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Intervention Aimed at Regulating the Way they Feel**

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EXPLORING THE PERFORMANCE AND SELF-REGULATION OF MEDICAL STUDENTS
THROUGH AN INTERVENTION AIMED AT REGULATING THE WAY THEY FEEL

by

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B.A. Human Kinetics, St. Francis Xavier University

Thesis submitted to the Faculty of Graduate and Postdoctoral Studies
in fulfillment of the requirements for the degree of Master of Arts in Human Kinetics

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ABSTRACT

Research has shown that how individuals feel affects their performance (Doell et al., 2006; Durand-Bush et al., 2005). Since felt experiences in the context of medicine have been shown to be of importance (Novack et al., 1997; Sotile & Sotile, 2002), and self-regulation skills have been found to help foster learning (Zimmerman, 1990), the purpose of this study was to examine the self-regulation of the felt experiences of four medical students through an intervention guided by the Resonance Performance Model (RPM) (Newburg et al., 2002), and determine how it affected self-defined standards of performance. Results of this multiple case study (Stake, 2006) showed that each student was able to identify and experience, the way they wanted to feel within their performance environment, and reach an optimal level of performance during the intervention process by attuning to and regulating the way they felt. Implications for future research on performance as a self-defined process, and the provision of opportunities for self-regulated learning in medical education are discussed.

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To Mom and Dad

"It is not how much you did, but how much love you put in the doing.
It is not how much you gave, but how much love you put in the giving."
- Mother Teresa

I dedicate this Master's Thesis to my parents, James and Debora Simon, whose love, understanding, and unquestioned support allowed me to pursue my academic and, more importantly, personal dreams. In light of all of the knowledge and experiences I have accumulated throughout this journey, nothing has prepared me more for the roads that lie ahead than what I have learned by having you in my life.

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ABSTRACT

Research has shown that how individuals feel affects their performance (Doell, Durand-Bush, & Newburg, 2006; Durand-Bush, Newburg, Faubert, Soulard, Arcand, & Burke, 2005). Since felt experiences in the context of medicine have been shown to be of importance (Novack et al., 1997; Sotile & Sotile, 2002), and self-regulation skills have been found to help foster learning under many instructional conditions (Zimmerman, 1990), the purpose of this study was to examine the self-regulation of feel of four female medical students through a 12-week feel based, person-centered intervention guided by the Resonance Performance Model (RPM) (Newburg, Kimiecik, Durand-Bush, & Doell, 2002), and determine how it affected self-defined standards of performance. Results of this multiple case study (Stake, 2006), informed by the constructivist paradigm (Guba & Lincoln, 1990) and presented using a narrative approach (Polkinghorne, 1995), showed that all four medical students were able to identify and experience the way they wanted to feel within their performance environment, and reach an optimal level of performance during their participation in a feel-based, person centered intervention process by attuning to and regulating the way they felt. The students were also able to develop a diverse range of self-regulatory abilities which allowed them to connect with multiple dimensions of their felt experiences (i.e., psychical, emotional, cognitive, and social). Implications for future research on performance as a self-defined and regulated process, and the role felt experiences can play in it are provided. Recommendations for the provision of opportunities for life-long, self-regulated learning in the medical field are also included.

Why Medical Students? An Anecdote

The following is an anecdote titled, *Who Needs Medical Students?*, from the editorial section of the *Western Journal of Medicine*, published in 2001 by Itai Danovitch, a medical student at the University of California, School of Medicine. After coming across this passage over two years ago my eyes were opened to the important sub-culture of medical school which, like any stream of education, lights the way for aspiring individuals to better themselves, and others, by learning skills that will guide their future careers; so, why medical students? While education is always a challenging, often arduous, and arguably a never-ending process, medical students will one day carry an important and distinctive responsibility within our society. While most of us will never become medical doctors, it is inevitable that, at some point in time, our lives will be affected by the medical field. Whether it is our own health or that of a family member, friend, or colleague, we have all faced medical challenges that are continuously met by medical professionals in our community. Inspired by this, and the following anecdote, my master's thesis addressed the performance of medical students. As such, it is my sincere hope that by taking this journey with me, you, as the reader, will be able to vicariously *feel* the experiences, by *living* the stories of the four medical students you are about to meet, and uncover answers to the question posed by Danovitch (2001), 'Who needs medical students anyway?':

We often feel that the duties assigned to us are merely token — obligations that may qualify us to be 'team members' but are not enough to make us 'key players.' Discouraged by our lack of importance, at some point, often late in the evening while determining whether to go home or stay on, we come to question whether anyone would ever notice if we were suddenly to disappear ... *what would medicine be like without medical students?* Things would probably run a bit smoother

without students to slow them down. Most likely, fewer questions would be asked, explanations would be briefer, and fewer repetitions would be required. And maybe at the end of the day, everybody would make their way home a little bit earlier. *But without medical students, something would be lost ...* in the ever-moving world of medicine, nobody can keep up with every advance, and there are good reasons to slow things down. Dwarfed by the onslaught of huge patient loads and constantly changing protocols, the sharpest of residents may get things wrong. And with their focus on 'cutting edge' therapies, the wisest attending physicians may forget the mechanism of an antibiotic. *The gift of having medical students in hospitals is not that they do minor procedures or write notes. It is that as long as they are present, no question is too elementary to be discussed. In this sense, medical students are the backbone of the team.* They are the reminder that every patient and every finding represent an opportunity for the advancement of personal medical knowledge. In a field as rapidly evolving and expansive as medicine, where questioning the precepts on which standards and protocols are based ensures that patients continue to receive the most appropriate medical therapy, this is an invaluable contribution. Medical students, as the bottom dwellers of the academic food chain, theoretically have the entire construct of a teaching hospital riding on their shoulders. In their short white coats, they legitimize the simplest of queries. *Their mere presence stands as a constant reminder that in its highest form, doctoring is as much about teaching as it is about treating.*

CHAPTER I

INTRODUCTION

The Field of Medicine

Since medical doctors routinely meet medical challenges in our community (Remen, 2001), their ability to perform and regulate their performance becomes a relevant and important issue. Inferably, because they connect with patients and attempt to support them during trying times on a daily basis, their personalities, values, beliefs, and emotions undoubtedly affect both themselves, and their patients. Through the development of self-awareness and self-regulation using a variety of approaches, physicians can learn to use themselves more effectively by gaining insight into how their experiences and emotional makeup affect their performance as medical professionals (Novack et al., 1997).

Emotions can contribute to both successes and failures of self-regulation. Self-regulatory processes are ever present and tangible in our everyday lives, and in reality, many issues we face daily can be reduced to the ability or inability to regulate or exert control over ourselves (Vohs & Baumeister, 2004). One approach that can help individuals learn to self regulate, particularly how they feel is that of resonance (Callary & Durand-Bush, in press). Resonance is a process that can help people feel the way they want, perform better in their environment, and lead more fulfilling lives (Newburg et al., 2002). This process engages individuals in ongoing learning; they learn to pay attention to how they feel, monitor themselves and their environment, reflect on this data, and make decisions to stay true to themselves and feel the way they want as often as possible. Fundamentally, the resonance process allows people to experience harmony or a positive reciprocity between their internal selves and their external environment (Wolfe, 2006). Novack et al. stated that physicians who can become more aware of *what* influences their

behavior may learn how to make more informed choices, which is a step toward adaptive change in improving performance and service to patients. It has been found that how individuals, particularly athletes, feel affects not only their behaviors and decision-making but their entire selves, including performance and well-being (Arcand, Durand-Bush, & Miall, 2007; Callary & Durand-Bush, in press; Doell et al., 2006; Durand-Bush, Newburg, Faubert, Soulard, Arcand, & Burke, 2005). Thus, it was both a logical and worthy step to examine if helping medical students pay attention to and regulate how they feel could lead them to increase their performance and well-being. Just as physicians attend medical school to learn the 'science' of medicine, they must use *themselves* to practice its art (Novack et al., 1997). Therefore teaching the practice of medicine should involve much more than the teaching of its science (Remen, 2001).

Medical Education

Addressing the current state of medical education was not a central focus of the present research. However, an understanding of how medical education is structured became relevant when exploring medical students' lived experiences. In reality, there seems to be a shift towards embracing the concept of overall physician health (Puddester, 2001), yet, alarmingly, during medical training, many students learn to routinely ignore their appetites, personal needs, emotions, and how they generally feel in order to 'get the job done'. For some, this has served as a survival tactic that allowed them to meet the high demands of medical school (Sotile & Sotile, 2002). Sotile and Sotile have cautioned against doing this because the repression of awareness of needs and feelings forces the delay in gratification, possibly leading to stress and burnout. Furthermore, the current structure of medical education itself is likely to contribute to disruptions in the health habits of medical students (Ball & Bax, 2002), despite recent trends in research and practice that address life and career adversity of physicians (Pearson, 2000).

What is interesting when looking at research on medical education is that students have been found to exhibit negative states upon graduation (Remen, 2001; Silver, 1982, Sotile & Sotile, 2002) which, one could argue, could affect their performance as young and less experienced medical practitioners. But why do they exhibit these negative states? Is it because they have not effectively learned how to recognize and manage important personal health and performance issues? In accordance with Novack et al.'s (1997) notion that medical care evokes a diverse range of feelings in physicians that affect how they perform, Pololi, Frankel, Clay, and Jobe (2001) stated that it becomes a critical step in medical education for students to develop self-awareness skills as early in their training as possible. Medical schools, however, often do not include such opportunities or activities in their curriculum (Novack, Volk, Drossman, & Lipkin, 1993). Therefore, a pertinent step in research is to explore how the performance of medical students is affected by how they feel, and conversely through ongoing self-awareness and reflection how they could use feel related information to enhance their performance.

Feel

An extensive literature review revealed that although much research has been conducted on the concepts of emotions (Hagtvet & Hanin, 2007; Pekrun, Goetz, Titz, & Perry, 2002), feelings (Damasio, 1994; Denzin, 1984; Gasper & Clore, 2000; Heesacker, & Bradley, 1997; Pitkala & Mantyranta, 2004), affect (Diener, 2000; King, Hicks, Krull, & Del Gaiso, 2006), and mood (Efklides, & Petkaki, 2005; Morgan, O'Connor, Ellickson, & Bradley, 1988), until recently the concept of feel as a holistic experience and process has not been the focus of empirical inquiry, particularly with respect to the well-being and performance of individuals. According to Durand-Bush and colleagues (2005), feel can be experienced physically, cognitively, emotionally, socially, and spiritually; thus feel is a unique multidimensional

experience that can vary over time as individuals become aware of themselves and their environment and as a result of learning (Wolfe, 2006).

Research examining feel as a multidimensional phenomenon in relation to performance is practically non-existent in the context of medicine. Given that feel and its encompassing emotional dimension is important to consider in this context (Novak et al., 1997) and that research is severely lacking, the overall purpose of this study was to examine the process of feel of medical students through an intervention, and determine how it affected their performance, particularly when they were met with obstacles and in their everyday performance environment.

As previously noted, an approach proven useful in exploring the process of feel is that of resonance (Arcand et al., 2007; Callary & Durand-Bush, in press; Doell et al., 2006; Durand-Bush et al., 2005; Wolfe, 2006). Traditionally applied with athletes, resonance is a feel based and person centered approach to performance and living (Newburg et al., 2002, Doell et al., 2006). Under a fundamental assumption that feel and performance are critical elements of medicine and that the Resonance Performance Model (RPM, adapted from Newburg et al., 2002, see Appendix A) is an effective tool to help regulate felt experiences to enhance performance and well-being in the context of sport (Arcand et al., 2007; Callary & Durand-Bush, in press; Doell et al., 2006; Durand-Bush et al., 2005), the RPM was deemed a valuable framework to study the process of feel and performance of medical students.

Purpose & Rationale

The purpose of the present study was to explore the process of feel of medical students, specifically how they constructed and experienced the different dimensions of feel (e.g., physical, emotional, cognitive, social, and spiritual), how these dimensions mediated each other, and how they in turn affected their performance. The present study also examined how the

medical students defined and constructed performance in their medical training environment. Finally, the present research served to uncover whether or not the medical students could enhance their performance through the process of feel by participating in a feel-based person-centered resonance intervention. Following were the specific research questions:

- (a) How did the medical students define, construct, and experience feel?
- (b) What dimensions of feel were meaningful and relevant to the medical students?
- (c) How did these dimensions influence each other and the medical students' overall experience of feel?
- (d) How did the medical students define, construct, and experience performance in their medical training context?
- (e) How did the medical students' experiences of their meaningful/relevant dimensions of feel affect their performance?
- (f) Could the medical students learn to regulate their felt experiences through a person-centered feel-based resonance intervention?
- (g) Could the medical students achieve an optimal level of performance as a result of their participation in the person-centered feel-based resonance intervention?

Prior to this study, the resonance process had yet to be studied and applied in the field of medicine. Moreover, little attention had been devoted to the empirical study of how the physical, emotional, cognitive, social, and spiritual dimensions of feel mediate or influence each other, and even fewer studies explored performance as a subjectively constructed experience. As such, it was hoped that the present study would add to existing research on feel by further:

- (a) Examining the multidimensionality of this concept including the mediatory relationships (inter-relatedness) of its different dimensions.

- (b) Exploring its process and link to performance, particularly in the medical field
- (c) Examining the concept of performance as an individually defined process
- (d) Linking these findings to the growing literature on resonance and the RPM.

From an applied perspective, it was hoped that the present study would lead to recommendations for additional research and applied interventions that could eventually lead to positive changes in future medical school-based courses, or feel-based counseling opportunities for students to help them manage how they feel and optimize their performance throughout their medical training program. Additionally, from a methodological standpoint, it was intended that the use of a constructivist approach (Guba & Lincoln, 1994) would help elicit rich data that would facilitate a better understanding of the constructive process of feel amongst medical students. Overall, the present study could have significant implications for not only future researchers but also physicians, other medical practitioners, medical school administrators, and students interested in feeling the way they want as often as they can, and enhancing their performance in the medical context. Another hope was that the unique focus on performance as a self defined process could lead to future empirical investigation into the facilitative role that it could have in the formal medical education process, and lifelong, self-regulated learning. As a whole, by encouraging students to give their performance and how they feel priority from the onset of their medical training, it may help them build a solid foundation for becoming attuned physicians better able to serve patients by first taking care of themselves (Ball & Bax, 2002).

CHAPTER II

REVIEW OF LITERATURE

In this section, literature pertaining to medicine and medical education, feel, emotions, performance, resonance, and self-regulation are critically reviewed.

Medicine and Medical Education

Sotile and Sotile (2002) reported that physicians today are largely ill-equipped to manage much of the adversity they face in their careers and reciprocally in everyday life. They conveyed that medical organizations would be wise to make 'emotional management' training available to their members. While Lievens, Coetsier, De Fruyt, and De Maeseneer (2002) stated that counseling may be useful for medical students throughout their academic career, Kern, Wright, Carrese, Lipkin Jr., Simmons, Novack et al. (2001) echoed that making counseling available to students would be a progressive solution. As a whole, this may reflect that medical education lacks optimal conditions for personal growth and optimal performance, and that different methods in medical settings should be explored to promote introspection and meaningful experiences (Kern et al., 2001).

One potential step in fostering introspection is to provide opportunities for increased self-awareness. Self-awareness is an active and reflective process used to structure and organize experiences in the course of forming knowledge (Artz, 1994). In essence, in order to become self-aware, individuals need to possess effective reflective skills (Westberg & Jason, 2001). Novack et al. (1997) reported that self-awareness can enhance physician well-being, and lead to a deeper and more sophisticated understanding of patients. By enhancing self-awareness early in training, and later in practice, its importance could become engrained and appreciated as a key to the effective and efficient use of clinical skills, and as a base for the art of healing. Thus, in order for students, residents, and practitioners to become more self-aware and learn from their experiences, they need to be reflective both during and after their experiences (Novack et al., 1997; Westberg & Jason, 2001).

According to Westberg and Jason (2001), reflection should be used regularly by medical professionals to become more attentive to how they feel in order to take care of themselves, and provide more effective patient care. Despite this notion, many health care providers do not have well-developed reflection skills. Westberg and Jason recommended that teachers help students understand the meaning and importance of reflection during their training. They went as far as to state that health professionals who are not reflective self-aware learners can become incompetent and even dangerous.

Encouraging students to keep a journal in which they record more in-depth reflections, including feelings related to specific events can help develop self-awareness and reflective skills (Westberg & Jason, 2001). The use of journals/diaries in the reflection of feelings has been successfully used with medical students in research (Pitkala & Mantyranta, 2004). Results indicated that the 22 student participants abundantly and openly reported their feelings, and reflected on how they felt in relation to their first experiences with 'real' patients. In stark contrast to the literature exposing widespread cynicism amongst graduating medical students, these students did not reflect such negative feelings in their journaling, supporting Westberg and Jason's position that medical education should provide more opportunities for reflective thinking and positive emotional development.

Westberg and Jason (2001) did cite, however, that there has been a shift in some medical disciplines toward understanding and promoting the more positive aspects of experience, a general trend advocated by proponents of positive psychology (Seligman & Csikszentmihalyi, 2000). As such, some health care sectors are starting to take into account how practitioners feel and how this affects how they interact with patients, colleagues, and others (Westberg & Jason,

2001). It is not clear if this change in trend is also reflected in medical schools so as to positively impact the students early in their medical training.

It has been shown that students encounter a unique range of affective experiences in their academic settings, and that emotions can have a profound effect on students' motivation, thoughts, and actions (Pekrun et al., 2002). These authors suggest that research focused on experiences should not be limited to the categorization of such experiences, as important data regarding students' affective processes may be overlooked. They stated, for example, that "simplistic conceptions of negative emotions as bad and positive emotions as good should be avoided because positive emotions are sometimes detrimental and negative emotions such as anxiety and shame beneficial" (Pekrun et al., 2002, p. 103).

In support of Durand-Bush et al.'s (2005) multidimensional definition of feel (Callary & Durand-Bush, in press), Pekrun et al. (2002) reported that students, in fact, experience a broad range of affective, cognitive (e.g., information processing), and physiological components of their emotional experiences. Furthermore, they suggest that "gaining a realistic view of students' competences for self-regulation and academic performance may require taking their emotions into account" (p. 103). The authors, however, generalized their study across academia and did not specifically examine medical students, as was done in the present study. Prinz (2004), although not in the context of medical education, also found that emotional experiences contain a number of components such as thoughts and other mental processes, feelings, and physiological changes.

There is no substantive empirical research conducted on the concepts of feel and emotion in the context of medical education and medicine in general. This suggests that although emotions, and inferably the way students feel in general, affect their performance (Pekrun et al.,

2002), more studies need to be carried out to better understand how felt experiences can positively impact performance in not only medical school but also future health care service delivery.

Emotions, Cognitions, and Feel

Emotions have long been recognized as powerful influences on human judgments and behavior (Fitzsimons & Bargh, 2004), and are central to human experience; in fact, they affect all aspects of human performance (Heesacker & Bradley, 1997), facilitate our construction of meaning (King et al., 2006), and play a dynamic role in learning over time (Sansone & Thoman, 2005). Most researchers have used the terms “affect,” “feeling,” “emotion,” and “mood” to refer to the richness of the human emotional life. Oatley and Jenkins (1996) have suggested a time-course difference, among other features, to help distinguish each concept. In essence, an emotion results from a sudden reaction to an event and involves physiological, behavioural, cognitive, and experiential changes, while feelings refer to the subjective experience of emotions, and usually last from minutes to days. Moods are typically dispersed; they last longer than feelings and emotions, are devoid of a connection with an object, and can result from an emotion. Finally, affect stands for the broad affective phenomenon and encompasses emotion, feelings, and mood (Vallerand & Blanchard, 2000).

Efklides and Petkaki (2005) suggested that diverse emotional experiences provide information relevant to different outcomes depending on how and when students construct these experiences (e.g., a student experiences anxiety prior to but not during his performance on a test). This suggests that a change in emotional experience (e.g., temporally) may lead to a different outcome, and that similar emotional experiences can affect outcomes both directly and indirectly by altering how the learner engages in the learning activity (Efklides & Petkaki, 2005).

Thus, if students' learning processes are influenced by their emotions and feelings over time, as asserted by Sansone and Thoman (2005), helping them to regulate such affective experiences in facilitative ways could lead to enhanced learning. Indeed, Damasio (2001) stated that the feeling of an emotion impacts any given situation, enhances learning, and increases the probability that comparable situations can be anticipated. A limitation is that it is not clear in Damasio's work how a feeling can *enhance* learning in any type of situation, especially if the feeling is deemed by a student to be prohibiting optimal performance. As such, the way in which medical students learn to attune to and regulate their feelings, and how they feel more globally in order to maximize their process of learning and performance, was explored in the present study.

Emotions are linked to cognitions in that they affect each other in self-regulation processes (Efklides & Petkaki, 2005). In terms of learning, the recent paradigmatic shift embracing the dynamic role of feelings and emotions over time offers a fresh, yet complex way of understanding the psychological experience of learning and cognitive development (Efklides & Petkaki, 2005). Although not specifically addressing cognition, Sansone and Thoman (2005) also built on emotions and feelings as part of a dynamic process. In their paper on how feelings and emotions affect learning, these authors highlighted that recent research on learning has "started to incorporate a feeling or emotion component as part of the learning process over time" (p. 507). They believed this trend would lead to greater insight into the multiple ways in which feelings and emotions affect the process of learning over time, thus evoking new questions concerning their dynamic role in education.

Sansone and Thoman (2005) also suggested that "fluctuations in emotion are not noise in the process, but rather are important dynamic patterns that characterize the phenomenon of feelings and emotions during learning and engagement" (p. 508). Moreover, they suggested that

such patterns can not only vary from person to person, but context to context, which can fluctuate over time themselves. Therefore, it could be argued that by helping students regulate their emotions and how they feel, they may learn to become aware of intra and inter contextual variability, learn to embrace the temporal and dynamic elements of their learning process, and as a result, become more engaged within it. The proposed study will shed light on the learning process of medical students over time and its link to how they feel and perform.

According to Gasper and Clore (2000), we are influenced by the information provided by our feelings, yet differences in emotional appraisal influence when and how we rely on this information. Artz (1994) reported that how we feel emotionally is a powerful indicator of how and what we perceive, and *feeling as a way of knowing* is a process that can help us make sense of our experiences. Henceforth, due to the subjective nature of feelings, individuals will experience them in their own unique way based on their perceptions and appraisals of situations. It is therefore essential that one recognize the central importance of perception in the formation of emotions (Botterill & Brown, 2002) and arguably feelings as well. By recognizing how we are affected by emotions, as well as the thoughts and events that precede them, we can prepare for their onset (Botterill & Brown, 2002). One could argue that the thoughts and events that follow emotions are equally as important in perception and self-regulation processes.

In addition to recognizing the role of perception in the formation of emotions, there is a need to examine them as a multifaceted experience. Hagtvet and Hanin (2007) suggest that “instead of restricting emotions to one single emotion construct in terms of unidimensional state anxiety, pleasant emotion state, unpleasant emotions state and the like, increased understanding may be achieved by measuring a *configuration* of emotion constructs in order to examine how an optimal *constellation* of emotions account for success or dysfunctional constellation of emotions

account for failure or sub-standard performance” (p. 68). This suggestion is in line with that of Durand-Bush and colleagues (2005) who have examined the concept of feel and its link to performance and well-being from a multidimensional perspective. Furthermore, it flows with the objectives of the present study, in which a dynamic, multidimensional feel approach was explored with medical students.

Physiology, Emotions, and Feel

Emotions are associated not only to cognitions but also physiological processes. Artz (1994) reported that we can recognize our emotional states through our physiological responses as it has been found that biological structures and physiological processes are fundamental for emotions to occur (Goncalves & Machado, 2000). Furthermore, physiological responses to emotions involve changes to the autonomic nervous system, such as heart rate, blood pressure, and galvanic skin response (Vallerand, 1983). With overt changes in the body, subtle changes exist in the way the brain operates within neurological systems, which manifest themselves in cognition (Damasio, 2004); for example, “as emotional states get established, a number of thoughts congruent with that emotion are also evoked” (Damasio, 2004, p. 52). Thus, Damasio refers to an emotion as “a collection of preparatory body changes and ensuing behaviors that are accompanied by a particular style of mental operation” (p. 52).

From a psycho-physiological perspective, Damasio (2004) defines emotions as “bioregulatory reactions that aim at promoting, directly or indirectly, the sort of physiological states that secure not just survival but survival regulated into the range that we, conscious and thinking creatures, identify with well-being” (p. 52). Damasio added that feelings, commonly associated with emotions, “are the mental representations of the physiological changes that occur during an emotion” (p. 52). Thus, he defined a *feeling* as the perception of an emotional state

enacted in the body through some change in bodily state, in conjunction with the perception of a certain style of processing leading to the production of thoughts/themes constant with the emotion.

If we look at the broader concept of *feel* in comparison to that of *feelings*, does Damasio's definition apply? Can we say that it always involves the conscious perception of an emotional state? Durand-Bush et al.'s (2005) research on feel as a multifaceted subjective experience has shown that athletes, for example, consciously feel strong, powerful, and physically relaxed when they compete in their sport, which pertains to the physical dimension of feel. Others feel confident, free, and in control, which reflects the cognitive dimension of feel (Arcand et al., 2007; Doell et al., 2006; Lussier Ley & Durand-Bush, 2006; Wolfe, 2006). Durand-Bush and colleagues have not examined feel from a physiological standpoint but subjective in-depth reports from over 50 athletes suggest that in some situations, they may be experiencing *feel* independently of an emotion, that is, their perception of their bodily state (e.g., feeling tired) is not directly or consciously linked to an emotion (e.g., sadness, anger, guilt, happiness). Therefore, more research is warranted to investigate the different dimensions of feel and how they are intricately experienced and the current study aimed to do so.

Much like the multiple dimensions of feel, Gross and Thompson (2007) viewed emotions as multi-componential processes that unfold over time, involve shifts in their duration, intensity, and can offset behavioral, experiential, or physiological responses. Congruent with the findings of Durand-Bush and colleagues (Arcand et al., 2007; Callary & Durand-Bush, in press; Doell et al., 2006; Lussier Ley & Durand-Bush, 2006; Wolfe, 2006), individuals may regulate negative and positive emotions either by decreasing or increasing them and they may also see them as facilitative or debilitating (Gross & Thompson, 2007) through conscious intervention. While it is

clear that the process of self-regulation comprises a complex interplay between anatomical, neuro-chemical, cognitive, and social factors, an exploration of brain physiology combined with existing cognitive and social theory has become increasingly important to understand the 'self', and how individuals attempt to regulate their thoughts and behavior (Banfield, Myland, Macrae, Munte, & Heatherton, 2004).

To continue elaborating on the limited research on feel, feelings, and emotions as multidimensional constructs, Damasio (2004) found that the adaptive value of feelings comes from amplifying the mental impact of a given situation and increasing the probabilities that comparable situations can be anticipated and planned for in the future to avert risks and take advantage of opportunities. This is supported by the research of Durand-Bush and colleagues (Arcand et al., 2007; Callary & Durand-Bush, in press; Durand-Bush, Faubert, & Newburg, 2004; Durand-Bush et al., 2005) in which participants learned to feel the way they want as often as possible as a result of taking part in a feel-based resonance intervention. Through awareness and ongoing reflection, athletes consciously examined how they were impacted by different situations based on how they felt. They learned to anticipate and plan desired responses to situations, particularly those leading them to not feel the way they wanted (Arcand et al., 2007; Doell et al., 2006).

Overall, both physiological and neurological considerations are integral parts of our felt experiences as our bodies provide us with rich and detailed information about what we encounter on a daily basis (Artz, 1994). Therefore, it becomes helpful to pay attention to and work with our bodies. By physically locating the locus of our feelings (e.g., knowing where we feel in our body), we can use that information to further refine our understanding of our experiences (Artz, 1994). According to Damasio (2000), the full impact of emotions is only realized when they are

sensed, when they become feelings, and when those feelings themselves are felt. Artz described emotions as “adjectival labels we apply to our experience” (p. 22) once we feel them. Furthermore, “in effect, feeling orients us in relation to that which we experience” (p. 22), which relates to ‘feeling as a way of knowing.’ This, arguably, reflects the emotional dimension of the concept of feel (Callary & Durand-Bush, 2008; Wolfe, 2006). It is unclear, however, whether Artz referred to this labeling of felt experiences as a conscious or unconscious process. However, in any case, Artz stipulates that emotions affect our felt experiences and how we perform, and we cannot become conscious of how they affect us until we feel them. That said, what is meant by ‘feel them’? Do individuals sense their emotions at the cognitive level as ‘feelings’? What about physically, such as respiratory or heart rates? Is it a holistic incorporation of both (e.g., Damasio, 2004; Damasio, 2001; Gross and Thompson, 2007)? Furthermore, as per the subjective nature of emotions (e.g., Efklides & Petkaki, 2005; Sansone & Thoman, 2005), what variability exists in how individuals ‘feel them’? Nevertheless, all resources considered, consensus has emerged that emotions are biologically based responses that help an individual meet challenges and opportunities, and involve changes in subjective experience, behavior, and physiology (Ochsner & Gross, 2004). As such, the present study sought to embrace these holistic, subjective, and dynamic perspectives.

Performance

Although emotions have not been examined extensively in the context of medicine and medical education, and have seldom been studied from a multidimensional perspective, they have been the focus of research in sport, particularly because they have been connected to performance. Hanin’s (2000) research linking emotions and performance is of relevance to the proposed study in which the performance of medical students is examined. According to Hanin,

emotions are undeniably a fundamental element of performance. Hanin and Syrja (1995) studied emotions and performance by looking at individual zones of optimal functioning (IZOF) in junior ice hockey players and found that although many affective states within the hockey players' IZOF facilitated their athletic performance, others proved to be detrimental. They suggested that these 'optimal' and 'dysfunctional' emotions could be individually predicted using the IZOF model. The IZOF maintains that "each athlete has his or her own optimal zone of pre-performance anxiety within which he or she is more likely to attain optimal performance" (Woodman & Hardy, 2001, p. 294), hence optimal functioning and performance are specific to an individual. The IZOF consists of five basic dimensions; form, content, intensity, time, and context, which are used to individually describe optimal and dysfunctional structures and dynamics of performance-related emotional experiences (Robazza, Pellizzari, & Hanin, 2004). A limitation of the IZOF is that it mainly refers to anxiety rather than the full spectrum of emotions that can be experienced during performance. That said, while Hanin and Syrja did focus on preferred anxiety in their study, they worked under the assumption that it could be applied to other performance emotions which they referred to as positive and negative affect (PNA).

