BARRIERS AND FACILITATORS OF PREOPERATIVE EDUCATION WITHIN ENHANCED RECOVERY AFTER SURGERY (ERAS) PROGRAMS

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DEDICATION

To my parents, who have always encouraged me to advance my education and for always believing in me. You have shown me what strength, hard work, and dedication truly mean.

To my husband Jamie, for your unconditional love, support, patience, and encouragement every step of the way.

This accomplishment would not have been possible without you.

ABSTRACT

Providing sufficient and timely pre-operative education is essential for clients undergoing surgery within Enhanced Recovery after Surgery (ERAS) programs. Ineffective education may result in increased anxiety, increased risk of complications, longer hospital stays, and higher incidence for readmissions. The purposes of this project are to examine current nursing approaches in providing pre-operative education and; examine client perspectives in receiving this education in order to identify barriers and facilitators from both nursing and client perspectives. This project will include observation and informal discussion with nurses and clients at the preoperative assessment clinics at two Southern Alberta hospital settings. The information collected was organized into a SWOT analysis to determine internal and external strengths, weaknesses, opportunities, and threats in order to identify barriers and facilitators for ERAS post-operative information. The barriers and facilitators will inform recommendations to enhance the pre-operative process, improve client compliance, and surgical outcomes for ERAS clients.

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CHAPTER 1: INTRODUCTION

Pre-operative education is an important factor in improving health outcomes of clients undergoing surgery within Enhanced Recovery after Surgery (ERAS) programs. ERAS programs are a multi-disciplinary approach that requires collaboration between nurses, surgeons, anaesthesiologists, dieticians, and physiotherapists to coordinate care for clients (Gustafsson et al., 2012). The general components of the ERAS program include client education and preparation, reducing surgical stress response, maintaining postoperative physiological function, minimizing pain and discomfort and promotion of client autonomy (Aarts et al., 2012; Fearon et al., 2005; Gustafsson et al., 2012; Varadhan et al., 2010). The purposes of this project are to examine current nursing approaches in providing pre-operative education and; examine client perspectives in receiving this education in order to identify barriers and facilitators from both nursing and client perspectives. These barriers and facilitators will inform recommendations to enhance the pre-operative process, improve client compliance, and improve surgical outcomes for ERAS clients in two Southern Alberta hospitals.

Practice Problem

ERAS programs are a coordinated and multidisciplinary approach that combines many individual evidence-based perioperative interventions, each of which may have modest benefits when used alone, into a coordinated effort which has a synergistic beneficial effect on surgical outcomes (Aarts et al., 2012; Feldman, Delaney, Ljungqvist, & Carli, 2015; Gustafsson et al., 2012). A major component of ERAS recommendations include providing preoperative education and information in the form of personal counselling, pamphlets, or multimedia information. Client education plays an important role in influencing an individual's response to the post-operative experience and recovery process. The goal of preoperative education is to provide

concrete information and instructions to clients to enhance a successful recovery after surgery (Feldman et al., 2015; Gustafsson et al., 2012; Kahokehr, Sammour, Zargar-Shoshtari, Thompson, & Hill, 2008). Ineffective preoperative education and information may lead to increased anxiety, increased risk of complications, longer hospital stays, and higher incidence for readmission (Aasa, Hovback, & Bertero, 2013; Gustafsson et al., 2012; Ljungqvist, Hausel, Nygren, Thorell, & Soop, 2007). Providing sufficient and timely pre-operative education is essential (Feldman et al., 2015; Gustafsson et al., 2012; Lassen et al., 2012). Recovery programs like ERAS have shifted away from traditional practices to embrace new innovative approaches such as shorter fasting times, increased fluid intake and carbohydrate loading before surgery, mobility immediately after surgery, intake of nutritional supplements, and chewing gum post-surgery (Feldman et al., 2015; Gustafsson et al., 2012). These new post-surgery recommendations contradict traditional practices. It is imperative then, that clients are provided this new information, and understand what it means to enhance their postoperative experience and decrease the potential for complications.

The ERAS Society guidelines provides strong recommendations for preoperative education (Feldman et al., 2015; Gustafsson et al., 2012; Henriksen, Jensen, Hansen, Jespersen, & Hessov, 2002; Kehlet, 2015; Ljungqvist et al., 2007). However, clients are receiving the information but are not necessarily understanding it. There are numerous factors that affects clients' ability to receive and comprehend information including health literacy, language barriers, stress and anxiety, and age related factors (Aasa et al., 2013; Kripalani & Weiss, 2006; Tse & So, 2008). For these reasons, ineffective communication and lack of understanding of preoperative education has the potential to complicate ERAS outcomes.

Currently, there is lack of pre-operative educational best practice guidelines which poses potential threats to the process of providing effective information and education to clients. This presents challenges for the preoperative education process. It is important to understand the different barriers healthcare professionals and clients face and to determine different ways to communicate in order for clients to receive and comprehend information. In order to increase client education, preparation, and autonomy it is important to first determine how best to support nurses in providing information in a meaningful and beneficial way. Improved collaboration and education with clients has the potential to bring forth better outcomes for clients after surgery. Clients who are aware of and understand the rationales for ERAS interventions will have improved surgical outcomes and become partners in their recovery (Aasa et al., 2013; Norlyk & Harder, 2009; Sibbern et al., 2017).

Purpose of the Project

The purpose of this project is to examine current nursing approaches in providing pre-operative education and to examine client perspectives in receiving this education before they undergo surgery for hepato-biliary and pancreatic surgery (HBP) and colorectal surgery within ERAS programs. The goal of this project is to identify barriers and facilitators from both nursing and client perspectives in order to make recommendations to enhance this process. These recommendations will serve as a project deliverable and will be shared with practice.

CHAPTER TWO: LITERATURE REVIEW

A systematic review of the literature was conducted. Databases searched include Google Scholar, CIHNAL, Proquest Nursing & Allied Health Database, Medline, Pubmed, and Cochrane Database of Systematic Reviews. The key words used include preoperative, education, information, teaching, counselling, surgery, colorectal, pancreas, biliary, hepatic, liver, enhanced-recovery, ERAS, fast-track, clients, client, and guidelines. This literature review included studies from 2002 to 2017 and was limited to health-related (or nursing-related) articles. This review revealed that many groups conducted extensive work on preoperative education and impact on health outcomes, however, very little evidence is published on preoperative education for abdominal surgeries or for ERAS programs. The following themes organized the literature review: (1) preoperative education and ERAS programs; (2) client perspective: barriers and facilitators in receiving education; (3) nursing perspective: barriers and facilitators in providing education; and (4) educational strategies in preoperative education.

Preoperative Education and ERAS Programs

The ERAS Society guidelines indicate that the evidence level for providing preoperative education is low to moderate, yet it remains highly recommended within ERAS reviews and recommendations due to many potential benefits in surgical recovery. (Gustafsson et al., 2012; Lassen et al., 2012; Melloul et al., 2016). The findings from studies that focus on colorectal, hepato-biliary, and pancreatic surgery indicate that well-informed clients experience less anxiety, less pain, and recover faster after surgery and also have a greater sense of security, commitment, empowerment, and control in their surgical recovery (Aasa et al., 2013; Gustafsson et al., 2012; Johansson, Nuutila, Virtanen, Katajisto, & Salanterä, 2005; McDonald, Hetrick, & Green, 2004). However, many of these did not indicate what pre-operative educational strategies were used to inform clients.

Johansson et al. (2005) conducted a systematic review on preoperative education for orthopedic clients and found that educational interventions produced good results in increasing knowledge, reducing postoperative pain medication, and increase self-efficacy. However anxiety reducing effects were limited in this literature review. Guo (2015) also conducted a comprehensive review of the literature on six randomized control trials regarding the preoperative education interventions on cardiac surgery clients and the impact it has on reducing anxiety and improving recovery. Some trials demonstrated that preoperative education interventions improved physical and psychological recovery while other studies indicated no evidence was found to reduce anxiety and hospital stay. These findings are consistent with a Cochrane Review conducted by McDonald et al. (2004) regarding the impact of preoperative education for hip and knee replacements. In their review of nine randomized control trials MacDonald and colleagues (2004) found that it was unclear if preoperative education had benefits in terms of reducing anxiety or improving surgical outcomes such as pain, function, or adverse events. Some of the studies included in this review did conclude that there was a small benefit to preoperative education in the reduction of anxiety. There was also discussion in this review that preoperative education may represent a useful adjunct with certain low risk clients based on physical, psychological, and social needs.

ERAS preoperative information and education is aimed to improve postoperative recovery where clients can be seen as partners in their care and be more collaborative in their surgical recovery (Aasa et al., 2013; Sibbern et al., 2017). Pre-admission planning and goal setting are important for medical and social issues to be explored early in this process (Kahokehr, Sammour, Zargar-Shoshtari, Thompson, & Hill, 2009). The ERAS society recommendations indicate that clients should receive verbal and written information preoperatively describing what

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will happen during hospital stay, what to expect, and what role they have in their recovery (Feldman et al., 2015; Gustafsson et al., 2012; Lassen et al., 2012; Melloul et al., 2016). The ERAS information provided to clients emphasizes their role with specific tasks to perform during the postoperative phase including targets for oral intake, nutritional supplements, and mobilizing (Fearon et al., 2005; Gustafsson et al., 2012; Kahokehr et al., 2009). In addition to this, clients should also be informed of the rationales for interventions in order to facilitate adherence to ERAS guidelines and allow for timely recovery after surgery and early discharge. The literature indicated that awareness of risk of complications encouraged clients to take more responsibility because they did not want to prolong their personal course of recovery. (Aarts et al., 2012; Feldman et al., 2015; Norlyk & Harder, 2009).

Educating and informing clients is seen as a valuable and essential component for surgical care. Indeed, it would be considered unethical to exclude it based on inconclusive findings (Guo, 2015; Johansson et al., 2005; McDonald et al., 2004). However, there is a need for more evidence and research to determine which method or combination of preoperative educational strategies are best for providing individualized education based on physical, physiological, and social needs.

