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UNDERSTANDING TRANSITION INTO PRACTICE AFTER POST GRADUATE MEDICAL EDUCATION IN SURGICAL SPECIALTIES

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Abstract

Introduction:

Becoming independent in the operating room is a source of tremendous stress in the initial years of practice. There is paucity of research describing the challenges surgeons face during transition and their coping strategies.

Methodology:

We conducted semi-structured interviews using rich pictures as an elicitation method. Qualitative thematic analysis was used to analyze the data.

Results:

Surgeons described their transition as revolving around two goals: achieving good outcomes and minimizing their fear of complications. They also described challenges related to being a surgeon and beyond being a surgeon. Contextual factors related to the surgical specialty played a pivotal role in how they were able to cope with those challenges.

Conclusion:

Our study suggests that transition to practice is not a uniform experience across surgical specialties. The institutional context/culture in which it occurs shape the strategies used by transitioning surgeons.

Keywords

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Chapter 1

1   Introduction

At the end of their training, all surgeons will face the stage in which they will need to be 'the boss' in the Operating room. While transition into independent practice have been described as challenging and stressful for physicians in other specialties (Beckett, 2006; Morrow et al., 2009; Westerman et al., 2013), we do not know whether this is true for new surgeons. Our study aims at identifying whether transition into independent practice is challenging for new surgeons and if so what are those challenges they face? How do they cope with them? This knowledge will help to inform residency training programs and ultimately improve physician performance and wellbeing.

1.1 Physicians and the transition

Transition is defined as

"the process or a period of changing from one state or condition to another." Oxford dictionary

Physicians go through multiple transitions during their professional career, including the transition into independent practice following postgraduate medical education. The effects of this major transition on physicians' performance and well-being are not well understood. It has been suggested that the physicians may feel well prepared for clinical tasks but unprepared for tasks which are non-clinical such as supervising trainees during call shifts and administrative tasks. The rate burnout in physicians transitioning from trainee to consultant is reported to be between 10 -25 % in newly graduated consultants (Westerman, 2014). There is paucity of research describing the coping strategies implemented by the newly practicing physicians to overcome the challenges faced during this transition period, this lack of literature is even more profound on the transitions that surgeons go through.

The applicability of what little is known about trainee transitions, within the surgical context is unclear. The nature of the surgical practice is unique in medicine. In surgery the transitions from trainee to consultant must also occur within the operating room which is a

unique clinical environment. How surgeons negotiate the transition from being a trainee under supervision into being the most responsible physician in the operating room is not well studied.

1.2 Stages of transition

The transition into independent practitioner represents periods of change with its associated multiple factors and dimensions rather than a single moment. Physicians go through many different types and phases of transition during their careers, such transitions from geographical area to another or between different specialties. Medical education has three major phases of transition: premedical to medical education, undergraduate to postgraduate training, and from postgraduate training to independent practice. Each of these phases has a unique nomenclature that is applied based on the clinical context and the jurisdiction in which it takes place. The various terms are explained in (Table 1).

Table 1: Terminology of the stage of education after medical degree per country in which studies were conducted

Stage of Medical Education	Terminology in Canada	Terminology in the USA	Terminology in the UK
Following Undergrad	PGME (Postgraduate Medical Education)- Residency	GME – Residency	PGME - Specialist Registrar training
Trainee within Specialty Training	Resident	Resident	Specialist Registrar /Registrar
Registered Medical Specialist	Attending Physician	Attending Physician	Hospital Consultant

To date medical education research has largely focused on the transition from premedical to medical school, or from medical student to junior doctor, with scarce data on the final transition to independent practitioner. Earlier stages of transition in medical training have been described as critically intensive learning periods. Trainees must transition into new clinical environments with different contextual factors in the new role in the hospital. The ability for hospital systems to recognize and adapt to these intense learning periods may help the performance of the new physicians. (Kilminster, Zukas, Quinton, & Roberts, 2011)

Even the lay community identifies the significance of medical trainee transitions. This notion of poor performance in newly transitioned physicians is represented by statements like 'Don't be ill in August'. A statement familiar to most doctors and increasingly the media, as patients admitted at the beginning of August *(when newly qualified doctors - the equivalents of residents in Canada- start work in NHS hospitals in the UK)* have a higher death rate compared with the previous week (Blencowe, Van Hamel, Bethune, & Aspinall, 2015). The main challenge of the transition from medical student to trainee physician is the adequacy of preparation for new tasks related to patient care such as prescribing and documentation. In response to this challenge many schools of medicine have instituted curricular changes and preparatory courses in an attempt to make the transition smoother. To date there are no such courses for the transition from postgraduate trainee to consultancy starting independent practice (General Medical Council, 2009).

Transitions from trainee to independent professional have been well studied in various other professions that effect the public, for example aviation and firefighting. This body of research demonstrates that during the transition the performance of the individual may be adversely affected (Kilminster et al., 2011). In these other professions of critical importance numerous supporting mechanisms have been implemented to ensure safety of the public.

1.3 Transition into independent practice in medicine

The last stage of transition in medical education – and quite possibly the most important one -is the transition into independent practice. Transition to independent practice is the

capstone of many long years of medical education and specialty training and rather than be an opportunity it could as easily represent the most stressful part of training. The Royal College of Physicians and Surgeons of Canada in its implementation of competency based training recognizes this transition as the "transition into practice" as one of the steps on the continuum of medical education. While institutions continue to recognize the importance of this transition we lack deep insight into this significant stage of a surgeon's professional life.

While the transition to independent practice has been under studied, some understanding of the impact on doctors and patients has been elucidated. We know that many new practicing physicians experience the transition to independent practice as intense and stressful (Morrow et al., 2009)(Beckett, 2006) and that physician preparation for that transition may ameliorate the amount of stress experienced (Morrow et al., 2009). Burnout is estimated to be as high as 10% and high emotional exhaustion at 18 % among new hospital consultants clearly demonstrating a detrimental level of stress during the transition to independent practice (Westerman 2013). The majority of the literature cites transitioning residents to have had excellent preparation during their medical training for clinical duties but a lack of preparedness for non-clinical tasks as the impetus for stress (Teunissen & Westerman, 2011). The lack of preparedness within non-clinical competencies such as management, research and teaching junior doctors correlated with burnout, whereas lack in clinical competencies did not (Westerman et al., 2013).

Table 2: Overview of published papers studying transition into practice after PGME and including surgical specialties

Authors	Year	Discipline	Main findings	Recommendations
Crowe	2004	Various	Describing the RCP experience with new consultant conferences	Tips and tricks for job negotiations and tackling management issues

Higgins et al.	2005	Various	Training in non-clinical skills is needed	Preparation through training within specialty training program
McKinstry et al.	2005	Orthopedics	Management training is lacked by new consultants	Preparation through training within specialty training program and mentoring for new consultants
Brown et al	2009	Various	Transition is challenging. New consultants are clinically well prepared, but unprepared in respect to managerial and financial aspects	Preparation through training within specialty training program
Morrow et al.	2009	Various	New consultants are clinically well prepared, but unprepared in respect staff management and leadership	Preparation through training within specialty training program
Westerman et al.	2014	Various	Three themes were identified; disruptive novel elements; perception and coping; and personal development and outcome	Further research in this area is needed

Table 2 summarizes the findings of research focused on the transition to independent practice in surgical specialties. While these studies allow some insight they are not generalizable, as they were mainly executed in highly specialized fields. Most of the previous research surrounding the transition to independent practice in surgery are

quantitative or survey based and therefore lack deep insight into the stress and coping strategies experienced. Another potential area lacking in the research to date is the focus on the medical education perspective only, ignoring other important and significant facets of the transitions to practice like socialization and psychological stress.

Very few authors have approached questions around the transition to practice using qualitative research. One of the few studies to use qualitative methods was conducted by Westerman et al. Westernman's work studied 14 newly appointed hospital consultants in the field of internal medicine and obstetrics & gynecology in Netherlands. They developed a thematic analysis, and three themes interacting in a longitudinal process were identified. Their framework describes how novel disruptive elements (first theme) due to the transition from resident to attending physician are perceived and acted on (second theme), and how this directs new attending's personal development (third theme). They have identified three recurring categories within each theme (task, role, and context) (Westerman et al., 2010). Table 3

Table 3: overview of main issues within themes and categories as described by Westerman et al. 2010

	Category		
Theme	Task	Role	Context
Disruptive novel elements	• Non clinical tasks • Supervision	• Leadership • Responsibility	• Alterations in personal situations • Organizational structure • Culture
Perception and coping	• Medically well prepared • Non clinical tasks not well prepared • Proactive to reduce stress and feeling incompetence	• Leadership is stressful • Being proactive is needed	• Possibility to question in safety → facilitates transition • Peer support perceived as helpful
Personal development and outcome	• Feeling of incompetence Diminishes • Task mastery develops	• To take a position takes time • Expectations are discerned gradually	• Personal situation settles through time • Structure and culture of organization

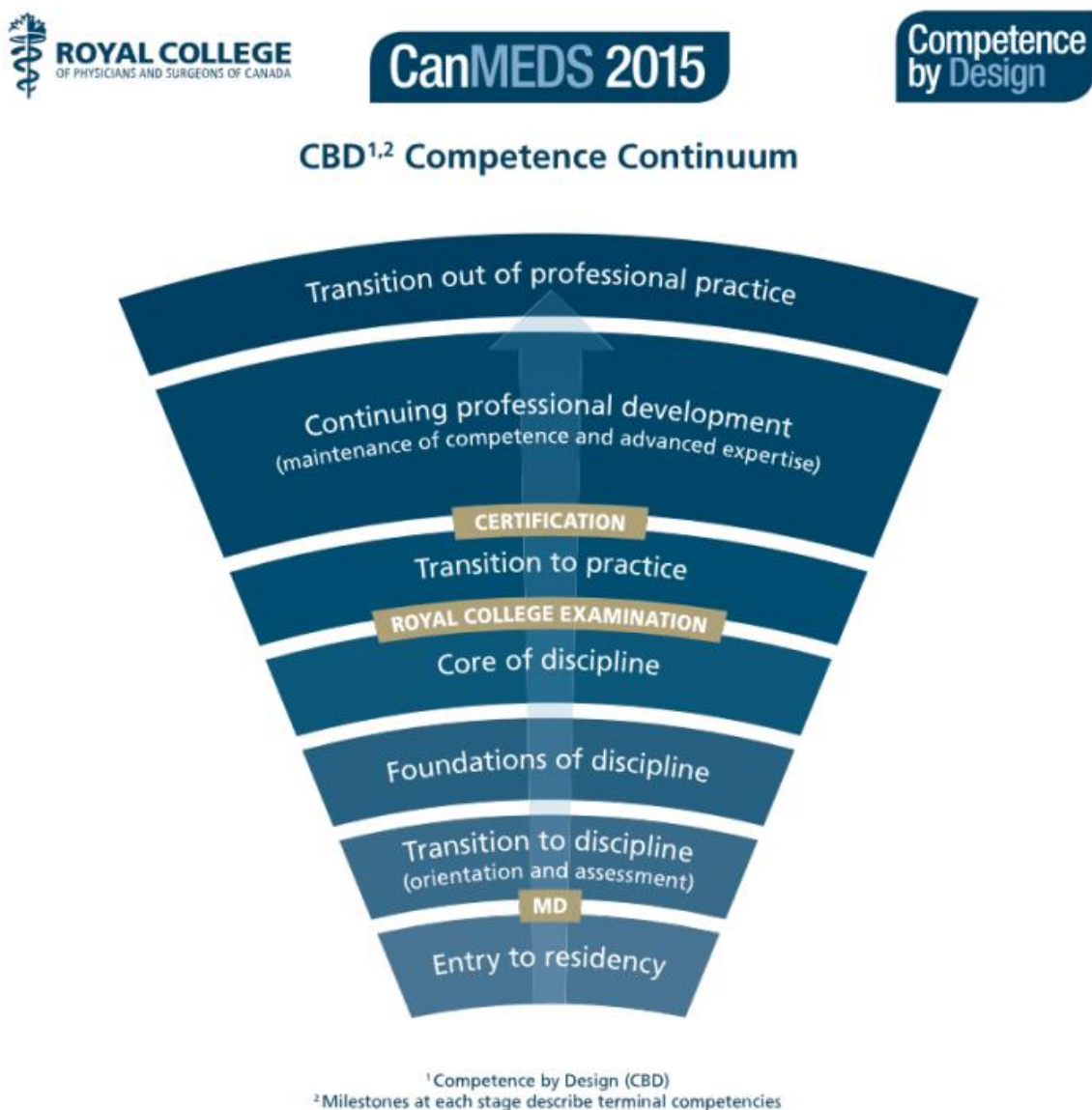|	• Longitudinal process		become clear through time

1.4 Becoming an independent Surgeon

Are surgical graduates well prepared for the transition to independent practice? This question has created real concern within the medical community regarding the structure of the residency training programs and the preparation of future surgeons. The emphasis on duty hour restrictions and the mandated omnipresence of the attending surgeon with the residents in the operating room has called into question if residents can function independently. This concern has led to the recent changes and reforms in the surgical residency training programs such as remodeling of the on-call coverage systems into a "night float" rotations and the utilization of more "rural" rotations.