Hanin and Syrja's (1995) research suggests that individuals can identify their optimal emotional states (IZOF) and, ultimately, take steps to create these states during performance. Robazza et al. (2004) asserted that since each athlete, and arguably any performer, has a specific *constellation* of optimal and dysfunctional emotional content, identifying such information and putting it to use to enhance performance becomes an important avenue of research. Furthermore, Robazza et al. stated that "to enhance performance it is necessary that an athlete is: aware of his or her optimal and dysfunctional zones; able to distinguish optimal from less optimal states; and be able to enter and stay in the optimal zone of functioning during performance" (p. 381). This

awareness must also occur at multiple levels outside of actual performance, that is, pre and post event (Robazza et al., 2004). In line with the current study and consistent with the previous suggestions to determine emotional states that enhance and inhibit performance, a feel-based intervention could be conducive to allowing medical students to feel the way they want to reach optimal performance, arguably in a similar fashion that the IZOF model can allow athletes to become aware of and regulate their anxiety (Hanin, 2000), and PNA (Hanin and Syrja, 1995) to maximize performance. However, since there seems to be other mitigating factors on felt experiences and performance in addition to emotions (e.g., cognitive, social, and physical considerations), perhaps a more holistic focus could facilitate optimal functioning in multiple and even overlapping ‘individualized zones’ which take into account the individual as a whole. Another limitation of Hanin’s work is that it is not clear how we can help performers identify and regulate their IZOFs. As will be explored in the following sections, the use of the RPM (Newburg et al., 2002) and narratives (Polkinghorne, 1995) in the current study to guide and document the process through which medical performers attempted to regulate how they felt to optimize performance allowed for a detailed account of not only *what* they did but also *how* they did it throughout the intervention.

As stated above, Hanin (2000) proposes that any emotion can have both facilitating and debilitating consequences on athletic performance and should not be referred to so-called ‘positive’ and ‘negative’ emotions, respectively. For instance, excitement, which may be identified as a positive emotion, can have a positive effect on performance (Lazarus, 1991). However, it was found that excitement can also inhibit performance depending on how it is perceived and experienced by an individual via the five basic dimensions of IZOFs (Robazza et al., 2004). Therefore, it could be said that when optimal and dysfunctional elements of our

experiences are explored, we should not necessarily link optimal with 'traditionally positive emotions' and dysfunctional with 'traditionally negative emotions'. Rather, optimal and dysfunctional emotions are susceptible to subjective variability over time, intensity, and context (Robazza et al., 2004).

In a similar fashion, Newburg et al. (2002) found that how performers felt everyday was central to their performance and sustained participation in their chosen discipline. Newburg (2006) also cautions about judging emotions as being positive or negative. He recommends that people look at how they feel and determine if it is the way they want to feel or not. As an example, sadness may be perceived by some people as a negative emotion; however, in some circumstances (e.g., losing a loved one), someone may find it necessary to feel sad for a period of time. In sport, it could be argued that athletes experiencing anger, which may be seen as a negative emotion, may have the ability to divert the emerging mental and physical energy from this emotion to a required task that could lead to enhanced as opposed to decreased performance. More research must critically examine the effects of both enhancing and debilitating emotions and the benefits of examining the way that people feel in relation to how they *want* or *do not want* to feel in their performance environment.

Seve, Ria, Poizat, Saury, and Durand (2006) highlighted that until recently, studies on emotion in sport focused on pre-performance emotions, with less attention given to subjective emotional experiences related to task execution. In their study on performance-induced emotions experienced by elite table-tennis players, they found that pre-event emotions can affect performance, whereas ongoing performance affects the dynamics of mid-event and post-event emotions. Seve et al. concluded that in order to understand emotion, it must be studied in close relationship with the perceptions of the actors involved in the situation. This is in line with

Botterill and Brown's (2002) observation that perception is at the core of the formation of emotions. Understanding the impact of typical emotional content on unfolding performance could provide a basis for developing performance aids (Seve et al., 2006). For instance, there may be value in helping individuals recognize typical emotional responses to situations so that they may better anticipate and manage these emotions in ways that are conducive to performance. The intervention conducted in the current study examined whether or not medical students could manage how they feel, including how they emotionally feel, in an attempt to optimize performance in their medical school environment.

A review of the medical training literature revealed an abundance of research focused on the performance of medical students. Areas that have been addressed include:

- (a) Communication skills and confidence (Kaufman, Laidlaw, & Macleod, 2000).
- (b) Clinical experience and learning styles in final exam performance (Martin, Stark, & Jolly, 2000; McManus, Richards, Winder, & Sproston, 1998).
- (c) Clinical and academic performance and learning approaches (Arnold, & Feighny, 1995).
- (d) Acquisition of expert-performance through deliberate practice (Ericsson, 2007).
- (e) Evaluation of clinical performance through observation (Pulito, Donnelly, Plymale, & Mentzer Jr., 2006).
- (f) Self-efficacy and performance on Objective Structured Clinical Examinations (OSCE's), Mavis, (2001).
- (g) Performance assessment problems in surgery residencies (Littlefield et al., 2005).

A common characteristic across these studies was that performance was measured as an objective outcome, with little if any focus on personal definitions or standards of performance.

That said, one study explored the self-perceptions of performance of medical students (Violato & Lockyer, 2006), however these perceptions, while grounded in personal appraisals, were nonetheless based on objective measures revealing little yield for appraisals based on self-defined performance standards.

The aforementioned performance research focused on performance as an outcome rather than a process, confirming that performance in the context of medicine is traditionally and institutionally defined and measured objectively through, for example, exams or clinical evaluations. Other plausible elements of medical performance not measurable through standardized or traditional means were not considered, which could limit our understanding of how individuals really perform in the medical environment. It is reasonable to assert that performance can also be based on more internal standards, for instance, the ability to maintain a healthy balance between school and personal life, feel accomplished and helpful when connecting with patients, control one's learning, feel confident in one's ability to apply knowledge, or simply feel happy and fulfilled in one's day to day experiences. Since research to date has gravitated towards an objective view of performance, it would be an important progressive step to also empirically explore more subjective, personal views of performance.

Self-Regulation

Connecting with the way one wants to feel on a regular basis seems to require a well developed ability to regulate oneself (Durand-Bush et al., 2004). As such, of further interest in the present study is the concept of self-regulation and the insights it provides into the understanding and application of the process of resonance and feel. Despite its inherent parallels, the concept of self-regulation has not been systematically explored, nor formally incorporated in previous resonance intervention studies (see following section). According to Banfield, Myland,

Macrae, Munte, and Heatherton (2004), one of our fundamental capacities is the ability to regulate and control our thoughts and behavior. Durand-Bush and colleagues (2004) have also demonstrated that we can regulate and control how we feel. While a comprehensive review of the self-regulation literature lies well beyond the scope of the present research, the critical and inescapable parallels between its tenets and those of the process of resonance and feel warrant discussion.

Vohs and Baumeister (2004) described self-regulation as the “exercise of control over oneself, especially with regard to bringing the self into line with preferred standards” (p. 2), and thus includes any efforts by the self to alter its own inner states or responses. Such preferred standards are analogous to the internal position(s) created by individuals engaged in the process of resonance (e.g., ‘the way they want to feel’) (see following section). For instance, across the physical and emotional dimensions, a preferred standard could reflect a medical student wanting to feel light on their feet first thing in the morning, or feeling excited while on a medical rotation. Since Vohs and Baumeister view self-regulation as a process, it also represents a logical fit with the concepts of resonance and feel (see following section), and due to the focus on the self as an active agent in such processes, there is a seamless fit with the constructivist paradigm (Guba and Lincoln, 1990), which informs the intervention process in the present study.

Furthermore, much like the RPM (Newburg et al., 2002), Carver and Scheier (1981) see self-regulation as a complex, dynamic, and interactive process that represents the ability to control and determine one’s behavior consciously and intentionally. Their self-regulation model posits feedback loops from which individuals become consciously aware of the discrepancy between their current and desired self-states, then consciously choose to engage in action to reduce this discrepancy (Fitzsimons & Bargh, 2004). Discrepancy reduction is analogous to the

actions taken by individuals in the resonance process, where they identify the way they want to feel under one or more conditions/contexts, and develop and implement strategies that seek to reduce the discrepancies between the way they want to feel and the way they actually feel (see following section). Carver and Scheier (1981) emphasized the process of monitoring inner states in relation to specific goals or preferred standards. As such, the use of these self-monitoring processes has become an epicenter of much work on self-regulation (Vohs & Baumeister, 2004). That said, a definitional issue that has arisen in relation to Carver and Scheier's definition pertained to self-regulation as a conscious process. Evidence has accumulated highlighting the importance of also recognizing automatic or non-conscious processes in self-regulation (Vohs & Baumeister, 2004). In fact, findings have recently suggested that conscious processes are neither typical nor necessary for successful self-regulation, and we are able to regulate ourselves without being actively conscious of every regulatory process and action (Fitzsimons & Bargh, 2004).

Emotion Regulation

Like other self-regulatory processes, emotional processes may be controlled consciously or can be automatic or unconscious (Gross & Thompson, 2007). Emotions can also contribute to both successes and failures of self-regulation (Vohs & Baumeister, 2004). Indeed, questions about emotion regulation, including how individuals regulate their emotions, which strategies they use, and how different emotion regulation strategies influence the way they feel, think, and act, have begun to surface in the literature. Emotion regulation is essential for our continuing mental and physical health (Ochsner & Gross, 2004). Bargh and Williams (2007) suggested that successful emotion regulation strategies can vary as a function of an individual's current goals and pursuits, that is, they are situation and context sensitive. Thus, emotions tend to be regulated

on the basis of whether they facilitate versus interfere with ongoing goal pursuits in line with an individual's preferred standards.

A critical assertion by Fitzsimons and Bargh (2004) is that it is important to recognize that in the real world, people do not often encounter neatly encapsulated conceptual representations of a goal, as is often the case within strict and controlled research settings. Rather, people typically encounter varied situations that are laden with cues that are contextually unique, dynamic, and often unpredictable. Since a variety of real-world situational features can directly trigger self-regulatory responses, it is imperative that we explore how self-regulation operates under more natural contexts (Fitzsimons & Bargh, 2004). Consequently, the present study explored self-regulatory processes unique to each medical student while they interacted with, and experienced their authentic physical and social environments over time.

Social Environment and Self-Regulation

Schutz and Davis (2000) suggested that emotions can act as indicators for reflective thinking about socio-environmental experiences, and future research into emotions and emotional regulation holds the promise of providing insight into our understanding of self-directed lifelong learning. Social relationships (e.g., family, friends, colleagues, and educators) can trigger self-regulatory responses toward goal achievement, especially if they trigger goals that individuals commonly pursue or are associated with those with whom they have the relationship (for review see Fitzsimons & Bargh, 2004). However, while interpersonal relations affect and are affected by self-regulation, they are vastly underappreciated in self-regulatory processes and warrant further exploration (Vohs & Baumeister, 2004). Although, Vohs and Baumeister did not highlight any possible adverse effects that social relationships could play in self-regulation, it is possible that they could represent an obstacle or create a discrepancy

between an individual's desired and current self. Nonetheless, a key feature of the social-cognitive model of self-regulation (Zimmerman, 2000) is the interdependent roles of social, environmental, and self-influences. Self-initiated processes can alter an individual's social and physical environment, and are reciprocally affected by these changes. Typically, people who neglect such multiple sources (i.e., self, social, and environmental), or view them as an obstacle to personal development, are often less effective in regulating their lives (Zimmerman, 2000). Attuning to such personal and environmental influences is also an important focus of the resonance process (see following section) because it was found that they can facilitate or inhibit desired feel (Arcand et al., 2007; Callary & Durand-Bush, in press; Doell et al., 2006; Durand-Bush et al., 2005; Lussier-Ley & Durand-Bush, 2006, Wolfe, 2006).

Social-Cognitive Model of Self-Regulation

According to Zimmerman's social-cognitive definition, self-regulation refers to "self-generated thoughts, feelings, and actions that are planned and cyclically adapted to the attainment of personal goals" (Zimmerman, 2000, p. 14). It is a process in which its quality hinges on an individual's beliefs and motives. Goals provide direction in self-regulation, and by being the object of behavior, they provide comparative points needed by individuals to determine where they are in relation to where they want to be (Schutz & Davis, 2000). The process is also highly cyclical because feedback information from previous performances is used to make adjustments during current and future efforts of regulation. Thus personal, behavioral, and environmental factors are always changing during learning and performance (Zimmerman, 2000). Zimmerman's cyclical process includes three self-regulatory systems, referred to as the cyclical phases of self-regulation; forethought phase, performance phase, and self-reflection phase (Zimmerman, 2000). Each phase contains several sub-processes, as explained below, and

will be linked to elements of the theoretical frameworks and the intervention process carried out in the present study.

Forethought phase. The forethought phase consists of two categories, that is, task analysis and key motivational beliefs. Task analysis refers to the setting of goals, deciding upon specific outcomes for learning or performance, and involves the planning of such goals that are appropriate for the task and context (Zimmerman, 2000). As highlighted by proponents of the RPM, and consistent with the constructivist paradigm (Guba & Lincoln, 1990), Zimmerman (2000) noted that no self-regulatory strategy will work equally well for all persons, and few, if any, strategies will work optimally for one person on all tasks or occasions. This suggests that the development of personal goal-attainment strategies is a highly subjective and context specific process. As the result of inherent diverse and changing interpersonal and contextual conditions in an individual's day-to-day experiences, self-regulated individuals must continuously adjust their approaches and choice of strategies (Zimmerman, 2000), much like the participants in past resonance studies (see following section) learned to routinely reflect on their felt experiences and performance, and subsequently adjust their approach when need be to connect to or revisit their desired feel (Arcand et al., 2007; Callary & Durand-Bush, in press).

Self-regulation skills are of little consequence if people cannot motivate themselves to use them (Zimmerman, 2000). The same can be said of the resonance process in that for the regulation of felt experiences to take place, individuals need to be intrinsically or internally motivated and efficacious in their ability to feel the way they want (Callary & Durand-Bush, in press; Wolfe, 2006). Research has shown that individuals can learn to do this within a resonance intervention process, in which they are encouraged and helped by a facilitator to continuously assess current and past strategies (e.g., task-analysis phase) before returning to preparation or

performance, which is analogous to Zimmerman's proposed feedback loops; thus avoiding the negative obstacle-preparation loop depicted in the RPM (Newburg et al., 2002).

Performance phase. This phase consists of three sub-processes; self-control, self-observation, and self-recording. Self-control refers to an individual's ability to maintain focus on the current task, and optimize efforts toward goal attainment (Zimmerman, 2000). Self-observation involves observing and tracking specific aspects of one's performance environment and related conditions, and subsequent efforts produced in response to such data (Zimmerman, 2000), much like the personal data collection process that occurs during a resonance intervention (Callary & Durand-Bush, in press). Attuning to performance feedback promotes self-awareness by providing relevant personal and environmental data that can be synthesized into future adapted strategies (Zimmerman, 2000). That said, how can individuals ensure that their self-observations represent an unclouded account of their experiences? Zimmerman (2000) addressed this question. Accurate self-observation is critical because individuals who misperceive or distort their behavior, actions, or the interpretation of environmental stimuli cannot effectively correct and accurately inform subsequent behavior. Thus, given the potential for such dissonance within self-observation processes, interventions focusing on helping individuals develop and maintain effective and accurate self-observation skills seem warranted.

Self-recording is a commonly used technique in self-regulation that can greatly increase the effectiveness and accuracy of feedback (Zimmerman & Kitstantas, 1996). Zimmerman stated that "records can capture personal information at the point that it occurs, structure it to be the most meaningful, preserve its accuracy without need for intrusive rehearsal, and provide a longer data base for discerning evidence of progress" (p. 20).

Self-reflection phase. This final phase of self-regulation refers to comparing self-monitored data with a standard or goal, and assigning attributable or causal significance to the results (e.g., whether individuals judge their performance to be the result of their level of ability or level of effort) (Zimmerman, 2000). Self-reflection is also linked with two forms of self-reaction, that is, self-satisfaction and adaptive inferences. Self-satisfaction refers to self-perceptions of either satisfaction or dissatisfaction regarding one's performance while adaptive inferences refer to subsequent conclusions about how they need to alter their self-regulatory approach during future efforts (Zimmerman, 2000).

Social-cognitive model of self-regulation, and self-regulated learning. Schunk and Ertmer (2000), grounded in Zimmerman's social cognitive model of self-regulation, defined self-regulated learning as self-generated thoughts, feelings, and actions, that are planned and systematically adapted as needed to affect one's learning. As such, it is well documented in the literature that self-regulation skills help foster learning under many instructional conditions (for review see Schutz & Davis, 2000; Zimmerman, 1990). Furthermore, students possessing highly effective self-regulation skills are more likely to enhance their performance in academic settings (Schutz & Davis, 2000), and self-regulated learning allows them to evaluate and monitor their progress toward learning goals, alter their approaches as needed, and adjust social and environmental factors to provide a setting highly conducive to learning (Schunk & Ertmer, 2000). It is also cyclical because these factors typically change during learning and must be monitored over time via self-reflection (Schunk & Ertmer, 2000). Nonetheless, despite lifelong, self-regulated learning emerging as a considerable area of interest within educational psychology in recent years (Schutz & Davis, 2000), Schunk and Ertmer (2000) felt that little effort to date has been made to link such self-reflective and regulatory processes with specific interventions.

As such, it was hoped that the present intervention based study with medical students would contribute to reducing this gap by empowering them to learn to self-reflect, self-regulate (Zimmerman, 1990), and monitor their progress over time. Indeed, the ability to regulate the self toward achieving personal learning goals seems to be a critical element in any student's academic performance.

Development of Self-Regulatory Skills

The ability to transfer self-regulatory processes from context to context depends on knowing how to self-regulate, believing that self-regulation is beneficial, and possessing the skills necessary to make appropriate modifications in self-regulatory processes to mirror their effectiveness within the novel context (Schunk & Ertmer, 2000). Although it is possible to develop self-regulating competence through personal discovery, this path is often tedious and limiting in its effectiveness (Zimmerman, 2000). Zimmerman also posited that self-regulatory processes can be acquired and sustained by social as well as self-sources of influence (e.g., personal strategies). Also, because self-regulatory skills are context specific, novel performance and learning situations or obstacles can uncover limitations in existing self-regulation strategies and require additional learning experiences. Zimmerman was not clear, however, if these new learning experiences leading to evolved self-regulation strategies are also developed through personal discovery or if they can be enhanced by external social resources provided through formal instruction, counseling, or other forms of interventions.

Self-regulation is both present and tangible in our everyday lives. As Vohs and Baumeister (2004) noted, many issues we face on a daily basis can be reduced to the ability, or in many cases inability, to regulate ourselves. As such, studies have shown that "no account of the self can be anywhere near complete without an understanding of how the self maintains control

over itself and makes the adjustments that it deems best to maintain harmony with its social and physical environment” (Vohs & Baumeister, 2004, p. 3). Since the present study, in part, focused on the self-regulatory processes of medical students, an understanding of these approaches to self-regulation and how they relate to resonance, feel, and performance, was warranted.

Resonance

One line of research having examined and aimed to increase individuals’ awareness of felt experiences is that of resonance (Arcand et al., 2007; Callary & Durand-Bush, in press; Doell et al., 2006; Durand-Bush et al., 2004; Durand-Bush et al., 2005; Lussier-Ley & Durand-Bush, 2006, Wolf & Durand-Bush, 2006). Feel is at the core of resonance, which is a process or a way of life that helps people feel the way they want as often as possible, perform better in their environment, and lead more fulfilling lives (Newburg et al., 2002). This process demands ongoing self-awareness, reflection, and regulation, leading people to feel engaged in what they do so that there is a positive reciprocity between their internal selves and what surrounds them externally (Wolfe, 2006). Ravizza (2001) stated within the context of sport, athletes need to develop awareness of their emotional states before they can effectively carry out self-regulatory techniques. Through awareness, athletes learn to evoke more control over their emotions, cognitions, and behaviors, and are better able to self-regulate to optimize their performances (Wolfe, 2006). Although never empirically explored, there are unmistakable and inherent similarities between the performance of athletes and that of medical doctors, and inferably medical students. Regardless of context, athletes and medical students are both under pressure to perform, often with tremendous expectations placed upon them. Traditional training ensures that athletes are often in peak physical condition, and medical students are schooled in the latest medical terminology and procedures, however it is a fair assertion that there is a significant

imbalance between the times they spend with those traditional training practices, compared to those spent on developing effective self-regulatory processes.

The Resonance Performance Model

In order to represent the process in which individuals engage to feel the way they want and experience a seamless fit between their internal selves and environment, the Resonance Performance Model (RPM) was developed (Newburg et al., 2002) and was subsequently adapted by Wolfe and Durand-Bush (2006). The RPM comprises four components: The Way You Want to Feel, Preparation, Obstacles, and Revisit the Way You Want to Feel.

The way you want to feel. As previously discussed, feel is a unique multidimensional subjective experience that can vary over time as individuals become aware of themselves, their environment, and as a result of reflection and learning (Wolfe, 2006). Research in the context of sport shows that feel can be experienced cognitively (e.g., I feel confident), emotionally (e.g., I feel happy), physically (e.g., I feel strong), socially (e.g., I feel left out), and also spiritually (e.g., I feel at peace) (Arcand et al., 2007; Wolfe, 2006). The RPM serves as an evolving guide to lead participants to identify how they feel and want to feel, and to regulate this across many facets of performance and daily life experiences. Therefore this component of the RPM helps individuals to identify how it is that they want to feel in different areas or situations of their daily life and becomes the foundation on which the other components are developed.

Preparation. In the RPM, preparation refers to everything that individuals do to connect with the way they want to feel while achieving their performance goals. Therefore, preparation can include, but is not limited to, cognitive, physical, technical, tactical, emotional, or social activities (Doell et al., 2006; Durand-Bush et al., 2005). Furthermore, preparation is highly individualized as each person's preparation skills, perspectives, and strategies are different.

Individuals need to invest time, commitment, and energy into preparing, and take ownership of the process of feeling the way they want in order to sustain it over time (Wolfe, 2006).

Obstacles. Obstacles, the third component of the RPM, are both internal (e.g., negative thought) and external (e.g., parental pressure) barriers that prevent individuals from feeling the way they want. As is the case with the other components of the RPM, due to the individual nature of the resonance process, obstacles are typically unique for each individual (Callary & Durand-Bush, 2008; Wolfe, 2006). However, the uniqueness of these barriers lies in how they are perceived and interpreted (Newburg et al., 2002). While facing obstacles, it is a common response to become trapped in the “obstacle-preparation loop” where individuals attempt to overcome the barrier by returning to the preparation phase and working harder, not necessarily smarter; hence escaping this potential vicious cycle requires both introspection and self-awareness to reconnect with their desired feel before engaging in more preparation (Wolfe, 2006).

Revisit the way you want to feel. The fourth component of the RPM involves realignment with how one wants to feel (Newburg et al., 2002) and represents what individuals do to feel the way they want again after facing an obstacle. Fundamental to resonance is the reality that engaging in the process does not mean people will be able to feel the way they want all the time, nor on demand (Durand-Bush et al., 2005). Reconnecting with desired feelings allows people to re-energize and refocus themselves to engage in more preparation in their quest to reach optimal performance and living (Doell et al., 2006).

Thus far, resonance research has been mainly conducted in the context of sport. It was found that intervention-based studies aimed at helping athletes design and engage in their process of resonance using the RPM as a tool led them to become more aware of and better able

to regulate how they felt in their performance environment and also in their daily life (Arcand et al., 2007; Callary & Durand-Bush, in press; Doell et al., 2006; Durand-Bush et al., 2004; Durand-Bush et al., 2005; Lussier-Ley & Durand-Bush, 2006, Wolf & Durand-Bush, 2006). It has yet to be determined if a resonance intervention can help medical students do the same. Considering that research examining feel and performance in the context of medicine is scarce but has been shown to be of importance (Novack et al., 1997; Sotile & Sotile, 2002), the present study was carried out.

Purpose of the Present Study

Based on the literature and existing gaps presented in this section, the purpose of the present study was to explore the process of feel of medical students, specifically how they constructed and experienced the different dimensions of feel (e.g., physical, emotional, cognitive, social, and spiritual), how these components mediated each other, and how they in turn affected the students' self-defined and constructed standards of performance in their medical training environment. Finally, the present research served to uncover whether or not the medical students could enhance their self-defined performance by learning to regulate their process of feel by participating in a feel-based person-centered resonance intervention.

CHAPTER III

METHODOLOGY

The methodology section outlines the research paradigm, the narrative/storytelling and multiple case-study approach, the participants, the resonance intervention, and the procedures used to collect and analyze the data and insure trustworthiness.

Research Paradigm

In light of the proposed research questions, a constructivist paradigm guided the present investigation (Guba & Lincoln, 1994). The entire construction of knowledge depends on our ability to map what happens over time, inside and around us (Damasio, 1994), as we naturally construct judgments based on the relations we perceive between the way we currently feel and the various domains in our lives (Keltner, Locke, & Audrain, 1993). Constructivism, therefore, is based on the premise that the human world is different than the natural world and accordingly, must be studied differently (Guba & Lincoln 1990; Patton, 2002). It represents “how human beings create systems for meaningfully understanding their worlds and experiences” (Raskin, 2002, p. 1). The participants in the present study, through their interactions with myself as the interviewer/researcher, constructed their own realities, thus meaning within these derived constructions was individually defined (Guba & Lincoln, 1994). Of central interest to this research was a deeper understanding of how the participants constructed their experience and interpretation of *feel* and performance based on their participation in a resonance (i.e., person-centered, feel-based) intervention. Therefore, the aim of this study was not to generalize such constructed realities, but to explore the richness of the participants’ experiences and creations. Individuals can live ‘identical’ empirical experiences yet will always have unique views of said reality (Patton, 2002). Hence, constructivism is built on the foundation of ontological relativity, which holds that “all tenable statements of existence depend on a worldview, and no worldview is uniquely determined by empirical of sense data about the world” (Patton, 2002, p. 97). The qualitative nature of this study led to an epistemological focus on subjectivism, as the findings were generated, or in this case created, as a result of the intervention and my interpretation of the participants’ subjective experiences in relation to feel and performance.

Previous studies in which the constructivist paradigm was used to ground the resonance intervention showed that participants, with the help of the interviewer/researcher could effectively construct how they want to feel in their environment and experience this through the resonance process (Arcand et al., 2007; Callary & Durand-Bush, in press; Durand-Bush et al., 2005; Wolfe, 2006). Due to the unique and personalized nature of each resonance intervention, and the importance of allowing each participant to construct his or her own reality and experiences within this process, the constructivist paradigm was deemed most appropriate and relevant to the present investigation.

Methodological Frameworks

Multiple Case Study

At the heart of this study rested the concepts of feel and performance. Stake (2006) reported that within any case study, from its outset, the phenomenon is identified. In the context of this research, it was noteworthy that a central objective was in fact *not* to define the concepts of feel and performance for the participants, but to explore their own personal constructions of them. As a result, definitions of the concepts of interest emerged throughout the course of the study.

Integral to the multiple case approach is the assertion that the researcher aims to explore how the phenomena/concepts (e.g., feel and performance) appear in different contexts (Stake, 2006). In this study, the word context did not necessarily pertain to different circumstances or experiences per se, but was rather interpreted as the inherent diversity contained within each participant's perceptions and assigned meanings. For instance, participants may have encountered similar experiences within the same context (e.g., medical school rotations), however, the interpretation and meaning they assigned to these experiences differed. As such,

patterns within a given context may not be the same across contexts and individuals, and contexts can change over time (Sansone & Thoman, 2005). Stake (2006) indicated that a multiple case design is generally used to identify either similarities or differences between cases, or both. Interest in the uniqueness of experience and interpretation of meaning in relation to feel and performance was what led to the present research. While it proves both exciting and insightful to identify commonalities across a series of cases, upon the outset of the present study, an intrinsic drive rested on the rich prospect of exploring how individuals diversely experienced and defined both feel, what meanings they ascribed to it, and how it affected their overall performance. On par with the tenets of constructivism, reality is not an absolute but is relative to the individual or group creating it (Guba & Lincoln, 1994). Thus, it was critical within the present investigation to focus on the individual experiences of each medical student over the course of the intervention so as to preserve each of their unique realities.

Stake (1995) asserts that there are no aspects of knowledge existing solely in the external world that is devoid of human construction. In fact, case study researchers acknowledge that their contributions to readers' experiences will depend on how the latter interpret knowledge and reality (Stake, 1995). In the present study, the in-depth multiple case study approach allowed the emergence of rich and meaningful data that reflected the participants' exploration and construction of feel and performance. However, I as the interviewer/researcher had the task of both clarifying descriptions and sophisticating interpretations (Stake, 1995). In terms of generalization, researchers embracing a constructivist view of knowledge tend to focus on the diversity of experience and encourage readers to deduce their own generalizations by providing them with rich material (Stake, 1995). Therefore, across multiple cases, and within each in solidarity, I shared with readers, and justified how I interpreted the participants' constructions of

reality, yet opened the opportunity for them to make their own interpretations and/or generalizations.