Client Perspective: Barriers and Facilitators in Receiving Education

ERAS guidelines emphasize the active role and involvement of clients in their recovery (Fearon et al., 2005; Feldman et al., 2015; Gustafsson et al., 2012; Henriksen et al., 2002). However, clients may feel vulnerable and face other challenges associated to a life-changing diagnosis, stressors associated with surgery, and conflicts related to work and home life. This section will outline the barriers and facilitators of preoperative education and information from the client perspective.

Barriers in Receiving Preoperative Education

Although the literature indicated that clients appreciated and benefited from preoperative education, barriers and inconsistencies were identified. Three different studies identified a major barrier for clients was not having enough time to read the information provided to them and not having enough time to prepare questions or have questions answered during preoperative assessment clinic visits (Johansson et al., 2005; Lithner et al., 2012; Sibbern et al., 2017). Educational sessions are often short in time and contain large amounts of important information. According to Norlyk and Harder (2009) clients felt they required a trusting relationship with healthcare providers through dialogue and cooperation to support them in their understanding and implementation of ERAS guidelines. This included getting a sense of security and support from nurses in order to take more responsibility for their recovery. However, this was greatly impeded by not having sufficient time to develop relationships or understand the information.

A potential for power imbalances and being told what to do was another barrier identified in the literature (Aasa et al., 2013; Johansson et al., 2005; Norlyk & Harder, 2009; Sibbern et al., 2017). Norlyk and Harder (2009) discussed how clients have a desire to be considered good and cooperative when trying to comply with expectations within the hospital setting. This may result in asymmetric power relationship between healthcare professionals and clients. Power imbalances can be prevented by having clients participate as partners in their care and receive explanations for interventions. Moreover, nurses and clients can work together as partners to identify relevant information, resources, and support to help clients' optimize their health and have autonomy in their recovery (Aasa et al., 2013; Johansson et al., 2005).

Another barrier identified in the literature pertains to sharing what is perceived by clients as inconsistent, incomplete, or contradictory information. In many cases there were

inconsistences between written material, verbal information, and information provided on wards after admission (Aasa et al., 2013; Bernard & Foss, 2014; Norlyk & Harder, 2009; Sibbern et al., 2017). These inconsistencies can potentially lead to further anxiety, frustration, and difficulties with compliance with ERAS guidelines. According to Kripalani and Weiss (2006) some of these inconsistencies could be associated with low health literacy levels. Health literacy refers to the ability to obtain, read, interpret, and process basic health information and has a significant influence over decision making which also impacts the amount of control one has over their health (Kripalani & Weiss, 2006).

Facilitators in Receiving Preoperative Education

Many clients who received preoperative education indicated that they had a comprehensive picture of the ERAS process as well as a greater sense of security and control (Aasa et al., 2013; Norlyk & Harder, 2009; Sibbern et al., 2017). Sibbern et al. (2017) conducted a systematic review of qualitative studies on clients' experiences with ERAS programs. In regards to information transfer, many clients who received written information at four to six weeks before surgery reported they felt better prepared for surgery. The clients in this study expressed that information sent to their home was also helpful for preparing questions for the pre-assessment clinic. Aasa et al. (2013) expanded on this where clients indicated that having the written information before the ERAS conversation occurred allowed clients time to consider questions and ask for clarification at their sessions and increased their overall confidence. In addition, many clients indicated they had many questions before surgery and found it very helpful to have face-to-face sessions before surgery to clarify information. They appreciated having the opportunity to ask questions and, have conversations where they felt acknowledged.

Clients perceived this approach as supportive in their recovery (Aasa et al., 2013; Norlyk & Harder, 2009; Sibbern et al., 2017).

The presence of family and support networks were reported to be beneficial to clients in reducing anxiety, helping with comprehension, and retention of information (Gustafsson et al., 2012; Lithner et al., 2012; Ljungqvist et al., 2007). Clients also indicated it was beneficial when information could be discussed at home and during hospitalization to reinforce and increase awareness of the expectations regarding recovery goals. (Aasa et al., 2013; Lithner et al., 2012).

Last, clients identified the attitudes and behaviors of healthcare professionals to be a decisive factor in ongoing and active participation with ERAS guidelines (Aasa et al., 2013; Norlyk & Harder, 2009; Sibbern et al., 2017). By building a trusting relationship with healthcare professionals, clients felt more empowered in their ability to work towards independence and felt safe knowing that the healthcare providers will be there to support them as they work towards their recovery goals (Norlyk & Harder, 2009).

Nursing Perspective: Barriers and Facilitators in Providing Education

Healthcare providers have a pivotal role within ERAS programs in providing ongoing education to clients as they undergo their surgical journey. Nurses provide information and education to clients to improve client satisfaction, reduce stress and anxiety, and improve overall health outcomes. This section will outline the barriers and facilitators in providing preoperative education from a nursing perspective.

Barriers in Providing Preoperative Education

There are many factors that impact healthcare providers in providing preoperative education. For example, education was often given low priority during the preoperative visits with clients due to time constraints and workload (Aasa et al., 2013; Johansson et al., 2005;

Lithner et al., 2012; Ronco, Iona, Fabbro, Bulfone, & Palese, 2012). Tse & So (2008) conducted a descriptive cross sectional design study which examined nurses' perceptions of importance for pre-operative education and factors that influence this teaching. They found that more than half of the nurses in this study perceived themselves as not often providing complete information to clients. This was related to a number of factors including lack of time as being one of the most influential factors.

In some cases, there were challenges associated with determining whose responsibility it was to provide preoperative education to clients with ERAS programs. Alawadi et al. (2016) conducted a study assessing the barriers and facilitators of ERAS programs for colorectal surgery in safety-net hospital in Huston, Texas which serves a low-income and largely minority population. The participants in the study included anesthesiologists, surgeons, nurses and clients. In this study, there was confusion regarding the responsibility to provide information to clients – approximately 60% of nurses in this study felt that doctors were primarily responsible with providing pre-operative information (Tse & So, 2008). This resulted in nurses not always providing complete information unless specific questions were asked based on the assumption that clients had already received a majority of the information - which was not always the case. Lack of client understanding was a significant barrier for nurses when providing preoperative education and could potentially be associated with health literacy and language barriers (Feldman et al., 2015; Friedman, Cosby, Boyko, Hatton-Bauer, & Turnbull, 2011; Kripalani & Weiss, 2006). Low literacy levels are associated with longer hospital stays and higher readmission rates (Friedman et al., 2011; Kripalani & Weiss, 2006). Language barriers were another common factor in influencing the amount of information provided to clients (Alawadi et al., 2016; Tse & So, 2008). When literacy and language barriers exist, other approaches and

resources should be utilized to influence the amount and type of information delivery (Alawadi et al., 2016; National Voices, 2014; Tse & So, 2008).

Facilitators in Providing Preoperative Education

Multiple studies suggest that ERAS guidelines were perceived positively by many staff members because of its standardized evidence-based approach in providing care to clients (Alawadi et al., 2016; Gustafsson et al., 2012; Sibbern et al., 2017; Tse & So, 2008). ERAS guidelines are intended to provide consistent and accurate information to clients to improve client satisfaction, quality of care, and health outcomes (Feldman et al., 2015). The literature suggests that nurses and healthcare providers who are educated on the benefits of these guidelines, and understand how to share this information with clients will better support them with their surgical recovery (Bernard & Foss, 2014; Feldman et al., 2015; Ronco et al., 2012). ERAS programs use a multi-disciplinary approach which requires collaboration between nurses and other healthcare professionals to coordinate care. Norlyk and Harder (2009) and Sibbern et al. (2017) discussed how the attitudes and experiences of each member of the interdisciplinary team has important implications for success and adherence to ERAS guidelines. This knowledge and collaboration allows for various opportunities to enhance client care and to support the team in the process of carrying out ERAS guidelines.

Educational Strategies in Preoperative Education

The goal of preoperative education is to provide concrete information and post-operative instructions for clients to enhance a successful recovery after surgery. The ideal timing of preoperative educations is 1-3 weeks before surgery (Aasa et al., 2013; Sibbern et al., 2017). Having a support person present for the information sessions help clients with reminders and

cueing on an on-going basis following the nurse visit (Aasa et al., 2013; Feldman et al., 2015; Friedman et al., 2011; Gustafsson et al., 2012).

As indicated earlier in this review, clients often feel they receive a large amount of information in a short period of time. Information packages provided to clients prior to their first clinic visit are very useful in that they allow time to absorb information and formulate questions prior to meeting with the nurse (Aasa et al., 2013; Friedman et al., 2011; Sibbern et al., 2017). This is not only beneficial to inform clients but also provides an opportunity to ask questions for individualized teaching. Not only do information packages provide essential information but because clients can think about the information, teaching during the nurse visit can be individualized.

ERAS Society Guidelines indicate that preoperative education within ERAS programs should include counselling, leaflets, and multimedia information with explanations and rationales for interventions. (Gustafsson et al., 2012; Ljungqvist et al., 2007). However, most often only face-to-face verbal and written explanations were provided to clients (Feldman et al., 2015; Gustafsson et al., 2012; Johansson et al., 2005; Lithner et al., 2012; Norlyk & Harder, 2009; Tse & So, 2008). It is important to recognize that clients have varying degrees and levels of health literacy based on numerous factors including education, cultural and language barriers, age related factors, and different experiences of individuals (Aasa et al., 2013; Feldman et al., 2015; Kripalani & Weiss, 2006). In this review of the literature, utilizing multiple formats of information where written information complements verbal information appear essential. That being said, written information should be at a reading level suitable for the general population, considering those with low health literacy and language barriers (Feldman et al., 2015; Friedman et al., 2011; Johansson et al., 2005; National Voices, 2014). Visual aids, pictures, and

illustrations are useful in enhancing other formats of materials especially with clients with low

health literacy with consideration that illustrations are non-ambiguous and utilize text in simple

language (Aasa et al., 2013; Friedman et al., 2011; National Voices, 2014). Information provided

to clients should be clear, concise, offer rationales, and focus on client role. By knowing the

benefits and safety of ERAS interventions, clients would have a greater sense of coherence and

control over their recovery (Kahokehr et al., 2009).