In response to both public sentiment and medical educators the Royal College of Physicians and Surgeons of Canada is implementing competency-based medical education (CBME) curriculum, Competence by Design (CBD) (The Royal College of Physicians and Surgeons of Canada Website). It is an outcomes-based competency approach to the design, implementation and assessment of a medical trainee using an organizing framework of competencies (e.g. CanMEDS 2015). In a CBME system, a curriculum is organized around the competencies (entrustable professional activities) expected of a resident at any given point in training, and that resident's advancement is dependent on having achieved those expected milestones (Figure 1). It is a transformational change initiative designed to enhance CBME in residency training and across the spectrum of specialty practice in Canada. CBD organizes residency training into four developmental stages and clearly lays out markers for teaching and learning at each stage. Each stage of training, and each learning experience, focuses on the identified outcomes for that stage. The stage-specific outcomes, which are called milestones or abilities are determined by each specialty as part of their cohort plans for implementation of CBD. The first stage in residency is known as Transition to discipline. It emphasizes the orientation and assessment of new trainees. Foundations of discipline, the second stage, covers broad-based competencies that every

trainee must acquire before moving on to the third stage, which is known as Core of discipline. The third stage covers more advanced, discipline-specific competencies. The fourth and final stage of residency education is known as Transition to practice. During this stage the trainee demonstrates readiness for autonomous practice. – Source: The Royal College.

Figure 1: Competence by Design. Source the royal college

CBD[1,2] Competence Continuum

[1] Competence by Design (CBD)
[2] Milestones at each stage describe terminal competencies

In 2010 The American College of Surgeons (ACS) Division of Education partnered with the Accreditation Council for Graduate Medical Education (ACGME) to convene a National Invitational Conference to define key issues relating to the transition to practice. This conference developed recommendations to address various challenges regarding preparation of residents for independent surgical practice. These recommendations were highly valuable especially in light of the variable support and mentorship provided for newly minted surgeons across institutions within the United States (Westerman et al., 2014) Key recommendations generated during the conference included the need to focus on the transition to practice within the context of the continuum of professional development (Westerman et al., 2014).

Other authors from the U.S have suggested that new regulations have decreased independence of residents in the operating room as a result of close faculty supervision and restrictions on resident duty hours especially for emergency conditions (Lewcis & Klingensmith, 2012). This lack of independence in training may impact on the surgeon being independent following completion of their residency program. These findings highlight the importance and the great need to conduct well designed qualitative studies addressing the issue of transition to practice in surgical training in order to better understand it features and effects on the transitioning surgeon, as well as its effect on the quality of care provided to the patients with a special focus on the intraoperative aspect of the transition as it represent a unique environment for surgical practice compared to non-surgical one.

The current work aims at exploring the surgical transition into practice in the operating room; understanding the kind of challenges that surgeons face early in their practice and strategies implemented by the surgeons to overcome any challenges and difficulties they faced. Understanding this aspect of a surgeon's transition to practice will inform educational strategies for residency programs to potentially ensure surgeons wellbeing and competency. In the following sections of this thesis I will provide an introduction to qualitative research methods and how to apply them to such a research question. I will describe the methodology we used within qualitative methods to conduct our study, followed by a discussion of our findings and relevance to medical training.

1.5 Reflexivity:

Part of engaging in qualitative research is recognizing and understanding how a researcher background, professional experience and assumptions may influence their research. It is essential therefore to share some of my background and to consider its possible impact on my work. I am an Obstetrician and Gynecologist holding a faculty position at King Abdulaziz University in Jeddah, Saudi Arabia. I have great interest in medical education especially surgical training for obstetrics and gynecology residents. As a relatively recent graduate from surgical specialty training my research question was motivated by reflection on my own training and transition to practice. This work culminating in a master's of science in surgery will form the corner stone for my academic work in the future. I hope to continue to contribute to this essential aspect in medical education and preparation for future surgeons. I fully acknowledge that being an ''insider' may impact on the research. However, as a surgeon I understand the concepts and terms essential for me to understand and translate what my participant colleagues are describing. One potential risk of being an insider can result in overlooking some findings that might be new or important to outsiders. Our methods however were careful to try and minimize this risk as much as possible understanding that it can never be eliminated fully.

Chapter 2

Materials and Methods

2.1 Introduction to qualitative methods

Qualitative methods aim to make sense of, or interpret, phenomena in terms of the meanings people bring to them. (Greenhalgh, T & Taylor, R. 1997). We studied a complex multidimensional psychosocial phenomenon, that is the transition into being an independent practicing surgeon, with special focus on the intraoperative experience. This phenomenon was investigated by conducting a qualitative research study using semi-structured interviews with rich pictures as a method to elicit novel concepts and meanings.

Medical education research is broadly divided into quantitative and qualitative methods. Quantitative methods are used to answer questions of (what) in an objective matter, it provides complete and detailed analysis of the studied topic using measurable numeric data. Qualitative methods on the other hand answers the (how and why) aspects, it focuses on gaining deep understanding of the subject by analyzing narratives in a systematic and rigorous process following the roles of standard scientific inquiry. (Sim, J., & Wright, C. 2000). Qualitative methods are used to explore new areas that have not been examined previously and is the first step in understanding a phenomenon before conducting quantitative research. Qualitative methods allow insight into poorly understood areas of clinical practice and the life of clinicians. When applied properly, qualitative research serves as a valuable method to develop theory, evaluate programs and design interventions. (Baxter & Jack, 2008; Choo et al., 2015)(Morse, 1999)

Over the last decade, qualitative research has gained increasing popularity by health care scholars. It provides a pivotal tool increasing our understanding of complex health care topics. Qualitative research has become an essential tool to study complex psychosocial phenomena within their context. (Baxter & Jack, 2008)

Qualitative methods use an inductive approach to knowledge generation in which the individual experiences form the bases for understandings of phenomenological experiences. For example, qualitative methods have been used to gain an understanding of myotonic dystrophies with a focus on the patient experience rather than just the biomedical model used previously which fails to capture the actual patent experiences(LaDonna & Venance, 2015). Researchers used photo voice techniques in which patients with myotonic dystrophy took photographs pertaining to their daily experiences living with the disease. Those photographs where used to stimulate focused and group discussions that using qualitative research principles lead to better understanding of patient's daily experiences. (LaDonna & Venance, 2015)

The following table summarizes the main differences between qualitative and quantitative methods:

Table 4: Comparison of qualitative and quantitative studies (Choo et al., 2015)

Characteristic	Qualitative	Quantitative
Nature of concept understudy	Unfamiliar and poorly defined	Clearly defined
Main goals of the study	Gaining in depth understanding	Obtain detailed numerical descriptions or functions of a representative sample. Finding generalizable results
Types of measurement	Exploratory, formative & confirmatory	Structured, hypothesis driven with intent to test hypothesis
Data collection	Flexible to allow in-depth understanding and/discovery of the unexpected	Validated, repeatability of measure is important

	Questions posed to participants can be modified in the course of the study	Research questions and measures decided a priori and not subject to change
	Typically conclude when data saturation is met and no new information is discovered	Concludes at an established sample size
Data analysis	Iterative, used to modify research questions for ongoing study	Constructed a priori, not influenced by data collection

Adapted from materials from Kathleen Morrow and Rachelle Rosen, Center for Behavioral & Preventive Medicine, Department of Psychiatry and Human Behavior, Warren Alpert Medical School of Brown University, Providence, RI

Qualitative research may be used in the health care realm for identification and description of a new clinical problem, development of surveys, generating standards of care as well as intervention evaluation. The applications are vast and generally under-utilized.

2.2 Types of qualitative designs and their research question:

In addition to the ability to study complex situations, qualitative research design allows multiple methodological methods to understand them. Widely used qualitative research designs include narrative research, case Study, grounded theory, phenomenology, and participatory action research. (Morse, 1999)(Creswell et al., 2007)

In 1995 Morse and Field (Morse, J. M., 1995) described a useful framework for using qualitative methods in health science research based on the type of research question. Table 5 explains how the framework recommends the types of qualitative methods which are best suited to particular research questions(Creswell et al., 2007). In our study we focused on a process question, exploring the experience of new surgeons with transition into independent practice.

Table 5: types of research questions and their qualitative design(Creswell et al., 2007)

Type of research question	Qualitative design
Chronological/story-oriented questions: Questions about the life experiences of an individual and how they unfold over time	Narrative research
In-depth, descriptive questions: Questions about developing an in-depth understanding about how different cases provide insight into an issue or unique case	Case study
Process questions: Questions about experiences over time or changes that have stages and phases	Grounded theory
Essence questions: questions about what is at the essence that all people's experience about a phenomenon	Phenomenology
Community action questions: questions about how changes occur in a community	Participatory action research

2.3 Types of Qualitative Data Collection Methods:

Data collection for qualitative studies take on various forms. The data collected depends on the level of intervention and involvement the investigator would like to impose. Each type has its advantages and limitations, and the choice of the data collected depends on the goal of the research in question. Examples of data collection techniques include participant observation, open-ended interviewing, semi-structured interviewing, cognitive interviewing and focus groups (Choo et al., 2015).

2.4 Qualitative Interviewing: Rich Pictures as an Interview Elicitation Tool:

Qualitative data collection involving interviews could be broadly divided into: unstructured and semi-structured interviews (DiCicco-Bloom & Crabtree, 2006). Unstructured interviews are mostly used in ethnography and anthropology in which the researcher collects data mainly through field observation. Semi-structured in-depth interviews are the most widely used interviewing format for qualitative research and can occur either with an individual or in groups (DiCicco-Bloom & Crabtree, 2006). Semi-structured interviews are usually scheduled in advance at a designated time and location and they are only conducted once for an individual or group. It typically takes between 30 minutes to several hours to complete. Interviews are usually based on a set of predetermined open-ended questions, with other questions emerging from the conversation between interviewer and interviewee. Semi-structured interviewing provides the advantages of collaboration between investigator and participants to gain deep insight of an issue, it also allows discussing sensitive and private topics. The disadvantages of semi-structured interviewing include the requirement of significant time to collect a representative and appropriate population. It also depends on the ability of the participants to recall and remember the details and the ability of the interviewer to probe for those details.

In our study we opted to use a research design in which a visual method called a "rich picture" is used as a visual elicitation tool for semi-structured interviews, this design involves drawing pictures explaining multiple dimensions of the issue being investigated and being asked about; It is part of systems engineering (SE) approach to research.(S M Cristancho et al., 2014) (Boardman & Sauser, 2008).

During interviews physicians may struggle to articulate their experience in words; They tend to over simplify the issue or focus on the operative aspect only (Sayra Cristancho, 2015)(S. Cristancho et al., 2014). Rich pictures are pictorial representations that attempt to capture an individual's perspective of a situation, including objects, ideas, people, character, feelings, conflicts, and prejudices (Armson, R. 2011.)

Conflict

People

Objects

Ideas

Feelings

Prejudice
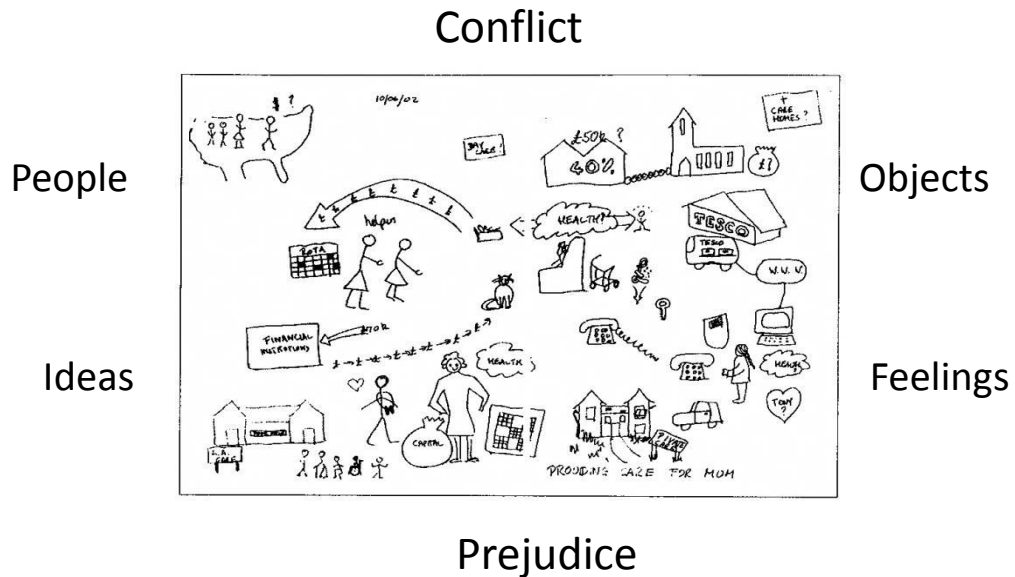
Figure 2: An example of rich picture; it shows pictorial representation of multiple diminutions and aspects of the situation being described. Source (Armson 2011)

Using rich pictures, participants use sketched symbols such as stick figures, to display features of interest and the interactions among those features, and thus rich pictures serves as an excellent tool to help physicians tell their story of the relevant complex conditions affecting a situation at a particular place and time. (Guillemin, 2004) Based on previous experience we believe using rich pictures have assisted us in interacting with our participants and will overcome the limitations of interviews as a sole mean of data collection; helping to gain deep insight of surgeon's perspectives in relation to transition.