Narratives

Narrative practice enables researchers to alternately focus on the *whats* and *hows* of the investigation; the strength in this lies in the researcher's capacity to develop general knowledge about the core themes that make up the content of the stories collected in an interview context (Sparkes & Partington, 2003). Narrative practice (Polkinghorne, 1995) has been found in previous studies on resonance to be the most effective way to convey the multidimensional aspects of feel and the process of resonance, and also to chronologically create an informed and appropriately complex reconstruction of the participants' experiences (Callary & Durand-Bush, in press; Lussier-Ley, 2006; Wolfe, 2006). The view that people structure experience through stories has led to a "more sophisticated appreciation of people as active social beings and focused attention on the way personal and cultural realities are constructed through narrative and storytelling" (Sparkes & Partington, 2003, p. 293). Furthermore, Miller (1994) suggests that personal stories based on lived experiences are created and maintained over time and serve as an important foundation for the social construction of the self. The use of narrative practice, therefore, allowed me to describe the 'what' and 'how' of the process of feel and performance of medical students through my interpretation of their experiences (Holstein & Gubrium, 2000).

Critics of the narrative practice approach feel that reconstruction of experience relies on memory, which can always be inadequate or falsified, and requires the use of a well-designed interview (Lazarus, 1999). Although the participants in the present study relied on recall to describe some of their past experiences pertaining to feel and performance, the strength of the study was that it documented in the "here and now" the process through which the students' not

only revisited past constructions, but most importantly, generated and experienced new constructions throughout the resonance intervention. Previous studies on feel and resonance showed that recorded interventions provided valuable first-hand data of how participants were able to develop and incorporate the process of resonance into their performance environment and daily lives, and how their perceptions of performance and well-being changed/evolved over time (Arcand et al., 2007; Callary & Durand-Bush, in press; Durand-Bush et al., 2004; Lussier-Ley, 2006; Wolfe, 2006).

Data Collection and Analysis

Researcher's experience and preparation. My abilities as the interviewer/researcher to investigate the participants' experiences as they evolved was a critical component of the research process, and the use of multiple interviews and journaling helped both the participants and myself to document their constructions or reconstructions of experiences over time.

With the present study being intervention-based, I familiarized myself with previous resonance interventions that primarily involved multiple interviews and journaling. I completed eight Master's level intervention and consultation courses pertaining to counselling, ethics, organizational behaviour, mental training, research methods, qualitative data analysis, interviewing, and advanced topics in sport psychology, physical activity, and health. In addition to course work, I completed a 400 hour consulting/counselling internship with athletes (i.e., national level sprint kayakers and elite-youth soccer players) and medical students under the guidance of my thesis supervisor.

To further prepare myself for my role as a consultant/researcher, I regularly engaged in discussions on feel and resonance with members of our research team. I also identified and continuously worked to engage in my own process of resonance, which proved to be vital in

helping individuals participate in a resonance intervention (Durand-Bush et al., 2005; Wolfe, 2006). Furthermore, I piloted my methodology, particularly the interview guide and my intervention delivery, with two medical student clients with whom I worked as part of my internship, but had not counselled them in any context specifically related to the present study. This step proved to be very useful in that both students offered a great deal of insight into both the content of the questions, and my delivery. Accordingly, minor modifications were made to the interview guide.

Participants

The present study involved four medical students currently enrolled full-time in the School of Medicine of the Faculty of Health Sciences, at the University of Ottawa. This number was deemed appropriate due to the length and in-depth nature of the intervention and overall research. Participants were required to be either third or fourth year medical students undertaking their clerkship years, or medical residents. The reasoning behind this was that despite having a range of experience in terms of education level, they all shared a similar medical performance environment; that is, clerkship students and residents participate on block rotations focusing on a specific medical specialty, lasting three to four weeks. Although to varying degrees, they all worked with, and received feedback from, their preceptors and attending staff, and they also wrote exams every few rotations. Stake (2006) postulated three general criteria for selecting multiple cases:

- (a) The cases must be relevant to the topic under study.
- (b) The cases must provide diversity across the context.
- (c) The cases must provide good opportunities to learn about complexity and contexts.

All three criteria were met in the present study. While it was not an aim to generalize the findings, incorporating the widest range of experience and diversity across medical training levels was a foreseeable benefit. Table 1 describes the demographics of each medical student case.

Table 1

Participant Demographic Profiles

	Case #1	Case #2	Case #3	Case #4
Name	Ruby	Emelia	Marissa	Sophie
Age (years)	32	29	24	24
Sex	Female	Female	Female	Female
Education	Second year medical resident	Second year medical resident	Third year medical student	Third year medical student
Specialization	Obstetrics gynecology	Pediatrics	Surgery* Family medicine* Anesthesiology* Emergency*	Family medicine* Emergency*

Note. * Denotes an undecided specialization.

All participants were fluent in the English language and were asked to verbally communicate in English during the interviews and sessions. However, each participant was able to write in their language of choice in their personal reflective journals whenever they felt they were better able to express themselves in that language. The journals were used as a means to reflect and learn about oneself and were not analyzed.

Recruitment posters were distributed through the School of Medicine of the Faculty of Health Sciences campus at the University of Ottawa, and two hospitals in the greater Ottawa area. A list of interested, available and eligible medical students was compiled from which the four participants were chosen based on purposeful sampling (Patton, 2002). Interested candidates attended an individual orientation session, and in one case a telephone interview was conducted (Doell et al., 2006) to identify those who demonstrated a sincere interest in, and commitment to the research. It is noteworthy that the preliminary information session or interview was *not* the pre-intervention interview. Due to the length of the intervention and overall study, choosing keen medical students who appeared to have a high level of engagement and interest in the study was critical.

After obtaining informed consent via a signed letter of information/consent (see Appendix B), the selected participants clearly understood that their continued involvement in the study was voluntary and they reserved the right to withdraw from the study at any time without repercussion. None of the participants dropped out at any time during the study.

Resonance-Based Intervention

The present study was guided by the following fundamental assumptions:

- (a) Everyone feels.
- (b) How everyone feels can change.

- (c) Everyone has the potential to feel the way they want.
- (d) Everyone's internal perceptions and external environment can influence how they feel.
- (e) Everyone has the potential to learn and collect feel-related data and make decisions that will influence the way they feel (Durand-Bush et al., 2004).

Based on these assumptions, the RPM was used as a conceptual framework to guide the one-on-one, personalized intervention with each participant (see *Phase 2*). An interview guide (see Appendix C) based on the RPM was developed to facilitate the process and generate discussion and reflection with regards to feel and performance. While a guide was used, topics addressed by the participants ultimately steered the direction of the intervention since all resonance-based interventions are person-centered (Arcand et al., 2007). Nonetheless, I as the interviewer/researcher played a critical role in establishing a trustworthy relationship, as well as in listening, challenging, and supporting through dialogue and probing (Martin, 2000). Therefore it was my role to help the medical student participants attune to and develop their process of resonance while paying particular attention to feel and performance, and assist them in the construction or re-construction of their reality, as supported by the constructivist paradigm (Arcand et al., 2007).

The study took place across three phases. The first phase involved a pre-intervention interview with each participant while the second comprised six individual resonance intervention sessions. The third phase consisted of a post-intervention interview, again with each participant, thus the study involved a total of eight meetings. In each phase, participants were invited to attend their interview or intervention session at the University of Ottawa Training Center for Intervention and Consultation on the main campus, at times convenient to both them and myself.

The Training Center is fully accessible by a free shuttle-bus traveling on the hour to and from the medical school and main campuses. Each interview/intervention session was audio-recorded using a high-quality digital voice recorder.

Phase 1 – Pre-intervention interview. The concepts put forth in this study are not as transparent, simplistic, or comprehensible as they may appear upon initial review. In fact, the concepts of feel and performance imbedded in the process of resonance have deeply inherent philosophical characteristics that demand considerable thought, self-reflection, and adequate time to understand and implement (Newburg et al., 2002). It can be argued that people process, interpret, and understand information in limitlessly different ways. Through my work as a consultant with athletes, coaches, and students with different educational backgrounds and modes of learning, I have come to believe that it is critical for consultants and researchers, whenever relevant, to present concepts in a way that allows their clients to understand the nature of the questions being posed to them. In the pre-intervention interview, the participants were introduced to the concepts of feel, performance, and resonance in order to identify their initial understanding and general experience of these phenomena. This provided me with a framework of their current realities. Example questions included:

- (a) What is feel to you, what does it mean and how do you define it?
- (b) How do you experience it on a daily basis?
- (c) Does feel have more than one facet in your experience?
- (d) What is performance to you, how do you define it?
- (e) How do you experience it?
- (f) Does performance have more than one facet?

- (g) What leads you to experience optimal and sub-optimal performance? Can you enhance it, if so, how?

This initial interview followed a semi-structured, open-ended format, and ran for approximately 90 minutes. Along with the introduction and exploration of the concepts encasing this study, the participants were encouraged to ask questions in order to clarify any issues they had. Procedures, instructions for journaling, and other logistical information were explained during this interview.

Phase 2 – Resonance intervention. The resonance intervention conducted with each participant evolved from their pre-intervention interview. Each intervention involved six in-depth, semi-structured, open-ended sessions conducted approximately every second week over a 12 week period. Based on previous studies employing resonance interventions, 12 weeks proved to be an appropriate time frame to give participants the time and space to explore feel and develop their process of resonance (Arcand et al., 2007; Callary & Durand-Bush, in press). As noted by Newburg and colleagues (2002), it requires both time and conscious effort to create and maintain one's process of resonance. Doell and colleagues (2006) noted that participants felt multiple sessions with the researcher/interviewer to discuss their experiences were essential in the development of their process. Providing the participants two weeks between sessions seemed to give them a sensible time frame to experience and reflect on feel, performance, and resonance, which was also advocated by Arcand et al. (2007).

Each session, along with some of the journal content when appropriate (see subsequent section), informed subsequent sessions and followed an interview/intervention guide (see Appendix C) based on an adaptation of Newburg et al.'s (2002) RPM. The open-ended questions were posed to the participants in an attempt to help them explore how they perceived and

experienced feel (i.e., physically, emotionally, cognitively, socially, and spiritually) and performance (i.e., optimal and sub-optimal) across time and in different situations. Core questions that were revisited throughout the intervention included:

- (a) Based on what feel is and means to you, how do you feel on a day to day basis in the context of medical school? How do you want to feel in this context? Does how you want to feel differ when you are studying/practicing in comparison to when you are being tested? How often do you feel the way you want? Can you regulate how you feel, if so, how; if not, why?
- (b) What allows you to feel the way you want in different daily situations?
- (c) What prevents you from feeling the way you want? What obstacles do you face on a daily basis?
- (d) How do you respond to obstacles? Can you reconnect with how you want to feel when you are distanced from it? If so how; if not, why?
- (e) Does how you feel affect how you perform while studying and taking tests? How can you maximize the way you feel and perform?

Although each intervention was unique, I focused on the evolution of the participants' experiences with their process of resonance, specifically in relation to their perceptions of feel and performance. I also identified changes and lessons learned as they attempted to create and regulate how they feel on a daily basis, and noted how this affected their self-defined standards of performance. Participants were asked to share intricate details of their experiences and empowered to continuously tell their story. Based on past studies, it was foreseeable that some participants could have required either additional or fewer sessions depending on their needs and/or desires and this would have been possible due to the client-centered, open-ended nature of

the intervention (Wolfe, 2006). In the present investigation, this was not necessary, however, one participant who encountered more difficulty and discomfort compared to the others after the pre-intervention interview required more time in subsequent sessions to help nurture her understanding of the relevance of the concepts of resonance and feel in relation to performance. Such accommodations were in line with the constructivist paradigm (Guba & Lincoln, 1994) and were made as I sought to maximize each participant's experiences throughout the intervention.

Phase 3 – Post-intervention interview. A post-intervention interview was conducted with each participant approximately one month after the completion of the 12-week intervention. The purpose of this interview was to explore:

- (a) The participants' overall experiences during the study.
- (b) What they learned through the intervention.
- (c) How they viewed their experience of feel and performance in light of their process of resonance now that the intervention had been completed for a month.
- (d) If and how their experiences of feel and performance changed over the course of the study.
- (e) If and how they believed this process would guide them in their future career in the medical field.

Journaling. Upon the commencement of the intervention phase, the participants were provided with a journal and asked to write down how they feel each day, reflecting on their thoughts, behaviors, and feelings related to their performance environment and general daily lives. They were also encouraged to write "their story," including miscellaneous thoughts, highlights, experiences, processes (e.g., reflection, learning), revelations (e.g., "a-ha" or "eureka")

moments), perceived changes they felt were important to them and their realities. Specifically, the journal comprised (see Appendix E):

- (a) Blank RPM sheets that the participants completed throughout the intervention, and noted emerging and evolving definitions of feel and performance.
- (b) Daily profile sheets where on an x and y axis chart they plotted how they felt on a scale from 1 to 10 over a 24 hour day. Some participants independently used one sheet for each relevant dimension of their felt experiences (e.g., socially, physically) and filled them out over the course of a day to contrast and compare each dimension.
- (c) Questions reflected in the Feel-Based Learning Model (see description below).
- (d) An area where they recorded their story and anything of relevance to them (Durand-Bush, 2007; Doell et al., 2006).

Participants were not limited to words; they were also encouraged to create visual representations of their felt experiences and performance (e.g., drawings, doodles). Durand-Bush and colleagues (2004) found that other forms of journaling such as verbal, musical, and pictorial were found to be viable options for several participants. The participants were encouraged to complete the journal every day, with the understanding that there would be variations based on each individual's interest, commitment, time constraints, and preferences (Callary, 2004). It is also worthy to note that, according to past studies using similar feel-based interventions (e.g., Arcand et al., 2007; Callary, 2004; Callary & Durand-Bush, in press; Durand-Bush et al., 2004; Lussier-Ley, 2006; Wolfe, 2006) journals were most useful at the beginning of the intervention when participants were often not conscious or unsure of how they felt and wanted to feel, therefore reflective monitoring was needed. However, in the latter stages of the resonance

intervention, participants were often more attuned to their emerging process and felt they did not have to write in their journals as routinely as before.

Journaling was successfully used to facilitate the reflective process of medical students (Pitkala & Mantyranta, 2004), and nursing students (Simpson & Courtney, 2007) in past research, although it has never been implemented as an intervention tool within an empirical investigation with medical students. As such, the reflective journaling approach was considered a critical element in the present study because it gave the participants opportunities to reflect at a deeper level, particularly between intervention sessions, and self-monitor their process over time. An important difference in this study compared to previous research on feel and resonance was that participants were empowered to reflect beyond the surface and increase the quality of their reflective learning (Moon, 2004). Moon observed that learners tend to reflect at a descriptive level at which there is no discussion. Conversely, deep reflection appears to characterize an “ability to use different frames of reference with associated flexibility, openness and awareness of the range of relevant issues” (Moon, 2004, p. 94).

Furthermore, since learning is at the core of the resonance process, participants were introduced to and encouraged to engage in feel-based learning following Durand-Bush’s (2007) exploratory model, and to reflect on the different components (i.e., Pay Attention, Collect Data, Reflect, and Make Decisions) (see Appendix E). This model served to generate discussion during the intervention sessions with regards to reflection, learning, and decision-making processes that affect feel and performance. Upon obtaining permission from the participants, when applicable, I examined the content of their reflective journal before each intervention session to help revisit certain themes, formulate questions, and generate more discussion. An important nuance within the journaling process in the present study, as compared to past investigations with a similar

design, was that the participants e-mailed their stories stemming from their experiences before the intervention sessions as opposed to traveling to deliver the journal material to the consultant/researcher before the meeting. This process proved quite efficient and advantageous for the participants given their excessively heavy schedules. Again, the content of the journals was not systematically analyzed.

Concept mapping. Concept mapping is an educational tool that encourages meaningful learning (Kinchin & Hay, 2005; Pinto & Zeitz, 1997), increases long-term information retention and improves transfer of knowledge in future problem solving activities (Pinto & Zeitz, 1997). As an active and creative learning activity, it allows individuals to organize concepts according to their relationships (Pinto & Zeitz, 1997), and provide a visual structure of their knowledge framework (Kinchin & Hay, 2005). In an effort to create a more visual and parsimonious representation of the participants' experiences of feel and performance, concept maps were co-constructed upon the completion of the post-intervention interview. Facilitated by the interviewer, the participants created their internal representations on a white board using images, words, arrows, colors, and other visual symbols that allowed them to create an accurate account of their experiences with the related concepts. Each concept map was reproduced in a computer document by myself and subsequently authenticated by each participant.

Recent research in medical education has lent considerable support for the use of concept mapping as a successful educational tool (Edmondson, 1995; Edmondson, 1994; Pinto & Zeitz, 1997; Rendas, Fonseca, & Pinto, 2005). However, these studies explored the application of concept mapping within the actual delivery of medical education. In the present study, concept maps were used as a method of creating a holistic and visual representation of feel and performance as each participant summarized it at the end of the intervention process. After being

synthesized, they were given to each participant to help serve as a visual reminder of the intervention process, and hopefully as a personal guide in their continuing journeys beyond the present study. Given that medical schools have become interested in the benefits of concept mapping as a learning strategy for medical students because they increase long-term information retention and improve transfer of knowledge in future problem solving activities (Pinto & Zeitz, 1997), the participants' creation of such personal concept maps could have further implications outside of the data analysis process (see Chapter V).

Data Analysis

Each tape-recorded pre and post-intervention interview and intervention session was transcribed verbatim, and then filtered for grammatical errors. In order to preserve the participants' anonymity, pseudonyms were given to each medical student. As previously discussed, a case study, narrative approach was used to collect and analyze the data. Despite the evident strengths of a content analysis, in which data is typically subjected to a pre-determined thematic analysis, its use in isolation can lead to an over-determination of the themes identified from the intervention sessions and interviews (Smith & Sparkes, 2002). Furthermore, Faricloth (1999) stated that with content forms of analysis, there is a narrative detachment from the artfulness of storytelling. Since a content analysis remains largely systematic and formal, it often misses the uniqueness of each story because it relies on the preconceived categorizations of the researcher (Smith & Sparkes, 2002). Thus, as the holistic experiences of the participants were of central interest, deviance from such constructed narratives would have jeopardized the logical representation of each student's unique construction/experience/reality.

The analysis in this study centered on medical students sharing their experiences, in both the work of constructing meaning, and on the circumstances of narration, respectively. Narrative

analysis allows for the creation of flowing text open for interpretation, rather than a deconstruction of contexts in search of commonly emerging themes.

In a narrative analysis, according to Polkinghorne (1995), the interviewer/researcher constructs the data, which is not necessarily ‘narrated’ or ‘storied’ in any chronological or systematic order, in a manner that gives events and circumstances cohesive meaning (Wolfe, 2006); the result is a narrative (Polkinghorne, 1995). The narrative analysis process in this study included descriptions and interpretations of events and experiences that I, as the interviewer/researcher, synthesized *into* a narrative (Wolfe, 2006). After all transcripts were combined, case by case, to form four complete independent transcripts, the data was analyzed using both paradigmatic reasoning to classify and categorize the qualitative data based on the RPM, and narrative reasoning to generate a narrative (Bruner, 1985; Wolfe, 2006). In essence, the analysis comprised both a narrative analysis and an analysis of narratives (Polkinghorne, 1995).

Analysis of narratives. An analysis of narratives represents a paradigmatic approach where specific experiences or responses are organized into more generalized themes and categories that can be predetermined based on a deductive approach, or can emerge following an inductive approach (Polkinghorne, 1995). In the case of the results presented in the Article 2 (see Chapter IV), in which an analysis of narratives was performed, the analysis incorporated both approaches, that is, the RPM components were used to deductively organize the data (Wolfe, 2006) and an inductive approach was also used to allow for the emergence of personalized themes such as:

- (a) The way each medical student defined feel.
- (b) How each dimension was relevant to their overall felt experiences.

- (c) How these relevant dimensions were inter-related.
- (d) What role these played in the medical students' self-regulation of feel within their learning/performance environment over the course of the intervention.

In essence, pieces of text that were associated with deductively and inductively identified themes (e.g., the inter-relatedness of the multiple dimensions of feel, see Article 2) were selected and placed under their corresponding theme so that only relevant pieces of text were used for the analysis and report of the data. The context and content of these categories in turn informed the synthesis and discussion of the data.

Narrative analysis. While an analysis of narratives is a more typical procedure to explore stories, a narrative analysis is also a significant way to organize data (Polkinghorne, 1995; Wolfe, 2006). In a narrative analysis, the researcher constructs the data in a manner that gives events and circumstances cohesive meaning. The data include descriptions or depictions of events and situations that are synthesized and interpreted (Polkinghorne, 1995). Thus, for the first article, a narrative analysis was performed to relay the story of each medical student's journey through the intervention process, specifically in relation to how their experiences of feel and performance evolved. Their stories were written in the present tense to allow the reader to 'move through the process' with the medical students. They incorporated actions, decisions, chance circumstances, interpersonal processes, and other environmental factors involved in the description of each participant's experiences as they evolved and changed (Polkinghorne, 1995).

As reported in the previous section, each interview and intervention session was digitally recorded, transcribed verbatim, and chronologically combined, case by case, to form four independent but complete transcripts that were subsequently analyzed from two vantage points; a profile analysis and an intra-case analysis (Burke, 2007; Gergen & Gergen, 1983).

Profile analysis. The first level of the narrative analysis involved the construction of personal profiles for each participant from the pre-intervention interview, appearing at the beginning of each narrative and reflecting their initial definitions of performance and feel. These definitions served as baselines to guide and inform the proceeding experiences reported within the narrative. Creating these personal profiles also allowed me to situate each medical student within their performance context (Seidman, 1998).

Intra-case analysis. The second level of the narrative analysis involved an intra-case analysis to explore how the participants constructed and experienced feel and performance over time (chronologically) (Stake, 1995). After reading several times each participant's complete chronological transcript, it was reduced to include relevant information that best illustrated the participant's experiences or story and contributed to answering the research questions. Within the participants' condensed narratives, key themes (e.g., performance obstacles, or evolving self-awareness abilities, see Article 1) were identified and discussed in conjunction with direct citations to present the participants' perspectives in their own words (Bruner, 2002; Burke, 2007; Lieblich, Tuval-Mashiach & Zilbar, 1998; Wolfe, 2006). The purpose of sectioning the text into such themes, which could also be referred to as labels, was to preserve the flow and readability of the narratives. An important objective at this level was to focus on the participants' felt experiences and performance without losing important contextual information (Burke, 2007), and to highlight the evolving process of their experiences within their medical performance environment.

Once the two level of analyses were performed, the four cases were compared to explore similarities and differences and also to develop general knowledge about the core themes that made up the content of the narratives (Burke, 2007; Lieblich et al., 1998; Stake, 2006), such as

the medical students' perceptions of feel and the role it played over time within their performance. These cross-case comparisons were highlighted in the discussion in relation to existing literature.

Trustworthiness

Although it is common practice within the majority of quantitative research to evaluate it in terms of validity and reliability, qualitative research is generally assessed in terms of trustworthiness (Guba & Lincoln, 1990; Wolfe, 2006). Several steps were taken in order to entrench an optimal level of trustworthiness throughout this study. Pilot interviews, as previously discussed, were conducted to identify and remedy problems with the interview guide, as well as other elements of the methodology. In order to maximize the authenticity of the collected information, the constructed narratives and concept maps were sent to the participants for member checking (Guba & Lincoln, 1994). They were asked to note if they accurately represented their reality and experiences within the intervention process. In other words, they had the opportunity to comment on my constructions and interpretations of their stories.

Throughout this study, I engaged in bi-weekly debriefing sessions with my thesis supervisor and research team members having experience implementing similar methods and interventions (Arcand et al., 2007; Callary & Durand-Bush, in press; Doell et al., 2006). The purpose of these sessions was to discuss the intervention, including possible questions or issues to address with the participants. Peer debriefing was also important throughout the data analysis process as I was able to discuss my constructions and interpretations of narratives (Guba & Lincoln, 1994). As the primary interviewer/researcher, I was prepared and trained to implement the resonance intervention. I felt confident in my ability to form a trustworthy relationship with the participants, which was crucial since I wanted them to feel comfortable and confident to

share their life experiences with me (Ivey & Ivey, 2003). The data that emerged from the interviews and intervention sessions was richly described through the narratives to the extent that readers should be able to make their own judgments and links to their personal life.

CHAPTER IV

RESULTS

The results section of this thesis is presented in the form of two articles. The seven research questions presented in Chapter I are divided between these two works as indicated below.

The first article is titled *The Self-Construction of Feel and Optimal Performance in Medical School: Exploring the narratives of four medical students*, and will be submitted to the peer reviewed journal “Narrative Inquiry”. It will address the research questions:

- (a) How did the medical students define, construct, and experience feel?
- (b) How did medical students define, construct, and experience performance in their medical training context?
- (c) How did the medical students’ experiences of their meaningful/relevant dimensions of feel, affect their performance?
- (d) Were the medical students able to achieve their optimal level of performance as a result of their participation in the person-centered feel-based intervention?

The second article is titled *Learning to Self-Regulate Multidimensional Felt-Experiences: The journeys of four medical students*. This article will be submitted to the peer reviewed journal “Qualitative Health Research” and address the following research questions:

- (a) How did the medical students define, construct, and experience feel?
- (b) What dimensions of feel were meaningful and relevant to the medical students?
- (c) How did these dimensions influence each other and medical students overall experience of feel?
- (d) Could the medical students learn to regulate their felt experiences through a person-centered feel-based resonance intervention?

ARTICLE 1:

THE SELF-CONSTRUCTION OF FEEL AND OPTIMAL PERFORMRNACE IN MEDICAL
SCHOOL: EXPLORING THE NARRATIVES OF FOUR MEDICAL STUDENTS

THE SELF-CONSTRUCTION OF FEEL AND OPTIMAL PERFORMRNACE IN MEDICAL
SCHOOL: EXPLORING THE NARRATIVES OF FOUR MEDICAL STUDENTS

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Abstract

Since physicians routinely meet medical challenges in our community (Remen, 2001), their ability to perform becomes a relevant and important issue. Physicians today are largely ill-equipped to manage much of the adversity they face in their careers (Sotile & Sotile, 2002), suggesting that medical education may lack optimal conditions for personal growth and optimal performance (Kern, Wright, Carrese, Lipkin Jr., Simmons, Novack, et al., 2001). Since research has shown that how individuals feel affects performance (Arcand, Durand-Bush, & Miall, 2007; Durand-Bush, Newburg, Faubert, Soulard, Arcand, & Burke, 2005), the purpose of the present study was to examine how engaging in a person-centered feel-based intervention affected the self-defined performance of medical students. Results of this multiple case study showed that all four medical students were able to define performance and feel as they experienced it within their performance environment. They learned how to achieve an optimal level of performance during the intervention by regularly paying attention to and reflecting on their felt experiences and what facilitated and inhibited them. Results offer implications for future research on performance as a self-defined process and the role felt experiences can play in it, as well as applications for medical students, administrators, and professionals.

Most of us have had the experience of interacting with medical professionals in our lives. It is fair to say that when we did, we expected them to perform well and make us feel better. However, Sotile and Sotile (2002) reported that physicians today are largely ill-equipped to manage much of the adversity they face in their careers and reciprocally in everyday life. Therefore, inferably, they may not always be using themselves effectively to treat people due to the stress they face in their profession (Remen, 2001; Sotile & Sotile, 2002). Novack et al. (1997) stated that doctors can begin to do this by developing self-awareness and gaining insight into how their experiences affect their performance.

Research has shown that how we feel affects our performance and well-being. Within the context of sport, multiple studies have demonstrated that athletes can enhance perceptions of performance and well-being by learning to regulate themselves to feel the way they want as best and as often as possible (Arcand et al., 2007; Callary & Durand-Bush, in press; Doell, Durand-Bush, & Newburg, 2006; Durand-Bush et al., 2005). Felt experiences have been shown to be of importance in the domain of medicine (Kern et al., 2001; Sotile & Sotile, 2002). It has been found that doctors can begin to not feel the way they want during their medical training. As students, they learn to routinely ignore their personal needs and emotions and how they generally feel in order to do what they have to do in order to succeed (Sotile & Sotile, 2002). It is not uncommon for them to exhibit negative states or conditions such as cynicism and burnout upon graduation (Remen, 2001; Silver, 1982; Sotile & Sotile, 2002). Logically, one could argue that this could very well affect their performance as young medical practitioners.

According to Willson (2006), one of the biggest responsibilities of medical educators is to nurture their students' intrinsic enthusiasm for medicine, encouraging them to be healthy and engaged practitioners, all the while helping them to avoid the cynicism and defensiveness they

can develop by the end of their training. Given that the current structure of medical education is likely to contribute to disruptions in the health habits of students despite the modern era of medicine reflecting change (Ball & Bax, 2002), there is a need for new methods and interventions to address the life and career of physicians (Pearson, 2000) and to promote introspection and meaningful experiences (Kern et al., 2001). Thus, research aiming to find innovative ways to enhance medical education in order to maximize the personal growth and performance of medical students is warranted. It follows then that the purpose of the present study was to examine how engaging in a person-centered feel-based intervention, aimed at helping them feel the way they want, affected the self-defined performance of medical students.

The premise of participating in such an intervention was that students should be empowered to proactively take control of their own learning and enhance identified areas of improvement via self-reflection and the feedback they receive from external evaluators (Shokar, Shokar, Romero, & Bulik, 2002). All things considered, just as physicians attend medical school to learn the ‘science’ of medicine, they should also use *themselves* to practice its art (Novack et al., 1997), and thus medical training should involve much more than the teaching of its science (Remen, 2001). Students need to attune to the areas of medicine in which subjectivity is inevitable, and indeed useful (Willson, 2006).

Performance

A review of the medical training literature revealed an abundance of research focused on the performance of medical students. Areas that have been addressed include: Communication skills and confidence (Kaufman, Laidlaw, & Macleod, 2000); Clinical experience and learning styles in final exam performance (Martin, Stark, & Jolly, 2000; McManus, Richards, Winder, & Sproston, 1998); Clinical and academic performance and learning approaches (Arnold, &

Feighny, 1995); Acquisition of expert-performance through deliberate practice (Ericsson, 2007); Evaluation of clinical performance through observation (Pulito, Donnelly, Plymale, & Mentzer Jr., 2006); Self-efficacy and performance on Objective Structured Clinical Examinations (OSCE's), Mavis (2001); and Performance assessment problems in surgery residencies (Littlefield et al., 2005).

