thesis is to find out different challenges for post operative care in surgical ward after one day surgery procedure and look after the nursing student competences need to face these challenges in post operative care in one day surgery. Generally, patient who had one day surgery will go home within 12-23 hours of after surgery depending on the post operative symptoms which demand different competences in the person who is looking after surgery such as nurses in post operative day surgery. This thesis conducts quantitative questionnaire survey to nursing student of Centria University of Applied Sciences student whose study language is in English and who already did surgical nursing course or surgical nursing practice during their study period. The research question focus in competences student need to face challenges for post operative care. Another question looks for the competence's student have for challenges in post operative care. In conclusion, the main research questions for this thesis are mentioned below.

Research questions are:

- 1) What kind of post operative competences nursing student need for one day surgery?
- 2) What kind of post operative competences nursing student have for one day surgery?

## 5 METHODOLOGY

Research is the process of gathering information through collecting, analysing, and interpreting information to answer questions. There are many ways to gather the information. Basically, researching is the process of answering the unanswered questions. Good research has passes from some steps of planned, organized, and has some specific goals to investigate in search for facts and truth. (Gupta & Gupta 2022, 4-6). In addition, Grinnell (1993) found research as a structure inquiry to solve a problem which helps to create new knowledge through utilizing acceptable scientific methodology. Moreover, a scientific methodology involves systematic observation, classification, and interpretation of data to find the answer of a problem. (Burns 1997,2).

### 5.1 Research Method

Methodology is the procedure of doing the research which provide some logic to scientific investigation one does. More generally, methodology is the science of methods which contains some standards and principles employed to guide the choice, structure, process and used of methods and indeed a dynamic in nature which can be changed according to need and demand of the researcher (Sam & Aroma 2011, 39-43). Quantitative research is based on collection of numerical data where researcher test and hypothesizes the problems to get insight information in identified problems. (Gupta et al. 2022, 6). This thesis adapts quantitative research approach to derived results for the identified problems on what kind of competences needed for post operative care and what kinds of competences students have for post operative care.

Researchers conduct questionnaire survey with the help of Webropol software to gather information on topic and identify solution on identified problems from its population data. Multiple choice questionnaire was design for quantitative research for this thesis and research conducted in between August and September 2023. The research follows all the guideline of Centria for the quantitative questionnaire survey. This thesis took permission from the director of education, Centria before conducting survey. The questionnaire was design in seven open-ended questionnaires where three questionnaires were for general information and four questions explains the research problems of this thesis.

## 5.2 Data Collection and Analysis

The researchers conducted pilot study on five nursing students studying in a Finnish university of applied sciences who already did surgical nursing practice or who already studied surgical nursing course before conducting survey on target population size. The participant selected for the pilot study for this thesis were from Helsinki area and one participant were former student from Centria. The final questionnaire was design with the inclusion from the pilot study suggestions. The questionnaire was design as Part I for general background information and Part II for competences and skills on nursing student for post operative care for one day surgery. The survey was conducted online in multiple choice questionnaire where participation is voluntarily and aafollow all the guideline explained by Centria. The researchers took permission from the director of education of Centria before conducting research and sending re-search questionnaire to its respondents through email.

The quantitative data were collected through questionnaire survey from Webropol. This thesis used Ms-Excel and Ms-Word for recording, interpreting and analysis raw data from its respondents so that it can explain the accurate and reliable results in this thesis. One of the benefits of using quantitative research was the feature of quantitative research which involve collecting and analysing data for accurate statistical analysis. (Goertzen 2017, 12-18). The researcher records the data collected from its target respondent and organized data into table and figures for review, analyse and explore further.

## 6 ETHICAL CONSIDERATIONS

Ethics in nursing research is the moral principles which researcher must follow in conducting research to assure the right and welfare of their respondents, group or community. Protecting harmful effects of experimental intervention should reflect from the very starting phase of the research. The researcher equally values their all responders without any bias in any circumstances of social, religion, psychological aspect providing maximum physical comfort such as assurance of their valuable information which will be used for mentioned research purpose than anything else. (Dilshada 2022.) Therefore, while conducting research on nursing student of Centria university of applied sciences on what kind of competence is needed to the student to face the challenges in post operative care, this thesis admires their respondent values and comfort without diverting its main objective during survey.