       Preoperative education is an essential and highly recommended component of

ERAS programs (Aarts et al., 2012; Gustafsson et al., 2012; Lassen et al., 2012; Melloul et al.,

2016). Both clients and nurses face many barriers in how preoperative education is presented and

understood. These barriers include large amounts of information in a short period of time, clients

receiving inconsistent information, and challenges associated to low health literacy. Facilitators

in preoperative education include clients receiving information before the face-to-face session,

having multiple opportunities for discussion and questions, and understanding the benefits of

ERAS guidelines and rationales to increase compliance and surgical outcomes. Effective

educational strategies when providing preoperative education involve utilizing various teaching

methods including written, verbal, and visual approaches and ensuring clients receive

information early and frequently to support them in their understanding. The literature highlights

that preoperative information and education can lead to better care, recovery, and outcomes after

surgery. Therefore, this project is necessary to better understand how clients understand, absorb,

and use the information and how to support nurses in the process of providing effective

preoperative education.

CHAPTER THREE: THEORETICAL FRAMEWORK

This project is guided by two theoretical frameworks: The Health Belief Model (HBM) and The Theory of Planned Behavior (TPB) as there are two audiences for this project – the clients receiving preoperative education and the nurses who are providing it. It is important to be aware of the perspectives of both groups as clients need to receive and understand this information in order to enhance their recovery after surgery with ERAS programs and nurses influence how and what information is transmitted.

The HBM was selected for this project to guide the assessment of client needs (See Appendix A for application of the HBM from client perspective). It is important for healthcare providers to be aware of a clients' perception of health, disease, and outcomes to understand how best to provide information and education. Preoperative information and education is regarded as one of the most important factors for fast-track rehabilitation or enhanced recovery programs (Feldman et al., 2015; Gustafsson et al., 2012). This project will use the HBM to guide the exploration of client facilitators and barriers so to improve collaboration between clients and nurses and improve outcomes for clients in enhanced recovery programs.

The TPB was selected for this project to inform the needs of nurses when providing information and education to clients before surgery with enhanced recovery programs (see Appendix B for application of the TPB from nursing perspective). It highlights the need to understand the beliefs of nurses, about who they see as affecting or influencing these beliefs and their behavior, and what they perceive as barriers to taking action regarding current practice in preoperative education. Enhanced understanding of the nurse's role through the application of the TPB will help identify facilitators and barriers for recommendations to improve preoperative nursing care.

Health Belief Model and Client Perspective

The health belief model (HBM) is one of the most frequently used models to help inform behavior change. It is designed to help understand health behavior through better understanding people's beliefs about health (Alberta Health Services, 2010; World Health Organization, 2012). The World Health Organization (2012) outline that at the core of this model, there are six constructs which impact the likelihood of people talking action related to their health. These six constructs include: perceived threat, perceived seriousness, perceived benefits, perceived barriers, cues to action, and self-efficacy. All of these constructs influence a person's decision to engage and participate in interventions to improve surgical recovery.

Perceived Threat or Susceptibility

Within the HBM, perceived threat refers to the belief that people perceive themselves as susceptible to a problem, illness, or condition (World Health Organization, 2012). All clients undergoing surgery are at risk for complications, longer recovery, and readmissions due to a number of different factors. These factors may be associated with non-compliance to ERAS interventions resulting in greater incidences of developing a post-operative ileus, prolonged wound healing, increased pain and nausea, reduced pulmonary function, and decreased physical performance (Aarts et al., 2012; Fearon et al., 2005; Gustafsson et al., 2012; Spanjersberg, Reurings, Keus, & van Laarhoven, 2011). As healthcare providers, it is important to inform clients of the threat and their susceptibility to complications.

Perceived Severity or Seriousness

Perceived seriousness refers to the belief that people are aware of the potential seriousness of a condition or situation and its consequences (World Health Organization, 2012). The perceived threat in non-compliance to ERAS interventions includes clients having the potential for prolonged hospital stay and readmissions related to complications. A systematic

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review by Spanjersberg et al. (2011) described the main reasons for increased length of postoperative treatment include pain, nausea, and developing a post-operative ileus. According to other studies, the length of hospital stay was considered to be the primary outcome although other outcomes were also considered – including mortality, minor complications, major complications, and hospital readmissions (Gustafsson et al., 2012; Ljungqvist et al., 2007; Spanjersberg et al., 2011). Clients need to understand the perceived seriousness and related consequences of surgery to make informed decisions and become partners in their recovery in order to prevent complications or reduce the severity of complications.

Perceived Benefits

Perceived benefits refer to the belief that taking action will minimize risk or consequences (World Health Organization, 2012). There are many benefits associated with ERAS programs. When ERAS programs were implemented and compared with conventional findings, there was an overall reduction in complications, decrease in hospital length of stay, and no significant increase in readmissions (Aarts et al., 2012; Ronco et al., 2012; Spanjersberg et al., 2011). Clients need to understand the benefits of ERAS programs in general as well what the specific benefits of the various components of ERAS programs (such as shorter fasting times and carbohydrate loading before surgery, and early oral intake, mobility, and chewing gum after surgery) have on improving surgical outcomes. Kehlet and Wilmore (2002) stated "classic studies have demonstrated that the knowledgeable [client] requires less analgesia in the postoperative period and at the same time, experiences significantly less pain than the less informed [client], and more recent investigations have supported the conclusion that preoperative information will aid coping, reduce preoperative anxiety, and may also enhance postsurgical recovery" (p. 631). Gustafsson et al. (2012) also indicated that detailed information may help

diminish fear and anxiety and improve the recovery process. Understanding the benefits of

ERAS guidelines has the potential to increase compliance and enhance the recovery process.

Perceived Barriers

Perceived barriers refers to the belief of the negative consequences or costs (physical or

psychological) associated with taking a particular action (World Health Organization, 2012). The

diagnosis of cancer poses a significant threat to a clients' life and well-being. Clients may have

feelings of being overwhelmed and frightened about the amount of information provided to them

resulting in the potential of not being able to fully understand or comprehend the information

(Johansson et al., 2005; McDonald et al., 2004). This can be related to a number of factors

including low health literacy, length of appointment, the type of educational material, and how

the educational material is presented (Aarts et al., 2012; Johansson et al., 2005; Ronco et al.,

2012). However, clients need to be aware of specific reasons for participating in ERAS

interventions as well as the benefits associated with a faster recover and fewer complications.

Healthcare providers need to assess clients' perceptions of barriers in carrying out these

interventions in order to better support clients in their recovery. Through education clients will

be better prepared to weigh the threat of complications against the benefits of learning about and

participating in ERAS programs.

Cues to Action

Cues to action refers to factors that stimulate readiness for change (World Health

Organization, 2012). Information provided from healthcare providers can influence readiness and

willingness to participate in in-hospital interventions. According to Norlyk and Harder (2009) by

building a trusting relationship with healthcare professionals, clients felt more empowered in

their ability to understand the information. Interaction and face-to-face communication are

important because in addition to developing relationships and building trust, it allows

opportunities for clients to ask questions and seek clarification from healthcare professionals

(Norlyk & Harder, 2009). Feldman et al. (2015) discussed how clients need information about

ERAS intervention in order to participate in care. This information should include: "clear written

guidelines, including specific goals for each day of the perioperative period, the expected length

of hospital stay, criteria for hospital discharge, and how to continue their recovery following

discharge" (p. 13). When providing education to clients, nurses must consider different levels

health literacy and different ways to communicate information effectively (Aasa et al., 2013;

Feldman et al., 2015; Kripalani & Weiss, 2006). People have varying degrees and levels of

health literacy based on numerous factors including education, cultural and language barriers,

and age related factors. Cues to action through the use of effective education can stimulate

clients to learn about and participate in ERAS recommendations to support them in their

recovery.

Self-Efficacy

Self-efficacy refers to confidence in one's own ability to take action (World Health

Organization, 2012). Self-efficacy helps shape "the initiation of a behavior, amount of effort put

toward that behavior, and length of time the behavior is sustained in the presence of obstacles or

challenges" (Alberta Health Services, 2010, p. 7). Empowering clients through education will

support them in better managing the stressors associated with their surgery and allow them to

feel like partners in care (Feldman et al., 2015).

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Theory of Planned Behavior

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The theory of planned behavior (TPB) is a useful and commonly used model to explain

behavior and identify important factors affecting behavior change including healthcare

professional's behaviors and intentions (Alberta Health Services, 2010; Godin, Bélanger-Gravel, Eccles, & Grimshaw, 2008). First developed by Ikek Ajzen, TPB is an extension of the theory of reasoned action developed by Ajzen and Fishbein in the early 1960s (McKenzie, Neiger, & Thackeray, 2009). The TPB is based on the premise that intention is one of the most important determinants of an individual's behavior. Intention is referred to as the cognitive representation of a person's readiness to perform a given behavior (McEwen & Wills, 2010). This model is based on the assumption that the intention to perform the behavior is influenced by three constructs: attitude toward behavior, subjective norm, and perceived behavior control.

Attitudes towards the Behavior

Attitudes, or behavior beliefs, are defined by Ajzen as "the degree to which performance of the behavior is positively or negatively valued"(as cited in McKenzie et al., 2009, p. 168). They are determined by the belief that a desired outcome will transpire if a particular behavior is followed (Nutbeam & Harris, 1999). Attitudes can be viewed as a combination of beliefs, intentions, emotions, and perceptions. Based on this theory, nurses will have a more favorable attitude and be more likely to provide preoperative education (effectively and with explanations of rationales) to ERAS clients if they understand and believe in the benefits to clients outcomes.

Subjective Norms

Subjective norms, or normative beliefs, are defined by Ajzen as "the perceived social pressure to engage or not engage in a behavior" (as cited in McKenzie et al., 2009, p. 168). Subjective norms focus on the beliefs of the individual and the opinion of others (such as family, friends, employer, co-workers, media, lawyers, etc.) as well as best practice guidelines, and practices that are embedded in routines and traditions. Therefore, individuals who believe that they are expected to perform a behavior a certain way, are more motivated to meet expectations

and hold positive expectations (McKenzie et al., 2009). Based on this model, nurses need to be educated in the benefits of ERAS programs and in providing effective education as a normative practice and have a shared goal and expectation of providing standardized ERAS education to improve client outcomes.