A common characteristic across these studies was that performance was measured as an objective outcome, with little if any focus on personal definitions or standards of performance. That said, at least one study explored the self-perceptions of performance of medical students (Violato & Lockyer, 2006), however, these perceptions, while grounded in personal appraisals, were nonetheless based on objective measures revealing little yield for appraisals based on self-defined performance standards.

The aforementioned research suggests that performance in the context of medicine is traditionally and institutionally defined and measured objectively. Other plausible elements of medical performance not measurable through standardized or traditional means were not considered, which could limit our understanding of how individuals really perform in the medical environment. It is reasonable to assert that performance can also be based on more internal standards, for instance, the ability to maintain a healthy balance between school and personal life, to feel accomplished and helpful when connecting with patients, to control one's learning, to feel confident in one's ability to apply knowledge, or simply to feel happy and fulfilled in one's day to day experiences. Since research to date has gravitated towards an objective view of performance, it would be an important progressive step to also empirically explore subjective views of performance and help determine self-directed ways to maximize performance in the medical environment.

Feel

Feeling the way one wants could be a means to evaluate performance (Newburg, Kimiciek, Durand-Bush, & Doell, 2002) and in order to investigate this, it would be important to further examine the concept of feel. Some researchers have recently studied feel as a holistic and dynamic experience encompassing physical, cognitive, emotional, social, and even spiritual dimensions (Arcand et al., 2007; Callary & Durand-Bush, in press; Doell et al., 2006). In these studies, the multidimensional felt experiences of athletes were considered broader than emotions and cognitions. For example, through a feel-based intervention, a rock climber identified that he wanted to feel, while climbing, confident, strong, both supported and challenged by his climbing partners, and a sense of enjoyment. This experience was not just an emotion but an overall experience also involving physical, cognitive, and social elements (Arcand et al., 2007).

Research has shown that through person centered, feel-based interventions, athletes can learn to become aware of themselves and their environment and enhance performance and well-being through the formation of personal strategies that allow them to connect or reconnect with the way they want to feel (Arcand et al., 2007; Callary & Durand-Bush, in press; Doell et al., 2006; Lussier-Ley, 2006). What is unique about the intervention based studies conducted in different sporting contexts is their constructivist nature (Guba & Lincoln, 1990), in that the participants played an active role in defining their felt experiences, performance, and well-being and directing the intervention to maximize personal relevance and meaning. Such studies have not been conducted in the context of medicine and considering the lack of research on feel as a multidimensional phenomenon affecting performance in medicine, it would be a fruitful avenue of research.

The concept of feel is at the core of resonance, which was defined as a process that helps individuals regulate how they feel across meaningful life and performance domains (Newburg et al., 2002). The aim of the RPM is to empower individuals to engage themselves to feel the way they want and experience a seamless fit between themselves and their environment as often as possible. Table 1 describes the RPM, comprised of four components: The way you want to feel, Preparation, Obstacles, and Revisit the way you want to feel. This model has been used as the framework for feel-based intervention research (Arcand et al., 2007; Callary & Durand-Bush, in press; Doell et al., 2006; Durand-Bush et al., 2005; Lussier-Ley, 2006; Wolfe, 2006) and was used as the intervention framework in the present study.

(Insert Table 1)

Novack et al. (1997) stated that physicians who can become more aware of *what* influences their behavior may learn how to make more informed choices, which is a step toward adaptive change in improving performance and service to patients. Therefore, the use of the RPM as an intervention framework seemed to be a relevant one as it promotes self-awareness of felt experiences and what influences them such as thoughts, behaviors, and one's external environment. It also advocates performance and well-being as a process primarily driven by an internal locus of control to give power back to individuals (Newburg et al., 2002).

Self-Awareness and Reflection

Self-awareness is both an active and reflective process used to structure and organize personal experiences (Artz, 1994). It was found to enhance physician well-being and lead them to more deeply and sophisticatedly understand their patients (Novack et al., 1997). The development of self-awareness is important in helping medical students build the skills and the mental and physical stamina needed to sustain a work practice that is highly demanding by

nature (Willson, 2006). It also plays an important role in helping people identify how they want to feel and regulate this in the face of obstacles (Arcand et al., 2007; Callary & Durand-Bush, in press; Doell et al., 2006). According to Westberg and Jason (2001), reflection should be used regularly by medical professionals to become more aware and attentive to how they feel in order to take care of themselves and provide more effective patient care. Yet despite this notion, it was found that many health care providers do not have well-developed reflective skills. Westberg and Jason recommended that educators help students understand the meaning and importance of reflection during their training as research indicated that students who regularly engage in active reflection enjoyed and benefitted more from their medical studies (Sobral, 2000).

Westberg and Jason (2001) went as far as to state that health professionals who are not reflective self-aware learners can become incompetent and even dangerous. By focusing on enhancing self-awareness and reflection skills early in training, their importance and use can become more engrained and appreciated (Novack et al., 1997). Such skills could also help develop accuracy in self-assessment, which is important because “medical students, residents and experienced physicians who suffer from inaccurate self-assessments are unlikely to design, pursue, or seek out appropriate and adequate continuing education and professional development experiences from which they could benefit” (Violato & Lockyer, 2006, p. 242). Schmidt and Rikers’s (2007) research on the development of medical expertise suggested that medical students should devote more time to reflecting on their experiences within their performance environment in order to deepen their understanding. A critical step in medical education is thus to develop the self-awareness skills of students as early as possible to promote self-directed, lifelong learning, which was identified as a critical outcome (Harvey, Rothman, & Frecker, 2003; Pololi, Frankel, Clay, & Jobe, 2001).

Purpose of the Study

Novack and colleagues' (1997) report on physicians stated that medical care evokes a diverse range of feelings that affect how physicians perform. While much of the focus throughout medical training remains on the treatment of patients, the physical and mental well-being of medical students should not be ignored (Willson, 2006). Many medical schools do not include learning opportunities or activities in their curriculum to address affective factors (Novack, Volk, Drossman, & Lipkin, 1993). However, as advocated by Sansone and Thoman (2005), helping students regulate their affective experiences could lead to enhanced learning and performance. It could also be argued that helping them regulate how they feel through ongoing reflection could lead them to embrace the temporal and dynamic elements of their learning process and become more engaged within it (Westberg & Jason, 2001). A feel-based intervention designed to increase awareness and develop reflective and self-regulation skills could prove to be advantageous in the growth and performance of medical practitioners. As such, the purpose of the present study was to examine how engaging in a person-centered feel-based intervention guided by the RPM (Callary & Durand-Bush, in press; Newburg et al., 2002) affected the self-defined performance of medical students. More specifically, the research questions were: How did the medical students define, construct, and experience feel? How do they construct and experience performance within their medical environment? How does the way they feel affect their performance? Can they achieve an optimal level of performance by participating in a feel-based, person-centered resonance intervention nurturing self-reflection and the development of self-awareness?

Methodology

Research Paradigm and Approach

Constructivism. The qualitative nature of this study led to an epistemological focus on subjectivism as the findings were co-created as a result of the intervention process and interpretation of the participants' subjective experiences in relation to feel and performance. Of central interest was a deeper understanding of how medical students constructed their experiences throughout the study, hence the selection of a constructivist paradigm to guide it (Guba & Lincoln, 1994).

Multiple-case study. In congruence with the constructivist paradigm, a central objective was *not* to define the concepts of feel and performance for the participants, but rather explore their *own* personal constructions of them as they emerged throughout the course of the intervention process. Stake (1995) asserted that there are no aspects of knowledge existing solely in the external world that are devoid of human construction. In fact, case study researchers acknowledge that their contributions to readers' experiences will depend on how the latter interpret knowledge and reality (Stake, 1995). Within the present study, the in-depth multiple case study approach allowed for the emergence of rich and meaningful data that reflected the participants' exploration and construction of feel and performance.

By embracing a constructivist view of knowledge, the researchers focused on the diversity of the medical students' experiences (Stake, 1995), and the use of the case study approach led them to explore *how* they performed and felt at an individual level. Within and across the multiple cases, the narratives highlight the main interviewer/researcher and participants' constructions of reality. Indeed, constructivism, entwined with the multiple-case approach, justifies the extensive narrative description provided (Stake, 1995).

The narrative approach. Individuals tell stories in an effort to understand, make sense of, and communicate their experiences (Sparkes & Partington, 2003). As such, in line with the

constructivist paradigm, many researchers have focused their attention on the way personal realities are constructed through the use of narratives (Sparkes & Partington, 2003). The term 'narrative' is described as the process of creating a story, the cognitive schema, or the result of the story's context (Polkinghorne, 1988) representing a subjective viewpoint of one's self and the world (Lazarus, 1999).

Polkinghorne (1995) reported that qualitative researchers are gravitating toward narrative forms of inquiry because narratives are uniquely suited for creating linguistic representations of human experience, and serve as an important foundation for the construction of the self (Miller, 1994). In the current study, the data was analyzed and integrated into narratives to document the process through which the participants attempted to define and regulate how they felt and performed in the medical environment, producing a rich account of not only *what they did* but also *how they did it* (Holstein & Gubrium, 2000). The participants revisited past constructions, and most importantly, created and experienced new constructions throughout the intervention process. Hanin (2003) estimated that narratives and in-depth interviews can be used to describe concrete performance situations by identifying the thoughts, feelings, and/or experiences accompanying these situations. The narrative approach has been found to be the most effective way to convey the multidimensional and complex aspects of felt experiences within the process of resonance in a chronological manner (Wolfe, 2006).

Data Collection

Participants. Four ($n = 4$) female medical students were recruited for the study. A recruitment notice was posted throughout the School of Medicine of the University of Ottawa. The participants were chosen through purposeful sampling (Patton, 2002), that is, those who demonstrated an interest in, and commitment to the 17 week study were selected. Their

continued involvement was voluntary and they were informed that they could withdraw from the study at any time without repercussion. Table 2 presents the demographics of each medical student.

(Insert Table 2)

Data collection phases. The present study took place across three phases over 17 weeks; a pre-intervention phase, an intervention phase, and a post-intervention phase. The following table provides a brief description of these phases including their timeline and key purpose.

(Insert Table 3)

Journaling. Each participant was provided with a journal and asked to write down how they felt each day, reflecting on their thoughts, behaviors, feelings, and anything of relevance related to their performance environment and general daily life. The use of journaling to facilitate the reflective process has been successfully used in past research with medical students (Pitkala & Mantyranta, 2004) and nursing students (Simpson & Courtney, 2007). The participants were encouraged to complete their journal every day, with the understanding that there would be variations based on each individual's interest, commitment, time constraints, and preferences (Callary, 2004; Doell et al., 2006). The reflective journaling approach was considered a critical element because it gave the participants the opportunity to reflect at a deeper level, particularly between intervention sessions, and self-monitor their process over time. The content of the journals was not systematically analyzed.

Data Analysis

A narrative analysis (Gergen & Gergen, 1993; Polkinghorne, 1995) was carried out to identify, describe, and interpret the events and experiences emerging from this study (Sparkes & Partington, 2003). Each interview (i.e., pre- and post-intervention phase) and intervention session

(i.e., intervention phase) was digitally recorded, transcribed verbatim, and chronologically combined, case by case, to form four independent but complete transcripts that were subsequently analyzed from two vantage points; a profile analysis, and an intra-case analysis (Burke, 2007; Gergen & Gergen, 1983). The four cases were compared and contrasted in the discussion to highlight similarities and differences between cases, and to develop general knowledge about the core themes that made up the content of the narratives (Burke, 2007; Lieblich, 1998; Stake, 2006).

Profile analysis. The first level of narrative analysis involved the construction of personal profiles for each participant from the pre-intervention interview, appearing at the beginning of each narrative and reflecting their initial definitions of performance and feel. These definitions served as baselines to guide and inform the proceeding experiences within the narrative. Creating these personal profiles also served to situate each medical student within their performance context (Seidman, 1998).

Intra-case analysis. The second level of analysis involved an intra-case analysis to explore how the participants constructed and experienced feel and performance over time (Stake, 1995). After reading several times each participant's complete chronological transcript, it was reduced to include relevant information that best illustrated the participant's experience and contributed to answering the research questions. Within the participants' condensed narratives, key themes were identified and discussed in conjunction with direct citations to present the participants' perspectives in their own words (Bruner, 2002; Burke, 2007; Lieblich, Tuval-Mashiach & Zilbar, 1998; Wolfe, 2006). An important objective at this level was to focus on the participants' felt experiences and performance without losing important contextual information (Burke, 2007).

Trustworthiness

In order to provide an optimal level of trustworthiness, pilot interviews were conducted with two third year medical students to test the interview guide and intervention procedures. To maximize narrative authenticity, the constructed narratives were sent to the participants for member checking (Guba & Lincoln, 1994) and minimal changes were made accordingly. Peer debriefing occurred throughout all phases of the study (Guba & Lincoln, 1994).

Results

The results of this study are presented in the form of narratives emerging from the four independent cases: Ruby, Emelia, Marissa, and Sophie (see Table 2). Each narrative begins with an introduction of the medical student and why she chose medicine as a career. The next two sections outline how she defined and experienced performance and wants to feel, respectively. After becoming situated with the student, the next section, written in real time and chronologically extending from the pre-intervention interview to the final intervention session, explores how feel and its relevant components affected the student's performance, whether or not she was able to create and sustain her process of feel through the intervention process, and if she was able to enhance her performance as a result. Finally, a summary of the post-intervention interview highlights the student's overall journey through the process and lessons for the future in medicine.

Ruby: 'Chasing Rabbits and Small Towns'

Why Medicine?

Ruby knew early on as a child that she wanted to become a doctor. Due to graduate scholarships, however, she studied chemistry because at the time she felt it represented a stable career, only to realize that there was nothing about her choice that ignited any passion; she could

not mount any kind of love for it. Consequently, she followed her childhood dream because it was, “something she could feel for”, and now as a second year medical resident in obstetrics gynecology (OBGYN), she has never looked back. She enjoys it because of the great deal of patient contact, something she truly values, “I’ve never regretted doing something that felt right ... I now feel that connection ... I’m very much a feel person, if something feels right, I do it.”

How Ruby Defines Performance

Performance for Ruby is largely based on her social experiences within her environment, and are defined in two ways; the experiences she has with her patients (internal, subjective), and those with her preceptors, colleagues and co-workers (external, subjective). Her external, subjective experiences can have two facets; first, how she appraises her experiences with these parties, and second, the feedback she receives from them. There is also an element of objectivity connected with this second experience of performance. Her preceptors evaluate her performance during her rotations, and while she does not place as much personal emphasis on such measures, since she strives to attain favorable reviews, this adds an objective (measurable) element to her performance. She places a great deal of emphasis on the quality of the interaction and connection she establishes with her patients and co-workers, “If I don’t have or feel that connection with the people I work with then I’m at a loss ... I get lost within my negative thoughts and find it difficult to move forward.” The quality of the connection is also tied into the feedback she receives, which she feels is paramount to learning and performing at an optimal level. Receiving feedback, especially if it is corrective, helps facilitate her development as a resident because it helps her become more aware of how she has performed and informs her future efforts.

That said, how Ruby internally appraises a given situation is important for attaining optimal performance. For instance, while it is important for her to feel connected with a patient,

it does not mean that if she does not sense a connection, she has a sub-optimal performance. The opposite is also true. She is able to internally gauge her performance and does not have to rely on external input. Overall, her performance is influenced by a combination of internal and external sources.

How Ruby Defines Feel

Feel plays a central role for Ruby in medical school and impacts how she performs. She defines feel as a gut feeling or instinct; an internal position that reflects either when there is something wrong about a situation or a calming sensation when something feels right. When she is not feeling the way she wants, she cannot sit still and feels disconnected with her tasks and has difficulty accomplishing them. Feel also has more than one facet; it has physical, emotional, cognitive, and social dimensions. When Ruby performs, she wants to feel like she has just climbed to the top of a peak, “There is a certain sense of clarity ... [a sense of] achievement.” The mountain is an image that represents her overall desired felt experience. While on the top of this metaphorical mountain she feels energized, in part from the satisfaction she feels as a result of the efforts she made in her ascent:

While there is an element of fatigue, it almost brings a sense of peace. My muscles hurt but they are not tight. Tightness is a big element for me. There is warmth there, so the muscles are warm and tired, but the mind is calm. Even though my heart is racing, it’s doing so for a reason [because I worked hard], and is associated with facilitative thoughts. It seems like everything is working together, and there is no disconnect anywhere in my life.

Much like being on top of that mountain, feeling the way she wants *during the process* is like a high; a lasting surge that allows her to feel like she can juggle multiple tasks as once. Once she

has reached the summit there is also a feeling of excitement, like she wants to take on more challenges. When Ruby feels the way she wants, she performs better:

I interact with patients better, my memory is better, tasks come more easily to me, and I am more productive ... because I am more motivated to do things. When I'm not feeling the way I want, I tend to wallow more, I'm slower, and just not on my game ... I at least perceive them [tasks] as being bigger than they really are, or need to be.

Intervention Session One

They Will Always be There: Responding to Inevitable Obstacles

Ruby wants to be able to meet obstacles in her performance environment and in her daily life. When she is able to perform the way she wants and avoids obstacles or responds to them in a positive way, she is able to experience an overall sense of well-being:

If I'm always battling obstacles it means that I'm chasing down well-being. When that happens, it's a responsibility and burden as opposed to something that comes naturally and allows me to feel the way I want. It's added to the list of things to do...I think it's important for me to develop that approach because I'm always going to have obstacles, the question is "Am I going to approach them with a defeatist attitude or am I going to boar through them?" ... Some obstacles are going to be there and you're not going to be able to beat or control them, but you can still find a middle ground and learn to work around them as best you can.

Obstacles for Ruby are internal 95% of the time. In essence, she is her own worst enemy.

External obstacles are different, "With external obstacles they involve me, but are not mine. It's not always my fault, it's not always my responsibility to solve the problem myself ... it feels like their origins are from somewhere else rather than me."

When met with an obstacle, Ruby takes action to overcome it if it is internal or she relinquishes responsibility if it is external to redistribute her energy towards what she can control. Often, her response depends on how she feels in the moment. For example, when she feels happy or the way she wants, she is more inclined to respond to an obstacle in a way that will increase her patient's well-being because she feels motivated to do so and maintains her focus on the task, "If I am feeling the way I want, I [feel] more inclined [to take action]." While minor obstacles do not tend to affect Ruby, when she is concurrently met with additional obstacles, it becomes increasingly difficult for her to manage them as if it weakens her immune system, making her susceptible to decreased performance.

Taking Note: An Increasing Awareness

By the end of the first intervention session, Ruby feels that she is already becoming aware of what feeling the way she wants actually is, and she is learning how she can connect with it as often as possible. She does not think she has all the basics, nor the skills to self-intervene at this point, however, she is beginning to see a cycle of how not feeling the way she wants can negatively impact her performance:

[What is important is] establishing a clear goal of what feeling the way I want is, and learning how to connect with that most of the time, but also being able to recognize when I'm not feeling that way and manage that at its onset so that it has minimal impact on my performance as much as possible.

Ruby wants to focus her attention on journaling between this session and the next one. She feels it is helping her to develop her awareness of what accompanies or precedes negative feel.

Intervention Session Two

Feedback is Important

Ruby arrives at a critical realization that she needs feedback, both positive and corrective, in order to continue learning and performing to both her own her standards, and those of her preceptors. She is extremely frustrated when she receives a written evaluation from her preceptor that was supposed to also be debriefed in person. Not only that, she is also discouraged because there has almost been a void of meaningful feedback from all members of her attending clinical staff on her rotation:

My preceptor just checked off, “Meets expectations for everything,” which is not true.

There were some where I knew I exceeded expectations, but others that I know I needed help on, and I felt really disappointed with that. Even though I passed the rotation and that’s what’s important, the primary thing, I just really felt that my assets were not recognized as well as areas that I need to improve.

Her feeling of disappointment, even though she obtained a positive evaluation, supports her definition of performance, as more of an internal perception. She knows that she could have done better and feels cheated.

Aware of How To Reconnect

After the first intervention session, Ruby develops more awareness and starts to apply strategies to reconnect with how she wants to feel:

I was thinking today, “How am I going to get all the stuff done that I wanted to?,” and feeling like I didn’t reach those expectations I had for myself, or what others had for me...it just didn’t feel good. However in that moment I thought, “just imagine the ocean, and that mountain.” ... Imagining that situation and revisiting that feeling I get from that image helped.

Ruby is also conscious of her preparation and how it affects the way she feels, especially physically. Cycling to work or exercising gives her a sense of contentment and energy that she needs to feel the way she wants, not only physically, but emotionally and cognitively as well. It helps to clear her head and take charge and formulate what it is she has to do, “It’s calming and allows me to sense the mental dialogue within myself ... ‘Why are you saying those negative thoughts?’” She is also learning more about how she approaches internal obstacles, “I use my sense of intuition and apply rational thinking in order to solve the problem.”

At this stage of the process, Ruby is paying attention to cognitive, emotional, and physical dimensions of how she feels. While she is not completely sure what that awareness means to her, there is a strong sense that this new knowledge is going to help her as she evolves throughout the intervention process:

It’s been more on my mind, I haven’t come to any great conclusions yet but I have been more aware of the fact that I need to be aware of what I’m feeling ... how I’m feeling, and why ... I’ve also become more aware of the emotional component ... I’ve tried to define my emotions more, so instead of just feeling “boo-hoo,” and allowing the emotion to be experienced, I’ll step back and say “Ok, what is that right now ... am I sad, am I tired?” I’m also trying to think physically, “What am I feeling with these emotions, how does my posture change with this emotion?”

Intervention Session Three

Fatigue is a Factor

An obstacle for Ruby this week is her inability to ride her bicycle to work. Feeling rushed in the mornings before a shift, and being cognitively and physically tired from a string of long shifts is leaving her frustrated and drained:

I'm working really long hours...then have to get up really early and then have to bike into work, so ... I've resorted to driving to work so I can sleep longer ... biking to work makes me feel like I have accomplished something right from the outset of the day ... but for the last two weeks it's been taking too long on these rounds and I have no control over it.

Although Ruby knows that exercising positively impacts how she feels, she chooses not to use this strategy at the moment because her need for rest sleep seems to be more important.

Feeling Connected to Others

With her new preceptor, Ruby finds she is not, once again, getting the feedback she needs and it is impacting her performance. She wants to feel a positive and reciprocal connection with those giving her feedback, including fellow residents, nurses, patients, and her preceptors:

I wasn't getting feedback at all because I didn't have a connection with the preceptor ... when I have a good rapport and there is good communication, things flow and just feel like we're working well together. I feel like I'm holding up my end of the stick, but with this preceptor, I didn't feel that our connection was there, we don't seem to gel, and I find that affects my own performance ... I have no idea what she thinks about my performance or how I can improve because she offers me nothing.

This is an obstacle because she feels at a loss and does not know how to handle the situation. As a result she has noted a marked difference in her attitude toward others:

Coming back to that sensation of the pressure in my chest, that unsettled feeling, I feel tired ... my posture changes, I slouch more ... I just want to be alone, socially. My attitude is different towards others, I am less engaging ... less inclined to listen, and I have less patience for the people around me.

Peaks and Valleys: Fluctuating Awareness and Reflection

Ruby's awareness is moving through peaks and valleys in that at times she is quite aware of how she feels, yet at other times, she is not:

When I was so rushed and busy this past week, I wasn't taking the time to reflect, I was so filled with negative emotions that I could not step back in the moment and say, "Ok, what's happening here?," bringing it back to a center of awareness and use what I've learned in order to advance ... instead I went back to unproductive coping mechanisms instead of bringing in this new stuff.

That said, she knows her reflective abilities and self-awareness have improved since she began the intervention process, "Today, because I had the time to reflect and be aware, I was trying to get in touch with how I was thinking, feeling, and performing, and how to change that."

Intervention Session Four

Adding to the Mountain: Taking Control of Feel

For the most part, Ruby is able to feel the way she wants this week because she has more control, that is, she has identified and can apply strategies that allow her to do this. For example, imagining a place where she experiences her desired feel helps her reconnect and align her thoughts, emotions, and behaviors:

When I'm slipping from the way I want to feel a little bit, I use the imagery a lot and it fluctuates between a few images ... one is Madagascar playing bubbles with the kids, and the other is that mountain that gives me a sense of tranquility. Both were times when I felt a good connection with my environment and it helps me to regroup my thoughts, emotions, and physical being back to where I want them.

Ruby is also back to reconnecting by exercising on a regular basis, “I get exhausted while doing it but I push myself to do it, and it helps me recuperate.” Still, she feels there is room to improve her self-regulatory skills:

I’d like to be able to better control the sensation of frustration, and it’s a physical sensation, I can feel this warm temperature rising in my chest. I can feel frustrated, even for minor reasons sometimes, and reasons outside of my control ... it starts in the stomach and moves into the chest, and is just this warmth, and I feel tense after that. ...Usually time will help me feel better, like when I take a minute or two and remove myself from the situation as soon as I can. This seems to work so long as I’m not bombarded at once by multiple frustrations.

Ruby recognizes that a recurring obstacle is taking on too many tasks at once, “If you chase two rabbits, both will escape.” As it seems, Ruby has been chasing too many. However, she is now aware of when she does this and can act upon it:

Unlike in times past, and in previous sessions, instead of saying at the end that I chased too many rabbits, I notice it about half way through a series of tasks, I’ll say it to myself and be able to narrow them down and prioritize. I did that last night because I kept getting called everywhere, so I was trying to do them all and was scatterbrained ... I stopped and said, “Ok let’s start with the emergency patients; who’s sick, who can wait, who’s critical, etc”.

Physical Sensations Can Be Triggers

Ruby reflects back on what usually accompanies negative thoughts and emotions. She wants to notice the physical sensations she has at their onset and then immediately take a deep breath before becoming too overwhelmed and then begin her cognitive process of evaluating and

formulating appropriate responses. She sees that physical sensations, such as tightness in her chest, lead to physical and mental stress and she wants to learn how to tune into these before negative emotions accompanying these physical sensations become too engrained to manage. Negative emotions become debilitating to her performance if she cannot rationalize her thoughts appropriately.

Intervention Session Five

Small Town Feel

Ruby returns from a four-week rotation in a small community. She shares how it was an enlightening and enjoyable experience as it fit well with her style of care, learning, and communication. There was ample feedback and collaboration, which reinforces her desire to practice in a small community.

I really enjoyed the rotation in a smaller community ... the patient was the focal point of care and everyone worked as a team ... the feedback was fantastic. If someone thinks you did a good job they tell you ... I'd have nurses tell me how much I'd improved in my suturing, or how much they enjoyed having me there and it was really refreshing. ... I felt like I was part of the team ... like I was a contributor. When I'd make a comment or give an opinion about a patient I felt listened to ... they gave me a lot of responsibility.

Working in this smaller environment built confidence in Ruby's abilities and fed the strong connection she desires to have with the medical team of which she is a part. Her ability to establish social connections in her performance environment are becoming an important regulatory strategy to feel the way she wants:

That connection with my co-workers is so important for me to have in order to do a good job ... that's something that I've identified through these sessions as being important for

optimal performance. ... I need that positive social connection, and it feeds me to do well, and motivates me to do more.

Journaling Served its Purpose

Ruby mentions that writing things down in a journal is not benefitting her as much as it used to because she now reflects on her own:

It becomes automatic, like the awareness. I automatically start reflecting. Writing notes to myself works, bullet notes, that will work sometimes, but to sit and write answers to questions in a journal; that does not seem to work like it used to.

That said, she shares how it served her well at the onset of the intervention, especially in establishing a baseline for her desired feel and facilitating her awareness:

I think it was important in the beginning [because] I got a sense of what was happening ... it gave me a mental framework or baseline in my mind to go off of ... I can see that in my head and it becomes my own little gauge.

Intervention Session Six

Making Feel-Based Decisions

Physical fatigue is a critical factor for Ruby. Working long hours is taking its toll on her body and she realizes that for her to be physically, cognitively, and emotionally well, she needs her rest. Too often she jumps out of bed in the morning and rushes to work, which puts her in a negative mood. To feel better, she decides to change her routine:

I've started getting up half an hour early ... so I could take that extra time at home ... I thought to myself, "Should I go in now and be cranky for five hours, or should I take the extra time ... and then have a better morning?" I did the latter, and I don't regret the decision ... in terms of the patient care that came that day, it was worth it ... I didn't have

to reestablish myself, my thoughts, throughout the day, and it carried over to other experiences in my day ... if I'm in a foul mood early in the morning often I'll have already made the decision that I'm going to have a bad day.

Physical Sensations in the Body are Instrumental

Ruby identifies the order in which physiological warning signs appear. The feeling begins in her gut and a few minutes elapse before a feeling of heaviness reaches her chest. Her body acts as an effective instrument to use to control how she feels. It gives her warning signs that something is amiss, telling her mind to react:

There are a few minutes between gut and chest where I could say, "Ok here it is, let's get out." It becomes this guttural response that is telling me that I have to get myself out of the situation, in the moment, immediately ... it's not an anxiety attack though, my heart is not racing, I don't feel stressed, it's just a clouding over of what I'm trying to do.

Reaching Stability

Ruby feels the way she wants on a more consistent basis. Spending time with friends who are not in medicine provides her with a much needed break from the rigors of her medical performance environment and allows her to return to work feeling recharged and energized. She no longer experiences peaks and valleys nearly to the extent that she used to. She feels she has reached a stable level or a plateau on her spectrum of felt experiences.

Post-Intervention Session: Ruby's Journey

The Social Dimension of Feel

Ruby reiterates that the social dimension is a critical component to her overall conceptualization of feel because she has a deep desire and need to connect with people. She

needs to have that collaborative sensation with others in her performance environment or else she does not feel as driven or motivated and does not optimally perform:

If I'm connected with my family or co-workers, preceptors, colleagues, and patients, I'm much more motivated to perform better, to keep going, moving forward. I'm also a lot happier with what I'm doing because I feel that there is a connection ... an established therapeutic relationship ... with a patient there is an openness; they feel free to ask me anything, they feel that they can communicate with me well.