In addition, informant consent is another important ethical challenge author of this thesis noticed and solved while conducting and analysing results ready for published. The responder of the research process will be informed advance and the purpose of the research will be clearly mentioned and researcher goals will be notified in advance while conducting questionnaire survey so that the participants informed consent can be received for study purpose of this thesis. Further, this thesis follows the ethical aspects of autonomy, non-maleficence, beneficence, and justice for conducting quantitative research by respecting participant of survey, publishing the research work and exploitation free research which will avoid the probable disadvantage to the participant. Furthermore, the nursing research should follow ethical standard and researcher should understand and apply ethical principle to their own research for further study. (Heale & Shorten 2017).

Doyle and Buckley (2014) mentioned that the goals of the research should be simple and follow the rules and regulations which ensure the participant information security and confidentiality of the data for the mentioned purpose than any other. Hence, this thesis follows all the important ethical issue of research and responsible conduct of research of Centria University of Applied Sciences and research permission is applied to the organization in well advance before conducting and analysing first hand research data of the participant. The target group of this thesis research participant is informed, and data is analysed through different tools available for conducting research such as Ms. Word. Ms Excel and Webropol.

## 7 RESEARCH FINDINGS

The outcomes of the questionnaire survey conducted in two nursing group, third and second year of student, studying in Centria University of Applied Sciences (UAS, hereafter) were analysed and explained below. The questionnaire survey was conducted through Webropol and divided into Part I as General information and Part II as student knowledge and competences in same page (See appendix). The population size of the questionnaire survey is 36 students among which 78% students participated in the survey.

### 7.1 Background Information on Respondents

The background information of respondents was the basic part of survey where the researcher asks basic questions to the participant which will help researcher to know and understand the general information on the respondent participated in the questionnaire survey for quantitative research.

TABLE 2. Age group, population size, surgical nursing practice/course during school period

Age	Participants	Percent	Did Surgical nursing practice /course
<b>Below 20</b>	1	2.8 %	Yes
<b>21-24</b>	10	27.8 %	Yes
<b>25-29</b>	5	13.9 %	Yes
<b>30-34</b>	7	19.4 %	Yes
<b>Above 35</b>	5	13.9 %	Yes
<b>Total participants</b>	<b>28</b>	<b>77.8%</b>	<b>100%</b>
Population size	36		

The above TABLE 2 represent the background information on age, population size and respondents studied/practiced surgical nursing. We can see that 77.8% population size participated in the survey questionnaire voluntary among which 100% did surgical nursing course or surgical nursing practice during their study period in Centria UAS. In addition, age group 21-24 were the highest population size participated in the questionnaire being 10 and 7 participants were from age group 30-34. 1 participant is from age group below 20 who participated on our thesis questionnaire survey.

Moreover, Figure 2 below is the population data and participants according to nursing student groups.