Perceived Behavioral Control

Perceived behavior control, or control beliefs, refers to a person's perceptions of their ability or their perceived ease or difficulty in performing a particular behavior. (McKenzie et al., 2009). As a general rule within this model, "the more favorable the attitude and subjective norm with respect to a behavior, and the greater the perceived behavioral control, the stronger should be the individual's intentions to perform the behavior under consideration" (McKenzie et al., 2009, p. 169). Conversely, if the attitudes and subject norms are less favorable, there would be less likelihood of an individual's intentions to perform a behavior. Nurses need to feel empowered and understand they have the ability to provide effective education to clients. This can be done by ensuring nurses receive and understand ERAS guidelines through ongoing training and having resources in place in order to decrease obstacles and provide a great sense of control over providing effective preoperative education.

The HBM model focuses on the client perspective in receiving and understanding information and the TPB focuses on the nursing perspective in how information and education are provided to clients. The HBM is an effective tool in predicting factors that may influence the health behaviors of clients requiring surgery within ERAS programs. Nurses and healthcare professionals can focus on potential change strategies based on clients' perceptions and beliefs. By understanding clients' beliefs, there is a greater potential to provide effective communication in order increase compliance and improve surgical outcomes. The TPB is a beneficial tool to

assess nurses' intention to provide effective preoperative education based on attitude, subjective

norms, and perceived behavioral control. Based on this model, nurses who have a more a

favorable attitude, understand that ERAS guidelines are a standard of practice, and feel

empowered in their ability to provide effective education will be more likely to learn about and

implement preoperative educational strategies to support clients in their recovery.

CHAPTER FOUR: PROJECT DESCRIPTION

Setting and Stakeholders

The purposes of this project was to: examine nursing approaches in providing pre-operative education; examine client perspectives in receiving this education before clients underwent surgery within ERAS programs; and identify barriers and facilitators from both nursing and client perspectives.

This project will include direct observation and informal discussion with nurses and clients at the preoperative assessment clinic at two Southern Alberta hospital settings: Foothills Medical Center in Calgary, Alberta and Chinook Regional Hospital in Lethbridge, Alberta. The results from this project will be shared with the provincial ERAS lead, the manager of surgical services at Foothills Medical Center, and the ERAS coordinator for Foothills Medical Center.

The intent of this project is to share the findings from Foothills Medical Center, which has established ERAS programs for a number of years, throughout the province (including Chinook Regional Hospital) where ERAS programs have been recently implemented within the last two years.

Data Collection

The data collection entailed observation of preoperative education sessions (15 sessions) between nurses and clients, listening to telephone education, through informal discussions with nurses and clients, and an informal discussion with a volunteer Patient Advisor with the Surgical Strategic Clinical Network, an individual who was diagnosed with rectal cancer and who underwent surgical treatment using the ERAS guidelines.

Currently there are two target audiences for this project – (1) clients who are receiving preoperative information and education and (2) nurses who are providing preoperative information and education to ERAS clients. Two theoretical frameworks were selected to

formulate the foundation for recommendations for this project: The Health Belief model (HBM) to guide the assessment of client needs and the Theory of Planned Behavior (TPB) to inform the needs of nurses when providing preoperative information and education to clients before surgery. Guiding questions were developed based on the HBM and TPB to help facilitate discussion and obtain information for data collection (see Appendix C for guiding questions).

The data collected from observation and informal discussions will be organized into an analysis of strengths, weaknesses, opportunities, and threats (SWOT) to help identify barriers and facilitators from both nursing and client perspectives, and provide a foundation to build recommendations upon. SWOT is a systematic approach to examine strengths, weaknesses or areas for improvement, opportunities, and threats (McKenzie et al., 2009). DeSilets (2008) provided a description of each component of the SWOT analysis: strengths are described as values, abilities, knowledge, and personal responses, weakness are factors that inhibit or diminish the ability and quality of work in implementing this innovation; threat is an event or trend that would result in producing negative consequences; and opportunities are a combination of many factors that will result in positive consequences.

Ethical Considerations

Following the completion of A pRoject Ethics Community Consensus Initiative (ARECCI) training course, an assessment of risk for the participants of this project was completed. ARECCI tools are used to assess the level of risk and identification of ethical consideration and are primarily utilized for quality improvement and project evaluation. This project was determined to be minimal risk (see Appendix D for ARECCI links). No identifying client information was collected or recorded. Participation in this project was voluntary. The

information recorded was recorded as group data with no information being linked to specific

site or diagnosis.

CHAPTER FIVE: PROJECT RESULTS AND RECOMMENDATIONS

The findings from this project and the evidence from the literature supports the view that information and education presented to clients could be improved through a better understanding of the barriers and facilitators faced by both clients and healthcare professionals. These barriers and facilitators are identified throughout the SWOT analysis from both client and nursing perspectives (see Appendix E and Appendix F). This chapter provides five recommendations for practice based on supportive project data (findings within SWOT analysis) and based upon supportive literature. A project deliverable of recommendations to improve practice was developed and is to be shared with key stakeholders to support improvement within the PAC settings and within the ERAS program (see Appendix G for project deliverable).

Recommendation # 1 – Standardize the Number of Client Contacts for ERAS Clients

Mail information
- Written booklet + ERAS visual handout + ERAS video links
- Include ERAS specific information

Pre PAC phone call
- Verbal + ERAS visual handout + video reminders
- Collect history

PAC appointment
- Witten booklet + verbal + ERAS visual handout
- **Review booklet with client** - do not expect clients to read it on their own

Post PAC phone call
- Verbal + ERAS visual handout
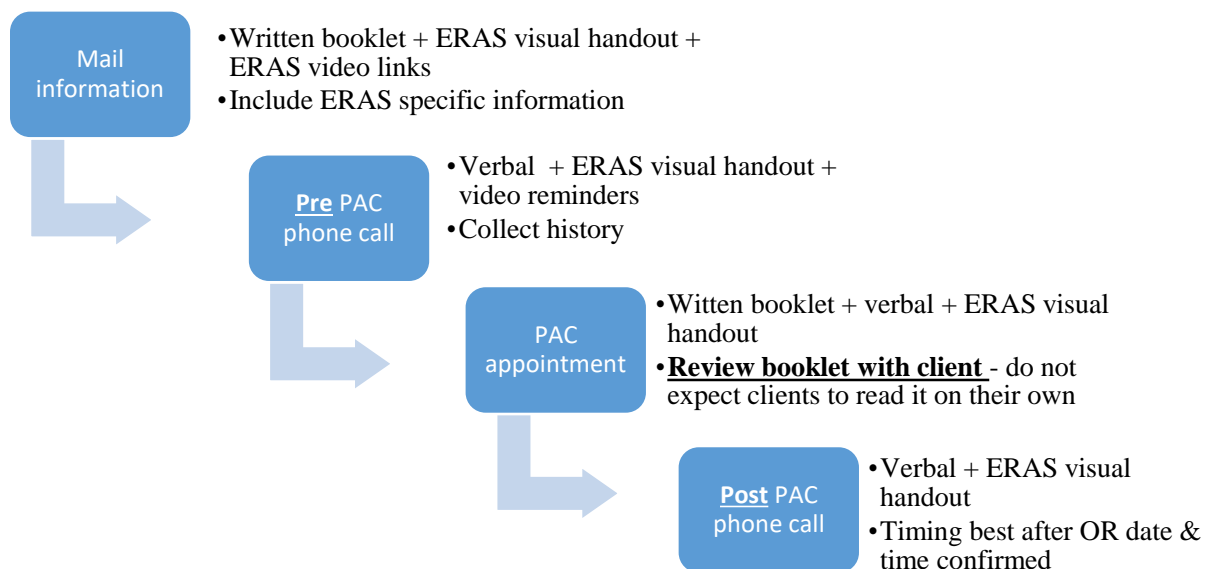- Timing best after OR date & time confirmed

Figure 1. Standardization of client contacts for preoperative education

Supportive Project Data for Recommendation #1

- There was an inconsistent number of client contact during the PAC sessions (having information booklets early, pre-PAC phone sessions, PAC clinic appointments, and post-

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PAC follow-up). Having consistent client contacts ensure clients have opportunity to receive, understand, and reinforce information.

- Clients indicated repetition of key messages was important to their understanding
- Clients preferred nurses review information in the booklet with them.
- Phone calls pre and post PAC appointment were beneficial to clients in understanding and recalling information.
- Many clients indicated when all information was reviewed during the PAC clinic appointment, they felt overwhelmed with the amount of information they received in a short period.

Supportive Literature for Recommendation #1

The Registered Nurses' Association of Ontario (RNAO, 2012) and Friedman et al., (2011) recommendation engaging in more structured and intentional approaches when facilitating client centered learning in order to affect a more positive health outcome for clients. Having standardized client contact allows nurses to check for understanding, offer explanations, provide demonstrations, and clarify information until it is understood by clients (Friedman et al., 2011; RNAO, 2012). Clients who reviewed this information early and more frequently felt more confident and motivated to be partners in their recovery.

It is important to plan information sessions early, with repetition and reinforcement in multiple forms of education including written, verbal, visual, and video cues (Ronco et al., 2012). Information packages provided to clients prior to their first clinic visit are very useful given they allow time for clients to absorb information and formulate questions prior to meeting with a nurse (Aasa et al., 2013; Friedman et al., 2011; Sibbern et al., 2017). Written information decreases confusion and improves client knowledge when provided prior to the first clinic

appointments (Friedman et al., 2011). Telephone calls may be considered more convenient for clients, provides opportunities to ask questions, and allows for more time in face-to-face sessions to review ERAS information (National Voices, 2014; RNAO, 2012). The evidence also indicates that verbal instruction should only be used in conjunction with other methods of education delivery to support clients in recalling information (Friedman et al., 2011; National Voices, 2014; Ronco et al., 2012). Reviewing written information with clients improves understanding as it is interactive, allows for nurse/client dialogue, address issues of immediate concern, and allows for opportunities for clients to ask questions (RNAO, 2012). This is why it is important to have numerous client contacts during the preoperative phase to ensure that clients are receiving various methods of instruction (verbal in conjunction with written, visual, and video formats) as well as repetition and reinforcement to support them in the postoperative phase.