The Physical Dimension of Feel

One of the biggest lessons Ruby takes from the intervention process is a new awareness of the physical dimension of how she feels, and how she is now more in tune with these bodily sensations:

It's been those physical cues, learning to identify what I'm feeling physically ... look at those cues and try and relate those to performance and how it affects it ... it comes down to self-awareness ... tuning myself to what I need to not only perform optimally, but to experience that sensation within myself that I have performed to the best of my potential.

As a by-product of being conscious of these physical feelings within herself, Ruby discovers that they allow her to be mindful of the way her patients feel:

I think, "What are they thinking, feeling, and experiencing in terms of their outward reaction to what I've been telling them?," and "How can I break through that and connect?" ... I have to do a bit of mental role playing to get better in touch with my patients ... put myself into their shoes.

A Strong Stance: Performance is an Internal Process

Ruby does not feel that her definition of performance has changed. What remains critical is how objective feedback, coupled with subjective perceptions of social connectedness, allow her to appraise her overall performance at an optimal level:

I feel there has been an increase in confidence that I can perform well, I know I can achieve it, and I just need to bring in the correct preparation for it ... I think that's been the biggest thing. I always go into the shift with a little bit of anxiety with that thought that "Ok, is this the day that I make a big mistake?" ... I do know however that I will make little mistakes and that's ok ... as long as I recognize them and learn from them ... then I can move on. Ideally I want to get rid of all mistakes, but no one can ever erase the human factor in medicine.

Ruby's Future in Medicine

What has become important for Ruby to remember is that she knows she can perform at her best on a regular basis. There are going to be some obstacles that are out of her control, and sometimes she is going to make mistakes, but she accepts that she is still learning. It is part of the process for her, and a level of humility is needed to ask questions when she "screws up." In the end, the sum of these efforts is what gets returned to her patients. So will her journey through this process help in her future career as a medical professional?:

I am more confident in what I'm doing, which I think leads to the fact that I'll perform better if I'm more confident in my skills. It helps with learning skills ... I'm always going to have to be a doctor who starts off my day through preparation ... I'll always listen to those physical cues, and learn when I need to take a personal break from it all.

A large part of her performance is going to hinge on her level of communication with those in her performance environment, establishing those social connections and the quality of the feedback she receives:

Identifying feedback and feeling that connection with patients was something I didn't realize before this study ... I always probably knew, but it was never something tangible to me. It is part of my preparation now, establishing that connection with colleagues, and the therapeutic relationship with patients ... I think [this intervention] had an impact because if I feel the way that I want, I feel that my career element is in check, and going well ... that's a huge part of my life. But I also think [the way I feel] affects my relationships around me, whether they are my friends, preceptors, colleagues, or patients ... they will see me, if I'm feeling the way I want, as being a happier, better person.

Without a doubt, Ruby will continue to work to serve her patients to the best of her ability, pursue that dream of a small town career, pay attention to how both she and her patients feel, and with any luck, maybe catch a few rabbits along the way.

Emelia: 'Balance'

Why Medicine?

Emelia completed one year of residency in family medicine and subsequently changed into pediatrics so she is starting her first year of residency working with children. She enjoys dealing with acute cases because of the challenge it gives her in the moment and she is able to see immediate results. Emelia feels like medicine is a place where she belongs, "It's being put in that position of helping that I enjoy ... making people feel like they can accomplish things ... making them feel better."

How Emelia Defines Performance

Emelia sees her performance as the way in which she acts or reacts after encountering an event; it is multifaceted and influenced by both internal (e.g., how she feels about her performance, independently of external evaluation) and external (e.g., a preceptor's evaluation) sources of evaluation. In cases where there is a conflict between the two sources, her performance is gauged more by her own internal interpretations. Even if she agrees with a negative appraisal, she is able to accept it and move on, holding a realistic view of where her performance level should be, "Preceptors have subjective opinions, and different standards ... I'm able to forgive myself for not doing something correctly ... I'm still in the learning phase and can't beat myself up." Another facet to her performance stems from her connection with patients. She looks at how patients react to her and the service she delivers, and uses this information as data to help assess her performance. While Emelia appreciates both subjective and objective measures of performance, she likes to assess how much control she has in a situation and evaluate herself based on this. Thus, as it seems, her subjective, internal appraisal of performance tends to carry more weight than more traditional, objective measures.

When she is performing optimally, whether it be subjectively or objectively, she feels like she is on autopilot, "I don't have to think as much about what I'm doing, and I'm good at what I'm doing ... It's like a sense of flow, I just go with it and feel confident." Emelia sees sub-optimal performance, in subjective terms, as emotional betrayal. It is when she allows her negative emotions to take control over what she does, which leads her to be less motivated and focused on her patients. When she experiences positive emotions, she performs more optimally and invests more of herself in the process.

How Emelia Defines Feel

Emelia defines feel primarily as how she experiences her emotions and thoughts, and how they manifest themselves within her body. Positive emotions make her feel like she is light and floating, while negative emotions bring about a heavy feeling and a diminished sense of control. When feeling the way she wants, Emelia becomes somewhat unaware of physical sensations as if they unconsciously flow through her in a natural way that allows conscious thoughts to be focused on the task at hand. When not feeling the way she wants, she becomes more conscious of physical sensations, such as muscle tension, and experiences frustration, anger, tension, and even fear. Fear feels foggy, heavy, like she cannot see and she no longer has control of her body and mind:

The way I feel influences my thoughts, and then my thoughts reciprocally influence the way I feel across the other dimensions ... So my thoughts are an extension of my feelings ... the two are always interlinked. If I can change my thoughts then I feel my body become lighter, I become happier ... these positive thoughts influence and lead my emotions.

Balance: How She Wants to Feel

While performing her duties as resident, Emelia wants to feel a holistic state that she describes as her 'balance,' in which she feels knowledgeable, confident, and relaxed, and she experiences a state of flow:

I want to feel that I know what I'm doing, so I can go in there and be able to do it and not have the anxiety of stress ... I just want my knowledge to flow out of me without second guessing ... I would be very relaxed, not tense, feel like I was floating from duty to duty ... concentrating on what I was doing and getting positive information from my task.

Emelia also has a strong physical connection to her body in the form of muscle tension that she can tangibly feel in her dexterity and coordination. When she visualizes physically feeling the way she wants in her mind, it looks like a bright light with no dark colors, and she feels like her body does not have any weight to it, particularly in her arms and legs.

Intervention Session One

Medicine: Love it or Hate it?

While Emelia is in training for a career for which she is unwaveringly passionate, she often feels overwhelmed with the commitment and rigors that come with her role as medical resident. She is routinely so exhausted; feels devalued, and often can only think about getting through the day:

Right now, I feel my values are slipping, and it's bad ... I'm not going to let medicine run my life. I think as a resident you have to, but I don't think you have to do that as a doctor during your career ... It's important for me to be able to have a family and be able to focus on that for a few years and then refocus on medicine later. But I think it's important to have the right amount of time; I think I can be a better doctor if I can be balanced in my own life because I'll be better able to appreciate medicine instead of resenting it.

This is starting to conflict with her intrinsic ideals about why she wants to be in medicine:

Medicine is an amazing profession, but I find I'm running away from it sometimes...it feels like I have so much to get through before I can see again why I got into medicine...I think now that I just don't care as much, I know it sounds bad, but when I feel overwhelmed and stressed, I just know that the patient care I provide is not at an acceptable standard for myself.

I Need to Have Control!

Emelia is realizing that being able to routinely achieve her sense of balance is important both over the course of her residency training, and later in her career. It is about being in as much control over her life as she can; something that is often difficult to do because of the demands placed upon her:

If I'm at work [for example] I don't eat as well or frequently, but when I'm balanced I'm feeling and being healthier physically ... I just don't feel like I have control over the time ... it's important to me that I am able to feel knowledgeable in my work ... and to be able to learn and build on that knowledge. Also, I really want to feel like I'm making a difference ... that said, since becoming a resident I'm finding that having more time with each patient and that control I have over how busy I am, is important ... however I don't feel like I have as much control right now [as a resident].

As such, Emelia's performance environment does not always involve a formal performance evaluation. In this case the environment in which she is required to perform her medical duties (i.e., looking after patients, and paperwork) is structured in a way that prevents her from managing her time in a way that allows her to feel the way she wants; balanced. Sometimes Emelia has such little control that she misses lectures in order to have some element of it over her life. That said, if she can learn to control her environment, or at least how she reacts to it, she can focus more on the positive elements of her experiences. In order to gain control, she must become more aware of antecedents to her facilitative and debilitative states:

Sometimes I'll be on autopilot and then all of a sudden, I'll feel overwhelmed by so many things, so if right then I can reflect more on how it's happening and evolving, I can learn to control my feelings and/or experiences better.

Reconnecting with her Balance

Emelia thinks that revisiting the way she wants to feel on a regular basis could benefit her across all areas of her performance as a resident, and in everyday life as well. In the end, this could allow her to maintain that valuable relationship between herself and her patients:

I feel it would give me more energy, focus, less worry, a more positive attitude towards work, better relationships with my family, friends, boyfriend, and less overall stress. If I can feel that, I'll have more time to myself to relax and to reflect on what's going right, and how can I do it better.

In subsequent sessions, Emelia hopes to learn more about how her thoughts and emotions affect one another, and how she can have more control over her performance, "I think it's going to help me in developing the link between my thoughts and emotions, like if I can control my emotions, I can control my thoughts."

Intervention Session Two

Saying No to the Inhumane: Taking Control

After working a 29 hour shift, Emelia is asked to stay on for another shift and instead of letting negative thoughts overcome her, she reflects for a moment and realizes she has some control; she refuses to work:

I get frustrated that I have to work long hours, and in such an inhumane environment at times, it makes me not want to be at work. I'm less motivated to interact with patients. I'm less motivated to read and learn ... It's extremely dangerous, we have people's lives in our hands ... Other residents go through it as well, and many would have stayed to work ... but I have to protect myself ... If I did, I would get angry and feel myself get frustrated with patients and it's just not fair to them or me.

Connecting with Children

In some situations, Emelia is beginning to feel the way she wants at work and discovers that while interacting with patients, she can focus better, “I felt the balance I wanted during my interactions with the kids ... I felt supportive ... I knew that I was helping them by talking, and the way they responded was very good.”

She also has positive interactions with the children’s parents, which give her a high sense of accomplishment and satisfaction. She feels motivated to make the extra effort and both she and the parents are rewarded as a result, “I didn’t have a million other things to do at the time so I could afford to give them the attention that they needed, so I wasn’t frustrated because of feeling rushed, and I was calm ... I felt really good.” Therefore a key lesson for her is that it is important to take the time to connect with patients and their family, regardless of time constraints as it helps her achieve her desired feeling of balance and she, “loves that feeling from helping others.”

Intervention Session Three

Eureka!: Pediatrics Feels Right

Emelia realizes that she has to remember three things; first, she enjoys working. Secondly, she must maintain a positive mindset because that is when she feels her balance. Thirdly, she needs to be mindful of how she is feeling and when, and why she feels that way. These reminders are helping Emelia feel the way she wants and perform at an optimal level:

I feel like I wake up in the morning and I don’t feel upset going into work, I don’t dread it like I sometimes do. Feeling good as well means that I’m a lot more happy with being in the profession, and I think it’s a bit easier to push through the hard work if I can feel that way...get by the parts I don’t enjoy and keep in mind that there is a greater purpose

to what I'm doing this all for ... it just clicked for me that I'm in the right field, I love pediatrics.

Internally Appraising Performance

Emelia feels satisfied with one of her rotations even though she receives a less than optimal evaluation from one of her preceptors:

I was on this rotation with this preceptor for a few weeks and I really enjoyed it ... I tried so hard, and put my heart into it, worked overtime, and showed I loved what I was doing, and got along with the patients... So then when I get my review he just said, "Well, you're pretty much on average with everyone else." I just felt that I had better than average, gone above and beyond.

She does not dwell on this review, however, because she reminds herself that her performance is more than her evaluation score, and includes her own appraisals based on how she feels she performed. This highlights a potential conflict between external and internal appraisals, and in this case, as previously mentioned, her personal perceptions prevailed. Furthermore, this is in line with Emelia's need to feel a sense of control over herself, her actions, and her performance.

A Transition Toward Self-Regulation

Emelia begins to reinforce that medicine is not just about getting the right diagnosis or prescribing the right medication; it is about eliciting that positive response from her patients. She is trying to figure out how to better connect with them and be as happy as she can instead of feeling negative. She feels she is entering a transitional stage in which she can influence much of how she feels and what she thinks in any situation she encounters:

I remember that when we talked before, that positive connection was never something I could really express ... but now ... I definitely have become more aware of when my thoughts are positive and when they are negative, and I'm consciously trying to train them better ... keep the negatives down right when they happen ... and not getting mad at myself if I do have negative thoughts ... not trying to overanalyze them. I don't sit there and mull over why I'm feeling bad, I just act and try and turn it around.

Intervention Session Four

The Exam: Responding to an Obstacle

Emelia has an oral exam in which she moves from station to station to answer questions based on a scenario and receives immediate feedback from an examiner. There is one station where she receives a mix of positive and negative feedback. She chooses to focus on the positive and is able to continue performing well on the rest of the exam:

I focused on the fact that she wasn't attacking me personally, that was just her way ... I didn't dismiss what she said, but I dismissed the delivery and how it made me feel negatively ... I found it fairly easy to do and it was because I was able to separate how it made me feel from the actual information.

Emelia is able to do this as a result of her acute awareness, "I was thinking, 'Ok why am I feeling this way and how can I feel the way I want with her?'" She shares that feel played a major role in her performance during the oral exam, "Instead of letting it get me in a bad mood, I just shrugged it off ... and then attacked that next station in that automatic, flowing, mode...it made it a lot easier."

Awareness and Control are Increasing

Emelia notes that her improved ability to be aware of how she feels is partly due to the extra amount of time she has to herself from a less hectic rotation schedule:

I've also become more aware of how I can change my thoughts to affect the way I feel ... for example, when I start to notice that I'm feeling anxious, I become more aware of the fact that consciously changing my thoughts can alter my anxiety level ... I'm also more conscious that this process has become more automatic ... I'm not perfect at it, I still get frustrated and react to things, but it's getting better.

Intervention Session Five

The Process Becomes Automatic

This intervention session proves to be important for Emelia because she realizes that she is becoming able to recognize in the moment, or anticipate beforehand, different obstacles and automatically implement regulatory mechanisms to overcome them and feel the way she wants again. This is a remarkable improvement and highlights how applying her preparation and reconnecting strategies, which are so important to her performing optimally, is becoming a natural process as a result of practice:

I was aware that I wasn't feeling well, and aware that it was an obstacle, so I used my own cognitive approach to handle it better ... I admit I wasn't totally happy, but I could definitely handle it better ... I just accepted it and moved on to seeing what I could do about it ... I think that ability has definitely improved ... I'm just in general becoming more aware ... don't find myself consciously aware of trying to be aware ... it has become very automatic.

Intervention Session Six

I'm Burned Out

Emelia struggles at work more so than she has in a long time, “I’ve been physically sick and worn out ... I just feel burned out, I can’t catch up on sleep, and thus I find it hard to work.” This is an obstacle that affects her performance and prevents her from being able to establish or maintain a quality social connection with her patients, “I’ve found that I’ve not done nearly as thorough a job as I could have in my examinations of my patients ... I didn’t really spend a lot of time with the patients as I normally would.”

While she is aware that establishing this connection is what helps her feel the way she wants, she is so burned out that she lacks the motivation to perform up to her standards, “I was motivated only to do the minimum required and nothing more.” Emelia finds herself modifying her preparation process to devote more time to resting, which throws her into a vicious cycle in which she is not able to prepare properly, which in turn affects her performance and leads her to feel more frustrated and burned out; she is not able to get ahead.

One Step Backward, Two Steps Forward

Up to this point, Emelia feels that she had made so much progress, but now it feels like she is taking a few steps back. However, this challenge leads her to leap forward. She recognizes when she is in a negative state and addresses it immediately, “I was really impressed I was able to do that because I have not done that before here at work and during this process ... it has been a change for me, and definitely affected my patient care for the better the rest of the night.” As a result, she is more motivated to work to her highest potential, “I felt the connection and wanted to be with them more, I genuinely wanted to understand what was happening to them, and help.” Furthermore, while Emelia continues to be frustrated with her working hours, she decides to join a hospital committee that tackles issues such as residency scheduling. This symbolizes another

important step for Emelia because she is finding ways to exert more control; she realizes, “No matter what the situation, I can do something!”

Post-Intervention Interview: Emelia’s Journey

Performance is Stable

Emelia’s performance, since the intervention sessions ended, is even keeled with no major ups or downs. She has even tangibly seen an improvement in her ability to maintain control. She is proud to report the positive changes emerging from her work on the student committee, “It was amazing that I put in that much work and was so passionate about it ... because of that passion, there is going to be a marked benefit for about 30 or 40 people, and that makes me feel good.”

I Can Regulate Feel

Over the course of the study, Emelia’s ability to regulate how she feels increased, particularly due to her improved cognitive recognition of when she does not feel the way she wants:

I think it might be from these intervention sessions, or maybe I’m just becoming able to manage, handle my work and school better, and maybe that’s because of the intervention sessions as well. It comes back to my thoughts, I can recognize when I’m feeling certain things more. So I can recognize when I’m feeling tired or stressed out, and I’m aware of that. I can feel that anxiety in my body, physically being drained and not being able to worry.

Preparation is Key

Preparation was a critical element of the intervention process for Emelia. It helps her to manage how she feels and allows her to focus on what is important to perform optimally, “I feel

I'm more motivated and confident to face any challenge and go into it feeling the way I want ... because I'm feeling that motivation, I'm on a high to do my best, and will perform better."

Organizing her thoughts ahead of time makes her feel prepared to address any given task, "I prepare what I say before I go in and see a patient, which I think helps me to organize my own thoughts and delivery of my knowledge ... making my thoughts more fluid, and it makes me more confident in what I'm doing."

Anticipating Obstacles

Being prepared for Emelia often involves being able to predict obstacles she typically encounters. Thus, learning to pay attention to obstacles is another component of the intervention process that has helped her to achieve her current level of self-awareness and optimal performance:

I've been cognitively preparing myself over this past month because of the fact that I know I'm not going to get much sleep, so I'll deal with that by sleeping on weekends, or during times that I wouldn't normally sleep. I also reason that I am not going to get everything done that I want to, and just accept that, and be ok with it ... I have put things in perspective and organized my life, don't feel like I have a million things to do, and have control in my life.

Reflecting Through Journaling

Another important aspect leading to Emelia's increased self-regulation and learning is journaling. Over the course of the intervention, Emelia came up with her own method of journaling based on what works for her:

[Journaling] forces me to sit down and think about how I feel and what affects me, put things into perspective, understand what I'm going through, and also to relax a little

because I often get caught up when I'm feeling overwhelmed. It allows me to step back, reflect, and formulate how I'm going to tackle the issues at hand ... there is less clutter in my mind, leaving room for motivation to learn.

Interestingly, Emelia found herself journaling more toward the end of the study, "I didn't journal as much at the start, but after a while I realized how beneficial writing my experiences and reflections in a journal could be ... It's definitely something that I'm going to continue doing."

Becoming a More Positive Person

Emelia genuinely believes that as a result of her journey, she has become a more positive person than she used to be:

Coming to the intervention sessions over time really helped me to think about what was going on in my performance environment and how I could change the way I feel ... I realized that I am more in control of my thoughts and feelings than I did before, and not only do I realize that but having you [interviewer/researcher] here validating that in me and helping me recognize that, I believe it's made me more motivated to change how I feel at times when I'm not feeling the way I want ... Instead of going through the day with tunnel vision and just trying to make it throughout the day, I've learned to reflect more on *why* I'm feeling a certain way. If I am stressed I've learned how I can control that within myself and bring it down to where I want it. I've also learned how to recognize and acknowledge positives from my experiences, such as when I'm feeling the way I want, or do well ... I don't have to feel negative, there is always something I can do to change my thoughts to be positive ... and even though I acknowledge that medicine is always going to be a tough life, it can still be positive and enjoyable.

Emelia's Future in Medicine

What Emelia learned about herself over the course of this process will help guide her in her future career in pediatrics:

I realize that for one, no matter how hard things may seem, I can always find a solution and a way out, and two, that will make me a better doctor ... by having control over myself, even when I'm overwhelmed and busy, I'm less likely to get burned out. This means I'll be more compassionate with my patients, and devote more time to them ... I want to be in this profession because I love taking care of people, and I love giving them the positive side of myself ... if I can't take care of myself first than I'm not going to be able to take care of [my patients].

Marissa: 'Aura and Wings'

Why Medicine?

Marissa decided to go to medical school because, in her mind, there really was no other option, she is fascinated by the human body. Another reason was that some people close to her were sick, namely her mother:

I always did research for her trying to figure out this, and explaining that to her ... she would give me her test results and ask me what they would mean and I never really understood and felt so lost because I couldn't explain things well to her ... I was scared and felt in the dark, so I didn't want that feeling anymore, I wanted to understand.

Now a third year medical student, medicine to her is not a career but a lifestyle. It feels like home. Having variety in her career is critically important because she likes constant change.

How Marissa Defines Performance

Performance in medical school is seen by Marissa as being the actions she displays or exerts while engaged in her medical training environment. In terms of what she needs to achieve personal optimal performance and feel the way she wants, two aspects are important and shared; her ability to meet expectations required of her as a medical student, such as acceptable performance reviews and exam marks; secondly, her ability to achieve a state of balance in her life between work, school, friends, personal time, and family.

Marissa's performance in terms of medical school expectations (e.g., outcome tasks required in her medical training) also has two facets; an internal one that stems from her own appraisal of her performance in her medical environment, and an external one rooted in how others in her performance environment, such as her preceptors, perceive and/or evaluate her. Despite identifying both facets as being relevant to her, Marissa feels that the opinions of others regarding her medical training performance outcomes outweigh her own internal perceptions when it comes down to measuring it:

I've always been the type of person who needed to have acceptance from others, I really feed off of that ... So if performance to myself was not good but others thought it was great, I'm inclined to change and think, "Ok, maybe it was great ... maybe it wasn't so bad" ... I base myself a lot on what other people think of me and that's bad I know, but it's something that I have to work on.

How Marissa Defines Feel

Feel for Marissa is both multidimensional and situational and impacts everything she does. She describes and represents the way she feels at any given moment as 'her feel.' There are social, cognitive, emotional, and physical dimensions to this experience and she is particularly affected by the social one:

Feel plays a huge role in my life; all of my interactions with others depend on my feel. Like if I'm feeling down or off or not like myself, my interactions with everyone else, like my preceptor, friends, and even patients, will suffer. If I'm not feeling the way I want, then I won't be as healthy and I'll be more distracted in my ability to be there for someone else.

The Aura

Melissa was in touch with how she wanted to feel at the onset of the study and summarized it as her 'aura'; an optimal experience for which she strives:

If I'm surrounded with my friends, I'm a free spirit and I'm very outgoing ... and that feels good. If I'm in a comfortable environment like that, I'll feel happy ... It's like a surge of energy actually, it's like I feel vitalized ... It almost feels like I have an aura around me, like I have super powers, nothing can phase me, nothing can go through this aura of happiness or energy that I have around me ... it depends on the situation and feeds a lot off of everyone else around me. If they are all happy and everything is going well with everyone and my interactions are going well with them, then I am going to feel a lot better ... feel like I want ... if I'm feeling anxious or 'off,' I'm going to sit down and try to figure out what is going wrong because I love having that energy feeling, that aura, and want to try and get it back ... I'm always trying to figure out what's causing me to feel wrong so I can deal with it, cognitively block it out, or do something about it in order to return to that aura.

When she feels confident, she experiences her aura, her optimal level of feel:

I feel my aura when I'm confident, when I'm confident I feel very happy and invincible ... when I take on a new task I feel that I can do it, I feel prepared ... it's a feeling of

lightness on my feet, positive thinking ... If someone bumps into me and I'm feeling happy, I just shrug it off. I'm untouchable ... everything becomes clearer, and helps me not think about the negatives ... if I do have a negative thought or situation that pops into my head, I can be positive about it and figure out what I want more easily if I am feeling the way I want ... more than if I were just sitting there dwelling on the negatives.

Intervention Session One

Life is School

It is difficult for Marissa to separate her personal life from school because at this stage of her training, her life *is* school, "I don't have that separation. So if I've had a bad day at the hospital, say with patients, then when I go home and have to go see friends for a while, I'm not going to feel that great."

Feeling my Aura

Marissa begins this intervention session with a feeling of happiness precipitating from the experiences she has had from her first few weeks of third year training, "I'm excited, I feel like I'm confirming the reasons why I wanted to be a doctor ... we're with patients, and jumping right in ... it's exciting to actually be doing it instead of sitting in class." She believes that it is worth the effort to take steps to connect with her aura and at the very least, develop the ability to maximize the experience as often as she can. One way in which Marissa connects and reconnects with her aura is through exercise:

I like to work out when I feel stressed or haven't had a lot of time to myself ... lately I've been working out more again and maybe that's why I feel so good. It just makes me feel that way physically ... makes me feel healthy, and gives me a sense of accomplishment.

Music is a big part of her life, whether it is playing it herself or listening to her favorites, “For me I’ll just sit there and blast the music and drown myself in it ... It’s calming and stimulates my thoughts ... it’s kind of an escape. Listening to music loudly always gives me a little more of that aura.”

Dealing with Inevitable Obstacles

Marissa sees several benefits to developing the ability to respond to obstacles and reconnect to how she wants to feel, including becoming a better doctor:

In life there are all types of obstacles ... no perfect moment. If I can’t figure out a way to deal with them, put them aside and still perform with my aura then I’m going to be ineffective as a doctor, and in my life with others as well ... therefore, feel is a big determinant of my performance.

Social Connectedness

Social connectedness influences Marissa to a great extent. Her preceptors, colleagues, friends, and family all affect her ability to experience her aura:

If something is wrong with a relationship and I did something wrong, then I’ll feel it internally, uncomfortable, sad and confused. I don’t know how I should feel, or I can’t figure it out ... I can’t get that confused feeling out, or get back to that confident, happy aura.

Being able to socially connect with someone is not always possible. Therefore, staying in a positive frame of mind becomes critical to how she reacts to most obstacles:

Long term wise, I can work to establish social connections with people, but more in the moment, I can’t just stop what I’m doing and go talk to a friend, or use other strategies

like going for a run, or blast some music when I'm with a patient. So I try to think positive thoughts ... organize them as much as I can in the moment.

Intervention Session Two

Marissa notes that she relishes her freedom and time alone with patients as this gives her a great deal of confidence in her abilities. Her preceptor trusts her and makes her feel like she performs well, which validates her perceptions of performance. She notices a change, however, that her confidence is coming more from within rather than from external validation.

Reflection is Helping

Thus far in the study, Marissa feels that through reflection, she is becoming more aware how she experiences different dimensions of feel and what helps her to feel the way she wants:

Reflecting forces me to think about how I'm feeling, how I'm thinking. I knew this about me before I came in but I've never verbalized it ... I'm organizing my thoughts about myself now so this will be great for my aura ... I'm a lot more aware of how I feel, specifically what makes me feel how I want, like playing piano and working out. I work-out four or five times a week now, regularly, and I feel a lot better ... I feel physically better, have more energy, feel healthier, and more confident.

Choosing Family Medicine

Marissa reveals that family medicine is the discipline for her because it gives her a level of confidence and a feeling of comfort and certainty. It is something for which she is passionate, especially because of the variety and its ever-changing landscape. Doing a sub-specialty in anesthesia is something else she has been considering because it would give her the flexibility to change her work scenery more often throughout her career.

Intervention Session Three

When Love is an Obstacle

At this stage, Marissa confides that she has a personal dilemma outside of work. She is dating two different people at the same time but feels a stronger connection with one of them. So to resolve this situation, Marissa tries to make her decision by taking into account all dimensions of how she feels, and not just emotions like she normally does. This creates a more holistic approach to her decision making:

I want to take all the elements ... say socially this is the decision that I make, emotionally this is the decision I make, rationally [cognitively] this is the decision I make, and then take all of those together and come to a solution that works with all dimensions ... it's at peace because the different states agree and are on the same wavelength.

Nevertheless, it has become harder and harder for Marissa to focus on her work and feel the way she wants because of this inevitable choice she needs to make regarding her personal life.

Adding to Her Aura

Marissa expands her definition of feel. When she feels the way she wants, she experiences what she calls 'wings':

This week I was thinking of those energy drink commercials where it gives you wings ... For instance, after the 12 hour day in psychiatry, I was just beat but then [my psychiatry preceptor] gave me this positive feedback and it just gave me these wings ... it comes in with that whole social aspect of how I feel. It wasn't just the feedback from him that made me feel that way, I could just tell he had been impressed by my performance from day one and I was having a great week, so I think it all builds up to that.

Evolving Definition of Performance

Marissa's perceptions of performance are also shifting slightly, specifically with regard to the weight she assigns to external versus internal appraisals of her medical training performance. While she still bases her performance on what others think or say, she is now using other sources of information to evaluate it. She confides that even if her preceptor would have given her a bad report, she still would have felt good about it because she felt that her performance was great:

I think that internal evaluation does come into play, and it has changed since I've began these sessions ... I have formulated my own set as well based on my performance ... and it's all much more based on my own rather than theirs now.

Intervention Session Four

Do I Really Want This?: Rethinking Family Medicine

This week Marissa travels out of town to do a new rotation in family medicine. She now has mixed feelings about this specialty, despite her early passion for it. Not knowing exactly why, she is beginning to question her desire to be a family doctor:

Ever since I've been out here, it seems to be changing every day, and I've been really thinking hard about what it is that I want to do. I think I like the rural setting, but I'm finding it frustrating with the lack of resources we have here as compared to the hospital in the city ... so I'm starting to think of maybe not being in such a small town ... I can't perform efficiently, or not as best as I can.

A Need to Journal More

One thing she is going to work on over the next while is her journaling, something she has not been doing to the same degree as before:

I have not been very aware this week and I think it's also because of the journaling, that's been a big factor ... I just have not taken the time to stop and say, "Ok how am I feeling

now, and how can I feel better or get my aura or my wings?" ... I need to get that back this week and get some routine going, it's more of something I have to do myself ... consciously trying to become aware is important. When I'm not paying attention to, and I'm not aware of how I feel, how am I going to be able change my routine for the better?