2.5 Fundamentals of qualitative data analysis: Thematic analysis

Thematic analysis is one of the foundational analysis methods in qualitative research. It is defined as a method for identifying, analysing and reporting patterns (themes) within data. It minimally organizes and describes the data set in rich detail and it may go further than this as it may interpret various aspects of the research topic(Virginia Braun & Clarke, 2006). Thematic analysis is characterized by its flexibility. It allows researchers to develop rich and detailed set of data in order to understand the phenomenon in question, which makes it ideal to be used in new or under-researched areas.

There are multiple advantages for using thematic analysis, these include: flexibility, ease to learn and do, accessible to researchers with little qualitative research experience and that results are accessible to educated general public (Virginia Braun & Clarke, 2006) table 6.

Table 6: advantages of thematic analysis

- Flexibility.

- Relatively easy and quick method to learn, and do.

- Accessible to researchers with little or no experience of qualitative research.

- Results are generally accessible to educated general public.

- Useful method for working within participatory re- search paradigm, with participants as collaborators.

- Can usefully summarize key features of a large body of data, and/or offer a 'thick description' of the data set.

- Can highlight similarities and differences across the data set.

- Can generate unanticipated insights.

- Allows for social as well as psychological interpretations of data.

- Can be useful for producing qualitative analyses suited to informing policy development.

Source: Braun & Clarke, 2006

2.6 Phases to perform thematic analysis:

In an effort to summarize the essentials of performing a thematic data analysis we could describe six steps that needs to be done to conduct it as described by Braun and Clarke. (table 7)

Table 7: Steps for thematic analysis (Virginia Braun & Clarke, 2006)

Phase	Description
Familiarizing yourself with your data:	Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas.
Generating initial codes:	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
Searching for themes:	Collating codes into potential themes, gathering all data relevant to each potential theme.
Reviewing themes:	Checking if the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic 'map' of the analysis.
Defining and naming themes:	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells, generating clear definitions and names for each theme.
Producing the report:	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis

1- **Familiarize yourself with the data:** The first step is for the researcher to familiarize them selves with the data. The researcher should be looking for potential patterns and themes. This process could be started as soon as the data collection begins (using an iterative process), hand in hand with the transcription of the data source.

2- **Generate the codes:** The second step is the generation of initial codes. Codes identify a feature of the data that appears interesting to the analyst, it refers to 'the most basic segment, or element, of the raw data or information that can be assessed in a meaningful way regarding the phenomenon" (Boyatzis, 1998).

The process of coding is part of analysis, as you are organizing your data into meaningful groups. However, the coded data differ from the units of analysis (themes), which are often broader. The themes, which are developed after coding, are where the interpretative analysis of the data occurs, and in relation to which arguments about the phenomenon being examined are made.

Coding and data organization can be performed either manually (Figure 3 as an example) or through a software program. NVivo, Qidda, XSight and MAXQDA are some examples of those software program that could be used. (Boyatzis, 1998) (Miles and Huberman, 1994) (Tuckett, 2005).

Figure 3: An example of transcript coding – source Clarke et al. 2006

Data	Code
it's too much like hard work, I mean how much paper have you got to sign to change a flippin' name. I mean we have thought about it ((inaudible)) half-heartedly and thought no I just can't be bothered, it's too much like hard work. (Kate F07a)	1. Talked about with partner 2. Too much hassle to change name

3- **Look for themes:** The third phase will be to search for themes. This involves sorting of initial codes into potential groups (themes) and collate all the relevant data within the groups. It may be helpful at this phase to use visual representations, tables or thematic maps to help sort the different codes into themes. A thematic map of this early stage can be seen in Figure 4 about a study by Braun Wilkins of women's talk about the vagina. As codes are arranged, themes and subthemes will be developed. A group of codes might end up not belonging to any theme, they might be grouped into a theme called miscellaneous.
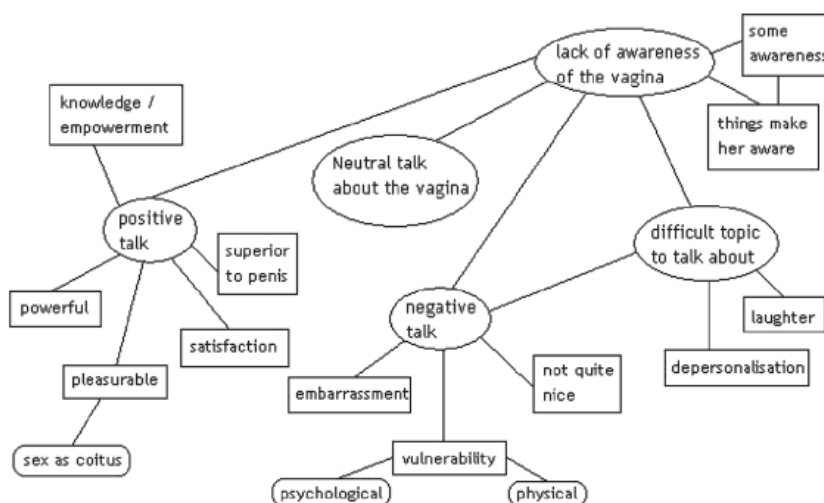
Figure 4 – Initial thematic map showing five main themes in a study by Braun and Wilkinson, 2003 of women's talk about the vagina. Source (V. Braun & Clarke, 2006)

4- **Review and confirm themes:** The next step is reviewing the candidate initial themes and to decide which one of them will have enough codes to support them and which ones might be combined to form a theme or vice versa. Codes within themes should cohere together meaningfully, while there should be clear and identifiable distinctions between themes.

Figure 5: An example of the outcome refinement process in a study by Braun and Wilkinson, 2003 of women's talk about the vagina. Source (V. Braun & Clarke, 2006)

5- **Define your themes:** The following step in thematic analysis is to define and name your themes, meaning finding the essence of what each theme represents and what aspects of data each theme captures. At this phase the researcher find each "story "that each theme tells, and how it relates to the overall general story in relation to the study question. It is important to consider each theme separately and in relation to other themes, and it is important as well to find any subthemes within the main theme and to identify them.

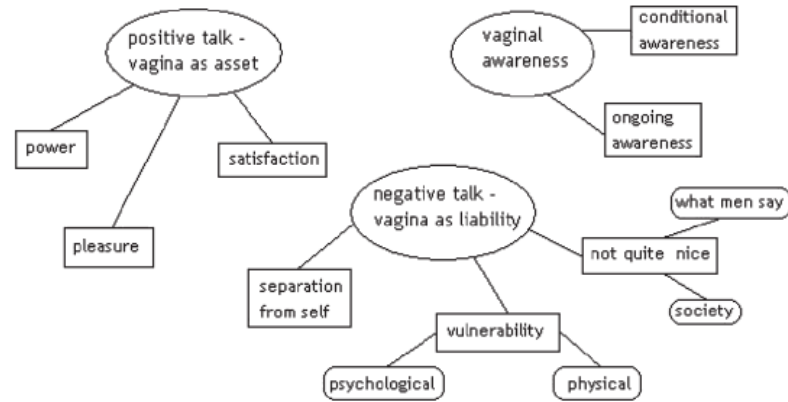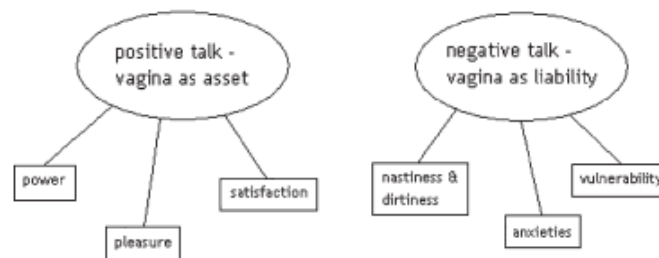**Figure 6: An example of final thematic map in a study by Braun and Wilkinson, 2003 of women's talk about the vagina. Source** (V. Braun & Clarke, 2006)

6- **Write the report:** The last phase of thematic analysis is the production of the final report, as the research presents their data analysis in a convincing and clear way explaining the steps that were taken in the analysis and telling the story that the complicated data tell in a simple way. It is essential to support the validity of the analysis by clearly explaining the steps that were taken in the process. Each theme should be explained and augmented with narrations and examples from the data set to support its conclusion and to give arguments in relation to the study question.

To summarize the thematic analysis and to simplify the review process for the researchers, a fifteen-point check list was developed and it is presented in the following table 8.(V. Braun & Clarke, 2006)

Table 8: A fifteen-point check list for thematic analysis:

Process	Criteria
Transcription	1 The data have been transcribed to an appropriate level of detail, and the transcripts have been checked against the tapes for 'accuracy'.
Coding	2 Each data item has been given equal attention in the coding process. 3 Themes have not been generated from a few vivid examples (an anecdotal approach), but instead the coding process has been thorough, inclusive and comprehensive. 4 All relevant extracts for all each theme have been collated. 5 Themes have been checked against each other and back to the original data set. 6 Themes are internally coherent, consistent, and distinctive.
Analysis	7 Data have been analyzed interpreted, made sense of rather than just paraphrased or described. 8 Analysis and data match each other the extracts illustrate the analytic claims. 9 Analysis tells a convincing and well-organized story about the data and topic. 10 A good balance between analytic narrative and illustrative extracts is provided.
Overall	11 Enough time has been allocated to complete all phases of the analysis adequately, without rushing a phase or giving it a once-over-lightly.
Written report	12 The assumptions about, and specific approach to, thematic analysis is clearly explicated. 13 There is a good fit between what you claim you do, and what you show you have done i.e., described method and reported analysis are consistent. 14 The language and concepts used in the report are consistent with the epistemological position of the analysis. 15 The researcher is positioned as active in the research process; themes do not just 'emerge'.

2.7 Procedure

2.7.1 Settings:

Our study was conducted in London, Ontario, Canada at the University of Western Ontario. Surgeons from different surgical specialties namely General surgery, E.N.T, Vascular Surgery, Urology, and Orthopedics were interviewed to gain wide perspective from different surgical specialties. The surgeons involved have been in practice for a minimum of 2 years, so that they will be able to provide a comprehensive experience on the different aspects of the transition. We interviewed one surgeon who has been in practice for more than 5 years (was practicing 7 years) as we wanted to find if there would be any difference in the thoroughness of the data provided.

All surgeons were practicing at a highly specialized university teaching hospital as we wanted to unify their experiences and to minimize any confounding factors that might affect their experience with transition to independent practice.

2.7.2 Data collection

We purposefully sampled 10 faculty surgeons from a variety of surgical specialties (Urology, vascular surgery, otolaryngology, Orthopedics and general surgery) at two academic hospitals in London, Ontario, Canada, who provided consent and were willing to participate in a semi-structured interview with rich pictures as an elicitation method.

The Health Sciences Research Ethics Board of Western University approved the research.

The interview guide was developed by the principal investigator based on input, analysis and examples from similar qualitative studies that were conducted on similar topics, and was modified to serve the need of answering our research question. The interview guide was then reviewed and approved by the rest of the research team and it was adjusted during the process of data collection based on the feedback from initial interviews with participants.

Surgeons were invited to participate in the study using email invitations that were sent by the principal investigator. Research proposal as well as introduction to our study were sent by email to the surgeons who agreed to participate a few days before the interview. Interviews were conducted at the surgeons preferred time and location. All surgeons were interviewed by the principal investigator.

Consents were obtained at the beginning of each interview; the study aims and the data collection methods were explained to the participants at the beginning of the interview and all the participants' questions were answered. Participants were given instructions on how to create rich pictures based on the guidelines offered by Armson (2011) who provided an example of the development of a rich picture from a personal story. At the beginning of each drawing session, we used this example to teach participants about the process and to show them what the final product might look like. We also emphasized that rich pictures were meant to be free-form drawings to depict an experience, and that art skills were neither necessary nor assessed.

Large drawing white paper as well as colored markers were provided to the participants to start drawing. The aim to focus on the first operative cases in the drawing was explained. The option whether they wanted the principal investigator to stay at the room while they were drawing versus leaving the room was offered to the participants. Interviews were conducted at the end of the drawing. Interviews were recorded using 2 electronic recording devices after ensuring informed consent.

The main question that were discussed in a semi- structured fashion with the participant were focusing on their perception of their operative transition from training to independent practice, challenges they faced during that phase, strategies they implemented to overcome those challenges and the effects of external factors. Detailed description of the questions could be found in the appendix (See Appendix 1)

A semi-structured approach means that we used these questions as a guideline for the discussion, but we were free to add or omit from them based on the discussion.

At the end of each interview, participants were asked to provide referral to colleagues who they might think will be good candidates to participate (snowballing technique) (Streeton, Cooke, & Campbell, 2004).

2.7.3 Data Analysis

A professional transcription services center transcribed interviews. They were reviewed for accuracy by the principal investigator and then analyzed. All emerging issues were identified and adjustments to the interview questions we made as needed. The initial codes were discovered by reviewing the interviews using thematic analysis principles. More than one team members re-coded the interviews for comparison and to check for accuracy. Similar codes were grouped to establish the initial potential themes and sub themes.