ERAS programs involve numerous interventions which may result in challenges in understanding the various components and benefits. The Best Practice Guidelines by RNAO (2012) indicate that effective client centered learning involves more educational sessions over a longer duration of time which allows for utilizing various teaching methods, providing opportunities for clients to ask questions, individualizing teaching approaches, and having an overall greater impact on knowledge retention. A minimum of four client contacts for preoperative education will allow for the time and consistency required for all clients within ERAS programs to receive and understand the information provided to them.

<div align="center">

Recommendation #2 - Provide Clients with a Visual Tool and

Rationales for ERAS Interventions

</div>

Clients have more responsibility in their health and being involved with their care when participating in ERAS programs. It is imperative therefore, that they understand their role in their

recovery. A visual aide with rationale is recommended for clients as it is easy to understand, clear, direct, and provides explanations for the interventions they will be involved in.

Supportive Project Data for Recommendation #2

- Clients indicated information should be "clear" and "direct"

- Providing rationales for ERAS interventions increased perceived likelihood of compliance by clients

- Clients indicated there were a lot of booklets and a lot of information to read and consequently, they were overwhelmed.

Supportive Literature for Recommendation #2

The RNAO (2012) recommends the use of images and pictures to communicate health information. Visual aids, pictures, and illustrations are useful in enhancing other formats of materials especially with clients with low health literacy given that illustrations and may be non-ambiguous and utilize text in simple language to improve health literacy and understanding (Aasa et al., 2013; Friedman et al., 2011; Houts, Doak, Doak, & Loscalzo, 2006; National Voices, 2014). Indeed, adding visual aids to written and verbal education can increase client attention, comprehension, recall and adherence to prescribed teaching (RNAO, Friedman et al., 2011; 2006; Registered Nurses' Association of Ontario, 2012).

It is important to use simple realistic images with limited content to prevent clients from being distracted (Houts et al., 2006). The sample visual provided in the deliverable (see Appendix G) exemplifies the impact ERAS interventions have on the entire body. The information provided to clients should be clear, concise, offer rationales, and focus on client role. By knowing the benefits and safety of ERAS interventions, clients have a greater sense of coherence and control over their recovery (Kahokehr et al., 2009).

Recommendation #3 - Simplify "Eating and Drinking before Surgery"

Form for ERAS Clients

An "Eating and Drinking before Surgery" form is provided to clients during their

preoperative assessment clinic visit. The information is very specific and clients are told their

surgery could potentially be cancelled if instructions on the form are not followed. The form also

provides hospital arrival time and surgery time. Timelines for nutrition and oral intake are also

on the form.

Supportive Project Data for Recommendation #3

- This form was confusing for some clients who did not have a surgery date/time when

  receiving the form. Many indicated they would need help to determine correct times.

- Clients indicated that information should be "clear" and "direct" to help them understand

  ERAS information.

Supportive Literature for Recommendation #3

The need to utilize multiple formats of information where written information at a

suitable level complements verbal information is essential especially for clients with low health

literacy and language barriers (Feldman et al., 2015; Friedman et al., 2011; National Voices,

2014; RNAO, 2012). The RNAO (2012) recommends the use of plain language, pictures, and

illustrations to improve health literacy. To make information easier to read there should be a

logical organization, use of simple words and short sentences, the use of boxes to draw attention

to information that needs to be emphasized, and the use of images to simplify information

(Feldman et al., 2015; National Voices, 2014).

Healthcare professionals should be involved as much as possible in developing this

information for clients as they have the background of the intended messages and will be

supporting clients during the education sessions (Houts et al., 2006). For the current form, I

suggest moving arrival time and surgery time to the top of the page. I also suggest highlighting information which does not have illustrations already in place to draw more emphasis to the topic, and using more positive language instead of focusing on "do not" messages. These changes may result in improving clients' ability to understand and comply with ERAS pre-operative eating and drinking guidelines.

Recommendation # 4 - Developing Education Modules and Teaching Tools to Support Nurses in Educating Clients about ERAS

Nurses in the PAC settings received an overview of ERAS guidelines and the impact on clients' health outcomes upon ERAS implementation. However, there is no standardized ongoing education sessions or online education tools that reinforce this program. Ongoing education is recommended in order to support nurses in their understanding and confidence with ERAS guidelines and providing effective client-centered teaching.

Supportive Data for Recommendation #4

- Information and teaching was not always consistent for each client
- Some nurses indicated lack of confidence in providing education and teaching to clients
- Some nurses also expressed lack of confidence in teaching ERAS specific information
- Individualizing and tailoring information to meet specific client needs was indicated as being important to clients to help them feel valued, part of the process, and understand the information

Supportive Literature for Recommendation #4

It is important that all healthcare providers are prepared to provide effective education which includes understanding the ERAS program (including rationales) and understanding how clients learn (Feldman et al., 2015; 2012; RNAO, 2012). The RNAO (2012) strongly

recommends the orientation and on-going learning for healthcare providers with a focus on client-centered learning. This ensures clients receive consistent information and is individualized to meet their specific needs.

Developing educational sessions and online modules for healthcare providers offers on-going education and support for nurses. This education should include teaching regarding ERAS guidelines, health literacy education, and principles of client-centered learning. Because ERAS guidelines are a multidisciplinary approach to care, it would be beneficial to have this education on an on-going basis to support understanding, develop confidence in implementation, and provide opportunities for discussion. Healthcare providers also need to understand the prevalence of low health literacy and the impact it has on client health and outcomes (Feldman et al., 2015). By having this education and training, healthcare professionals would be better positioned to provide effective strategies for client-centered learning specific to ERAS clients' needs.

Recommendation #5 - Developing a Volunteer Client Program to Share Past Experiences

This recommendation focuses on developing a volunteer client program involving clients who previously had surgery and are willing to share their experiences with ERAS and recovery. These interaction may occur over the phone, via email or social media, within group sessions, or face-to-face.

Supportive Project Data for Recommendation #5

- Some clients indicated having a social media group or opportunity to meet with past clients where clients can talk to people who have had this surgery and thus similar experiences may help reduce their anxiety and improve their understanding.

- Clients indicated it was important to have support networks involved to help reinforce information and talk to about their experience.

Supportive Literature for Recommendation #5

The Canadian Cancer Society (2017) state that that people who have peer support coped better with their diagnosis since they experience less anxiety, have more hope, and feel better able to cope. The RNAO (2012) suggests that mentorship strategies help build knowledge and confidence for clients who may not have similar supports in their lives.

CHAPTER 6: REFLECTION

Project Development Process

The purpose of this project was to examine nursing approaches in providing pre-operative education and to examine client perspectives in receiving this education before they underwent surgery within ERAS programs. A second purpose for this project was to identify barriers and facilitators from both nursing and client perspectives regarding the successful implementation of ERAS programs. I have found that through my personal experience and through this project there are many challenges that may hinder clients' ability to understand information provided to them by healthcare professionals and nurses ability to provide effective education to clients.

Programs like ERAS need for an effective team. To achieve effectiveness, measures need to be in place for team members to observe improvement, assess barriers and challenges, and enhance their understanding of multi-disciplinary approaches to client care. The goals of ERAS are to ultimately improve client outcomes. I believe this can be done by the ongoing examination of research and the application of evidence to ensure clients are receiving the best care possible. What I can take away from this process is being more aware of the complexities involved within the healthcare system, the individuals involved, and the processes with in it.

As I reflect upon the project development process, I feel that I have an invaluable opportunity to apply what I learned from this specific process to numerous other settings within my professional career. I have also developed more confidence in being able to seek out and implement processes for change in nursing practice and expanding my personal and professional goals.

Major Lessons Learned

The knowledge I have gained through working on this project and through the Masters of Nursing program at the University of Lethbridge has completely changed how I view healthcare and nursing practice. I have learned how to formulate meaningful and intentional questions, assess barriers and challenges, examine and apply evidence, focus on client outcomes, and improve quality healthcare. Working through this process I learned how to use, adopt, and implement theoretical models and framework to formulate a project.

Before I began my Masters studies I had little to no experience with project development. I felt it was daunting, complex, and way over my head. Now that I have learned about the process of project development, I have learned that I can make a difference, and I am looking for ways to implement this in my practice. I also further understand that there is a profound importance in the process of bringing new knowledge into practice, developing relationships between knowledge producers and knowledge users, and having strong leadership skills, effective communication, and the ability to collaborate with others to bring change and improvement within the healthcare system. I plan to continue developing my knowledge to improve nursing practice and health outcomes.

I have learned that trying to change practice and adopt this new evidence presents so many challenges. It is important to be aware of the barriers and facilitators in adopting change – especially a multi-disciplinary change in which many health care providers are required to not only change practice, but to systematically work together in this age of team-based care. I now understand that change takes time. It is important to start with small changes and be intentional when trying to improve nursing practice. This will ultimately result in positive outcomes and

sustainability on a larger scale over time. This is one of the most valuable lessons I can take away from this project.

Implications for Nursing Practice and Future Research

This project outlined the need for on-going support to clients undergoing surgery within ERAS programs. This project also highlighted healthcare professionals need to understand ERAS information, use of effective teaching methods, and teaching approaches that support client-centered care.

Further research and projects focusing on comparing current practices to recommendations for best practice would reinforce a standard of care including assessing the impact of specific educational strategies and methods on client outcomes. Furthermore, developing best practice guidelines for healthcare practitioners regarding effective teaching strategies specific for ERAS clients would be valuable. These considerations are reinforced in the literature.

Conclusion

An important component of ERAS guidelines include providing effective preoperative education and information to clients. Based on the literature, preoperative education is an essential and valuable component in improving surgical outcomes for clients undergoing surgery. Within ERAS guidelines, clients assume more responsibility in their health and recovery. The findings from this project and the evidence from the literature supports the view that information and education presented to clients could be improved through a better understanding of the barriers and facilitators faced by both clients and healthcare professionals. By assessing these barriers and facilitators, I developed five recommendations to enhance the preoperative education process to improve client compliance, to support nurses in providing effective

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preoperative education, and to ultimately support clients through their surgical journey to improve health outcomes. These recommendations formed a project deliverable and will be shared with key stakeholders to support improvement within the preoperative assessment clinic setting at two Southern Alberta hospitals and provincially within the ERAS program.