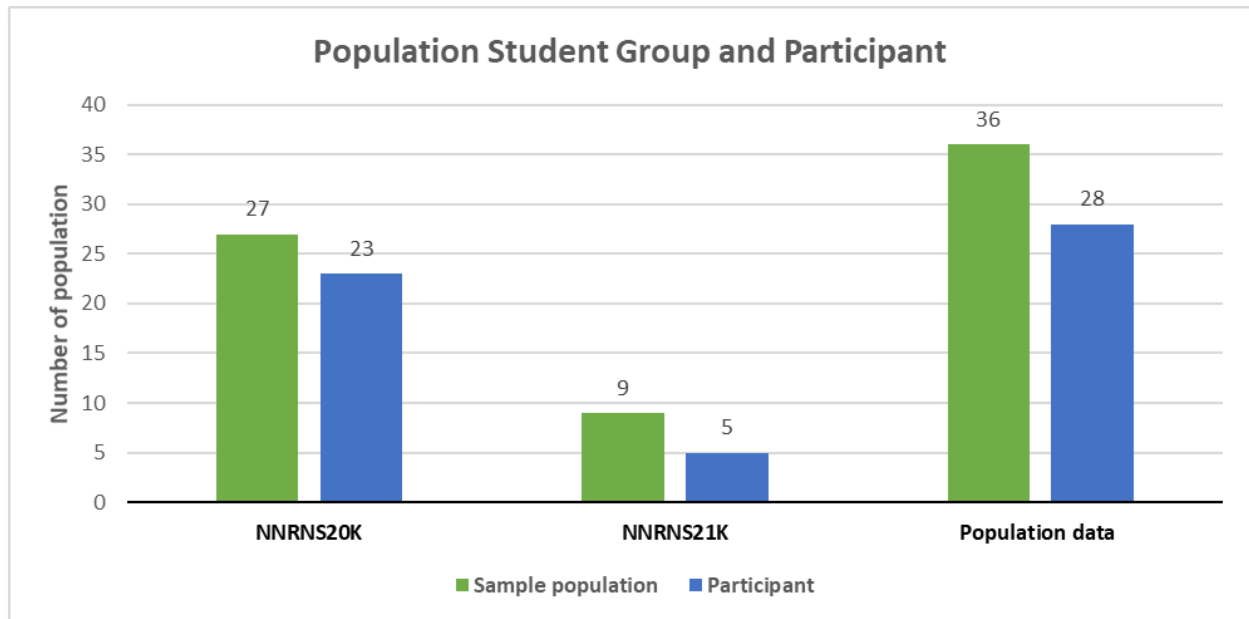


FIGURE 2. Population data and participant according to student group

In the above FIGURE 2 y-axis represent the number of population data used for this research survey and x-axis shows nursing groups together with total population data. From the figure we can observe that the total population size for our thesis questionnaire survey is 36 students among which 27 belongs to group NNRNS20K and 9 students from NNRNS21K. Moreover, 28 students participated in our thesis survey studying in Centria UAS where 23 students were from NNRNS20K being 85.2% respondent of the total sample size of the group and 55.6% respondent were from student group NNRNS21K. The total voluntarily respondent participant student was 77.8% of the total population data.

## 7.2 Nursing Student Challenges towards Post Operative Care in One Day Surgery

We asked our sample population i.e. nursing student studying in Centria UAS English as their study language the challenges for post operative care and student skills and competences for post operative care for one day surgery and their knowledge and skills for post operative care as Part II in our questionnaire survey. We asked four major questions to our population regarding their, challenges for post operative and if they need mentioned skills and competences for post operative care which they learn during their study period in nursing at Centria UAS. Likewise, we asked if they have those skills and competences for post operative care in one day survey patient. We also asked if they learned those skills and competences during their study period in Centria UAS or during their surgical nursing practice which is one of the mandatory course/practices in curriculum in Centria UAS bachelor's in health care, Nursing.

As part II in our thesis questionnaire survey, we ask nursing student of Centria UAS studying in English language about challenges for post operative care in one day surgery and if they need those skills and competences for post operative care in one day surgery. The results are explained below in Figure 3.