The research team met on regular basis to define what constituted a theme and to review potential themes. Inductive approach to data analysis was used to explore different aspects in relation to our study question and to reflect the participant's experiences in relation to transition.

Data collection was stopped once sufficiency was reached (no new themes are being discovered) (Francis et al., 2010) as agreed by the team members and group consensus defined themes. Clear and simple examples from our data were used as a reference to support our ideas and to provide a clear image to the reader.

Chapter 3

<u>Results</u>

3.1 Demographics

Data Sufficiency was reached after ten interviews. Out of the ten participating surgeons, six were male and four participants were female. Participants held positions at two different university hospitals. In terms of their specialty, three surgeons were general surgeons, two were urologists, two orthopedic surgeons, two vascular surgeons and one surgeon was E.N.T. The mean duration in practice after transition was 3.2 years. There were no major differences in the themes provided by different specialties. Our data did not suggest any differences in terms of perceived goals, challenges or the effect of contextual factors between male and female surgeons, nor any changes in the coping strategies.

3.2 Rich Pictures

Each participant started their interview by drawing a rich picture describing one of their initial experiences in the operating room including ideas, people and connections, they also draw representations of more subjective aspects, such as character, feelings, conflicts and prejudices.

Examples of rich pictures are shown in the appendix.

3.3 Themes

There were three main themes that were identified by the research team, the first theme was describing the perceived goals, second theme was reflecting the challenges surgeons face during the transition to independent practice; both at the level of being a surgeon and beyond being a surgeon. The last theme described the contextual factors such as availability of supportive and welcoming staff. Drawings will be presented in this section as an illustration device.

3.3.1 First theme: Perceived Goals:

At the level of perceived goals, all participants indicated that the main goal of the first years of practice as an independent surgeon is to achieve good outcomes and to minimize their fear of complications,

> *"So, you want quick, easy, successful cases that you can win. You don't want the big, terrible, long one on your first day in practice" [S1]*

In general, this fear of complications represented a significant source of stress for the participants especially at the beginning of their surgical career

> *"I lost a lot of sleep in the first year. I found it really hard, I think I was just nervous all the time that something bad was happening or was going to happen during the first year" [S6]*

The desire for good outcomes with no complication was probably the reason behind most of the decision made pertinent to patients' care, such as case selection for surgery in elective circumstances and the time booked for the procedure.

> *"I also selected cases that I felt had a high chance of success, unless it was an emergent case, which you don't have a choice. But electively I tried to be a bit more selective than I am now in terms of who I operated on" [S7]*

> *"I had to do everything I could to avoid having big complications early on, because that would be bad. "[S7]*

The participants indicate that those fears were diminishing as they gained more trust building a good reputation as being competent surgeons.

> *"I think the biggest challenge was getting over my own fears. I think that was harder than the cases. I was lucky, my first cases were not complex operative cases"[S2]*

3.3.2 Second theme: Perceived Challenges:

The second theme describes the challenges perceived by the new surgeon. Those challenges could be broadly divided according to their nature and the role that is required by the surgeon into challenges as a surgeon and challenges beyond being a surgeon such as dealing with non-clinical tasks.

A) Challenges caused by Being a surgeon:

Most of our participants indicated some of the challenges at the level of being a surgeon to include:

1- Making the final call:

One of the main challenges new surgeons face at the beginning of their independent career are making the final call and not having someone to "check the answer "with.

This was one of the main sources of stress and fear until the surgeons had the opportunity to build their confidence. Some of the examples from our interviews include:

> *"I would often be frozen with the pair of scissors; I would look three or four times before I finally cut it because I didn't have anyone else to check the final answer"[S1]*

Being surrounded by many people as shown in the drawing, didn't seem to resolve the challenge of making the final decision.

2- Building their reputation

There was a general agreement between our participants about the importance of building a good reputation and the fear of having a bad one at the beginning of their practice. The participants felt that they were closely observed by their coworkers.

The need for good reputation has always been in the back of their minds whenever they started to have some encounter with new colleagues and co-workers.

> *"people looking at me thinking "I hope she is as good as when she was a resident"* [S2]

> *"you really want to avoid having big complications early in your practice because that will taint people's view of you as a surgeon"* [S7]
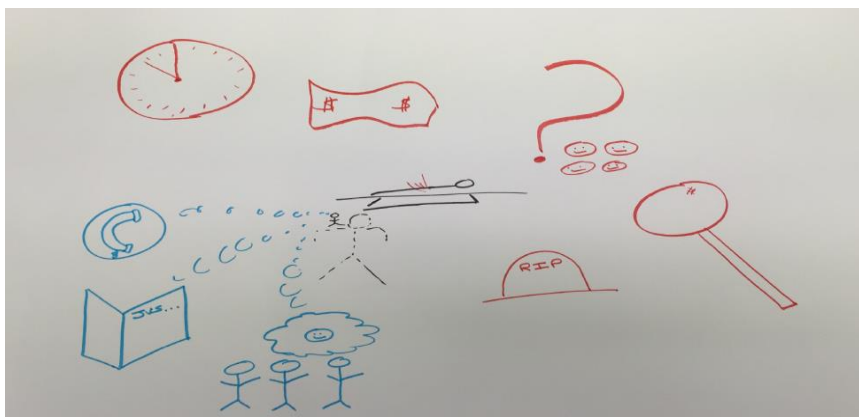
In addition to the magnifying glass, the surgeon used the metaphor of a tombstone to represent his concerns about losing his reputation.

They feared having a bad reputation might "stick" with them forever.

> *"Then I drew this magnifying glass because it does feel when you first start out, everybody has got you under the magnifying glass and you feel that you're being scrutinized heavily, which I think you are"* [S7]

3- Dealing with Time pressure

Operative time management was one of the main challenges described by our participants, which might be a universal phenomenon between surgeons, but our data suggests that it was more profound at the beginning of the surgical career.

> *"They get to know that you're a reasonable person and you're not trying to be slow or trying to take extra time. I think everyone in the operating room sometimes has a feeling like everything is against them, the biggest of which is time I think."* [S6]

For instance, drawing below shows the surgeon being under multiple sources of pressure, one of them is time as represented by the clocking being at 3:30 which is the end time for the O.R day.
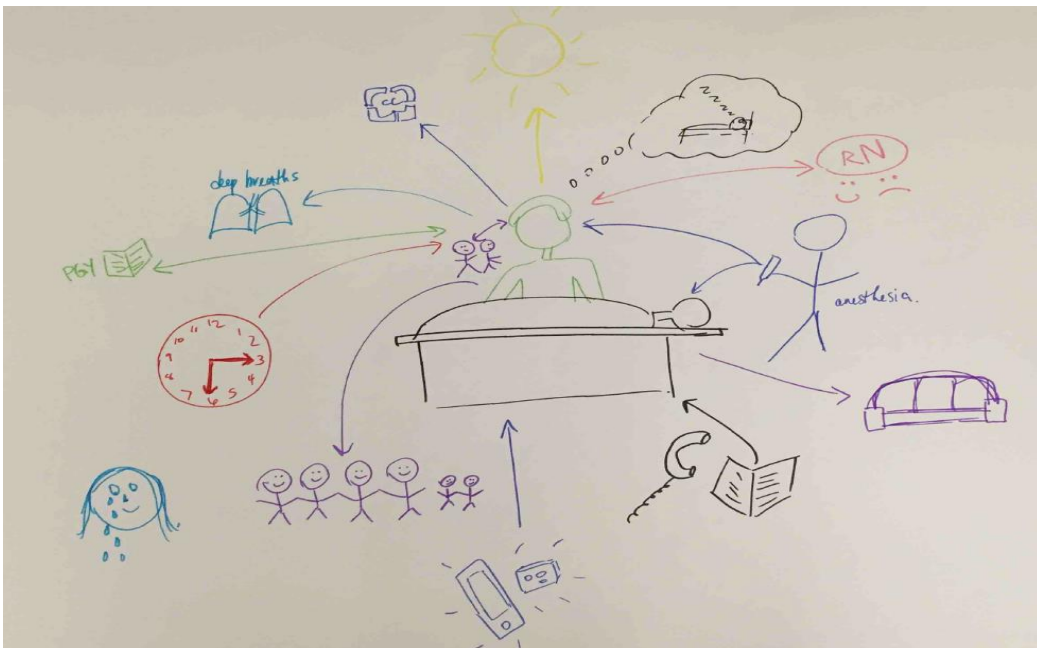
> *"The clock is set to 3:30- referring to her drawing- because that's when my O.R. day ends at 3:30 and I think this is not particular to someone who is starting practice, but I think the pressure to finish on time is just so huge "* [S6]

One of the strategies implemented by new surgeons was to book the cases for longer duration than experienced peers, they felt the need to operate slower than usual hoping to avoid any complications.

> *"Basically I would book my lists so that they were under-booked, so I didn't try and jam a few extra cases in there. I would book them with extra time."[S7]*

The stress of time management manifested in other ways as well such as being "impatient" with residents and trainees as described in the following themes. They also described feeling the time "flying by" in the O.R, and thus they might keep watching for the clock to avoid their last cases to be cancelled.

2) Challenges beyond being a surgeon

It has been suggested in earlier research that non-clinical tasks cause a lot of stress for the new consultant, our data confirms this finding.

> *"I say all the time, the easiest part of my job as a junior attending is the medicine part and everything else that I do is the hard part." [S2]*

> *"constantly thinking about non-clinical tasks before and after surgery but not during procedures" [S10]*

All our participants have agreed that facing additional demands in research, administration and teaching were a cause of stress especially that they were either not well prepared for that or that they didn't have enough resources to carry them.

As we conducted our study in a teaching hospital settings, all our participants were expected to accomplish certain level of scholarly work. The participants agreed that there is a high expectation to accomplish in research, but without enough resources.

> *"So, there's this huge expectation to accomplish a lot from a research perspective, but there's actually very little support or resources to try to do that" [S8]*
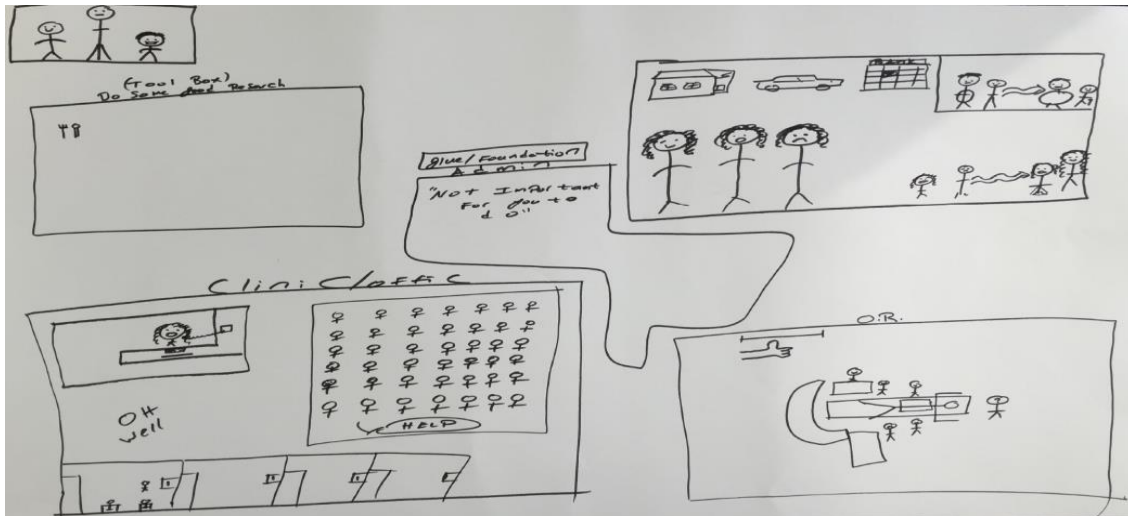
In this diagram the participant used a metaphor of drawing a large tool box with tiny spoon and a fork inside of it, representing the expectations from research and the tools provided to accomplish them

One of the main challenging new tasks transitioning surgeons face working at a teaching hospital is training and supervision for students and residents. The source of stress in teaching is found to be multidimensional resulting from the interaction of other challenges such as fear of complications, time management and lack of preparation for supervision, in addition new surgeons usually don't know the residents and their abilities and thus they don't initially trust them.

> *"I did not let the residents do as much of the case as I do now. I did most of it myself for a few reasons. One is you're not used to mentoring residents. You don't know how that's going to factor into the time of the operation. The second is you really want to avoid having big complications early in your practice because that will taint people's view of you as a surgeon." [S7]*

Our data confirmed that administrative and financial part of starting a new practice was very stressful for most of the participants, this has resulted mainly from the lack of preparation for those roles and the complexity of the tasks.

> *"My office was outside of this picture here. It was, I would say, by far the most challenging part of my practice "[S10]*

3.3.3 Third theme: Beyond goals and challenges:

Other important aspects characterizing the new surgeon experience with transition included collectively dealing with contextual factors, which encompases two main subthemes: availability of supportive colleagues, and having extra training with some supervision such as a fellowship.