A Better Love Life

Marissa has now resolved her love conflict after paying attention to how each of the two individuals she was dating made her feel:

I've been more aware of how I feel with one in comparison to the other, and seeing who makes me feel better, and that ended up being the major factor. When I'm with one I'm not feeling my aura, not feeling my wings, but when I'm with the other guy, I feel uplifted, and I think that's how you should feel with somebody.

Intervention Session Five

A New Direction

The past two weeks have been more reflective than anything for Marissa as she is trying to decide her future in medicine, specifically if family medicine is a good fit for her:

A lot of things have been going through my mind ... the more I'm working in family medicine, I've been finding that I'm just not motivated to go into the clinic ... it's all redundant and the patients are always coming in with the same complaints and it's too routine ... I'm not finding it very stimulating.

Marissa wants to work in an environment in which she feels motivated and stimulated:

It's good that I realize and I'm aware of how I feel in these environments ... I could have gone through the whole rotation and not been aware of how I feel and I would not have come to the realization.

The way Marissa feels has not been optimal, her performance has not been either, “I’m finding that since I’m not motivated, I’m not pushing myself to rise above the expectations ... I’m ok with being mediocre ... if I was feeling optimally, being stimulated and motivated, and passionate, my performance would be a lot better.” This is also particularly difficult for her because these feelings seem to contradict her earlier sentiments about family medicine.

Exciting, New Frontiers

Marissa is now thinking about specializing so that she can be an expert in the field she chooses. She finds the emergency environment much more motivating. Experiencing life as a family doctor was critical in this shift in direction:

I have actually found that I like the short contact with the patients, and being the specialist where no one else can do my job ... being an expert ... I enjoy that it’s really technical ... last week I really liked what I was doing in the OR, I got to do my first intubation by myself ... it’s become fun again!

As such, feel is becoming a critical factor in her choice of medical specialty, “It’s becoming more and more important that I choose that specialty based on how stimulating it is, and how it makes me feel while I’m there. I need to feel challenged and passionate about what I’m doing.”

Intervention Session Six

The Final Decision

Before making a final decision about changing specialty, Marissa wants to give it another chance during the last week of her rotation because it is in the city and no longer in a small town setting:

I wasn't sure if it was the rural setting so I wanted to give it another chance, but I realize now that it's just the rotation ... the specialty is not for me. I was getting the same thoughts and feelings as I did in the rural setting, and I just didn't feel it with the patients. It was boring ... all I can do is write a prescription, it's not as hands-on ... I felt like a referral service.

What Do They Think?... What Do I Think!

A shift in her perception of performance arises when Marissa works with a preceptor who does not listen or pay as much attention to her when she is working with her patients:

I would take the history but could tell he never listened to half of what I said, and then he would go in and treat the patient ... that doctor didn't even really have a right to give me feedback because he never even really saw what I did! He said I did a really good job, but I know he didn't pay attention, so what could he say?

In earlier sessions, her perception of performance was strongly rooted in other people's feedback. Thus although not a complete shift, she is not giving as much merit to the words of others now, even those in positions of authority.

Unconscious Awareness

Marissa's awareness is also improving since she spent time in emergency, although it has transformed from a conscious ability to an unconscious process:

I find that because my awareness has gotten a lot better as a result of this study, I've become more conscious of how I feel, what my baseline is, and it's become automatic ... it's to the point where I don't have to try to be aware anymore, I just am ... I've gotten to that point that it's become natural for me ... it's also being back here in my own place, I feel an ease with my environment, everything is familiar, and my routine is back ... I'm

more independent ... I feel more in control of my situations, of my environment, of my preparation.

Post Intervention Session: Marissa's Journey

New Passions

A lesson Marissa derived from this intervention is that working in the emergency room makes her feel the way she wants, and family medicine is not for her:

When I'm in emergency, I feel very upbeat, and I like it when things move fast ... I hate it when it's boring. In emergency, there are lots of balls in the air that you need to juggle and that keeps me alert ... [she also concludes] I don't know if I could only do anesthesia for the rest of my life, but maybe a combination of that and emergency.

They All Play a Role: The Multiple Dimensions of Feel

Marissa emphasizes the role feel plays in her life and performance. All of her dimensions are relevant; physical, emotional, cognitive, and social:

Each dimension come into my feel, and I think it's very important in how I experience and manage all situations ... feel is definitely a big factor, and determines how well I respond and how much a certain situation affects me.

Although the social dimension is important, Marissa now relies more on an internal mechanism to appraise and regulate how she feels:

I don't know if the influence of others has lessened, or throughout the months it's changed, but I feel now that the way I feel is coming from me ... more and more from myself and less from everyone else to determine how I feel. At this point, positives from other people around me just add to whatever state I've already created for myself. So if a preceptor gives me a great evaluation, it will heighten my aura that I already have, and if

they give me a negative one, it won't drop my aura or feel as much as it did before ... It's a lot less based on numbers, or feedback, and is now a mix between how I feel about my performance, my expectations, and what both my preceptors and I see as my potential.

Once Marissa is out of medical school, she is not going to have that constant feedback from preceptors anymore so she feels that this change in how she evaluates her performance will serve her well because evaluations will be more of an internal and personal process.

Regulating Through Preparatory and Revisiting Strategies

Marissa feels that a significant benefit of participating in the intervention lies in the development of strategies or tools that allow her to connect to her aura:

I believe it's the different tools or strategies to get back to my feel and what makes me experience feel the way I do ... it's using those to my advantage, like a toolbox in that if one thing does not work to connect with my feel, then I have other tools in there I can try, for example, music, working out, the piano, and positive thinking ... I really appreciated the part where I could build my tools and was able to pinpoint within myself what makes me feel the way I feel ... now I can just clear my mind and change my feel, and get back on that horse, or climb that mountain.

Marissa is better able to control her aura because she has become more aware of what it means to her, what detracts from it, and what she needs to do to get it back:

I can prepare myself better so the everyday obstacles do not extinguish that aura, and if I know how to get back to it, I can anticipate obstacles and how I'm going to handle them.

Then I have more control over how I feel, which affects [how I perform].

Journaling: Then and Now

A process that has become more automatic is journaling. In the early stages, it was more important to Marissa because she was not as aware of her experiences. She now finds it unnecessary to journal as much, as she has become naturally aware of her daily experiences and how they affect her, “Now I take the time on my own ... stop myself and reflect on how I feel, and if I don’t feel the way I want, I automatically try and see what’s going on and how to change it.”

It Was and Will Always be a Process: Transferring Skills for the Future

Marissa sees herself now and reflects back to when she first began the intervention sessions:

It was a development for me, a process. I can’t say that in our first session I identified everything and it all changed right away, that doesn’t happen. I can’t say that I had those tools and they worked great right away! It takes time. They are all transferable skills that I’ve learned ... not just things that I will use in medical school, that’s not where it ends...they are useful in my daily life. Later on, I’m only going to have more obstacles. Things are not going to get easier, kids are going to become a part of my life, work, co-workers, superiors, friends, and it’s going to be important that I can connect with the way I feel and all of those different dimensions ... and let’s not forget the patients. ... It’s always been, and will be, an advantage for me if I can take that control and regulate the way I feel...the more regular I am with my overall mood, the better I’ll feel ... in turn that’ll make me the best doctor I can be.

Sophie: ‘Thawing the Ice Queen’

Why Medicine?

Ever since Sophie was young medicine was what she wanted to do, and has always fascinated her. Since she also liked the idea working with people, becoming a doctor simply made sense for her. In grade nine Sophie had to name, and write about, three different jobs she wanted to pursue when she grew up. Confused, she went to the teacher and said “I only want to be a doctor.” The teacher told her to try her best to name three different jobs. Fittingly, Sophie just wrote about three different types of doctors! Although she is still undecided, Sophie is considering concentrating in pediatrics, obstetrics, family medicine, or internal medicine. Nevertheless, she feels it is important to continue to learn and improve over the course of her career because she believes being a doctor will challenge her, in a positive sense, for the rest of her life.

How Sophie Defines Performance

Performance is multifaceted for Sophie. There are three ways to examine it; how she feels she performs in terms of her own subjective expectations, how others such as her preceptors appraise it, and what objective measures such as her grades reveal. The latter two have become the more dominant facets of her performance thus she largely bases it on success that she can quantify through objective measures from exams or evaluations, or day-to-day feedback and performance reviews from the preceptors she follows on her rotations. As she is now entering her clerkship where clinical performance plays a greater role in her daily experiences, she prefers receiving feedback rather than a mark, and discussing comments and recommendations.

How Sophie Defines Feel

A Physical Sensation

Overall, feel represents a physical sensation for Sophie. She is very in tune with her body and what it tells her. That said, at the onset of the study, Sophie finds it difficult to articulate

what feel is to her beyond a physical phenomenon, and she is not aware of the connection that her physical sensations may have with other dimensions. Nonetheless, she concedes that the way she feels plays a critical role in her overall mood and how she acts around others.

Sophie has a difficult time talking about how she feels, something reflected in her nickname “the ice queen.” It is rooted in the fact that she is simply not as aware of feelings and does not like talking about them. When she talked about her feelings at different points in her life, it always seemed to end up badly and as a result she has become accustomed to ignoring them.

How Sophie Wants to Feel

In medical school, Sophie wants to feel confident, smart, relaxed, and devoid of negative anxiety. Identifying these states seemed to come naturally for Sophie. Her confidence is deeply rooted in her social experiences with others, especially those in positions of authority such as preceptors. It is also knowledge based in that she wants to be sure of herself when applying information. For instance when a patient describes symptoms to her, she wants to automatically know what to say, in a way that her knowledge flows from her mind.

Her feeling of confidence is also coupled with calmness and low anxiety. If she is feeling anxious, there is little chance that she is going to feel confident. Much like anxiety, she kinesthetically feels confidence whereby she is more physically energized, and feels cognitively engaged and motivated, which in turn makes her want to work harder:

When my confidence is not there, my energy dissipates and the motivation to work harder and do more leaves me [body and mind]. Feeling confident for me feels like everything is flowing, like I am on autopilot, with few thoughts aside from those on what

I am doing [conducting a procedure or speaking with a patient] ... basically my mind is not pre-occupied by negative thoughts and my body is free of bad physical sensations.

Intervention Session One

In the first intervention session, Sophie works to develop her definition of feel, as it is proving to be a difficult topic about which to speak. She confesses that she is finding the session particularly challenging because the content is unfamiliar to her, and she is unaccustomed to intensive self-exploration, especially centered on thoughts and emotions. Despite her discomfort, there is still a sense of willingness to learn and continue with the process.

Anxiety is a Part of Me

Sophie has always experienced negative anxiety. While it is not always present, it is often hiding just under the surface. Small, insignificant things can open the flood gates and allow anxiety to spill into her consciousness in a way that leads her to feel as if she is walking an endless tightrope where a balancing act prevents her from falling off of it, "little things will set me off, someone will cut me off while driving for example. I don't get mad in that moment but it will build on my anxiety, then I'll miss some green lights, and then it will set it all off." While Sophie recognizes that she is never going to rid herself completely of negative anxiety, she wants to be able to manage it so she is not paralyzed by her experiences. She does not want her anxiety to reach that conscious physiological level, "I know I'm in control in that I can fix it, I just don't know how...but at least I know something can be done."

Thus, an important step from this point forward in the intervention process is to discover potential triggers in her environment that lead to negative anxiety, a way she does not want to feel. Interestingly, when Sophie becomes cognizant of the physical signs of her negative anxiety, it begins to dominate her focus and conscious thoughts. In essence, thinking about negative

anxiety when she experiences it makes it worse. It is apparent that anxiety is emerging as a central theme for Sophie. Thus, a clear objective for her is to learn to manage it by appeasing it when it happens or trying to prevent it from arising in the first place.

What They Say Matters

Sophie is a very social person. She feels that her performance is greatly affected by how people around her make her feel, “If I’m comfortable with the patient or doctor, I’ll feel that my performance was better, but if I’m with a doctor who’s short with me or rude, even if my actual performance was the same objectively, I won’t feel it was as good, subjectively.” The only way Sophie feels she can achieve and maintain optimal performance is by not letting negative social experiences affect her thoughts as much as they normally do. This marks the first moment when Sophie notes that her thoughts are a relevant component of her experiences.

Intervention Session Two

The Unconscious Mind?

A recent argument with her preceptor on her psychiatry rotation instigates an important discussion during this session about the relevance of the unconscious mind and its role in our daily experiences:

The psychiatrist kept bringing up unconscious processes, specifically the influences of unconscious thoughts and emotions, that he thought was wrong with the patient and I don’t really feel comfortable talking about that ... it’s too wishy-washy and I don’t like talking about feelings ... I am frustrated not because I don’t like it, but because I just don’t get it ... anything that goes on inside the head, it’s too complicated for me.

When asked under what conditions she would feel comfortable talking about cognitive and emotional dimensions, she responds that it is not necessarily a comfort issue, but rather a fear of vulnerability:

I've always just kept things like that inside, and I'm just unaccustomed to talking about thoughts and emotions, feelings ... I don't want to seem vulnerable ... and even afraid of being judged ... I don't want people to think that I am weak. I want to feel like I am in control.

From this point forward, Sophie acknowledges that since she is so in tune with the physical dimension of how she feels, using it as a reference point could help explore her thoughts and emotions. For instance, instead of reflecting directly on what thoughts appear at a specific point in time in relation to an experience, Sophie can first reflect on the physical sensations that are elicited and then the thoughts and emotions preceding, accompanying, and/or proceeding them.

Becoming Aware of Dimensions Through Daily Profiles

Writing in her journal is becoming an important reflective activity. Over the past few weeks, Sophie has been trying to use her daily profile sheets (see Appendix E) to develop her awareness of each dimension of feel, compare them, and also make links to her thoughts and behaviors. For instance, she can see where her thoughts are on the positive/negative spectrum in relation to her physical and social experiences, and if any of these played a role in subsequent behaviors. Through journaling, she discovers that she likes to study more at night than during the day because she is more productive, focuses better, and it allows her to feel more prepared.

Intervention Session Three

I Have Negative Thoughts

Sophie is becoming more aware of her thoughts and emotions and how they affect her experiences, but she admits that she does not actively analyze and act upon them in the moment, “Being in psychiatry has helped ... I’m learning! ... I now know that those thoughts and emotions are there, they are just in the background and I’m not fully aware of them yet.” With time and deliberate practice though, she seems to be able to notice negative thoughts:

I’ve noticed that I have a lot of negative thoughts, and I’m more aware of my negative ones than the positive ones ... even when I was writing this all down in my journal I could see that everything I wrote was negative ... I always focus on the negatives, it’s not the good and it’s something I want to change.

To address this, she is beginning to write about positive experiences in her journal to see if this will alter her perceptions.

Changing the Way She Feels

In addition to thoughts, Sophie has been paying attention to all of the dimensions of feel over the past few weeks and it has been paying off in that she has “felt good.” So what is feeling good to Sophie? She is beginning to describe that feeling with more detail. Feeling good, or the way she wants, physically makes her smile, and there is an aura of energy that creates a light, positive, bouncy feeling:

I’m more aware of how I feel and trying to change how I feel ... focusing on the positives, recognizing when I’m being negative with myself ... trying to change my stress level... I’m not saying that it works all the time though, it doesn’t ... but at least I’m more aware ... I still don’t know entirely what feel is to me, but now I’m trying to be more aware.

Intervention Session Four

Feeling Accomplished

The attitudes and behaviors of Sophie's preceptors typically affect her performance. After being worried about her cardiology rotation for nearly an entire semester, she is beginning to change her mind now that she is a week into it. Her preceptor puts a great deal of confidence in her and praises her for the effort she makes to learn the dense amount of material. She feels a great sense of accomplishment, and even though she does not enjoy cardiology, she can work through it without feeling unmotivated, inadequate, and anxious. The preceptor's facilitative approach to learning is helping Sophie achieve her best and motivating her to push the limits of her potential.

Relinquishing Control

Sophie believes that the way she feels is never completely up to her, as it can always be determined by others at some level. She can be as positive as she wants under any circumstance, but she can never control the actions of others toward her. Thus, the social dimension will always affect her performance, for better or for worse.

The social dimension effects everything about me ... the positives I interpret are still rooted in what's around me and what I experience. I saw a lot of my friends this week, so I felt good because I was with them ... that's social ... it's not cause I changed how I acted or was thinking, but that's just how it happens. It's not in my control; I didn't do anything to make myself feel the way I wanted.

It remains to be seen whether or not Sophie will be able to identify herself as an active rather than passive player in the regulation of her felt experiences, or at least recognize avenues of control she can exert.

Creating a Baseline

Sophie is taking her daily profile sheets to school and work so she can fill them out whenever she has a moment instead of always trying to complete them later during the day. Her goal is to develop a baseline of how she wants to feel physically, cognitively, emotionally, and socially throughout a typical day. Because she is more than halfway through the intervention and still has difficulty identifying this, she is returning to basics. If she can create an identifiable baseline, then she can use this as a gold standard by which she can try to experience her day. Sophie is beginning to use strategies that help her feel the way she wants, such as listening to music before work, or exercising.

Intervention Session Five

I am Bored

Sophie has run into an unusual and unfamiliar obstacle; feeling overwhelmingly bored on her current rotation:

They [interviews she observes on the rotation] are only consultations ... if they are follow-ups, I can only just sit there and watch my preceptor ... he's there talking to the patients and listening, but it's always the same issues over and over ... I'm there for three hours just trying not to fall asleep ... then for the rest of the day it's difficult to stay motivated ... however, sometimes I got to do some colonoscopies ... letting me control the scopes was much more engaging and I didn't feel as bored when I got to physically do something.

The word "engaging" is critical for Sophie. Remaining in the periphery is not enough for her to learn thus taking an active role and feeling engaged is important to experience optimal performance. From this point forward, Sophie wants to develop strategies that will allow her to engage or re-engage herself when she is either bored or disconnected. She feels this would

enhance her clinical skills such as taking history and listening, “that’s how I like to learn ... I learn by doing.”

Finally! Experiencing Optimal Feel and Performance

Sophie is able to identify a time when she experienced optimal performance and felt the way she wanted:

We got a call at 1am, and I thought, “I just want to sleep.” But once I was in the emergency room I was fine, I felt great, I felt interested and didn’t look at my watch, and I was doing what I had to do ... I felt engaged with my task, there was no disconnect ... I liked it ... It was like a state of flow ... when you get there everything is moving fast and I just knew what I had to do and didn’t have that down time to think about anything else ... I felt the way I wanted but didn’t notice it until after. I was on autopilot ... and felt like I was in control.

Feeling needed, appreciated, and knowledgeable helps Sophie experience full engagement in the moment, and facilitates an optimal level of performance. While reflecting on this experience, Sophie radiates a sense of pride, and continuously smiles for the rest of the session.

Intervention Session Six

It Was Because I Was Engaged!

Sophie is pleased with her performance this week because she is able to feel the way she wants by consciously engaging herself after beginning to get bored. She feels great physically and experiences energy and lightness, which carries over other days:

I find that because I’ve been able to feel engaged, I’m in a better mood when I wake up in the morning. I’m not dreading work, and not counting down the hours until I can come

home ... I was writing things down while the preceptor was asking questions to the patient, recording what I would have asked, or what I wanted to ask him after the session ... I felt more motivated ... the heaviness wasn't there as much, and it helped ... I tried it and it worked!

What They say Matters, but it is not Everything

Sophie feels that her definition of performance is beginning to shift. While her social experiences and objective measures still greatly influence her performance, "It's still more about what other people think," she is giving more weight to her own interpretations and the way she feels, "If someone else was to rate me on my performance from this rotation, perhaps they would rate me lower, but I feel like it's been better." This demonstrates an increased internal locus of appraisal that she did not value as much at the beginning of the intervention.

Opening to Her Inner Self

Sophie is increasingly more open to her inner self, especially with regards to her thoughts and emotions. She is more conscious of the effect these have on how she physically feels. Looking back on her initial sessions, Sophie notices a concrete shift in her awareness, "It has changed, just a little bit each time ... I think I am becoming more and more aware of how I feel ... everything around me and how that affects how I feel."

Post-Intervention Session: Sophie's Journey

Her Social Environment is Central

The rapport Sophie feels with her social environment remains a central dimension of her felt experiences and directly impacts her performance and well-being:

They [social experiences] change the way I feel, with my thoughts, and how I feel physically; the people who surround me and the way they react and interact with me

affect me [for better or for worse]. For instance, during my first few days of my emergency room rotation, with a facilitative preceptor, I was really enjoying it ... I was seeing patient after patient with enthusiasm not because I was being a keener, but because I really wanted to do it ... she gave me great feedback, and that raised my confidence ... I felt happy.

This also highlights the emotional and cognitive dimensions of how she feels. She discovered earlier in the sessions that part of how she wants to feel is confident, happy, and smart. Through facilitative feedback and a positive connection with her preceptor, she is able to experience these feelings. Supporting her earlier efforts to use her awareness of her physical dimension, she now recognizes when she has an energized sensation and this helps her to become aware of positive thoughts and emotions.

Can She Have Full Self-Control?

Sophie revisits the concept of control. She debates her belief that she can never completely control the way she feels. Even after the intervention process, she cannot answer this question, which suggests that perhaps she did not learn to fully regulate how she feels and continues to allow herself to be considerably influenced by her environment. It also suggests that she cannot always respond to what is out of her control in a self-determined way. Sophie reports that she will continue to ponder this in the future.

Journaling was a Critical Tool

The journaling process was a positive experience for Sophie and she admits that she would never have learned this much about herself over the course of the intervention process if she did not journal:

When I wrote in there, I really had to think about what affected me and how I felt. I think that was my problem before, I wasn't aware of how I felt, physically or emotionally ... it helped me to articulate how I felt better to myself, and I figured things out on my own, and I could see it broken down right in front of me. It became more tangible.

Defining Feel, an Achilles Heel?

Much like the vulnerable heel of the ancient Trojan warrior Achilles, feel is still, and perhaps always will remain a challenging subject for Sophie to discuss and explore. However, based on how she originally perceived it, it appears that her definition has somewhat evolved over time. As the intervention progressed, she spoke much about anxiety, which she realized was rooted in her mind which then leads to conscious physical perception. In essence, she figured out that what was in her head was affecting her body, "I don't think I've changed that much in terms of my definition ... but I'm more aware of how I feel physically, and even emotionally ... I've also been trying to control more of how I feel in my performance environment."

An Unexpected Revelation

Sophie enjoyed her emergency room rotation, so much in fact that she is considering doing her residency training in this sub-discipline. What is it about this unlikely choice of work environment that she enjoys so much, given that she naturally experiences a lot of anxiety?

I liked that it's really fast paced and you see a lot of different things. When I was doing internal I was really bored. The last few weeks of cardiology were fun, but that was because of the preceptor, as I mentioned last time. But now looking back at those great last two weeks I had, when I compare them to the time I'm having in emergency, there is no comparison.

Sophie now experiences a newfound passion for medicine. She feels like she has a direction and a sense of belonging, which reflects her need to feel connected to or engaged in what she does:

I'm glad that I've found something that I really like. I was starting to feel scared that I would not find my true calling, so at least now I can see where I'm going. All my colleagues around me were always raving after they did this or that rotation, saying "That was amazing, I've found my niche," and that stressed me out a little that I hadn't.

How She Learned to Regulate Felt Experiences

Sophie has taken some steps to be able to identify how she wants to feel and regulate this to some extent. Achieving optimal performance may not be something she has been able to obtain as often as she would like, but the identification of how she wants to feel has at least proven to be insightful for Sophie. Some of her chronic obstacles are succumbing to negative anxiety and negative feedback from her preceptors, feeling bored and unable to feel engaged during her rotations, and an inability to feel a positive connection with individuals in her social environment such as preceptors, colleagues, patients, and others in her daily life.

How does Sophie typically prepare herself to reconnect in the face of these obstacles? While her toolbox is incomplete, she is currently able to draw on a few strategies such as journaling to become aware of what social situations, thoughts, and emotions typically lead to high anxiety, engaging herself under circumstances where she is disengaged from a task, such as imagining answers to questions and formulating responses in real time (to herself) while observing a preceptor interview a patient, and consciously seek out positive social environments that allow her to feel strong social connections, and other positive thoughts and emotions. While

these strategies represent a step forward for Sophie, she asserts that she still needs to work diligently to be able to reconnect with the way she wants to feel in the face of obstacles.

Sophie also feels that she is now playing a more active rather than passive role in her daily experiences and has more control over them. She reports that how she feels will impact her future work as a medical doctor because she will have better relationships with her patients and feel happier:

I've been able to see changes over the past few months, and I've at least tried to change the little things for myself ... I don't necessarily think I'm a different person, or can say that I'm a better person, but I can say that I am more aware and have tools to help myself, and I just need to keep practicing. I learned a lot about myself, before I had never thought about feeling in ways beyond physical. I don't think it's going to make me a better doctor in the sense that it's not going to give me more medical knowledge, but the way I feel will affect the way I interact with my patients, and that's a good thing. So indirectly it will make me a better one ... in my attitude ... it will make me happier.

Armed with her experiences from the intervention process, Sophie has initiated the beginning of a lifelong learning process that she hopes will allow her to continue developing her awareness and control over how she feels and how she responds to her environment. Indeed, there seem to be warmer days ahead for the 'Ice Queen.'

Discussion

The purpose of the present study was to examine how engaging in a person-centered feel-based intervention guided by the RPM (Callary & Durand-Bush, in press; Newburg et al., 2002) affected the self-defined performance of medical students. More specifically, the research questions were: How did the medical students define, construct, and experience feel? How do

they construct and experience feel within their medical environment? How does the way they feel affect their self-defined performance? Can they achieve an optimal level of performance by participating in a feel-based, person-centered resonance intervention nurturing self-reflection and the development of self-awareness? Overall, Ruby, Emelia, Marissa, and Sophie were able to define performance according to their preferred standards, and construct feel and its multiple dimensions as they experienced them within their performance environment. Although to varying degrees, each was able to achieve an optimal level of performance through their participation in the intervention.

Performance emerged as a unique concept for each of the participants. It is possible that Ruby and Emelia defined performance more internally because they were medical residents and more accustomed to the independence they had within their performance environment. As they were only beginning their clerkship training, Marissa and Sophie were not far removed from more objective, traditional forms of performance appraisal, thus perhaps this is why their perceptions were initially grounded in external means. This is supported by the literature on intrinsic motivation and self-determination (Deci & Ryan, 1985), locus of causality, and internal versus external perceptions of control (Weiss & Chaumeton, 1992; Weiner, 1986). The innovative and unique approach of giving participants the opportunity to explore performance from a personal perspective proved to be an insightful element of the intervention process. As stated by Willson (2006), medical students need to attune to the areas of medicine in which subjectivity is inevitable and indeed useful.

Prior to this study, research examining feel as a multidimensional phenomenon in relation to performance was virtually absent in the context of medicine. For Ruby, Emelia, Marissa, and Sophie, the concept feel represented a holistic, dynamic, and multidimensional experience that

varied over time and subjectively across each student, thus supporting and expanding past research on feel (Arcand et al., 2007; Callary & Durand-Bush, in press; Doell et al., 2006; Durand-Bush et al. 2005; Lussier-Ley & Durand-Bush, 2006; Wolfe, 2006). While each identified feel as a multidimensional experience, that is, social, emotional, physical, and cognitive dimensions were identified by all four of them, the degree to which each played a role within their performance varied significantly. For instance, with Sophie, she initially identified predominantly with the physical dimension, and only toward the end of the intervention sessions did she begin to identify with the cognitive and emotional ones. Even then, the degree to which Sophie attuned to the latter dimensions varied considerably compared to Emelia and Marissa. This highlights important differences that exist between what is relevant for each individual and how each is able to develop introspective awareness. This clearly demonstrates the importance of using an emergent design grounded in the constructivist paradigm (Guba & Lincoln, 1994) to focus on individual experiences and stay true to the resonance approach (Callary & Durand-Bush, in press).

All four participants reported that the way they felt was affected by their social connections in their medical performance environment, once again each in their own unique way. For example, for Ruby and Emelia, feeling connected to their patients was of the utmost importance. On the other hand, Marissa placed a great deal of emphasis on her social relationships outside of medical school as they influenced her performance. Because Sophie relied so heavily on external feedback, her relationship with her preceptors played a critical role in her experience of optimal performance. Westberg and Jason (2001) stated that despite the fact that many health care sectors are taking into account how practitioners feel and how this affects how they interact with patients and colleagues, it is unclear if these benefits are also reflected in

medical training. Results of this study suggest that how medical students feel overall and in relation to social agents in their environment is important and affects their performance. More research should be conducted to further examine this as all four students stated that being aware of and able to regulate how they feel would help them become better doctors by having a better relationship with their patients.

A collective lesson learned that supports past research on feel (e.g., Doell et al., 2006) was the importance of developing self-awareness through ongoing introspection and reflection on desired felt experiences and their influence on performance. As such, the intervention process, guided by the RPM framework (Newburg et al., 2002), seemed to foster a climate of reflective critical thinking in which each participant learned to pay attention to themselves, their social and physical environment, and the role each played in their daily experiences. Since resonance is a process that demands ongoing self-awareness, reflection, and self-regulation (Wolfe, 2006), the intervention phase allowed the medical students to learn at their own pace how to effectively enhance their performance through the formation of personal strategies leading them to connect or reconnect with how they wanted to feel, particularly in the face of obstacles in their medical environment. This supports research findings emerging from resonance interventions conducted in sport (Arcand et al., 2007; Doell et al., 2006; Durand-Bush et al., 2005; Wolfe, 2006) and performing arts (Lussier-Ley & Durand-Bush, 2006) contexts. It is also an indication that specific interventions may be developed and applied early on in medical students' training to help them develop awareness, reflective, and regulation skills to better take care of themselves, and in turn, better serve their patients (Novack et al., 1997; Sotile & Sotile, 2002)

The feedback received from preceptors was also identified as important sources of reflection and self-awareness for each student. Primarily highlighted by Ruby, Emelia, and

Sophie, by proactively taking control of their own learning in order to enhance areas of deficiency, they were able to maximize their reflection and rely on both internal (e.g., feelings, thoughts) and external (e.g., preceptors, attending staff) sources to appraise their performance (Shokar, Shokar, Romero, & Bulik, 2002). Taking this control highlights the importance of their ability to assess their medical performance and suggests that perhaps these students will be able to seek and design appropriate and adequate continuing education and professional development experiences in the future (Violato & Lockyer, 2006).