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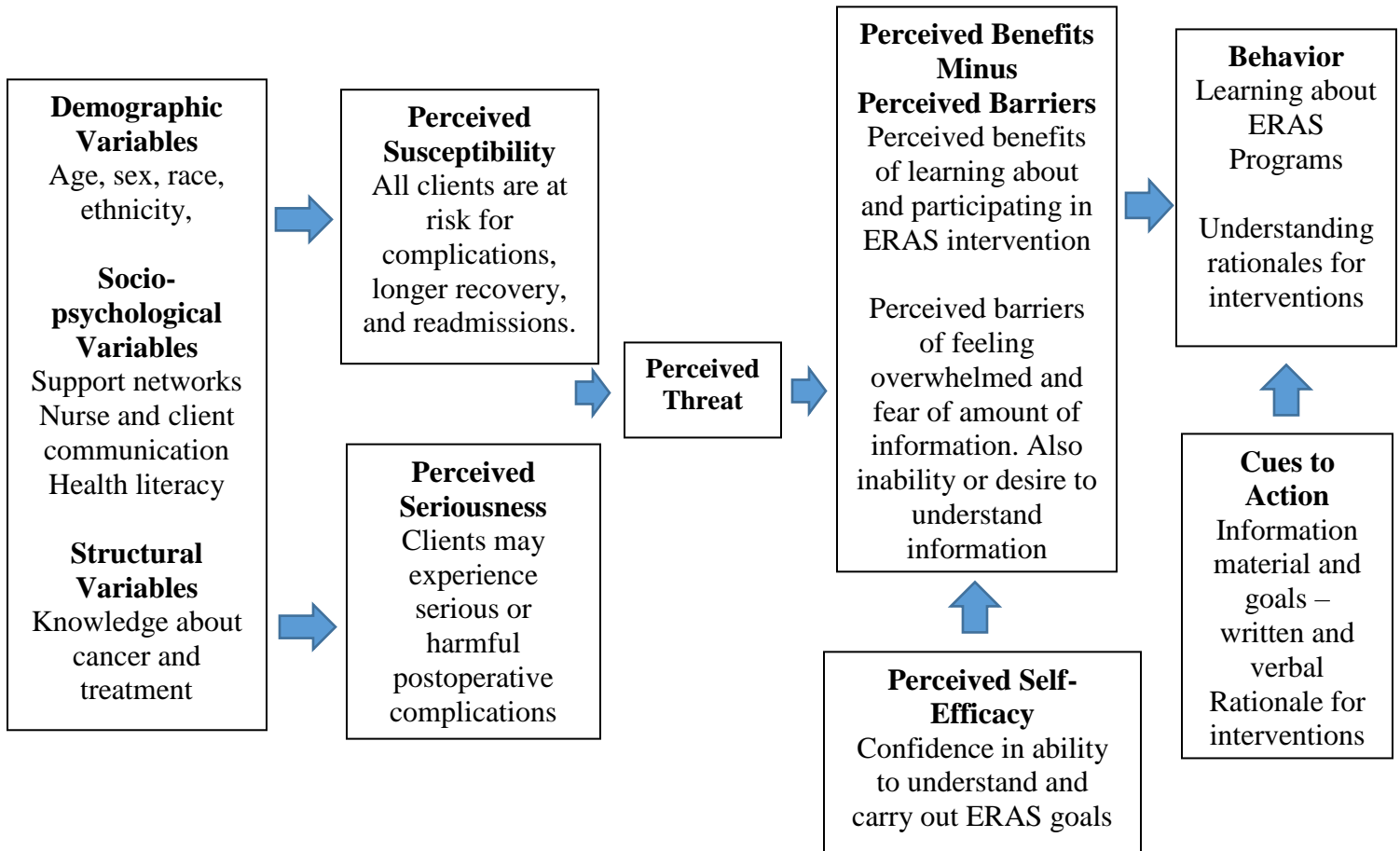
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Application of the HBM from Client Perspective

Adopted from (McKenzie et al., 2009)

Demographic Variables
Age, sex, race, ethnicity,

Socio-psychological Variables
Support networks
Nurse and client communication
Health literacy

Structural Variables
Knowledge about cancer and treatment

Perceived Susceptibility
All clients are at risk for complications, longer recovery, and readmissions.

Perceived Seriousness
Clients may experience serious or harmful postoperative complications

Perceived Threat

Perceived Benefits Minus Perceived Barriers
Perceived benefits of learning about and participating in ERAS intervention

Perceived barriers of feeling overwhelmed and fear of amount of information. Also inability or desire to understand information

Perceived Self-Efficacy
Confidence in ability to understand and carry out ERAS goals

Behavior
Learning about ERAS Programs

Understanding rationales for interventions

Cues to Action
Information material and goals – written and verbal
Rationale for interventions

APPENDIX B

Application of the TPB from Nursing Perspective

Adopted from (McKenzie et al., 2009)

Behavioral Beliefs →	**Attitudes towards preoperative nursing practice within ERAS (Behavior)**	
Normative Beliefs →	**Routines, traditions, and best practice (Subjective Norms)** →	**Intention to change behavior** → **Improvements in preoperative education (Behavior)**
Control Beliefs →	**Empowerment and motivation (Perceived Behavioral Control)**	**Actual Behavior Control**

APPENDIX C

Guiding Questions Based on Theoretical Frameworks

Health Belief Model: Client Perspective	Theory of Planned Behavior: Nursing Perspective
• How is ERAS Information Received? What is working well? What is not working? • Do clients believe they are susceptible to develop postoperative complications? • Are clients able to discuss the benefits of compliance with ERAS guidelines? • Are clients recognizing the rationales for complying with ERAS guidelines? • Are clients leaving with a sense of confidence? • Do the clients have any feedback or suggestions based on education sessions?	• What is currently working well for nurses in providing preoperative information and education? • What do you think is not working in how information and education is provided to clients • What are some obstacles for nurses presenting or helping clients understand information? • What do you think nurses can do (or what they need) to enhance the process of preoperative education?

APPENDIX D

ARECCI Links

ARECCI Screening Tool:
http://www.aihealthsolutions.ca/arecci/screening/197361/d65c860d22215e3650ac5f583bc26862

ARECCI Ethics Guidelines for Quality Improvement and Evaluation Projects:
http://www.aihealthsolutions.ca/arecci/guidelines/results/1332631/448944684

SWOT Analysis: Client Perspective

STRENGTHS	WEAKNESS
What is currently working well for clients in receiving information and education?	**What is not working?**
Having a support person present to hear and reinforce information was commonly indicated as beneficial.	A lot of information in a short amount of time – having some written information beforehand may alleviate feelings of "information overload"
Many clients indicated it was helpful to have a phone call to review medical history and medications – this left more time during the PAC appointment to review specific surgical information including eating and drinking before surgery, pre-habilitation, post-operative instructions.	Many clients felt "confused" with eating and drinking guidelines before surgery if they did not have surgery date and time set – it was indicated to be very specific to OR time and to remember time intervals. Clients indicated it would be helpful to review this handout with someone once OR date and time set (See Appendix for eating and drinking guidelines).
Clients found it comforting to know they can call the PAC nurses if questions occur to them after their appointments are over.	Clients indicated there was a lot of "verbal" information regarding ERAS and the booklets – stated it is helpful to have things in writing to review information later but would like to receive this information before PAC visit (and have consistent information from all providers).
Some clients indicated it was helpful to see healthcare providers, do ECG, lab tests, review surgery, and medical history in one day – more convenient to do everything in one day due to health issues and other appointments.	Clients indicated that information should be "clear" and "direct"
Repetition was indicated as being important – hearing about ERAS from the surgeon, reading the information at home, reviewing it with nurses, and receiving cuing and reminders from nurses during hospital stay.	Some nurses went through entire ERAS booklets with clients – this consistently was found to be beneficial when reviewed. Many of those who did not have booklet reviewed by nurse indicated it would have been beneficial to their understanding.
Clients indicated it was very helpful to have written information from surgeon or from mail before attending PAC.	Many clients who were being marked for ostomy by stoma nurse indicated they felt anxious and upset, indicated teaching during this time was not effective and were not interested in hearing about ERAS and postoperative recovery.
Having a nurse review booklet with clients was commonly identified as a positive way to understand information and cue for asking questions. Some stated it was less stressful and less scary when reviewed afterwards on their own.	Clients who did not have ERAS booklets reviewed with them indicated they did not fully understand, that "their mind wandered." Indicated that they

A few clients indicated it was important that they were looked at as a person, not a number. This helped them feel more comfortable about learning about ERAS if focused on them as individuals.	want to be told and reminded by surgical nurses after surgery.
Almost every client indicated having written and verbal information was very beneficial – few had watched videos and found this to support them further. Some clients indicated little desire to watch videos.	One client indicated that receiving ERAS information at PAC is too late – clients should have information much sooner.
	A few clients indicated that the benefits of ERAS are not discussed or stressed – clients are used to "traditional" approaches and want explanations as to why things are being done differently.
	Some clients were unaware or forgot about online videos as a resource.

OPPORTUNITIES	THREATS
Do the clients have any feedback or suggestions based on education sessions?	**What are some obstacles for clients receiving and understanding information?**
Some clients indicated have a separate phone call shortly after surgeon confirms surgery would be beneficial to review ERAS guidelines/booklet. The PAC had many factors/points of discussion and too overwhelming to first read/learn about ERAS.	PAC sessions include obtaining ECG, medical history, review of medications (and instructions on continuing or holding them before surgery), sleep apnea screening, personal habits (alcohol, smoking, drugs), malnutrition screening, functional assessments, delirium risk, fall risk, discussion on personal directive, pre-habilitation, diet instructions before surgery, and meeting with healthcare professionals (anaesthesiologist, internal medicine, stoma nurse, and obtaining lab work).
Indicated important to have translators available on the phone to help convey information.	
Not all clients received phone calls – those who did generally found it very helpful to review information before PAC	
Some clients indicated that there was "a lot of information to read" and indicated a quick chart, diagram, or visual aid to review may be helpful.	Appointment lengths are very long ranging from 2 to 4 hours. One client indicated "I stopped listening, it was lots of information and it was worrying me."
	Many clients indicated "there was so much paper work" with information booklets and handouts.
Some clients indicated having a social media group or opportunity to meet with past clients (volunteer basis who went through similar experiences) where clients can talk to people who have went through this surgery may help improve their anxiety and understanding.	Many clients had not heard of ERAS before PAC appointment.
	Are clients leaving with a sense of confidence?
Clients indicated it would be beneficial to have a follow-up phone call to review ERAS information	Many clients felt the PAC visit was important and helpful to their preparation of surgery and helped

separately from PAC appointment and closer to surgery date.