**A) Availability of mentors and/or a supportive team**.

One of the main contextual factors that affected the transitioning surgeon was the availability of supportive and welcoming staff such as senior surgeons, nursing as well as administrative teams. Experienced colleagues were found to be helpful in terms of guiding and providing back-up for new surgeons, this was found to greatly reduce the stress at the beginning for new surgeons, even if it was only by knowing that they were welcomed to call their seniors whenever needed.

> *"so, I automatically felt comfortable because they were definitely very welcoming as opposed to other experiences I've heard from other people"* [S4]
>
> *"If we have a difficult case that is atypical, the two of us would scrub in and do it together"* [S4]

This factor was confirmed both in positive and negative ways, meaning that the surgeons who didn't have enough support had much more difficulty with the new role and vice-versa.

> *"And none of the people in my department were that supportive of helping me"* [S3]
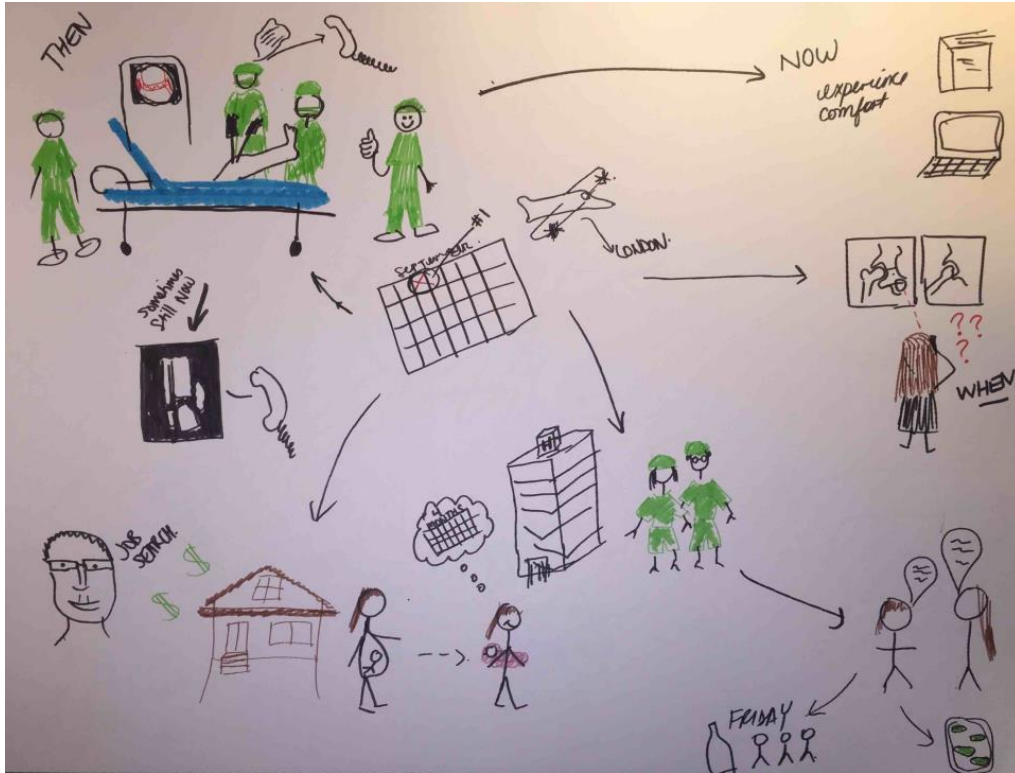
In this diagram the participant expressed her supportive colleagues being always available for her both inside and outside the hospital which made the transition easier.

B) Having extra training with minimal supervision after residency

This subtheme deals with the comfort expressed by many participants who had the opportunity to undergo extra training with minimal supervision such as a fellowship or mentorship. Surgeons who had this opportunity described added confidence and easer transition in the O.R. and more comfort to making the final decision during the operation.

> *"So, I don't think I would have transitioned as well as I did from residency to practice. I think I needed that year of fellowship to feel more confident'[S10]*

> *"After a few months of loose supervision, I was turned totally free to operate and do what I please. It was awesome" [S1]*

Chapter 4

<u>Discussion</u>

The main aim of medical education is to train a physician who can provide and improve patient care, yet can do so while maintaining their wellbeing (Frenk et al., 2010)(Royal College of Physicians and Surgeons of Canada, 2014). While the royal college in Canada is implementing the competency by design medical education curricula, those advances require deep insight into the current relationship between residency training and hospital practice as an attending.(Royal College of Physicians and Surgeons of Canada, 2014) One way to gain insight into this evolution is by exploring how physicians experience the transition from resident to attending. We lack deep insight at the transition of surgical residents and fellows into independent practice(Westerman, 2012), especially the transition in the operating room. Our study aimed at addressing this issue to help informing residency training programs and policy makers.

Our study identified key themes pertinent to surgical transition from postgraduate medical education and training into independent surgeon, with special focus on the intraoperative experience. As the first study being conducted to answer this multidimensional psycho-social phenomenon, we used qualitative design with thematic analysis to address this question, we used rich pictures as an elicitation method to have better interaction between the researcher and the participants, and to provide the participants with a useful tool to organize their ideas and to incorporate all different aspects pertinent to this surgical transition.

Through this process, I would like to discuss key findings of this work as they relate to three major areas in medical education research; Patient Safety, Physician wellbeing and Gender.

Looking at the current model of surgical training in Canada, the surgeons transform overnight from being the trainee to being the "boss" in the operating room, which cause a

significant source of stress for new surgeons, as well as might pose some risk on the quality of patient care provided. Interestingly other international health care models (such as the U.K) recognizes the step after residency and fellowship (Senior registrars) as a separate stage in which the surgeons have more autonomy in managing their patient, yet have some form of supervision and support by their senior more experienced colleagues (the consultants in the U.K). the Royal college of Physicians and Surgeons in Canada has implemented a similar phase "transition to practice "in the newly implemented Competency by Design Model for specialty training, hoping to alleviate the effect of transition on the new physician, the effect of which will appear in the following years.

In its competency by design paper series published in March 2014 the Royal college of Canada has incorporated the "Just culture of Patient Safety"(Nakajima et al., 2011) as one of the its components. The authors suggested poor uptake of patient safety competencies by PGME programs in Canada as they are not implementing the patient safety elements in their curricula in sufficient manner, they recommended increased teaching capacity, deliberate planning and creation of a patient safety curriculum, and developing teaching strategies and tools, as well as methods of assessment. Our study confirms that the main goal for all new surgeons is to have good outcomes, ensuring patient safety and especially avoiding any complications, We found that new surgeons persistently adopted risk averse attitude, such as trying to avoid complex or difficult cases, booking their cases for longer than usual, minimizing trainee's involvement occasionally and felt the need to have some form of backup from their colleagues. It was less likely for new surgeons to adopt an "innovative approach" when they faced uncertainty in the operating room earlier in their practice compared to their experienced colleagues(Sayra M. Cristancho et al., 2013). We found that those fears diminish as new surgeons gained more experience and build their reputation as competent.

The role of health care organizations in maintaining the wellbeing of health care professional is gaining increased attention by the medical community(Rothenberger, 2017; West, Dyrbye, Erwin, & Shanafelt, 2016). The contextual and inter-professional relationships played a significant role in the intraoperative experience for new surgeons. Surgeons who felt supported and welcomed had a much easier transition. It was evident in

our data that new surgeons consistently felt "under the magnifying glass" from their coworkers. This could be reflected upon their fear of bad reputation that could happen in case of some complications. Being scrutinized by coworkers impose significant stress and wanting to proof that you are a competent surgeon poses added challenge. Making the final call while operating represented the main intraoperative challenges during the early operative cases for the new surgeon. This confirms the general findings (Westerman et al., 2010) describing the effects of the new task of having the final responsibility in patient care.

Our data affirmed that transition is challenging for new surgeons. Those challenges range from being related to the surgical component of their practice and beyond. It has been suggested by number of studies that the lack of preparation for non-clinical tasks during residency poses some source of stress for the new consultant (Kilminster et al., 2011; Morrow et al., 2009; Teunissen & Westerman, 2011); this has been confirmed in our data. The research expectations were universally found to be unreasonably high by our participants, especially that new surgeons felt that the resources are insufficient. The effect of lack of preparation during the residency for non-clinical tasks was prominent, especially when surgeons were faced with administrative and teaching demands.

Having extra fellowship with "loose supervision" was found to be a facilitator for the transition. Participants who had a fellowship described the supportive role this extra training played in the early transition period, confirming the findings that have been suggested in the literature in other specialties (McKinstry et al. 2005).

We recommend promoting the role of health care organizations in helping the transitioning physician and in developing supportive environment for them to ensure their wellbeing as well as patient safety.

Transition to practice is not a uniform experience across surgical fields as shown by different responses provided by surgeons from various specialties, meaning that surgeons from the same specialty did not necessarily have the same experience with transition. In fact, it was one of the striking findings in our data that the institutional context/culture shape the strategies used by transitioning surgeons to overcome challenges and difficulties.

Despite some evidence that female surgeons might find residency training more difficult to cope with as reflected by higher odds of withdrawing from residency training (Bergen, Turnage, & Carrico, 1998) We did not find transition to be more challenging for female surgeons. The need for support by family and colleagues was universal between our participants and the primary goal of wanting good reputations and ensuring patient safety was equal between male and female new surgeons. Female surgeons might have more difficulty proven themselves in academic surgical circumstances as suggested by other authors (Zhuge, Kaufman, Simeone, Chen, & Velazquez, 2011), however we found that non-clinical tasks including academia was equally challenging for male and female transitioning surgeons.

Overall since transition to O.R impacts surgeons at different levels, when asked to provide a recommendation or a feedback for the residency training program in relation to preparing future residents for transition, it was not surprising that recommendations were not fit-for-all, meaning that participants failed to agree on a consistent recommendation, rather it was diverse and based on personal opinions. Some participants suggested implementing dedicated teaching sessions for the residents preparing them for independent practice, others felt that senior residents need to have more autonomy over their patients in the final year of training with minimal presence of the attending surgeon in the O.R., while some participants felt that the transition phase is inevitable and all surgeons will ultimately face it with its challenges regardless of how do we prepare the residents for it.

Possible implications:

Our results agrees with other studies (Crowe, 2004; Higgins, Gallen, & Whiteman, 2005; McKinstry, Macnicol, Elliot, & Macpherson, 2005; Morrow et al., 2009; Westerman, 2014) (Table 2) that there is increasing need by the residency training programs to provide their residents with resources preparing them to non-clinical tasks such as requirements to start independent practice and how to conduct research in the light of low resources. We would recommend the introduction of a teaching module in the academic "half days" dealing with the transition and providing the residents with essential information that they will inevitably need to know once they start practicing such as licensing, billing and setting

up a new practice. We recommend that graduating residents as well try to educate themselves in relation to the administrative and non-clinical tasks pertinent to independent practice while they are still in training as this might reduce the stress of transition.

Providing senior residents with more independence in the operating room might be one of the strategies that could be implemented. Our data suggest that residents who had such and independence had less stressful transition. However, ensuring patient safety and the acceptability of the patients to residents acting independently might be challenging.

Limitations:

All our participants are academic surgeons practicing in academic teaching hospitals. This was purposefully done to try to avoid any confounding factors that could result from differences in working environment that could result from working in some smaller community hospitals with different contextual factors. The criteria of the transition into practice in smaller hospitals and its associated challenges and strategies cannot be extrapolated or implied from our study and constitute a potential avenue for further research to be examined in another study in the future.

All our participants had an extra fellowship training following their specialty training and immediately prior to taking their current roles, thus we could not assess with confidence the nature of transition in surgeons who lack extra training after specialty training, or surgeons who transitioned from community practice into academic.

Further Research:

We believe that our thematic analysis should form the basis for future research exploring specific aspects of surgical transition. Areas such as the quality of patient care provided by the transitioning surgeon, physician wellbeing, the effect of having a fellowship after residency and whether implementing academic teaching modules explaining transition to residents are amongst the areas that deserve further exploring.

Conclusion:

In contrast to other studies examining transition into independent practice and including surgeons among physicians from other specialties (Crowe, 2004; Higgins et al., 2005; McKinstry et al., 2005; Morrow et al., 2009; Westerman, 2014) (Table 2), we focused our investigation to surgical specialties, with special attention to the operative experience. To the best of our knowledge, we conducted the first qualitative study assessing this important aspect of transition.

Competence represents doing the right thing, for the context, at the right time leading to better patient care. Our data confirms the need to consider redesigning the medical education curricula in Canada; this supports the initiative by the royal college to implement the Competence by design model which labels the phase of transition into practice as an essential component of the professional development. Hospital hiring new surgeons might have an important role helping new surgeons by developing welcoming and supportive environment. This will help making this inevitable stage in each physician's career, especially surgeons, a well-organized and monitored phase, ensuring physician wellbeing as well as promoting good patient care.