Westberg and Jason (2001) recommended that instructors help students understand the meaning and importance of reflection during their training because it can help them build the skills needed to perform in such a highly demanding environment. As such, by developing self-awareness, physicians and medical students can learn to use themselves more effectively by gaining insight into how their experiences affect their performance. Indeed, in support of Novack et al.'s (1997) findings, by becoming aware of what influenced their behavior, the participants were able to learn how to make more informed choices and took steps toward adaptive change to improve their performance. As Schmidt and Rikers's (2007) research suggested, medical students should devote more time to reflecting on their experiences in their performance environment in order to deepen their understanding. Results of this study also add to their assertion that in order to become and remain competent practitioners, medical professionals and inferably medical students need to *practice* becoming aware and reflecting on how they feel (Westberg & Jason, 2001). It appears from the results of this study and that of previous research on resonance that having a process in place to nurture awareness and reflection facilitates the practice and development of these skills (Arcand et al., 2007; Callary & Durand-Bush, in press; Doell et al., 2006).

The journaling component emerged as a critical element of the intervention process because it gave participants the opportunity to reflect at a deeper level (Moon, 2004), particularly between intervention sessions, and self-monitor their experiences over time. As noted within each of their stories, the manner in which journaling served its purpose varied, supporting past research that there are variations based on each individual's interest, commitment, time constraints, and preferences (Callary, 2004; Doell et al., 2006). It is noteworthy that as a result of journaling, reflection became an automatic process for Ruby and Marissa, while Emelia and Sophie continued to journal until the end of the intervention sessions. While the use of journaling to facilitate the reflective process has been implemented with medical students in past research (Pitkala & Mantyranta, 2004), the uniqueness in this study was that it was used as an intervention tool rather than to collect raw data. As such, perhaps using tools such as journaling to promote reflection could have direct applications within the medical education context.

Much can be said about the process underlying each medical student's journey throughout the intervention. Indeed, for each it was a constantly evolving and ongoing process. Feel and performance were not processes that were experienced optimally from the outset of the intervention. Learning by paying attention, collecting data, reflecting on them, and making feel-based decisions (Durand-Bush, 2007) from session to session was instrumental. Overall, Ruby, Emelia, Marissa, and Sophie had their share of breakthroughs and setbacks, and each felt their perceptions of feel, performance, and what role these played in their daily experiences evolved and changed over time, although to varying degrees. To illustrate this, one can highlight Sophie's journey, who found the intervention process to be quite challenging. That is not to say that the process was of little benefit to her; in fact, in terms of where she started and ended the process, Sophie experienced a great deal of insight. That said, her case suggests that exploring concepts

related to the self, such as feel and performance, can be an arduous task. Discovering how one feels and wants to feel, and how this is affected by one's environment is clearly not something that can be rushed nor forced (Arcand et al., 2007; Newburg et al., 2002). As such, each student discovered that such introspective processes take a great deal of personal commitment, desire, and openness (Arcand et al., 2007; Callary & Durand-Bush, in press). Perhaps the most rewarding lesson learned that each offered was that directly or indirectly, their experiences within the intervention process were going to help them become better medical practitioners in the future. For this reason, more research should be conducted with medical students and professionals to determine if similar results would be found.

Two minor limitations must be noted within the present study. First, all four participants were female, thus incorporating a male participant may have provided a more cross-gendered perspective. It is noteworthy, however, that men were not purposefully excluded; they did not come forth to participate. Second, all students were recruited from the School of Medicine at the same university, thus their experiences within this school, which arguably has a particular medical teaching philosophy could presumably differ from that gained in other medical schools. Results of this innovative study with medical students will add to existing research on feel, performance, and medical education because it demonstrated that feel is a multidimensional process that is linked to performance in the medical field. From an applied perspective, the present study could eventually lead to the development of interventions that could be implemented in future medical school-based courses, or feel-based counseling opportunities for students to help them manage how they feel and optimize their performance throughout their medical training. In light of the scarce empirical attention drawn to optimal performance as an individually constructed process, this study could lead to future investigations into the facilitative

role that such a process could have in lifelong, self-regulated learning if incorporated into formal medical education.

Clearly, as illustrated in Ruby, Emelia, Marissa, and Sophie's stories, feel affected the way they performed. Through their participation in the feel-based, person centered, resonance intervention, they were given the opportunity to identify what it meant to them to perform as medical students. They learned through ongoing introspection and self-awareness that it was possible for them to not only feel the way they want and achieve optimal performance, but also chose to specialize in sub-disciplines that engage and motivate them over time. Indeed, by encouraging students to give their performance and how they feel priority from the onset of their medical training, as was done in the current study, it may indeed help them build a solid foundation for becoming attuned physicians, better able to serve patients by first taking care of themselves (Ball & Bax, 2002). In conclusion, Ruby, Emelia, Marissa, and Sophie hold firmly in their mind that one day they will be in a position of significant responsibility and provide society with a critical service. As put forth by Remen (2001), they know that their ability to perform is a relevant and important issue both for them and us all. Now, they also know that regulating how they feel can help maximize their ability to perform under inevitable strenuous conditions.

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Table 1

Four Components of the Resonance Performance Model (adapted by Wolfe, 2006, from Newburg et al., 2002)

Component	Description
<p>The Way You Want to Feel</p>	<p>Refers to the way individuals want to feel in important areas of life from different relevant perspectives (e.g., emotionally, physically, cognitively, socially, and spiritually)</p>
<p>Preparation</p>	<p>Refers to what allows individuals to feel the way they want while achieving their performance goals. It can include, but is not limited to, cognitive, physical, technical, tactical, emotional, or social means, strategies, or activities.</p>
<p>Obstacles</p>	<p>Obstacles are both internal (e.g., negative thought) and external (e.g., parental pressure) barriers that prevent individuals from feeling the way they want.</p>
<p>Revisit the Way You Want to Feel</p>	<p>Refers to what allows individuals to reconnect with the way they want to feel after facing an obstacle. It can include, but is not limited to, cognitive, physical, technical, tactical, emotional, or social means, strategies, or activities.</p>

Table 2

Participant Demographic Profiles

	Case #1	Case #2	Case #3	Case #4
Name	Ruby	Emelia	Marissa	Sophie
Age (years)	32	29	24	24
Sex	Female	Female	Female	Female
Education	Second year medical resident	Second year medical resident	Third year medical student	Third year medical student
Specialization	Obstetrics gynecology	Pediatrics	Surgery* Family medicine* Anesthesiology* Emergency*	Family medicine* Emergency*

Note. * Denotes an undecided specialization.

Table 3

Pre-Intervention, Intervention, and Post-Intervention Phase Overview

Phase	Timeline	Description
Phase 1		
Pre-Intervention		
Interview	Week 1	Introduce participants to key concepts in order to identify their initial understanding and experience of these phenomena. Clarify intervention procedures including journaling process, and other relevant logistical information.
(1 session)		
Phase 2		
Intervention	Weeks	Engage participants in intervention in which each session informs the
Sessions	3, 5, 7, 9, 11, 13	following one; focus is on the evolution of the participants' experiences as
(6 sessions)		they identify changes and lessons learned while attempting to explore and regulate how they feel across time and situations, and how this affects their performance.

Phase 3	Explore (a) the participants' overall experiences during the study and if and how they changed over time, (b) what they learned over the course of the intervention, (c) how they currently view their experience of feel and performance in light of the intervention process, and (d) if and how the process will guide them in their future career as medical professionals.
Post-Intervention Interview (1 session)	Week 17

Note. Each interview and intervention session followed a semi-structured, open-ended format, and ran for approximately 60-90 minutes.

ARTICLE 2:

LEARNING TO SELF-REGULATE MULTIDIMENSIONAL FELT EXPERIENCES:
THE JOURNEYS OF FOUR MEDICAL STUDENTS

LEARNING TO SELF-REGULATE MULTIDIMENSIONAL FELT EXPERIENCES:
THE JOURNEYS OF FOUR MEDICAL STUDENTS

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Abstract

Research has shown that regulating how we feel affects our ability to perform (Callary & Durand-Bush, in press). Considering that, in the context of medicine, felt experiences and self-regulation skills are important and foster learning (Novack et al., 1997; Sotile & Sotile, 2002, Zimmerman, 1990), the purpose of this multiple case study was to explore the self-regulation process of feel of four medical students through their participation in a feel-based, person-centered intervention. Results indicated that for each case, feel was a holistic, dynamic, and multidimensional experience that varied over time. Each student was able to identify the way they wanted to feel based on different dimensions, observe how these mediated each other, and learn how to regulate their felt experiences. Findings are linked to the growing literature on self-regulation and support future research and applied efforts to provide opportunities for life-long, self-regulated learning in the medical field.

It is difficult for any individual to live life without being affected by the field of medicine. We all face medical challenges, whether it is related to our own health, or that of a friend, family member, or colleague. When we encounter medical professionals we tend to expect without any second thought that they will perform at their very best in order to meet our medical challenges, however seldom do we reflect on who these professionals really are; people who are susceptible to the same pressures and affective experiences in their daily lives as everyone else.

Despite a tangible shift towards embracing the concept of overall physician health (Puddester, 2001), alarmingly, during medical training, many students learn to routinely ignore their personal needs, emotions, and how they generally feel in order to 'get the job done'. Sotile and Sotile (2002) have cautioned against such practices because the repression of awareness of needs and feelings can lead to adverse effects such as stress and burnout both as students, and later as medical professionals. Furthermore, the current structure of medical education itself is likely to contribute to disruptions in the health habits of medical students (Ball & Bax, 2002). While medical care is thought to evoke a diverse range of feelings in physicians that affect how they perform (Novack et al., 1997), medical schools, often do not include opportunities or activities in their curriculum to address feelings in relation to performance (Novack, Volk, Drossman, & Lipkin, 1993). After a thorough review of the literature pertaining to medical education, it has become clear that there is no substantive empirical research conducted in this area, therefore, a pertinent step in research is to explore how the performance of medical students is affected by how they feel, and better understand how students can actively take a role in the regulation of their felt experiences in their quests for optimal performance and learning.

Self-regulation is present and tangible in our everyday life. In fact, many issues we face on a daily basis can be reduced to the ability, or in many cases inability, to regulate ourselves (Vohs & Baumeister, 2004). If self-regulation is an important skill that develops over time, how can students become more self-regulated in their learning (Schutz & Davis, 2000)? Vohs and Baumeister (2004, p. 3) stated that “no account of the self can be anywhere near complete without an understanding of how the self maintains control over itself, and makes the adjustments that it deems best to maintain harmony with its social and physical environment.”

Some researchers have shown that individuals can learn to regulate how they feel by participating in a feel-based, person centered resonance intervention (Arcand, Durand-Bush, & Miall, 2007; Callary & Durand-Bush, in press; Doell, Durand-Bush, & Newburg, 2006). Feel was defined as a holistic, subjective, multidimensional experience in that it can be experienced physically (‘I feel strong’), cognitively (‘I feel confident’), emotionally (‘I feel happy’), and socially (‘I feel connected to others,’ Callary & Durand-Bush, in press). Resonance, as depicted in the Resonance Performance Model (Newburg, Kimiciek, Durand-Bush, & Doell, 2002), represents the process through which individuals regulate their felt experiences to optimize performance and well-being.

Research examining feel as a multidimensional phenomenon in relation to performance is virtually absent in the context of medicine. However, as advocated by Sansone and Thoman (2005), helping students regulate their affective experiences could lead to enhanced learning and engagement. Novack et al. (1997) reported that physicians experience a diverse range of feelings that affect how they perform. Their ability to perform may become a concern because researchers are beginning to find that today’s physicians lack important skills to manage the stressors they face in their daily life (Sotile & Sotile, 2002). This suggests that medical education

may not be providing an optimal environment for personal growth, peak performance, and emotional management (Novack, Volk, Drossman, & Lipkin, 1993). According to Pololi, Frankel, Clay, and Jobe (2001), a critical step may be to help students develop relevant skills that promote well-being as early in their training as possible. Such skills could also promote self-directed, lifelong learning, which was identified as a critical outcome in medical education (Harvey, Rothman, & Frecker, 2003). Since self-regulation may enhance the learning and performance of students in academic settings (Schutz & Davis, 2000) and the ability to regulate emotions and affective experiences is an important part of this process (Sansone & Thoman, 2005), further insight into this holds the promise of helping us deepen our understanding of both performance and learning (Schutz & Davis, 2000).

Emotions and the Multiple Dimensions of Feel

In order to situate the multidimensional perspective of feel, one such dimension, emotions, is presented here as a vantage point to illustrate the interconnectedness that exists between concepts. This is a necessary step due to the void of literature on feel as an independent concept. It is also important at this stage to distinguish the concept of emotions from that of feelings, and the term *feel*, as it is used in the present study. An emotion results from a sudden reaction to an event and involves physiological, behavioural, cognitive, and experiential changes, while feelings refer to the subjective experience of emotions (Vallerand & Blanchard, 2000). The term *feel*, as suggested by the multidimensional definition, incorporates an individual's holistic perceptions of their felt experiences which can include their emotions and accompanying feelings, but as alluded to earlier, also incorporate other facets to their experiences such as social, physical, and cognitive. Again, *feel* varies over time and across individuals (Newburg et al., 2002).

Although only one of multiple dimensions of our felt experiences (Durand-Bush et al., 2005), emotions have long been recognized as being central to our experiences, judgments, and behavior (Fitzsimons & Bargh, 2004). In fact, emotions affect all aspects of human performance (Heesacker & Bradley, 1997), facilitate our construction of meaning (King, Hicks, Krull, & Del Gaiso, 2006), and play a dynamic role in learning over time (Sansone & Thoman, 2005). Furthermore, emotions and cognitions are linked and both are shown to affect each other in self-regulation processes (Efklides & Petkaki, 2005). Supporting a multidimensional perspective of emotions, Pekrun et al. (2002) and Prinz (2004) reported that students' emotional experiences have affective, cognitive, and physiological components. Gross and Thompson (2007) and Hagtvet and Hanin (2007) also viewed emotions as multi-componential processes that unfold over time, involve shifts in their duration, intensity, and can offset behavioral, experiential, or physiological responses. Thus, an emotion results from a reaction to an event and involves physiological, behavioural, cognitive, and experiential changes (Vallerand & Blanchard, 2000). By physically locating the locus of our feelings, such as knowing where we feel in our body, we can use that information to further understand our experiences (Artz, 1994). All aspects considered, emotions involve changes in subjective experience, behavior, and physiology, and can help individuals meet challenges and opportunities (Ochsner & Gross, 2004). By recognizing how we are affected by our emotions, we can prepare for their onset (Botterill & Brown, 2002).

Self-Regulation

Self-regulation can be described as the "exercise of control over oneself, with regard to bringing the self into line with preferred standards" (Vohs & Baumeister, 2004, p. 2); in essence, it is any effort by the self to alter one's inner states or responses. Carver and Scheier (1981) also viewed self-regulation as a complex, dynamic, and interactive process. Their self-regulation

model posits feedback loops from which individuals become consciously aware of the discrepancies between their current and desired self-states, and then consciously choose to engage in actions to reduce these discrepancies.

Contributing to both successes and failures of self-regulation (Vohs & Baumeister, 2004), emotions often act as indicators for reflective thinking about socio-environmental experiences. By drawing on a variety of emotion regulatory strategies, we have the ability to change the way we think in order to change the way we feel (Ochsner & Gross, 2004). While the role that emotions play in self-regulation has been discussed in the literature, more research on this is warranted (Schutz & Davis, 2000). The present investigation helped to address this gap in the self-regulation literature.

Social relationships (e.g., family, friends, colleagues, and preceptors) can also trigger self-regulatory responses toward the achievement of goals (Fitzsimons & Bargh, 2004) and desired felt experiences (Callary & Durand-Bush, in press). Conversely, interpersonal relations are affected by self-regulation processes (Vohs & Baumeister, 2004). A key feature of Zimmerman's (2000) social-cognitive model of self-regulation is the interdependent roles of social, environmental, and self-influences. Self-initiated processes can alter an individual's social and physical environment and are reciprocally affected by these changes. Typically, those who neglect such resources, or view them as an obstacle to personal development, are often less effective in regulating themselves (Zimmerman, 2000). An essential objective shared by all self-regulation theories, as well as the RPM, is to understand how this capability can be developed or optimized.

The social-cognitive model posited by Zimmerman (2000), is further defined in terms of control-specific processes that are used cyclically to achieve preferred standards in the regulation

of the self, and its quality hinges on an individual's beliefs and motives. Zimmerman's model includes three self-regulatory systems referred to as the 'cyclical phases of self-regulation' (i.e., forethought phase, performance phase, and self-reflection phase), and emphasizes the importance of socializing agents in the development of effective self-regulation (Zimmerman, 2000). The process is cyclical because feedback information from previous performances is used to make adjustments during current and future efforts of regulation. Thus, personal, behavioral, and environmental factors are always changing during learning and performance (Schunk & Ertmer, 2000; Zimmerman, 2000).

According to Zimmerman (2000), the forethought phase in his self-regulation model represents the preparatory component for an intended action. During the performance phase, which consists of the three sub-processes of self-control, self-observation, and self-recording, individuals make multiple judgments regarding their performance based on their level or quality of preparation and their perceived ability to handle any obstacle that may arise during the process (Schutz & Davis, 2000). The self-reflection phase of self-regulation involves comparing self-monitored data with a standard or goal, such as the way one wants to feel, and assigning attributable or causal significance to the results based on perceived levels of ability or effort (Zimmerman, 2000).

It is well documented in the literature that self-regulation skills help foster learning under many instructional conditions (Schutz & Davis, 2000; Zimmerman, 1990), and allow students to evaluate, adjust, and monitor their progress toward achieving learning goals (Schunk & Ertmer, 2000). In the case of medical students, such self-regulatory abilities could help them effectively learn and navigate through the arduous medical training process.

Resonance

The concept of feel is at the core of resonance, a process that helps individuals identify how they want to feel across life and performance situations, and based on this knowledge develop personal strategies to regulate how they feel, particularly in the face of obstacles (Newburg, et al., 2002). The Resonance Performance Model (RPM), which was developed by Newburg and colleagues (2002) and subsequently adapted by Durand-Bush and colleagues (Callary & Durand-Bush, in press; Wolfe, 2006) was used as an intervention framework in past studies to empower participants to regulate their felt experiences; it engaged them in self-regulatory processes through developing self-reflective abilities, resulting in heightened senses of self-awareness (Wolfe, 2006). The RPM consists of four cyclical components aiming to help individuals to feel the way they want, and experience a seamless fit between their internal selves and their environment.

The first component, called *The way you want to feel*, refers to the way individuals want to feel in important areas of their life from different relevant perspectives (e.g., emotionally, physically, cognitively, socially, and spiritually). *Preparation*, the second component, refers to what allows individuals to feel the way they want while achieving their performance goals. It can include, but is not limited to, cognitive, physical, technical, tactical, emotional, or social means, strategies, or activities. The third component, *Obstacles*, represents both internal (e.g., negative thought) and external (e.g., parental pressure) barriers that prevent individuals from feeling the way they want. The final component entitled *Revisit the way you want to feel*, refers to what allows individuals to reconnect with the way they want to feel after facing an obstacle. It can include, but is not limited to, cognitive, physical, technical, tactical, emotional, or social means, strategies, or activities.

A critical element of the process of resonance is self-awareness (Doell et al., 2006) and in order to become and remain competent practitioners, medical professionals need to practice becoming aware and reflect on how they feel (Westberg & Jason, 2001). As such, reflection should be used regularly by medical professionals to become more attentive to how they feel in order to take better care of themselves, and provide more effective patient care. Thus, it is important to help medical students build the self-awareness and reflective skills needed to succeed in such a highly demanding profession (Willson, 2006). Since the aim of the resonance process is to nurture awareness, reflection, and the regulation of desired felt experiences, especially in the face of obstacles such as stress, pressure, and adversity, it was deemed noteworthy and innovative to apply it with medical students.

Consistent with Vohs and Baumeister's (2004) view of self-regulation as efforts to align the self with preferred standards, such internal positions (personal standards) are analogous to the those experienced by individuals engaged in the process of resonance (e.g., the way they want to feel). Since these authors also described self-regulation as a process, it represents a logical fit with the concepts of resonance and feel. Furthermore, the assertions of Carver and Scheier (1981) and Fitzsimons and Bargh (2004) that individuals in self-regulation actively take actions to reduce discrepancies between desired and current selves are much like the actions taken by individuals in the resonance process in which they identify the way they want to feel in different conditions or contexts, and via self-reflection develop and implement strategies that seek to reduce the discrepancies between their preferred and current felt experiences.

Schunk and Ertmer (2000) reported that little research has been found linking the process of self-regulation with specific interventions, thus more research is necessary to explore how self-regulated learning may be facilitated. Due to the inherent self-regulatory properties of the

RPM guided intervention (Newburg et al., 2002), the present study attempted to address this gap in the literature. The ability to regulate oneself to achieve personal learning goals seems to be a critical element of any student's success in academia and requires more attention.

Based on the existing literature and gaps presented, the purpose of this study was to explore the self-regulation of feel of medical students. Specifically, this study sought to examine; How each medical student defined, construct, and experience feel (e.g., physical, emotional, cognitive, and social dimensions)? What dimensions of feel were meaningful and relevant to the medical students? How these dimensions influenced each other and medical students overall experience of feel? Were the medical students able to attain, and regulate their process of feel through the person-centered feel-based intervention?

Methodology

Multiple Case Study Approach

Informed by the constructivist paradigm (Guba & Lincoln, 1994), a multiple case study approach was used in this study to collect and analyze the data. Stake (1995) asserted that there are no aspects of knowledge existing solely in the external world that are devoid of human construction and the in-depth case study approach allowed for the emergence of rich and meaningful data that reflected the participants' exploration and personal constructions of feel and performance. Examining each participant as a case also enabled the researchers to focus on the diversity of their experiences at an individual level and allow the readers to rely on their knowledge and reality to interpret the findings (Stake, 1995).

Narrative Approach

Individuals tell stories in an effort to understand, make sense of, and communicate their experiences (Sparkes & Partington, 2003). The term 'narrative' is described as the process of

creating a story, the cognitive schema, or the result of the story's context (Polkinghorne, 1988) and thus represents the constructions of personal realities (Sparkes & Partington, 2003). Narratives are uniquely suited for creating linguistic representations of human experience (Polkinghorne, 1995) and serve as an important foundation for the construction of the self (Miller, 1994). In the current study, the data was analyzed and integrated into narratives to document the process through which the participants attempted to define, construct, and regulate how they felt and performed in the medical environment, producing a rich account of not only *what they did* but also *how they did it* (Holstein & Gubrium, 2000). According to Hanin (2003), narratives and in-depth interviews can be used to describe concrete performance situations by identifying the thoughts, feelings, and/or experiences accompanying these situations. The narrative approach has been found to be the most effective way to convey the multidimensional and complex aspects of felt experiences within the process of resonance in a chronological manner (Callary & Durand-Bush, in press; Wolfe, 2006).

Data Collection

Participants. Four ($n = 4$) female medical students were recruited through a research notice posted in the School of Medicine of the University of Ottawa. They were chosen through purposeful sampling (Patton, 2002), that is, those who demonstrated an interest in, and commitment to the 17 week participation period were selected. Their continued involvement was voluntary and they were informed that they could withdraw from the study at any time without repercussion. Table 1 presents a demographic profile of each medical student.

(Insert Table 1)

Data collection phases. The present study took place across three phases over 17 weeks; a pre-intervention, intervention, and post-intervention phase. In the pre-intervention phase

(weeks 1-3), an individual interview was conducted to introduce each participant to key concepts in order to identify their initial understanding and experience of these phenomena, and to clarify intervention procedures including the journaling process, and other relevant logistical information. In the intervention phase (weeks 3-13), participants engaged in an individual, feel-based, person-centered intervention in which each session informed subsequent ones. The focus was on the evolution of the participants' experiences as they identified changes and lessons learned while attempting to explore and regulate how they felt across time and situations, and how this affected their performance. Finally, at the end of the post-intervention phase (weeks 14-17), a final individual interview was conducted to explore:

- (a) The participants' overall experiences during the study and if and how they changed over time,
- (b) What they learned over the course of the intervention,
- (c) How they currently viewed their experience of feel and performance in light of the intervention process.
- (d) If and how the process would guide them in their future career as medical professionals.

Journaling. Each participant was provided with a journal and asked to write down how they felt each day as they reflected on their thoughts, behaviors, and feelings related to their performance environment and general daily life. Journaling has been successfully used in past research with medical students (Pitkala & Mantyranta, 2004) and nursing students (Simpson & Courtney, 2007) to facilitate reflection. It was considered a critical element in the study because it gave the participants the opportunity to reflect at a deeper level (Moon, 2004) based on their

interest, commitment, time constraints, and preferences, and self-monitor their process over time (Callary, 2004; Doell et al., 2006). The content of the journals was not systematically analyzed.

Data Analysis

Each interview/intervention session was digitally recorded, transcribed verbatim, and filtered for grammatical errors. After all of the data were transcribed, transcripts were combined, and subsequently written into four separate narratives representing each case's story. Each narrative was subjected to an analysis of narrative, a paradigmatic process in which specific experiences or responses are organized into more generalized themes and categories that are deductively or inductively determined (Polkinghorne, 1995). In essence, the narratives were divided into pieces of text that were then placed into more general categories. The context and content of these categories in turn guided the presentation of results and informed the discussion.

Trustworthiness

Trustworthiness was ensured by conducting pilot interviews with two third year medical students in order to test the interview guide and the delivery of the intervention prior to the actual data collection. To maximize narrative authenticity, the constructed narratives were sent to the participants for member checking and the main researcher engaged in ongoing peer debriefing (Guba & Lincoln, 1994).

Results

Results are presented as four independent cases that are each introduced with a table summarizing the participants' subjective definition and experience of feel, and their regulation of relevant interrelated feel dimensions. Readers are strongly encouraged to familiarize themselves with these tables before immersing themselves in the subsequent narratives illustrating the interplay and regulation of their dimensions of feel.

Ruby

(Insert Table 2)

Ruby discovered through the intervention that it is important for her to recognize when she is feeling cognitively overwhelmed because this brings about physical sensations of which she often becomes conscious even before she can identify that something is wrong. Thus, her physical dimension of feel became an indicator of how she could subsequently feel cognitively and emotionally, and what she could do stay in control of her performance and overall well-being:

The biggest part is the physical triggers of what's happening at an emotional level ... what I'm feeling. I've become more physically in tune with what I'm feeling and it motivates me to get back to a point to what's happening and what I can do to change the situation ... looking at those cues and trying and relate those to my performance and how they affect it is what is important to me to achieve optimal performance.

Running and cycling were physical strategies that Ruby used to feel the way she wanted and regulate her daily experiences. These also helped her to clear her mind and feel more focused, relaxed, and in control of her internal self:

As I'm running, I'll look at the water, it's calming, and allows me to sense that mental dialogue with myself. Saying, "Why are you saying those negative thoughts?" and "Ok, you need to work on this element, or that, etc." So in the future, when you run into the situation again, you won't make the same mistake ... There is a certain element of fatigue, but it almost brings a sense of peace, so the muscles hurt but they are not tight. Tightness I think is a big element for me. There is warmth there, so the muscles are warm and tired, but the mind is calm. Even though my heart is racing, it's doing so for a reason and it is

associated with better thoughts. It seems like everything is working together, and there is no disconnect anywhere in my life. It's tight.

Logic was an important part of Ruby's cognitive processing; she had the ability to take the stance of a third person by metaphorically removing herself from a situation in order to evaluate all available data, and prevent any interpretations from being influenced by negative emotions. An important conflict that could arise, however, was between logic and intuition. How could Ruby rely on logic to make decisions and still rely on her intuitive sense as well? It is a fair assumption to say that often we are faced with a choice that feels right but it may not appear to be the most logical:

I think I have to put the two together, I can ask the logical questions to myself but then I have to see if these answers fit with my intuitive sense. Sometimes I think I allow my intuition to come in too quick and I can make snap judgments, so I need to use both to make the correct differential I have in mind...If I have someone come in with a massive headache, nausea, vomiting, and then neck pain, with my intuition right away I would think meningitis, so then I would go get more information to try and see if the picture fits logically with my intuition. If it does not, I have to re-evaluate everything, and try to come up with something else.

Being able to use both logical and intuitive processes allowed Ruby to establish a positive perspective and a clearer state of mind. Most importantly, however, by paying attention to and reflecting on these processes over the course of the intervention, Ruby learned that she needs to take a step back to evaluate her experiences and recognize when she can regulate her cognitive processes and reconnect with the way she wants to feel across dimensions.

Ruby's Journey

Overall, Ruby learned to regulate how she feels socially, cognitively, emotionally, and physically; enhancing her ability to regulate her thoughts and actions as well, which are an integral part of the resonance process due to the strong reflective component and the implementation of actions or behaviors leading to desired felt experiences. Feel played a central role for Ruby both in her medical performance environment and everyday life. By becoming aware of physical sensations, she was able to develop an awareness of specific antecedents such as frustration, and formulate ways to avoid or respond to situations before negative thoughts and emotions emerged. Socially, she discovered how important it was for her to establish positive connections with her colleagues, preceptors, and patients to perform optimally.

Emelia

(Insert Table 3)

While it is difficult to pinpoint which dimension of feel was the most critical for Emelia, she felt as though her thoughts played a central role in the overall regulation of her felt experiences and encompassing dimensions. Her thoughts acted like a nerve center where information was interpreted and responses were formulated based on the data she received from her emotions, physical sensations, and social experiences:

Once I change my thoughts, everything else changes ... [when feeling overwhelmed by debilitating emotions and thoughts] I just have to be calm...take deep breaths, and then I can get a grasp on my emotions and thoughts [by taking that step back to evaluate and reflect] ... try to be aware of, and then [take] control.