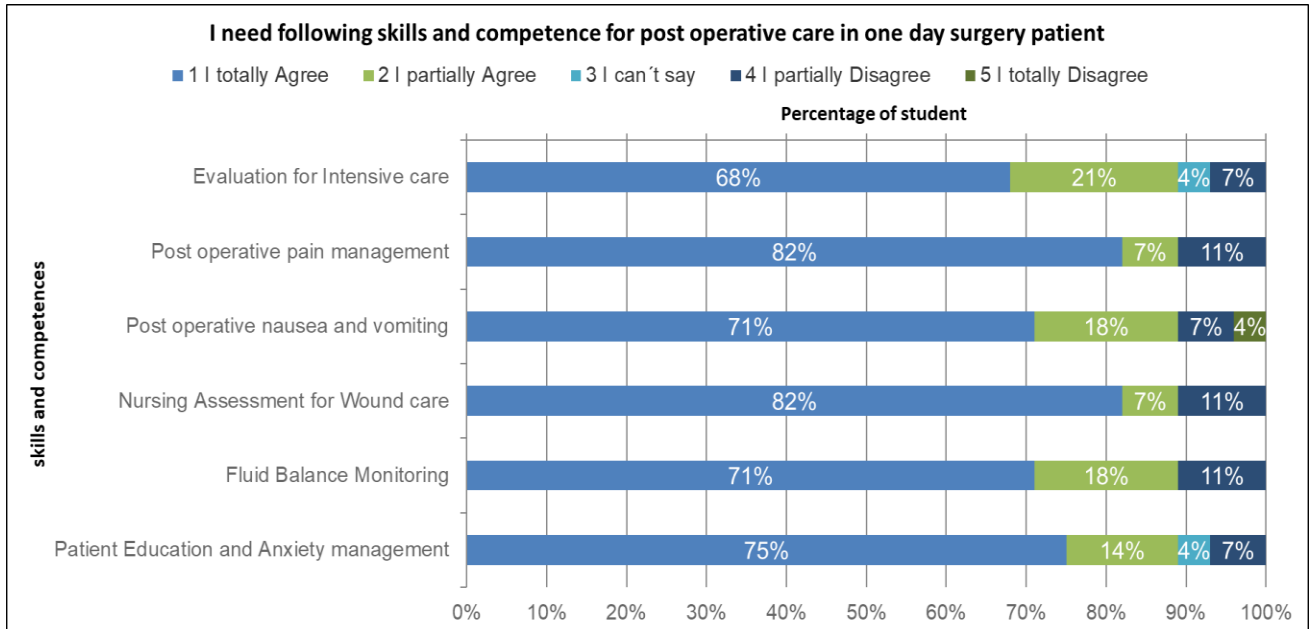


FIGURE 3. I need following skills and competences for post operative care in one day surgery

In FIGURE 3, challenges for post operative care and skills and competences is mentioned in y-axis and x-axis represent the percentage of student response to the challenges and competences. It shows that more than 70% of the student in Centria UAS think that they need above mention skills and competences for post operative care in one day surgery where 82% of the student think that they need post operative pain management skills and Nursing assessment for wound care skills for post operative care in one day surgery. Likewise, 68% student totally agree that they need evaluation skills for intensive care and 21% partially agree while 7% think they partially disagree that they need evaluation for intensive care to take care of post operative care in one day surgery patient. In contrast, 4% student totally disagree that they need post operative nausea and vomiting skills post operative care in one day surgery patient. On the other hand, 71% student totally agree that they need post operative nausea and vomiting skills and competences for post operative care in one day surgery patient.

### 7.3 The Perceived Competences of Nursing Students for Post Operative Care in One Day Surgery.

As second question in part II of our thesis questionnaire survey we asked nursing student of Centria UAS if they have skills and competences for post operative care in one day surgery. The survey result is explained below in figure 4.