Some clients indicated having a pedometer would provide incentive to match and improve mobility goals.

Some clients indicated it was important for them "to do their part" but indicated they needed support and reminders to be successful.

Are clients recognizing the rationales for complying with ERAS guidelines?

Not many clients were receiving rationales for ERAS guidelines – those few clients who received rationales stated they were more likely to carry out interventions because they saw how it benefited them and their recovery.

Are clients able to discuss the benefits of compliance with ERAS guidelines?

Clients received rationales and told that ERAS interventions were "prescribed" by surgeon – clients felt it was important to understand and implement ERAS guidelines.

Indicated "boosts how you feel" when you attempt to meet goals and eventually meet them – indicated it was important to reinforce that attempting ERAS guidelines is a benefit even if unable to meet the entire goal.

Client indicated that knowing that the better shape they were to go into surgery would mean the better shape they would be leaving the hospital.

Clients who understood rationales stated they understood how they would need less pain medications, recover quicker, be out of hospital sooner. They wanted to know "what's in it for me?" to comply.

them feel more confident about expectations and recovery.

Many clients who watched videos found them helpful but some clients indicated they did not want to watch or had challenges accessing computer.

Some clients indicated that they knew very little about their role and their post-operative expectations.

Do clients believe they are susceptible to develop postoperative complications?

Many clients felt this was not a concern, they were more concerned with the surgery itself.

Few clients who had past surgeries indicated they had a "rough time" without explanations and rationales to avoid complications and were much more willing to participate in ERAS goals if it mean decreasing complications.

Swot Analysis: Nursing Perspective

STRENGTHS	WEAKNESS
What is currently working well for nurses in providing preoperative information and education? Helpful to have phone discussions with clients before PAC visit to review health history – this allows more time for teaching during PAC visit. Not always possible to do this for all clients. Important for clients to bring support networks and especially translators if language barriers involved to help reinforce information and talk to about their experience. Some clients come with ERAS booklet before PAC sessions – this is helpful for clients when it occurs but not consistently done.	**What do you think is not working in how information and education is provided to clients?** Consistently have phone calls for all clients before PAC to obtain some health history information – this would make PAC appointment shorter and allow more time for teaching. Ensuring clients receive some ERAS information either from surgeon office or via mail before PAC visit. The PAC visits are very long – clients feel overwhelmed with visit as there is a lot information during one long session. However, some nurses indicated clients have many other appointments and it is often easier for clients to attend for one long appointment to obtain information and meet healthcare providers. Some nurses indicated that the PAC isn't an appropriate time to review ERAS guidelines due to new diagnosis, being on chemo, and amount of information they are receiving. Many nurses indicated that time was a barrier in providing education – there is a lot of appointment, lots of information to review. Sometimes doctors don't communicate or indicate if certain clients are ERAS or not – this presents challenges as nurses don't want to teach something clients may not need.
OPPORTUNITIES	THREATS
What do you think nurses can do (or what they need) to enhance the process of preoperative education?	**What are some obstacles for nurses presenting or helping clients understand information?** Some nurses indicated that clients should be reading information on their own during the PAC visits as they are often long and involve waiting for internal

Many nurses indicated it was important to review information, provide explanations and rationales to "optimize" recovery.	medicine doctors and anaesthesiologists. Stated clients are adult and it is important to promote self-care and initiative in their health.
Some nurses indicated it is important to emphasize ERAS guidelines are "prescribed" by the surgeon and important to be attempted.	Some nurses indicated they did not want to insult or irritate client by reading ERAS booklet with them if they are capable of reading on own.
A follow-up phone call to review ERAS guidelines after PAC visit may help clients remember what their role is in recovery. Some perceptions that clients won't retain information in this setting.	Information and teaching isn't consistent for each client – each nurse has their own personality, ideas, and teaching approaches.
Offering group ERAS sessions at a separate date and time for clients in a "scripted" approach to ensure all clients receive same information.	Some nurses expressed their lack of confidence in providing teaching for postoperative interventions when they do not normally work in that setting. Also indicated it was role of postoperative nurse to teach and try to inforce ERAS goals.
It is important for nurses to emphasize why ERAS guidelines are important and to demonstrate when able (deep breathing and coughing).	Some clients indicated to nurses that videos helpful but many stated they did not want to access or were unable to access.
Some nurses expressed it is much easier to teach in person with booklet as a guideline.	
Eating and drinking guidelines can be confusing for clients without having OR time during the PAC visit. It would be helpful for clients to call in once OR time confirmed to review these guidelines and to provide further teaching closer to surgery date so they can remember.	

Project Deliverable: Recommendations

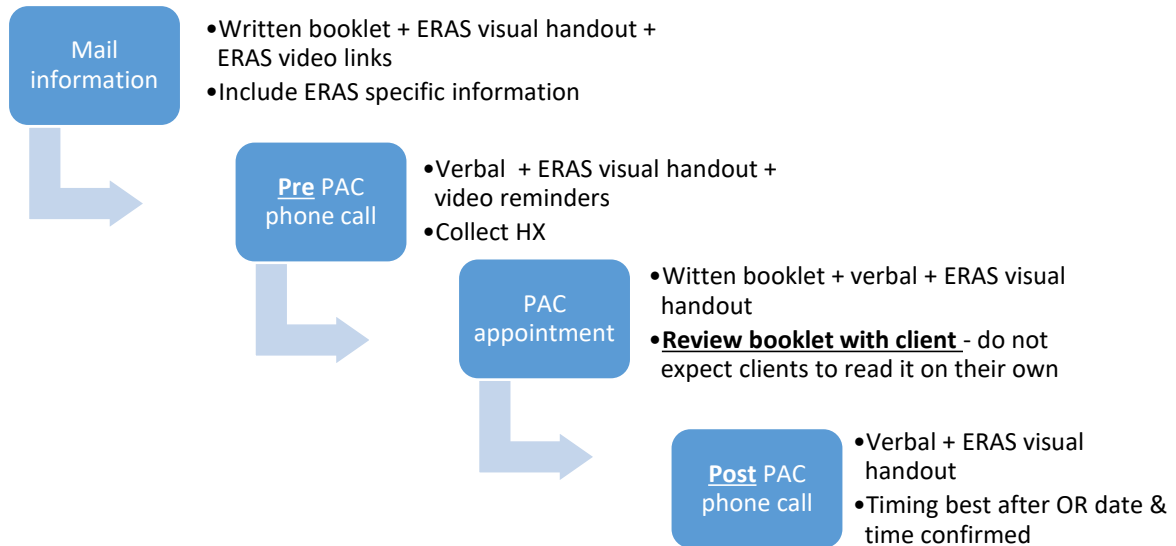**Recommendation # 1 – Standardize the Number of Client Contacts for ERAS Clients**

Figure 1. Standardization of client contacts for preoperative education

Supportive Project Data for Recommendation #1

- There was an inconsistent number of client contact during the PAC sessions (having information booklets early, pre-PAC phone sessions, PAC clinic appointments, and post-PAC follow-up). Having consistent client contacts ensure clients have opportunity to receive, understand, and reinforce information.
- Clients indicated repetition of key messages was important to their understanding
- Clients preferred nurses review information in the booklet with them.
- Phone calls pre and post PAC appointment were beneficial to clients in understanding and recalling information.
- Many clients indicated when all information was reviewed during the PAC clinic appointment, they felt overwhelmed with the amount of information they received in a short period.

Supportive Literature for Recommendation #1

The Registered Nurses' Association of Ontario (RNAO, 2012) and Friedman et al., (2011) recommendation engaging in more structured and intentional approaches when facilitating client centered learning in order to affect a more positive health outcome for clients. Having standardized client contact allows nurses to check for understanding, offer explanations, provide demonstrations, and clarify information until it is understood by clients (Friedman et al.,

2011; RNAO, 2012). Clients who reviewed this information early and more frequently felt more confident and motivated to be partners in their recovery.

It is important to plan information sessions early, with repetition and reinforcement in multiple forms of education including written, verbal, visual, and video cues (Ronco et al., 2012). Information packages provided to clients prior to their first clinic visit are very useful given they allow time for clients to absorb information and formulate questions prior to meeting with a nurse (Aasa et al., 2013; Friedman et al., 2011; Sibbern et al., 2017). Written information decreases confusion and improves client knowledge when provided prior to the first clinic appointments (Friedman et al., 2011). Telephone calls may be considered more convenient for clients, provides opportunities to ask questions, and allows for more time in face-to-face sessions to review ERAS information (National Voices, 2014; RNAO, 2012). The evidence also indicates that verbal instruction should only be used in conjunction with other methods of education delivery to support clients in recalling information (Friedman et al., 2011; National Voices, 2014; Ronco et al., 2012). Reviewing written information with clients improves understanding as it is interactive, allows for nurse/client dialogue, address issues of immediate concern, and allows for opportunities for clients to ask questions (RNAO, 2012). This is why it is important to have numerous client contacts during the preoperative phase to ensure that clients are receiving various methods of instruction (verbal in conjunction with written, visual, and video formats) as well as repetition and reinforcement to support them in the postoperative phase.

ERAS programs involve numerous interventions which may result in challenges in understanding the various components and benefits. The Best Practice Guidelines by RNAO (2012) indicate that effective client centered learning involves more educational sessions over a longer duration of time which allows for utilizing various teaching methods, providing opportunities for clients to ask questions, individualizing teaching approaches, and having an overall greater impact on knowledge retention. A minimum of four client contacts for preoperative education will allow for the time and consistency required for all clients within ERAS programs to receive and understand the information provided to them.