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Appendices:

Appendix 1: Sample of interview guide

Interview Guide

Digital Labelling Protocols:

PROJECT ACRONYM: STIP (Surgeon's Transition to Independent Practice)

SURGERY SPECIALTY:

 CD = Cardiac

 GS = General

 NS = Neurosurgery

 OB = Obstetrics and Gynecology

 OP = Ophthalmology

 OR = Orthopaedic

 PD = Paediatric

 PS = Plastic Surgery

 SO = Surgical Oncology

 TS = Thoracic

 UR = Urology

 VS = Vascular Surgery

GENDER: M= Male ; F = Female

ID#: three-digit, e.g., 001, 009, 010

INTERVIEW DATE: MMDDYY-TIME

Examples:

STIP-AN-M-002-022416-330PM

Or

STIP-GS-F-013-031116-900AM-Part1

STIP-GS-F-013-031116-900AM-Part2 (etcetera as needed)

* use dashes not underscore and no spaces between the various identifiers

Materials Check-List:

o Paper
o Markers
o Recorder x2
o Question list
o Consent form
o Example drawing

<u>Explanation of Research (Research Purpose)</u>

The goal of our research project is to gain insight into new surgeons' experiences with transition into independent practice after postgraduate medical education in the operating room. By talking with surgeons from various specialties, we hope to learn about the **different aspects of** the transition process from being learners to becoming the most responsible physicians in the operating room, how **did they perceive the transition, how do they identify and manage any challenges they face, and what coping strategies do they implement.** This information may be used by training programs to guide how trainees are taught to handle transition, as well as health organizations to develop supporting means for the new surgeons.

<u>Instructions for Drawing Rich Pictures</u>

There are two parts to today's session. First, I would like you to think of your first cases as a new surgeon. I'd like you to <u>draw</u> about your experience with first operative cases, using stick figures and part of the situation, including ideas, people and connections. You can also draw representations of more subjective aspects, such as character, feelings, conflicts and prejudices. You won't be judged on your artistic ability and the picture won't be analyzed in depth; rather, it will serve as a starting point for our discussion about transition.

I'll leave the room and you'll have 20 minutes to reflect and draw.

Here are some pieces of paper and markers. When I come back, I'll ask you to explain your drawings to me and ask you some questions about your experiences with transition.

Opening Statement:

"For recording purposes, I'll state that today is November 23rd at 2:00 p.m. and this is my interview with ID#001.

Questions

1. What specialty are you in? When did you start independent practice?
2. Tell me about your drawing?
3. If applicable - Did you perform those procedures in a hospital where you trained before?
4. If applicable - How did you **perceive** transition from residency to attending in the OR?
5. If applicable -Which **external factors** do you think influenced your experience with transition in the O.R?
6. If applicable -What were the **challenges** that you faced during your first procedures? If any?
7. What were **the strategies** that you implemented to overcome any challenges during the transition?
8. Based on your overall experience up to now, what other factors have impacted the transition (e.g. other cases or transition from med student to resident)
9. How do you feel about your preparation by your residency training for the transition into independent surgeon in the O.R?
10. If you were to reflect on the biggest lesson from the transition, what would it be?
11. Do you have any recommendations for the residency training programs to help prepare their residents for the surgical transition?
12. Is there anything I didn't ask you about that you think is important for me to know about your experience with transition in your practice?
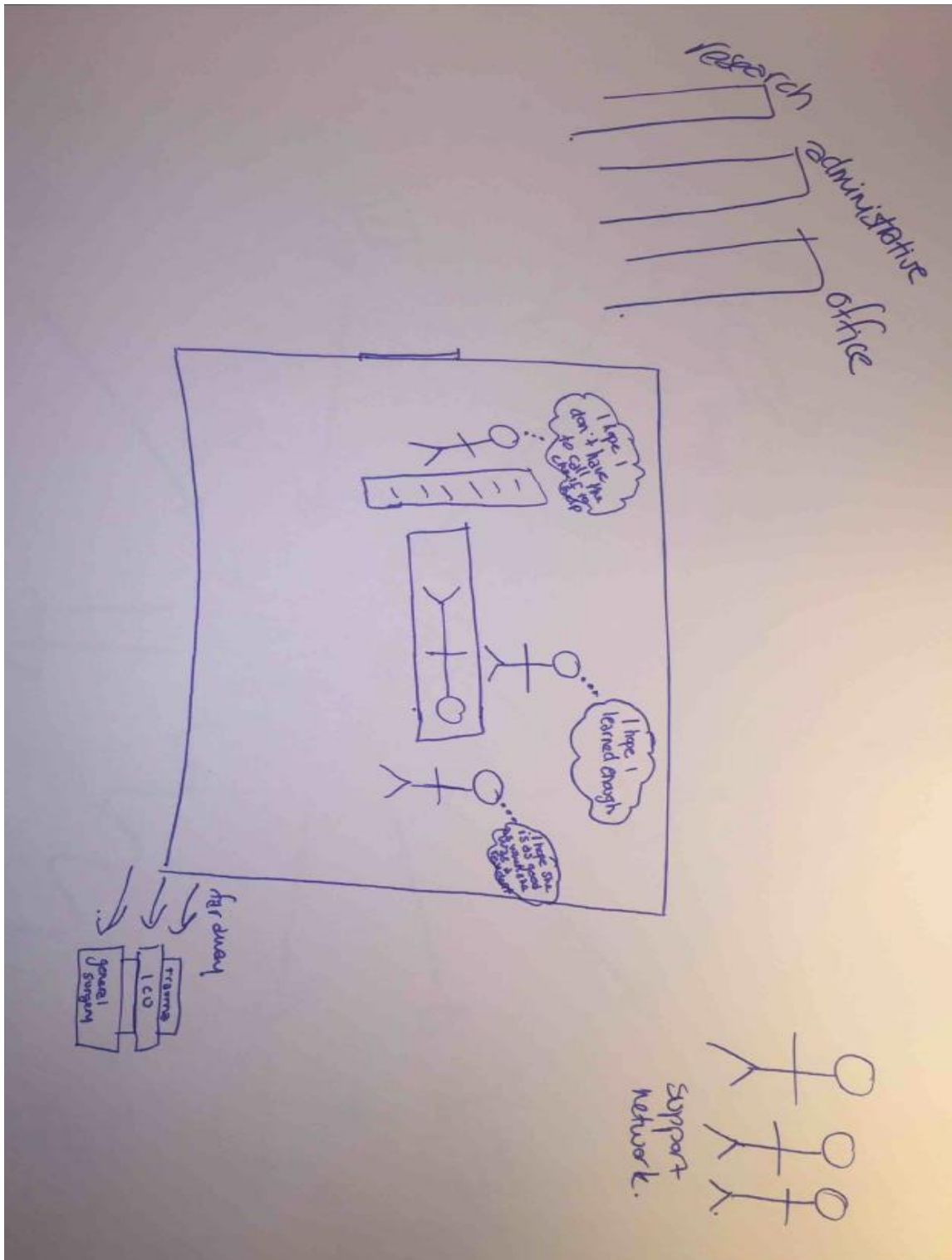
Closing Statement:

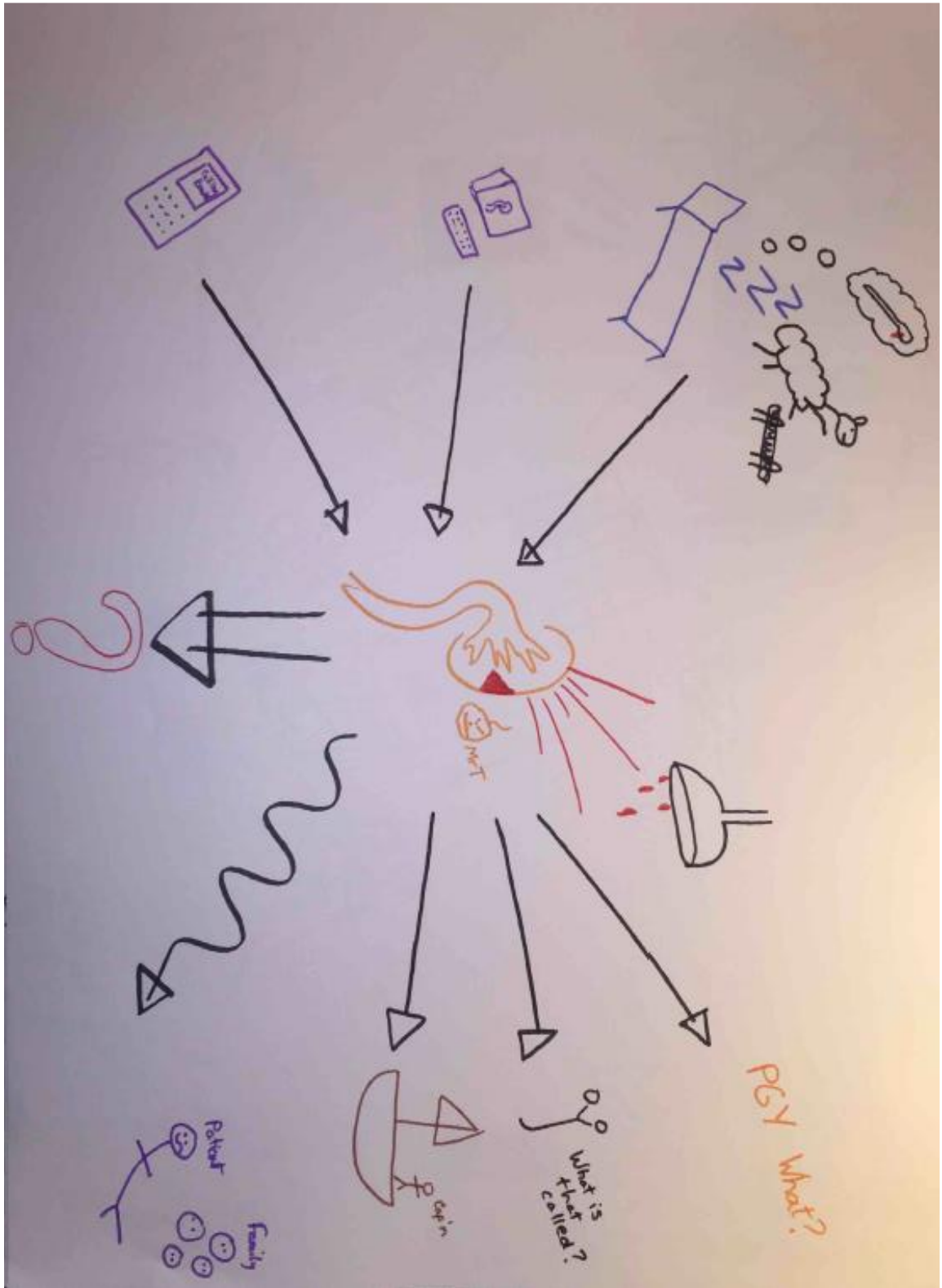*"This is the end of the session, I'll turn the recorder off now."*
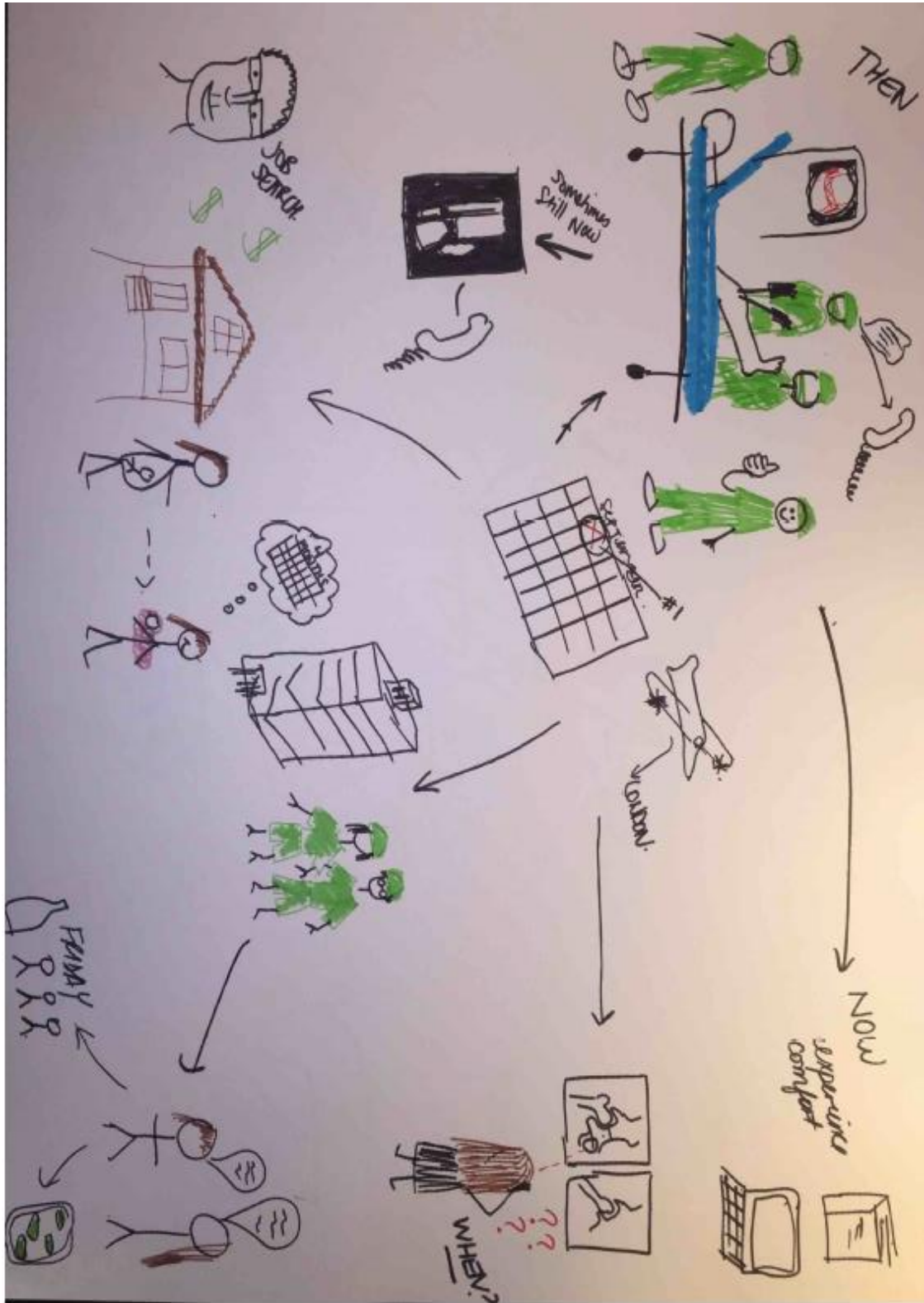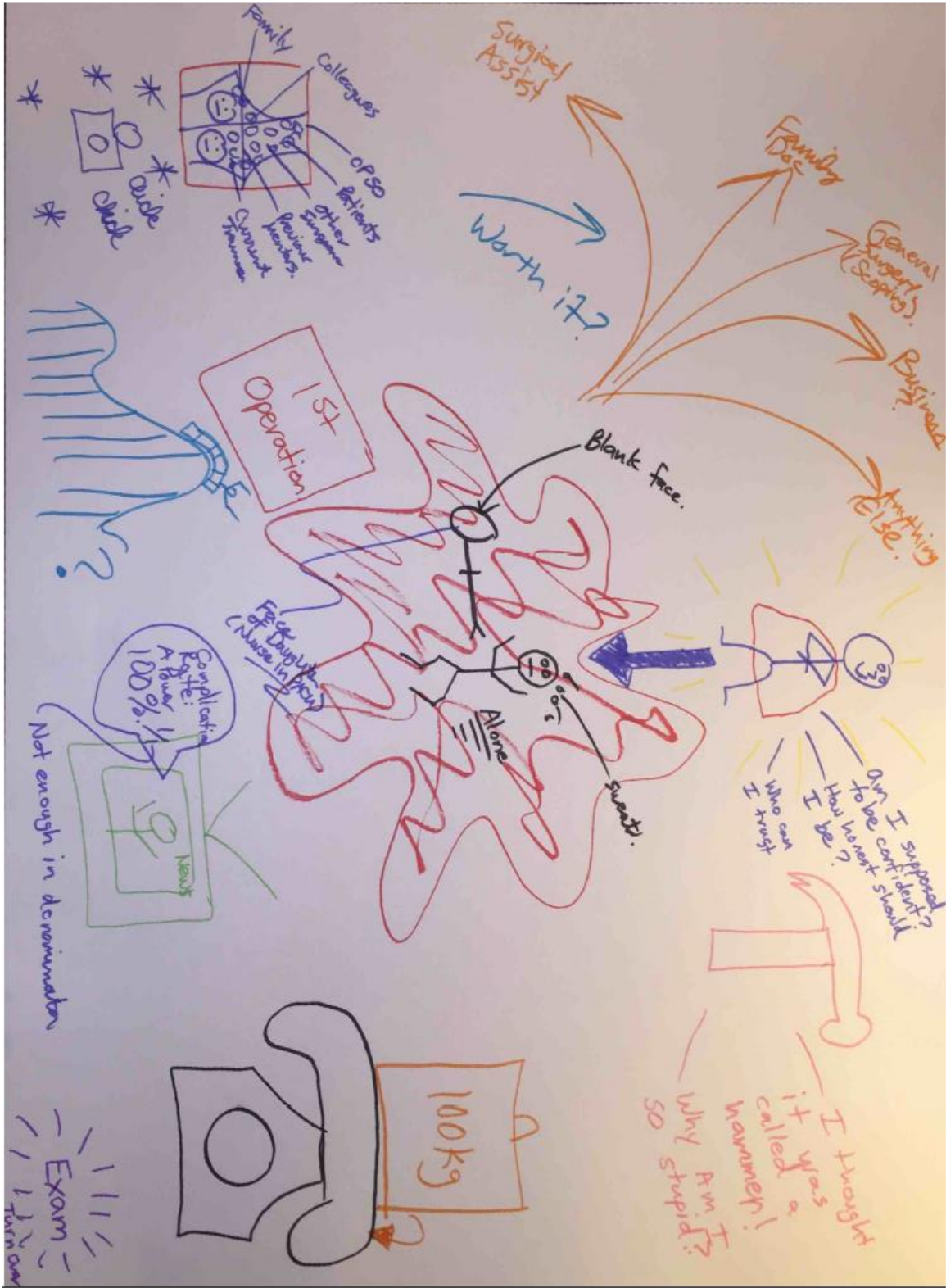
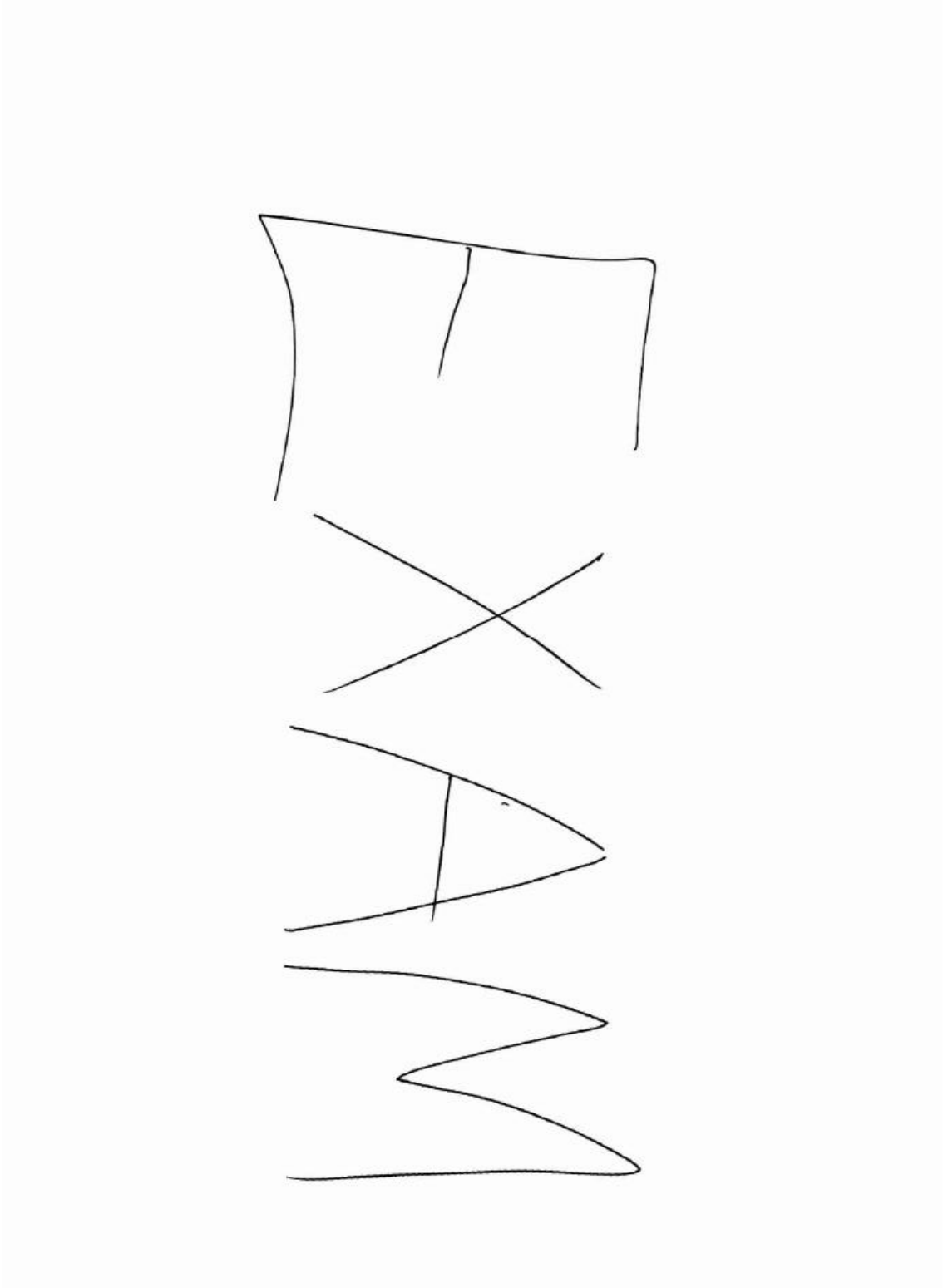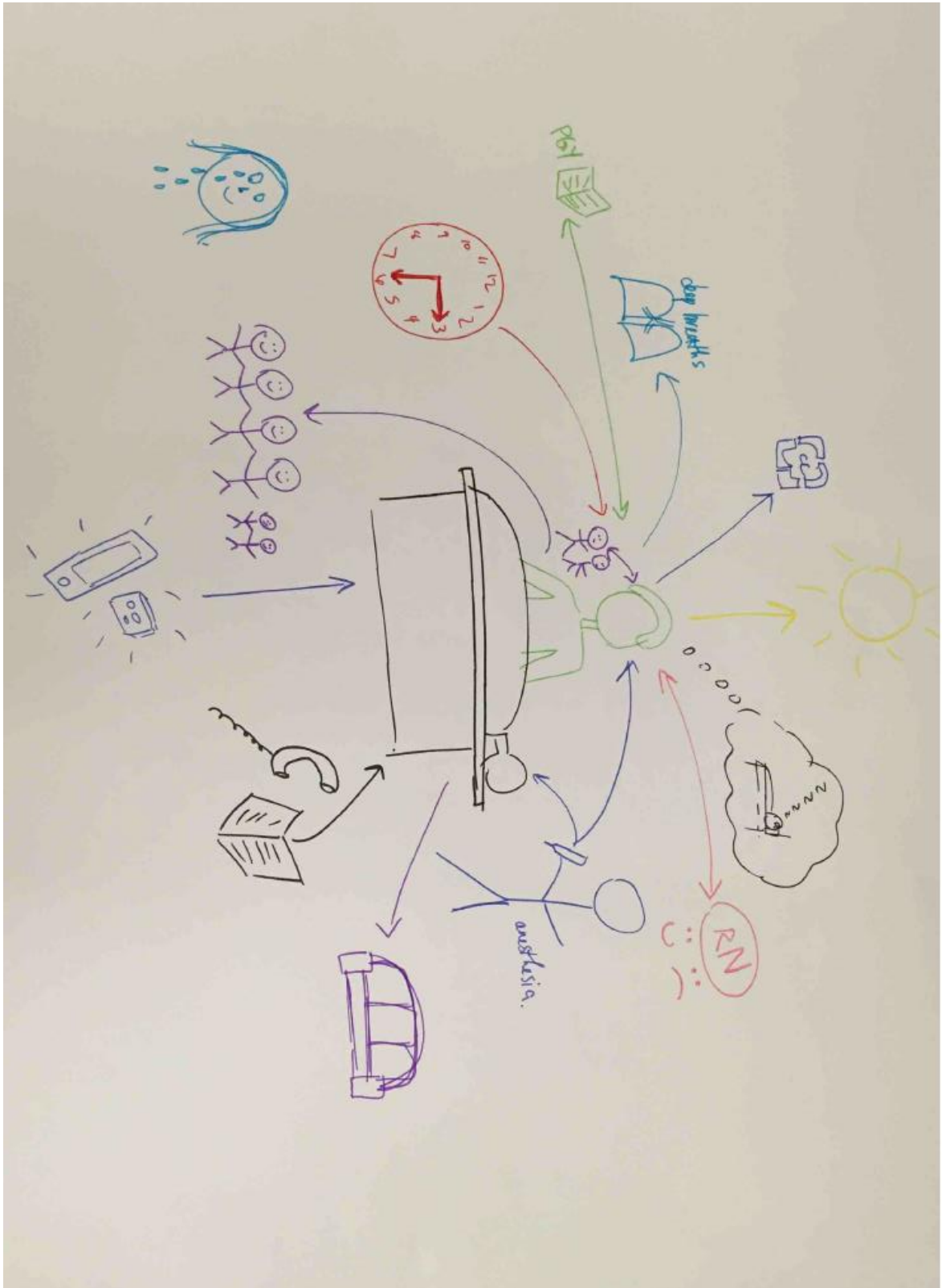# Rich Pictures:

Interview 1:
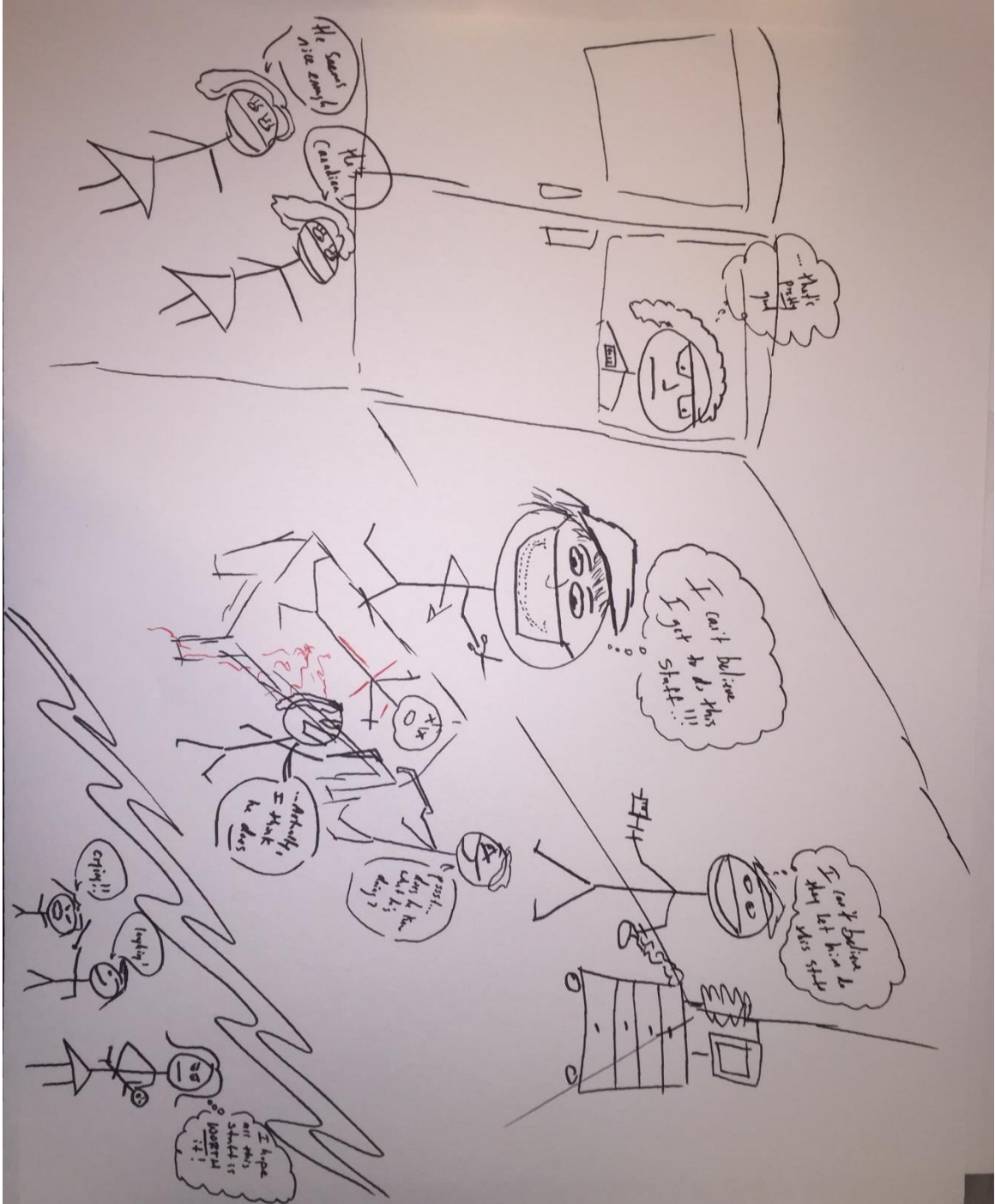
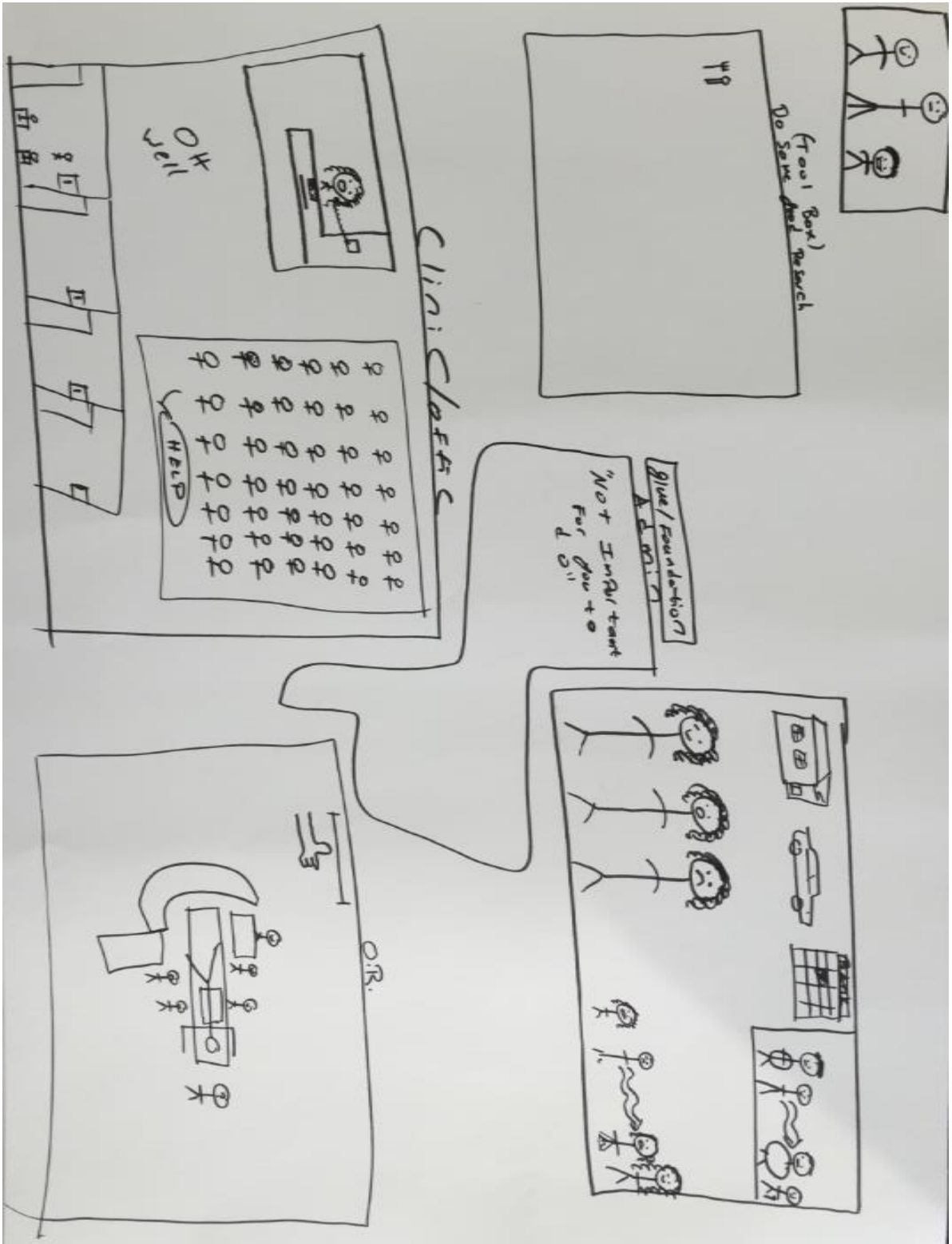Interview 2:

Interview 3:

Interview 4:
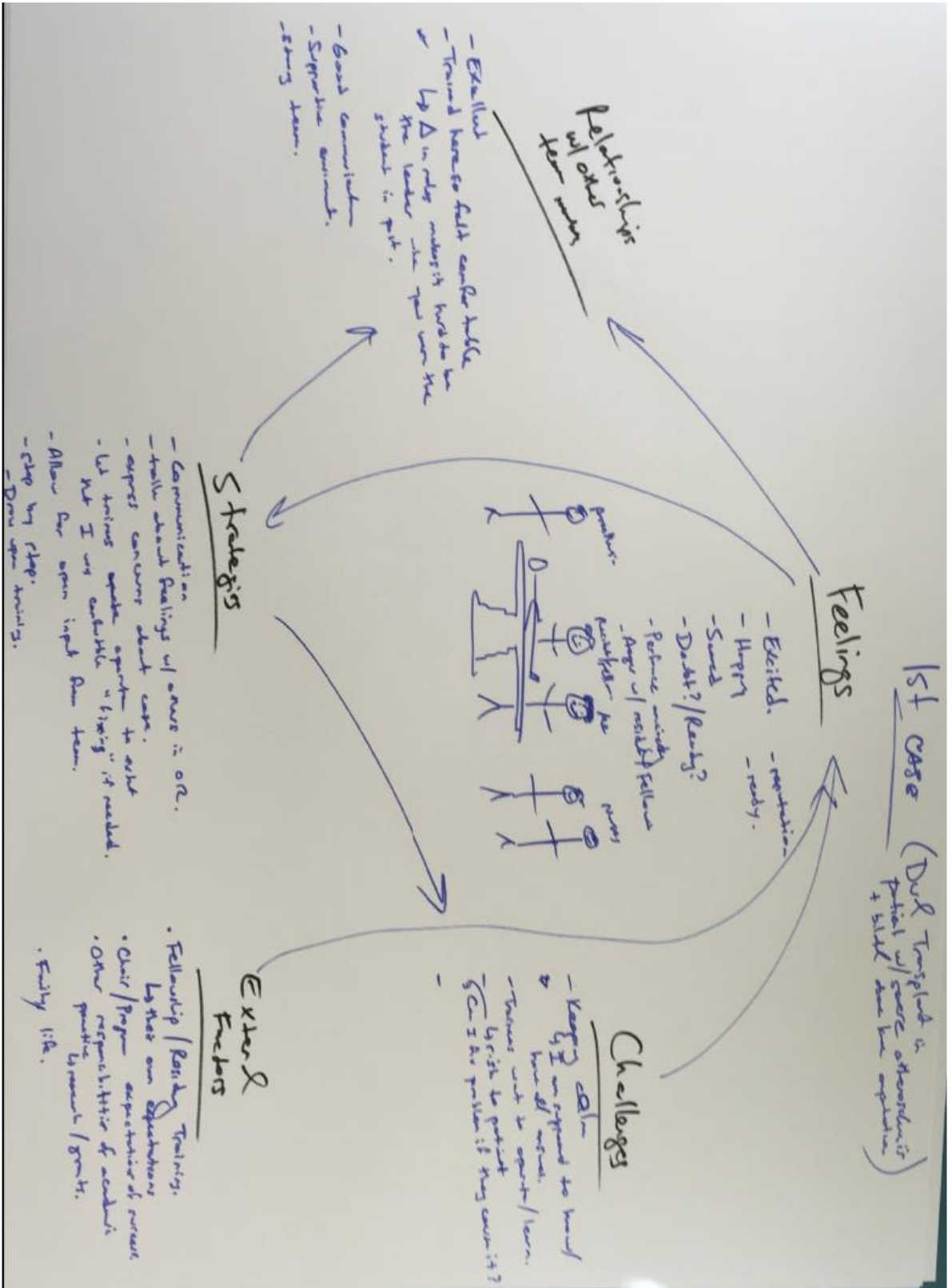
Interview 5 – front page

Interview 5 back page:

Interview 6:

Interview 7:

Interview 8:

Interview 9:

1st case (Dual Trainfield w/ space attendance + b/till and be explanation)

Relationships w/ others (team members)
- Excellent
- Trained hands-on first and then HGA
  - ↳ Δ in step makes it hard to be the leader when you are the student in part.
- Good communicator
- Supportive environment
- Long term

Feelings
- Excited. - motivation
- Happy - ready.
- Scared
- Doubt? / Ready?
- Positive mindset, prep w/ result follow

Strategies
- Communication
- talk about feelings w/ where is OR.
- express concern about case.
- We discuss spoke openly to ask
  - but I was available "living" if needed.
- Allow for open input from team.
- step by step.
- Draw your training.

External Factors
- Fellowship / Residency Training.
  - ↳ their own expectations
- Chair / Program expectation of resident
- Other responsibilities & academic practice. research / growth.
- Family life.

Challenges
- Keeping calm
  - ↳ If not prepared to hand kind of retreat.
- Resource used to support / learn
- Yet risk to patient
- If a problem if they can't do it?

Interview 10:

Curriculum Vitae

Name:	Mohammed Mazen Malak
Post-secondary Education and Degrees:	King AbdulAziz University
	Jeddah, KSA
	1999-2006 MBBS.
	McGill University
	Montreal, Qc
	2008 – 2013 FRCSC
Honours and Awards:	Medical degree with honours
	2006
	Special Resident in Minimally Invasive Gynecology
	American Association of Gynecologic Laparoscopist
	2016
Related Work Experience	Demonstrator
	King AbdulAziz University
	2006 – present

Publications:

Mohammed Malak, Tawfeeq Tawfeeq, Hananel Holzer, Togas Tulandi.

Risk Factors For Ectopic Pregnancy After In Vitro Fertilization Treatment.

Journal of Obstetrics and Gynecology Canada JOGC (2011) Volume: 33, Issue: 6, Pages: 617-619. PubMed: 21846451

Mohammed Malak, Stephanie Klam,

Adnexal Masses In Pregnancy; Case Presentation And Review Of The Literature.

Case Reports in Obstetrics and Gynecology, Volume 2015 (2015), Article ID 183243