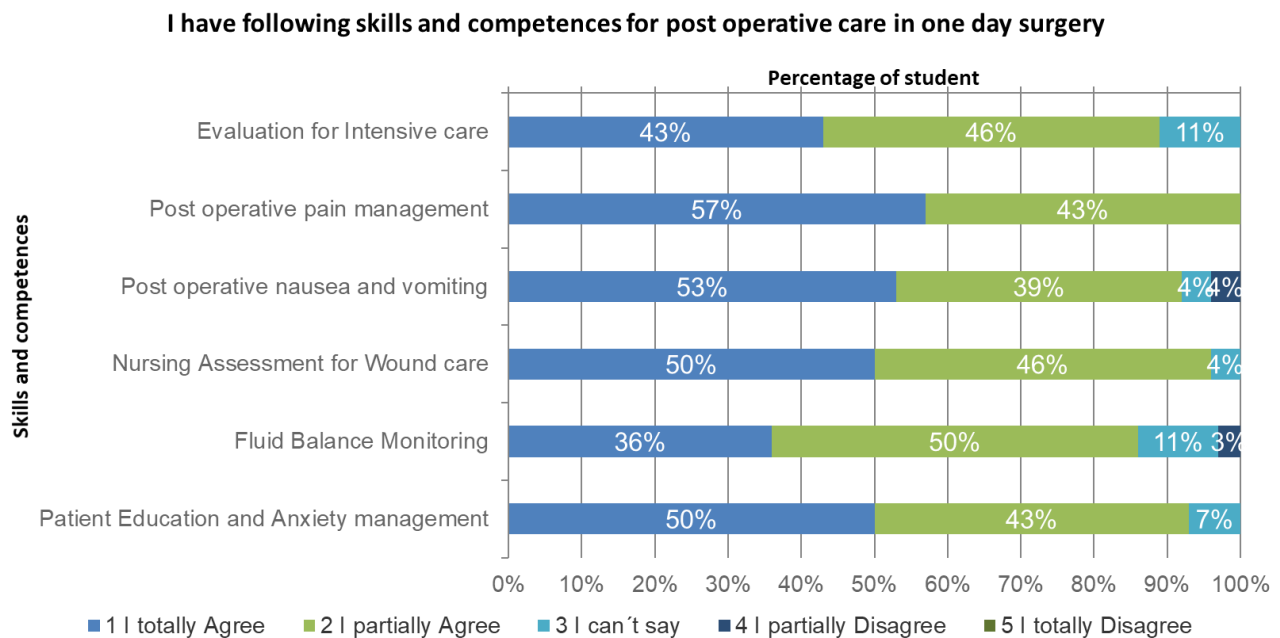


FIGURE 4. I have following skills and competences for post operative care in one day surgery.

In FIGURE 4, y-axis represent skills and competences and x-axis is the respondents in percentage. The figure shows the second- and third-year student studying nursing degree at Centria UAS agreed either totally or partially that they have above mentioned skills for post operative care which is over 89%. In contrast 4% student of second- and third-year nursing student partially disagree they have skills and competences for post operative nausea and 3% in fluid balance monitoring. Moreover, over 4% response that they cannot say if they have skills and competences for post operative nausea and vomiting and 11% says they cannot say for evaluation for intensive care and fluid balance monitoring.

#### 7.4 Nursing Students Competences for Post Operative Care They Learned During Study Period.

In part II of our questionnaire survey, we asked nursing student studying in English language at Centria UAS that whether they have learned following skills and competences mentioned below during their study period at Centria UAS. The survey result is mentioned in figure 5.