Recommendation #2 - Provide Clients with a Visual Tool and
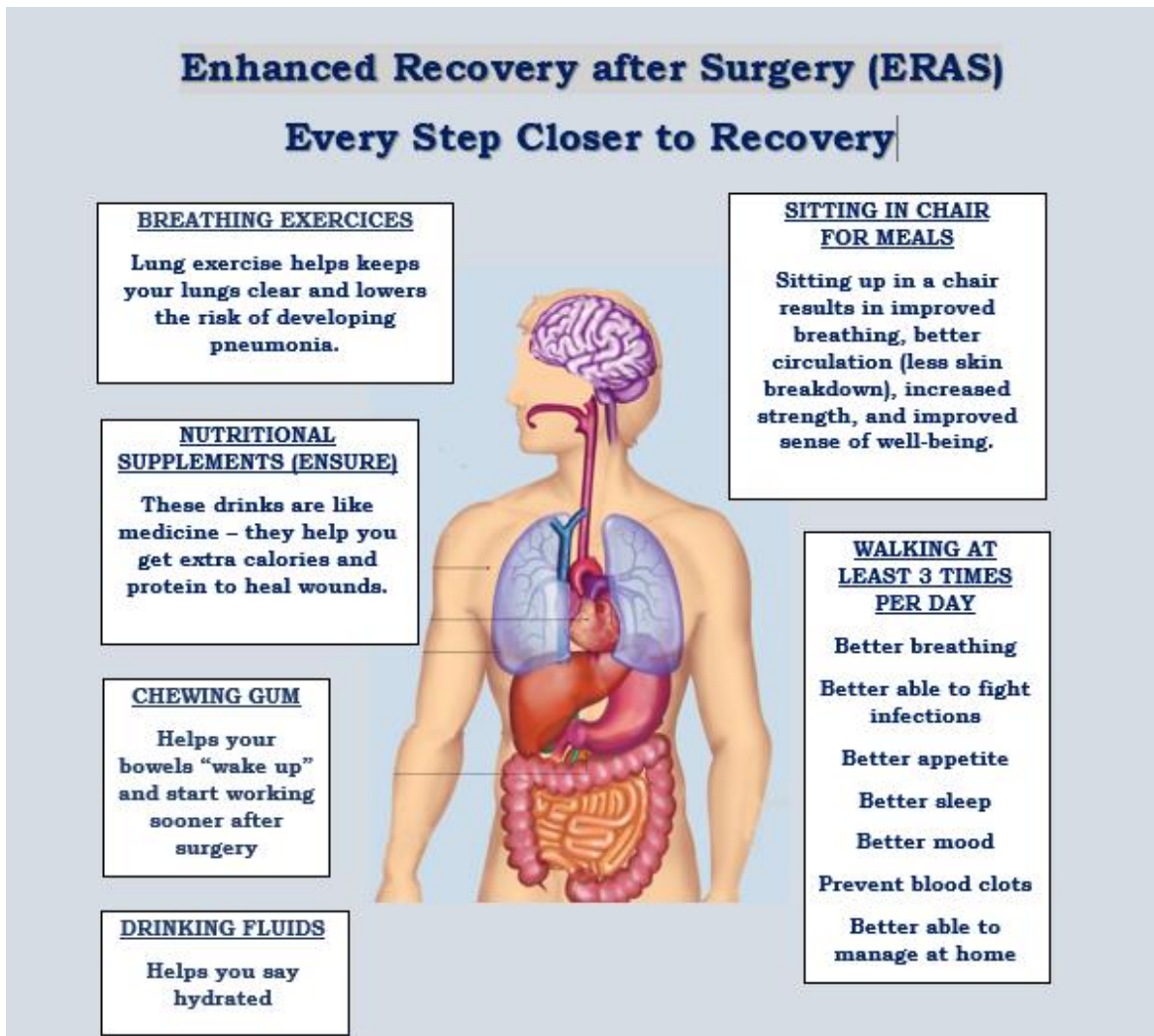**Rationales for ERAS Interventions**

Figure 2. Visual aid with ERAS interventions and rationales
Image retrieved from: http://image.sciencesource.com/preview/DA8472-Anatomy-of-the-Trunk.jpg

Supportive Project Data for Recommendation #2
- Clients indicated information should be "clear" and "direct"
- Providing rationales for ERAS interventions increased perceived likelihood of compliance by clients
- Clients indicated there were a lot of booklets and a lot of information to read and consequently, they were overwhelmed.

Supportive Literature for Recommendation #2
      Clients have more responsibility in their health and being involved with their care when participating in ERAS programs. It is imperative therefore, that they understand their role in their recovery. A visual aide with rationale is recommended for clients as it is easy to understand, clear, direct, and provides explanations for the interventions they will be involved in. The visual

aid in Figure 2 was adopted from an ERAS Patient Guideline Record and Move Alberta Handout: "Keep Moving: Myths and Facts about Being Active in the Hospital."

The RNAO (2012) recommends the use of images and pictures to communicate health information. Visual aids, pictures, and illustrations are useful in enhancing other formats of materials especially with clients with low health literacy given that illustrations and may be non-ambiguous and utilize text in simple language to improve health literacy and understanding (Aasa et al., 2013; Friedman et al., 2011; Houts et al., 2006; National Voices, 2014). Indeed, adding visual aids to written and verbal education can increase client attention, comprehension, recall and adherence to prescribed teaching (RNAO, Friedman et al., 2011; 2006; Registered Nurses' Association of Ontario, 2012).

It is important to use simple realistic images with limited content to prevent clients from being distract (Houts et al., 2006). The sample visual provided exemplifies the impact ERAS interventions has on the entire body. The information provided to clients should be clear, concise, offer rationales, and focus on client role. By knowing the benefits and safety of ERAS interventions, clients would have a greater sense of coherence and control over their recovery (Kahokehr et al., 2009).

Recommendation #3 - Simplify "Eating and Drinking before Surgery" Form for ERAS Clients

An "Eating and Drinking before Surgery" form is provided to clients during their preoperative assessment clinic visit. The information is very specific and clients are told their surgery could potentially be cancelled if instructions on the form are not followed. The form also provides hospital arrival time and surgery time. Timelines for nutrition and oral intake are also on the form.

Supportive Project Data for Recommendation # 3
- The Eating and Drinking before Surgery form was confusing for some clients who did not have a surgery date/time when receiving the form. Many clients indicated they would need help to determine correct times.
- Clients indicated that information should be "clear" and "direct" to help them understand ERAS information.

Supportive Literature for Recommendation #3
The need to utilize multiple formats of information where written information at a suitable level complements verbal information is essential especially for clients with low health literacy and language barriers (Feldman et al., 2015; Friedman et al., 2011; National Voices, 2014; RNAO, 2012). The RNAO (2012) recommends the use of plain language, pictures, and illustrations to improve health literacy. To make information easier to read there should be a logical organization, use of simple words and short sentences, the use of boxes to draw attention to information that needs to be emphasized, and the use of images to simplify information (Feldman et al., 2015; National Voices, 2014).

Healthcare professionals should be involved as much as possible in developing this information for clients as they have the background of the intended messages and will be supporting clients during the education sessions (Houts et al., 2006). For the current form, I suggest moving arrival time and surgery time to the top of the page. I also suggest highlighting information which does not have illustrations already in place to draw more emphasis to the topic, and using more positive language instead of focusing on "do not" messages. These changes may result in improving clients' ability to understand and comply with ERAS pre-operative eating and drinking guidelines.

Recommendation # 4 - Developing Education Modules and Teaching Tools to Support Nurses in Educating Clients about ERAS

Nurses in the PAC settings received an overview of ERAS guidelines and the impact on clients' health outcomes upon ERAS implementation. However, there is no standardized ongoing education sessions or online education tools in reinforcing this program. Ongoing education is recommended to support nurses in their understanding and confidence with ERAS guidelines and providing effective client-centered teaching.

Supportive Project Data for Recommendation #4:
- Information and teaching was not always consistent for each client
- Some nurses indicated lack of confidence in providing education and teaching to clients
- Some nurses also expressed lack of confidence in teaching ERAS specific information
- Individualizing and tailoring information to meet specific client needs was indicated as being important to clients to help them feel valued, part of the process, and understand the information

Supportive Literature for Recommendation #4
It is important that all healthcare providers are prepared to provide effective education which includes understanding the ERAS program (including rationales) and understanding how clients learn (Feldman et al., 2015; 2012; RNAO, 2012). The RNAO (2012) strongly recommends the orientation and on-going learning for healthcare providers with a focus on client-centered learning. This ensures clients receive consistent information and is individualized to meet their specific needs.

Developing educational sessions and online modules for healthcare providers offers on-going education and support for nurses. This education should include teaching regarding ERAS guidelines, health literacy education, and principles of client-centered learning. Because ERAS guidelines are a multidisciplinary approach to care, it would be beneficial to have this education on an on-going basis to support understanding, develop confidence in implementation, and provide opportunities for discussion. Healthcare providers also need to understand the prevalence of low health literacy and the impact it has on client health and outcomes (Feldman et al., 2015). By having this education and training, healthcare professionals would be better positioned to provide effective strategies for client-centered learning specific to ERAS clients' needs.

Recommendation #5 - Developing a Volunteer Client Program to Share Past Experiences

       This recommendation focuses on developing a volunteer client program involving clients who previously had surgery and are willing to share their experiences with ERAS and recovery. These interaction may occur over the phone, via email or social media, within group sessions, or face-to-face.

Supportive Project Data for Recommendation #5
- Some clients indicated having a social media group or opportunity to meet with past clients where clients can talk to people who have had this surgery and thus similar experiences may help reduce their anxiety and improve their understanding.
- Clients indicated it was important to have support networks involved to help reinforce information and talk to about their experience.

Supportive Literature for Recommendation #5
       The Canadian Cancer Society (2017) stated that that people who have peer support coped better with their diagnosis since they experience less anxiety, have more hope, and feel better able to cope. The RNAO (2012) suggests that mentorship strategies help build knowledge and confidence for clients who may not have similar supports in their lives.