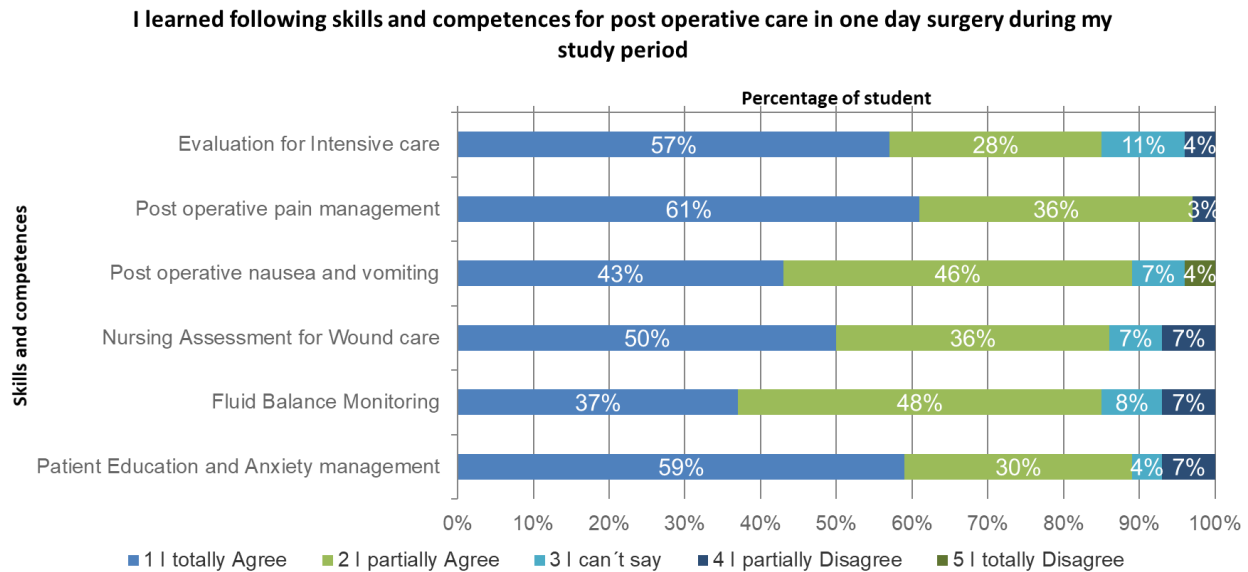


FIGURE 5. Skills and competences learned during study period

Here in the FIGURE 5 skills and competences were mentioned in y-axis and percentage of respondent mentioned in x-axis. In the above figure 5, we can see that 97% nursing student of Centria UAS studying second and third year of study agree either totally or partially that they learned post operative pain management skills during their study period followed by patient education and anxiety management 89% and nursing assessment for wound care with 86%. Nevertheless, 4% nursing student totally disagree that they learned post operative nausea and vomiting during their study period while 3% partially disagree that they learned above mentioned skills during study period for post operative care for one day surgery. Likewise, 4% cannot say they learned above mentioned skills in their study time.

### 7.5 Nursing Students Competences they learned for Post Operative Care during Surgical Practice.

We asked nursing student studying in English language at Centria UAS that if they learned below mentioned skills and competences during their surgical nursing practice as part II question. Indeed, nursing student studying at Centria UAS need to do their nursing practice in surgical nursing which is the mandatory as well. The survey results are explained in figure 6 below.

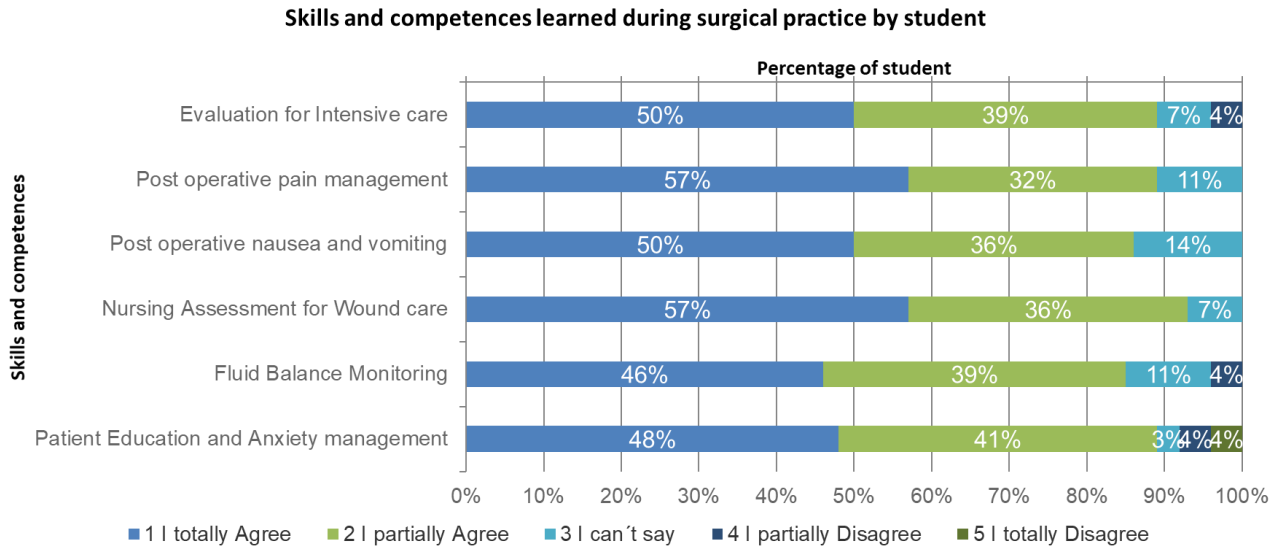


FIGURE 6. Skills and competences learned during surgical nursing practice.

In the above figure x and y axis represents percentage of respondent and skills and competences. From the above figure we can see that around 50% nursing student totally agree that they learned above mentioned skills and competences for post operative care in one day surgery patient during their surgical nursing practice. Above 85% nursing student of Centria who study nursing in English language agree either totally or partially that they learned above mentioned skills and competences for post operative care for one day surgery patient during their surgical nursing practice. However, 4% totally disagree that they learned patient education and anxiety management during their practice. None of the student either totally or partially disagree that they did not learn post operative pain management, post operative nausea and vomiting as well as nursing assessment during their practice for post operative care in one day surgery patient.

## **8 CONCLUSION AND DISCUSSION**

This thesis studies post operative care in one day surgery from the student perspective and competences if the student agreed they need the mentioned challenges for post operative care in one day surgery. Secondly, this thesis study if the student has mentioned skills and competences for post operative care.

### **8.1 Examination of the Research Method**

This thesis studies challenges for post operative care in one day surgery and competences student needs for one day surgery and post operative competence students have for one day surgery. This thesis uses quantitative methodology to study its objectives. This thesis asked nursing students of Centria UAS who is in second and third year of their study, studying bachelor's in health care in English language and who study surgical nursing course or finished surgical nursing practice. In addition, survey questionnaires were used for this thesis and used Likert scale method to derive the results and analysis. Webropol is used to conduct study and Ms-excel is used to analyse the research outcomes. Moreover, this thesis follows all the ethical guideline advised by Centria UAS and got the permission from the Director of Education of Centria UAS. The research survey questionnaire in nursing student were designed and follow and assure its participant for confidentiality and protect misuse of the data. Furthermore, this thesis conducts pilot study of nursing student studying in Finnish UAS and include suggestion from pilot study in question selection and conducting research.

Collection of the data were the first challenges through quantitative research method. Similarly, designing of questions which should be easy to understand and answer for respondent were next challenges this thesis went through. Nevertheless, the reaching to the respondent through webropol and email were easy as target respondent used some kind of gadget and tools such as webropol makes respondents easy to be taken part in survey even from their smart phone. Recording and analysing data were next advantage found by researcher when conducting research through quantitative research method.

### **8.2 Examination of the Results**

This thesis focuses on the post operative care for one day surgery patient from the student perspective and competences. The structure of the thesis follows theoretical framework explaining post operative care as challenges for post operative care in one day surgery. This thesis further explains why those post

operative care is important and challenges in post operative care in one day surgery. In addition, this thesis used Webropol for conducting questionnaire surgery to its population size and gathering data. This thesis made voluntarily participation on its population size and the questionnaire link were sent through email to the target groups of nursing student. Likewise, the results were presents in table and figure and the title were given to every outcome table and figure. The tools used for analysing and explaining the concrete results were Ms-Excel and Ms-Words.

Findings were similar to the previous findings explained above that evaluation for intensive care, post operative pain management, post operative nausea and vomiting, fluid balance monitoring and patient education and anxiety management were the challenges for post operative care in one day surgery for nursing student and they need those skills. Nurses should keep in mind that proper anaesthetic management and perioperative setting with short affecting anaesthetic agents makes patient zero pain however, made patient awake, alert with no nausea and vomiting and limited bleeding during perioperative time can bypass the requirement of intensive care. One-third of the day surgery patient express moderate to severe stage of post operative. Hence, post-operative pain management should be maintained by every health care organization and surgical health care nurse should have knowledge and competence. Moreover, anxiety management should be core element of patient education part in which surgical nurses inform normal ranges of recovery and management of self-care following the specific surgery procedure they went through. Furthermore, through quantitative research the nursing student of Centria have mentioned competences which are crucial which they learned during their study period and during surgical nursing practice.

### **8.3 Conclusions**

This thesis covers the one day surgery and its importance from the patient point of view and through organization perspective. Further literature review on post operative care in one day surgery add the values in this thesis on what are the challenges could be found in post operative care in one day surgery. Further, this thesis endorses the mentioned post operative care as challenges and at the same time needed competences in post operative care. This thesis conducted questionnaire survey on groups of nursing students of Centria UAS and derived results as the students' perspectives and competences on post operative care in one day surgery.

As we can see the study outcomes that the second and third year of nursing student studying in English language as their study language at Centria UAS agree either totally or partially that evaluation for intensive monitoring, post operative pain management, post operative nausea and vomiting, nursing assessment for wound care, fluid balance monitoring and anxiety management and patient education for post operative care in one day surgery patient and more than 85% nursing student response that they need those skills and competences. Similarly, 89% nursing student agree that they have those skills and competences for post operative care in one day surgery patient. Likewise, 97% nursing student of Centria UAS agree either totally or partially that they learned post operative pain management during their study period while 85% learned those skills and competences during their study period or during their surgical nursing practice. Likert scale model proved that nursing student agree totally or partially that above mentioned were the challenges for post operative care on one day surgery and they learned how to prepare those challenges during study period in Centria UAS either theoretically or during surgical nursing practice.

#### **8.4 Review of the Thesis Process**

This thesis objectives were to find what kind of competences nursing student need for post operative care in one day surgery and what kind of competences nursing student have This thesis explain the previous literature review on post operative care for one day surgery. This thesis conducted research to the nursing student whose study language is in English. The open-ended questionnaire was used to gather data, analysing the result and draw conclusion following the guidelines of Centria UAS. This thesis goes through different process in designing questionnaire before conducting survey. Conducting pilot study and endorsing suggestion from pilot study were some of the important events for this thesis. Different tools such webropol, Ms-word and Excel were used to elaborate and explain the research findings for this thesis in figures and tables.

The study includes nursing student of one UAS and English as study language. This can be further developed to all nursing student of Centria UAS including open university nursing student. The study could be different if the population size will be the whole Finnish UAS student. Moreover, this thesis study post operative care for one day surgery patient from student perspective nevertheless, the study can further expand to other variables such as through patient perspective and patient's relatives prospective to explore the kind of competences need for post operative care for one day surgery. Furthermore, the thesis can have more concrete view on nursing student needs for post operative care from expert panel interview or from different research methods.

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## APPENDIX 1

**SURVEY QUESTIONNAIRE:**

## Part I (General Information)

1. Nursing Group

NNRNS20K

NNRNS21K

2. Age

Below 20

21-24

25-29

30-34

Above 35

3. I have completed surgical nursing practice/Surgical nursing course

Yes

No

## Part II (Student Knowledge and Competences)

Please tick the best option with your knowledge and competences

4. I need following skills and competences for post operative care in one day surgery patient

	1. I totally agree	2 I partially agree	3 I cannot say	4 I partially disagree	5 I totally disagree
Evaluation for intensive care					
Post operative pain management					
Post operative nausea and vomiting					
Nursing assessment for wound care					
Fluid balance monitoring					
Patient education and anxiety management					

5. I have following skills and competences for post operative care in one day surgery patient

	1. I totally agree	2 I partially agree	3 I cannot say	4 I partially disagree	5 I totally disagree
Evaluation for intensive care					
Post operative pain management					
Post operative nausea and vomiting					
Nursing assessment for wound care					
Fluid balance monitoring					
Patient education and anxiety management					

6. I learned following skills and competences for post operative care in one day surgery patient during my study period

	1. I totally agree	2 I partially agree	3 I cannot say	4 I partially disagree	5 I totally disagree
Evaluation for intensive care					
Post operative pain management					
Post operative nausea and vomiting					
Nursing assessment for wound care					
Fluid balance monitoring					
Patient education and anxiety management					

7. I learned following skills and competences for post operative care in one day surgery patient during my surgical nursing practice

	1. I totally agree	2 I partially agree	3 I cannot say	4 I partially disagree	5 I totally disagree
Evaluation for intensive care					
Post operative pain management					
Post operative nausea and vomiting					
Nursing assessment for wound care					
Fluid balance monitoring					
Patient education and anxiety management					