Over the course of the intervention, Emelia met her goal of exploring her thoughts and emotions, and determined how she could use that information to exert more control over the way she felt to help guide and facilitate positive connections with her patients:

When I [am able to] feel more in control of things, it improves the relationships with my patients ... I think it's going to help me in developing the link between the thoughts and emotions, like if I can control my emotions, I can control my thoughts.

Since feeling in control was important for Emelia, she also worked on her appraisal of situations she could not control, such as the amount of hours she worked on a rotation. Instead of feeling helpless, she chose to consciously reflect and focus on what she could control; that said, this often proved to and continues to be a challenge for her. If she experienced intense debilitating emotions while cognitively evaluating the controllability of an experience, they could have a reciprocal debilitating effect on her subsequent thoughts, creating a negative vicious cycle. However, when she was able to efficiently control these negative thoughts and focus on positive elements, it became an effective way for her to feel the way she wanted from a cognitive (feels confident), social (feels motivated to spend more time with patients), and physical (feels a sense of calm and positive energy) perspective. Thus, it was important that she identify and evaluate the element of personal control she had within a given moment over either herself or her environment, and take progressive steps to establish facilitative regulatory processes to experience her desired feel. Emelia remarked, "if I can control how I feel, I can control how I approach the situation, and change things into positives ... I can't always control the external factors, but I can control my thoughts, my outlook." While Emelia admitted that she was still not completely able to manage certain feelings like feeling overwhelmed, she loved what she was doing, which to her is what ultimately counted.

When she was aware of how she felt in the moment, the dimension of which she first became conscious was situation specific, "I typically note the negative physical experiences first [i.e., heaviness in her chest] ... but it depends. If I'm feeling tired then I notice that physically

first, otherwise [if there are no negative physical elements] it can be the thoughts first.”

Reciprocally, on the positive side, if she was feeling the way she wanted physically, she did not consciously have negative physical sensations and she was able to enjoy the experience and have positive thoughts, “I’m more willing to feel positive about things, allow myself to feel it, not question it, and attune myself to acknowledge when I am happy.” It seemed as though her awareness was selective and changed like a chameleon from moment to moment, context to context.

Over the course of the intervention, Emelia found that once she became aware of a physical impedance, she automatically began to initiate actions or responses to reverse that experience instead of allowing it to pass. She stated in one session: “Even though I feel physically drained and I’m reacting negatively because of it, instead of letting that drain me, I’m actively trying to be positive ... that way it does not snowball.” As such, she was better able to regulate how she felt and performed in both her school and everyday life by adopting this active rather than passive approach to her experiences:

I am better able to recognize when I need to be more prepared, or when I need to be more positive, so I’m better able to recognize when I’m feeling overwhelmed and stressed and initiate my regulatory mechanisms...for instance with my thoughts, I take a step back and reflect on exactly what I’m stressed about, and actually I’ve started to map it out. I’ll write all the things I’m stressed about, and make a pie chart, or write questions to myself to elicit what I’m being bothered by, and how, and that helps me ... before [the intervention process] I’ve never felt I was ever physically in control of my thoughts. Now I can go to the gym, stretch, and it feels great in my body ... and it helps me create a

clearer mind ... I can separate myself from the day by going to work out. I can cognitively prepare myself better for what lies ahead.

Emelia's Journey

A journey through Emelia's narrative constructed from the intervention process revealed that each of the dimensions she deemed relevant were inter-related, and tangible examples illustrated how each worked to holistically mediate her overall felt experiences, for better or for worse. All things considered, the intervention helped Emelia to better control how she feels and perform on a daily basis. Nonetheless, she admitted that she will need to engage in this continuous, lifelong learning process to be able to regulate all of the experiences she will face in her life and career.

Marissa

(Insert Table 4)

Marissa came to understand through the intervention how her physical, emotional, cognitive, and social dimensions influenced each other and collectively as a whole to determine how she experienced her aura:

If I have a migraine, I am in a bad mood, and someone makes a negative comment about it, I would not take it in the same way [positively] as I would if I had my aura ... It determines how well I respond and how much a certain situation affects me.

When experiencing her aura, her physical sensations are heightened and she is more aware of everything around her. She feels centered and positive, "Everything I see and experience, I turn it into a positive feeling and it keeps feeding that aura." Emotionally, she feels like she has a "force field" around her that keeps the positive thoughts and emotions flowing. It

is an invincibility that allows her to turn or frame every experience as a positive one. It allows her to feel more prepared for whatever comes her way.

When Marissa is experiencing her aura, her emotions are more facilitative and she can better regulate her thoughts, "...I have more control over how I handle situations...something bad happens and I can easily control how I'm going to approach or handle the situation...I can think more clearly." With her aura firmly in place, she feels untouchable and ready to take on any challenge. A tangible example of Marissa experiencing her aura was during a rotation in the operating room. It was obvious how holistic her awareness of the social, emotional, physical, and cognitive dimensions was to her:

I intubated a patient on my own, I had the scope in my hand and I got to do it all alone, so ... a first for me, and I got it on the first shot ... I felt it in my chest, in my heart ... I was excited, more alert...there was that lightness, lighter on my feet, positive thinking...any situation around no matter what I was just thinking positively about it ... I can figure out what I want more easily if I am feeling the way I want...more than if I were just sitting there dwelling on the negatives.

The social dimension of her feel is also central to her aura experience. As an intensely social person, relationships affect how she responds to any given experience within her performance environment. When her perceptions are positive, Marissa feels confident in her ability to perform the way she wants at school and in her daily life.

With the relationships in my life, I want to feel confident, liked, [feel] that the relationship is well and we're on the same page ... we have good communication ...When I'm in that invincible state, at that stage I get really excited and anxious, but good anxious ... and I love that feeling because I can communicate better, my thoughts

are clearer in the sense that it's like when you ask a question and you're on the fence about something, I'm never on the fence about something when I feel that way.

Because social relationships are so important to Marissa, there is often a trickle-down effect on the cognitive, physical, and emotional dimensions:

If I'm feeling off, I have those off days when those things are not going well with one of my friends or family ... it affects me a lot, again I'm very social and affected by people around me. But if something is wrong with a relationship and I did something wrong then I'll feel it internally, I'll feel uncomfortable, kind of sad and confused, I'll feel that I don't know how I should feel, or that I can't figure it out ... I can't get out of that feeling and I can't get back to that confident, happy aura.

In light of all of the regulation strategies from which Marissa was able to draw, she acknowledged that they were not always accessible in the moment. When faced with conundrums, the key to a facilitative experience was maintaining a positive frame of mind:

Long term wise, I can use the social connections I have with others, but more in the moment, I can't just stop what I'm doing and go talk to a friend, go for a run, or blast some music when I'm with a patient. So I try to think positive thoughts ... organize them as much as I can in the moment ... if I can't use my normal regulatory strategies then I'll do what I can without them and consciously work to maintain a positive attitude.

Marissa's Journey

Over time, it became important for Marissa to be aware of different regulatory strategies that worked for her, allowing her to connect and reconnect to her aura:

It is using those to my advantage, like a toolbox in that if one does not fit, work to connect with my feel, than I have other tools in there I can try ... they [regulation

strategies] help with my thought content, I kind of shift my thoughts to the music, and I like the feel it gives me, it's a very upbeat, good feeling ... if I'm just dwelling on how I'm going to do poorly on an exam, that affects my feel physically, in my thoughts, etc., but if I re-direct, calm, or block those negative thoughts then I won't fall into that negative cycle where I can feel physically tense ... the music takes away the tenseness, it brings me closer to my aura... the feel music gives me.

Throughout the intervention process, Marissa built upon an already strong understanding of each of her relevant dimensions to her performance and well-being. The social relationships she experienced within her environment often, if not always, affected her feel, and had a reciprocal relationship with her thoughts, emotions, and physical being.

I'm a lot more aware of how I feel ... what makes me feel how I want to feel, like playing piano and working out. I work-out four or five times a week now, regularly ... I feel physically better, have more energy, and just feel healthier and more confident ... psychologically I feel a lot better. I'm clear-minded and it's a time that I can just spend with me.

Sophie

(Insert Table 5)

For Sophie, becoming aware of which dimensions of feel were most relevant to her was a process that spanned the course of the intervention. While it proved to be quite challenging to explore her thoughts and emotions in relation to her performance, she felt a strong connection to the physical dimension of feel. This physical attunement to her body allowed her to accurately describe physical states as they precipitated from her experiences. For instance, when she had high anxiety, she had trouble breathing, her heart rate increased, her hands got sweaty, she felt

dizzy, had trouble seeing, and in extreme cases, felt like she could lose consciousness. The advantage of this awareness was that she could prepare herself by using these bodily reactions as indicators of oncoming debilitating states. That said, controlling these reactions and states proved troublesome:

Being prepared, and being in control of my anxiety, allows me to feel the way I want. I know it's normal to feel anxious at times, but the thing is, when it gets to the point that I start to feel it physically, that's all I can focus on and it builds up until I want to pass out, and I just wish I could stop that all when the anxiety is still at a low level, and I can't.

It was as if once she began to notice those physical sensations, it was already too late to act as the anxiety became too elevated to manage it.

Sophie's anxiety became a central issue during the intervention process and learning to control it was one of the reasons she wished to participate in this study. In fact, when asked to describe the way she wanted to feel while performing as a medical student, her immediate response was "not feeling anxiety." For Sophie, this absence of high anxiety was represented by a feeling of being on autopilot with few conscious thoughts:

When I'm relaxed like that and able to have that regular heartbeat and breathing rate, I don't notice it consciously. I only notice when I have that high anxiety ... it's automatic, I'm not thinking about anything negative, or focused on how my body feels.

Feelings of confidence are coupled with low anxiety. If she is feeling anxious, there is little chance that she is going to feel confident. Much like her anxiety, she is aware of a kinesthetic link to confidence. Feeling confident invokes physical energy, engagement and motivation, which in turn make her want to work harder. When that confidence is absent, that

energy dissipates just as her motivation to work harder and do more. As such, her cognitive and physical perceptions are closely tied together within her moment to moment experiences.

Anxiety is not always present for Sophie, yet she feels like it is always hiding just under the surface. Small, even insignificant things can trigger her anxiety and interfere with her performance:

If someone will cut me off while driving on my way to school, I do not get mad in that moment but it will build on my anxiety, then I'll miss some green lights, and then later at work I'll make a mistake and it will set it off [her anxiety].

Toward the end of the intervention process, Sophie had identified with four relevant dimensions of feel and linked them with her experience of anxiety, which she saw as a process. First, social stimuli, such as feedback from her preceptor, feed the process. These stimuli (both positive and negative feedback or just negative feedback) can lead her to generate negative thoughts, which are accompanied or followed by physical sensations. It was not until much later in the intervention that Sophie became aware of an emotional component to her felt experiences. For instance, she realized that she felt frustrated when unable to regain focus after becoming distracted, and this often left her feeling very agitated anxious. This was a critical step because Sophie, at least in the preliminary stages of the intervention process, somewhat denounced emotions and even thoughts as role players both in her chronic anxiety and everyday experiences. However, she later understood that was more due to a lack of awareness, understanding, and confidence in her ability to explore her emotions and thoughts, as opposed to a belief that they did not play a role in her life.

Toward the end of the intervention process, Sophie realized and accepted that anxiety is a part of her life and is something of which she will never totally shed herself. The question

became, “Now that I’m aware of it, what can I do to manage it in the most efficient and effective manner? Can I reduce it? Can I predict it?” It is still an obstacle for her, but Sophie no longer felt at the end of the intervention that anxiety was as daunting as it once was:

Anxiety has been a distraction, but less so than before. I have really been able to work around it more. It’s not as paralyzing as it used to be, but it is still very hard to overcome at times. I do try some things like taking deep breaths, but it is still hard.

A goal that Sophie wanted to try to accomplish was managing her thoughts so that her anxiety did not reach a conscious physiological level; the typical point at which it usually became too debilitating to overcome in the moment. She thought that attuning to antecedents and recognizing associated thoughts and emotions that elicited this anxiety would allow her to, in the very least, function or focus properly and prevent her from feeling completely out of control:

I always focus on the really negative and then at one point it was a big problem, I would have panic attacks and feel like I was going to pass-out ... it got so bad that just being in public, just thinking about it would just get me anxious and I would feel those symptoms. I just feel sometimes that there was no way to go. Once I focus on that I just feel anxious and then tippy ... I really just have to change the way I think ... stop thinking about situations that bring on my anxiety...it is my own fault, I make myself anxious, it is nothing about the actual situation, it is my appraisal of it.

Staff members and the overall clinical environment in which Sophie worked during her final cardiology rotation provided positive social stimuli, which affected other dimensions of feel and resulted in positive thoughts and self-appraisals. She became more motivated to learn and do more, felt much happier emotionally, maintained a consistent positive mood, and rarely looked at her watch because she was bored. As such, Sophie finally began to experience the ultimate way

she wanted to feel due to facilitative social connections and the environment in which she worked:

I've realized that the environment is a key dimension...it has to be positive, energetic, in order for me to feel the way I want ... I will need to look at that when I decide where I want to do my residency and where I want to work later on in my career. I need to be in an environment that I really enjoy. Even if there is a job that seems really interesting in my future, if the environment is not going to be positive, then I will not do it.

It also became apparent that how Sophie physically felt was, at least in part, affected by her social environment. Previously unaware of that connection, now she used that information to her advantage. For instance, if she knew that a positive social interaction could boost her physical state, she could actively seek it. Reciprocally, whenever she experienced a negative social experience, she could chose to interpret it in a more positive manner, or at least recognize the debilitating effect it could have on her performance and take any necessary steps to resolve it.

Sophie's Journey

Overall, the intervention process proved to be quite an adventure for Sophie. While she may not have reached a position where she could consistently control her anxiety, she gave herself a monumental head start by becoming aware of how her social, cognitive, emotional, and physical experiences are holistic and interconnected, and affect both her performance and overall well-being.

Discussion

The purpose of the present study was to explore the self-regulation of the process of feel of medical students. Specifically, this study sought to examine how each medical student defined and experienced feel (e.g., multiple dimensions), what dimensions of feel were meaningful and

relevant to the medical students, how these dimensions influenced each other and medical students overall experience of feel, and whether the medical students were able to attain, and regulate their processes of feel through the person-centered feel-based intervention.

Overall, at the end of the study, Ruby, Emelia, Marissa, and Sophie viewed feel as a unique multidimensional experience that varied over time, a holistic and dynamic phenomenon that was experienced physically, cognitively, emotionally, and socially, thus supporting past research on feel (Arcand et al., 2007; Callary & Durand-Bush, in press; Durand-Bush et al. 2005; Wolfe, 2006). That said, the multidimensionality of feel varied over time for at least one student. Sophie identified primarily with the physical dimension of feel at the outset of the intervention process, but her awareness of the roles that other dimensions played gradually surfaced over time. Prior to this study, the process and multidimensionality of feel had not been examined with medical students, nor was the regulation of different dimensions of feel. Results of this study also support findings that felt experiences play an important role in the context of medicine (Novack et al., 1997; Sotile & Sotile, 2002), and self-regulation skills can help foster effective learning (e.g., Zimmerman, 1990).

While each medical student identified feel as a multifaceted experience comprising social, emotional, physical, and cognitive dimensions, the degree to which each played a role within their felt experiences varied significantly. This highlights the important differences that exist between individuals in not only their awareness and understanding of how they feel but also how relevant and meaningful different dimensions are in their performance and daily life experiences. This clearly demonstrates the importance of using an emergent design grounded in the constructivist paradigm (Guba & Lincoln, 1994) to examine and contrast individual felt experiences (Wolfe, 2006).

Ruby, Emelia, Marissa, and Sophie each noted to varying degrees connections between the dimensions of feel they identified. Their ability to regulate these interconnected dimensions also varied. First, particularly during the initial phases of the intervention process, each developed an awareness of how the way they felt with regard to one or more dimension affected the other dimensions. For example, when Ruby felt cognitively overwhelmed by any number of tasks, she also began to feel it physically in her body. Reciprocally, she experienced debilitating emotions, which came full circle and led to other debilitating thoughts and physical sensations, which also affected the way she responded to those in her social environment. Secondly, what they did with this increased awareness affected their self-regulation. Becoming aware of how each dimension was related was the first step from which they learned to formulate regulation strategies based on the premise that exercising control of one dimension (e.g., feel relaxed by decreasing heart rate) could influence another (e.g., feel positive by controlling thoughts). Indeed, physical sensations proved to be an integral part of the medical students' felt experiences, and their bodies provided them with rich and detailed information about what they encountered on a daily basis (Artz, 1994). Being able to pay attention to the way they felt and working with their bodies helped to physically locate the locus of their feelings and use that information to further refine their understanding of their experiences (Artz, 1994).

Developing self-awareness became a central component of the intervention process for each medical student, fostering a climate for reflective thinking in which they learned to pay attention to themselves, their social and physical environment, and the role each played in their daily experiences. As demonstrated by Carver and Scheier (1981) who acknowledged the important function of self-awareness in self-regulation processes, the medical students learned through the intervention to recognize and monitor their inner states in relation to "preferred

standards”, for example, how they wanted to feel, and how they wanted to behave to perform at their best. Furthermore, they increased their ability to not only note discrepancies between their current experiences and preferred standards but also apply personal strategies to reduce these discrepancies, which led them to feel the way they wanted, and enhance their performance. In essence, they developed or increased their ability to self-regulate, that is, exercise control to bring themselves into line with their preferred standards (Vohs and Baumeister, 2004). It is noteworthy that they were assisted in doing so throughout not any type of intervention but one that had a special focus on feel. Similar to previous studies on resonance, desired feel was a central preferred standard to which the medical students referred throughout the process (Arcand et al., 2007; Callary & Durand-Bush, in press). From this preferred standard, they identified additional congruent ones such as preferred thoughts, preferred behaviors, and preferred performance environments that led them to feel the way they wanted as often as possible. Thus in this study, the medical students learned to self-regulate themselves based on how they wanted to feel, which had not been specifically examined in the general self-regulation literature to date.

The social dimension of feel is of particular interest in this study. Research has shown that self-initiated processes can alter an individual’s social and physical environment, and are reciprocally affected by those changes (Vohs & Baumeister, 2004; Zimmerman, 2000). As was apparent within each case, interpersonal relationships affected and were affected by each student’s ability to self-regulate the way they felt, which was also the case in previous studies in which a resonance intervention was carried out (Arcand et al., 2007; Wolfe, 2006). These results highlighting the interdependent roles of social, environmental, and self-influences in the optimal regulation of the self support the social-cognitive model of self-regulation (Zimmerman, 2000), and the holistic, inter-dynamic nature of the RPM (Doell et al., 2006; Newburg et al., 2002).

Emotions seemed to be not only associated with cognitions, but also physiological processes (Artz, 1994; Damasio, 1994; Pekrun et al., 2002) and as results of this study suggest, the medical students' social environment and experiences. Much like the physical dimension of feel was identified by Ruby, Emelia, and Sophie as an "indicator mechanism," emotions seemed to have a similar function and triggered reflective thinking about their experiences, which contributed to their attempts to self-regulate (Vohs & Baumeister, 2004). For example, Ruby's recognition of the debilitating and facilitative nature of her emotions in her decision making processes appeared to help her change the way she thought in order to change the way she felt (Ochsner & Gross, 2004).

Future exploration of emotional regulation in conjunction with that of the other inter-related dimensions of feel may help us better understand how individuals can engage in self-regulated lifelong learning (Schutz & Davis, 2000). Indeed, the ability to effectively self-regulate oneself is a critical step in any learning process (Schutz & Davis, 2000). It allows individuals to evaluate and monitor their progress toward learning goals, alter their approach as needed, and adjust social and environmental factors to provide a setting highly conducive to learning (Schunk & Ertmer, 2000). Results of this study suggest that the ability to regulate the self toward achieving personally defined goals could lead to increased performance and well-being throughout medical training.

As highlighted by proponents of the RPM, and consistent with the constructivist paradigm (Guba & Lincoln, 1990), Zimmerman (2000) noted that no self-regulatory strategy will work equally well for all persons, and few, if any, strategies will work optimally for a person on all tasks or occasions. Zimmerman reported that self-regulation skills are context specific and this was also found in this study. It was not clear by reviewing Zimmerman's work whether or

not individuals learn to self-regulate through personal discovery or with the guidance of other individuals or resources. However, the medical students in this study highlighted that it was an advantage to have the interviewer/researcher present to aid them in their process. It is still unclear, nonetheless, if the skills they learned through the intervention will be maintained and further developed over time without the presence of the interviewer/researcher. Therefore future research should explore the longitudinal processes of individuals who undergo this type of intervention, as well as methods that could maximize the continued independent development of self-regulatory skills beyond participation in the intervention.

The results of this innovative study will add to existing research examining the multidimensionality of feel, specifically since it focused on the interrelatedness and regulation of different dimensions. Because it was the first of this kind to be conducted with female medical students, more research should be carried out to further examine the self-regulation process and skills of both female and male students and determine if there are gender differences. From an applied perspective, the present study could lead to changes in curricula designed to optimize students' self-regulatory abilities throughout their medical training program, and promote conditions for life-long, self-regulated learning. Furthermore, the concept of feel, as described by Newburg et al. (2002), Arcand et al., (2007), and Callary and Durand-Bush (in press) had never been formally studied in tandem with existing self-regulation literature. Based on the similarities between Zimmerman's social-cognitive model of self-regulation (Zimmerman, 2000), and the RPM (Newburg et al., 2002, Callary & Durand-Bush, in press), future research should continue to explore the complimentary properties of these two models.

In sum, findings suggest that feel represents a holistic, dynamic, contextual, subjective, multidimensional, and inter-connected process that can be actively regulated by the self. Due to

the exploratory nature of this study and a lack of research on the regulation of the interrelated, multiple dimensions of feel within the context of medicine, more research is warranted and necessary. By encouraging and empowering students to give their performance and how they feel priority from the onset of their medical training, it may help them build a solid foundation for becoming attuned physicians, better able to serve patients by first taking care of themselves (Ball & Bax, 2002).

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Table 1

Participant Demographic Profiles

	Case #1	Case #2	Case #3	Case #4
Name	Ruby	Emelia	Marissa	Sophie
Age (years)	32	29	24	24
Sex	Female	Female	Female	Female
Education	Second year medical resident	Second year medical resident	Third year medical student	Third year medical student
Specialization	Obstetrics gynecology	Pediatrics	Surgery* Family medicine*	Family medicine* Emergency*

Note. * Denotes an undecided specialization.

Table 2

Summary of Ruby's Definition, Experience, and Regulation of Interrelated Dimensions of Feel

Definition of Feel	Internal position or gut-feeling that reflects either when there is something wrong about a situation, or when she is feeling the way she wants.	
Desired Felt Experiences	Overall	
"Feeling the Way She Wants"	As a resident, feeling the way she wants is like a high; she is energized by a lasting surge of energy that allows her to feel like she can juggle multiple asks at once; there is also a feeling of excitement. As opposed to school/work, in her daily life she wants to feel relaxed, with no internal conflicts or insecurities. It's a calming sensation she experiences when something feels 'right'; there is a certain sense of clarity, her mind is calm. It seems like everything is working together, and there is no disconnect anywhere.	
	Dimension	Interrelation and Regulation of Dimensions
Social	Wants to feel/experience a sense of social connectedness with her patients, colleagues and preceptors.	When she feels connected, she reciprocally feels motivated (cognitive) to perform and keep moving forward and feels happier (emotional) with what she is doing.
Physical	Wants to feel in-tune with her body. When she does, she feels in control, she can breathe effectively and calmly. Her neck muscles feel warm and relaxed; her body feels gelatinous.	When in-tune with her physical bodily sensations she notes changes in how she feels emotionally, cognitively, and socially, which gives her a sense of awareness and insight into how to use that information to help her overall self-regulation.

Emotional	Wants to feel a sense of excitement and experience a greater sense of empathy with patients, and generally feel happy as a person.	When she experiences facilitative emotions, such as happiness or excitement, she feels more confident (cognitive), which is also felt physically (physical), and she is often more motivated (cognitive) to do more, and 'go the extra distance' for her patients.
Cognitive	Wants to feel motivated and on top of things, like she is on top of her game; she also likes to feel logical, rational, and intuitive, and have a sense of clarity, which allows her to feel more confident in her decision making.	When she feels intuitive and has clear, flowing thoughts, she feels physically aware (physical) of how her environment, social or otherwise, is affecting her. When she is able to be logical, rational, and intuitive, she feels confident (cognitive), especially when it comes to decision making.
Undesired Felt Experiences "Not Feeling the Way She Wants"	At school she feels disconnected with her tasks and has difficulty accomplishing anything. In her daily life and at school, she feels physically tense and cannot relax or experience a sense of calm. She feels preoccupied by negative thoughts, and the ensuing negative emotions tend to cause her to over-catastrophize situations; she tends to 'wallow,' rather than proactively take control and formulate steps to effectively regulate herself. An excess of debilitating emotions, such as frustration, also interferes with her reasoning and decision making abilities. Because facilitative feedback from social interactions play an important role in her self awareness, a lack thereof typically interferes with her ability to gather feel and performance related data on which she relies to prepare for and regulate future performances. She finds herself in a state of amotivation, and even feels physically tight in her neck muscles and heavy in her chest.	

Note. The self-regulation of feel requires that one be aware of both desired and undesired felt experiences and how dimensions within these experiences influence each other, however, the primary focus of the resonance intervention is on developing strategies to "feel the way one wants" as often as possible. By representing a retrospective account of the student's experiences this table depicts a culmination of the student's experiences precipitating from the intervention sessions, thus no formal chronological progression over the intervention process is highlighted.

Table 3

Summary of Emelia's Definition, Experience, and Regulation of Interrelated Dimensions of Feel

Definition of Feel	Sees feel primarily as how she experiences her emotions and thoughts and how they are physically manifested within her body.	
Desired Felt Experiences	Overall	
“Feeling the Way She Wants”	She wants to feel confident in her knowledge and execution of tasks, and be able to identify and evaluate what prevents her from feeling the way she wants to regulate herself and her performance. Establishing control is a critical element of feeling the way she wants. When feeling in control, she feels relaxed and at ease and is unaware of physical bodily sensations; they just flow from her as if she is on autopilot. It is a holistic experience that she describes as her ‘balance’ and a dynamic and situational constellation of social, physical, emotional, and cognitive feelings.	
	Dimension	Interrelated Dimensions
Social	Wants to feel connected with her patients and feed off that positive energy.	Such heartfelt interactions give her a sense of accomplishment, satisfaction, and motivation (cognitive) to make that extra effort. It is also an important variable in connecting to, and regulating over time, what she sees as her holistic state of balance.

Taking control of her physical sensations, for example through exercise, becomes a regulatory mechanism. It helps her to reflect on, organize, and regulate her thoughts to feel more positive (cognitive), which in turn leads to facilitative emotions, that is, she feels happier (emotional). Attuning to the physical dimension often acts as a strength indicator, allowing her to be aware of where she is in reference to her preferred balance or constellation.

Wants to feel connected to her body; feel relaxed in her muscles like she is limber, dexterous, and coordinated; feel light as if her body does not have any weight, especially in her legs and arms.

Physical

In a cyclical relationship, how she feels emotionally influences how she feels cognitively. When she experiences this light and floating sensation, she does not feel any tension in her body (physical), nor negative thoughts in her mind (cognitive). She feels love when she experiences a strong social contention with her patients (social).

Wants to feel, above all else, a love for what she is doing; she also wants to feel happy and content while on her rotations, which she experiences as a light and floating sensation.

Emotional

Thoughts and the way she feels cognitively play a central role in her performance and the regulation of her emotional, physical, and social dimensions. When her thoughts and ensuing feelings change, her emotions (emotional) and physical bodily sensations (physical) seem to follow and influence her perception of social and other environmental stimuli (social). Thus, her ability to take charge of her thoughts and how she feels cognitively (e.g., confident, motivated) is a critical factor in her ability to self-regulate.

Wants to feel in control of her thoughts, which in turn makes her feel confident that she can actively regulate the other dimensions of feel. She also feels motivated to do more, and seek out new learning experiences.

Cognitive

If she is not feeling the way she wants, she becomes more conscious of physical sensations such as muscle tension and she experiences frustration, anger, and even fear. Cognitively, she feels foggy like she can not see. Physically, she also experiences a heavy feeling, like she is not in control of her body or mind. Her stomach feels uneasy and her body feels clumsy. Negative emotions bring on more of a heavy feeling and a diminished sense of control. When her social connections with her patients are weak, she loses motivation to be there and devote time to them and their families. Not feeling the way she wants interferes with her ability to effectively regulate her performance, particularly by inhibiting her holistic sense of balance. Because self-regulation is seen as an active process, not feeling in control of her thoughts, emotions, and reciprocally her physical states creates obstacles that prevent her from reconnecting with her 'constellation' and lead her to adopt a passive role in her regulation.

Undesired Felt Experiences

"Not Feeling the Way She Wants"

Note. The self-regulation of feel requires that one be aware of both desired and undesired felt experiences and how dimensions within these experiences influence each other, however, the primary focus of the resonance intervention is on developing strategies to "feel the way one wants" as often as possible. By representing a retrospective account of the student's experiences this table depicts a culmination of the student's experiences precipitating from the intervention sessions, thus no formal chronological progression over the intervention process is highlighted.

Table 4

Summary of Marissa's Definition, Experience, and Regulation of Interrelated Dimensions of Feel

Definition of Feel
 It is both multidimensional and situational, connected primarily to her state of mind in the moment. There are social, cognitive, emotional, and physical dimensions to it, thus every aspect of her life plays a role in the way she experiences feel. She strives to achieve an ultimate feeling as often as possible, which extends from her performance as a medical student, to everyday life. Feel plays a critical role in her life and is a positive experience for her, more so than a negative.

Desired Felt Experiences

Overall

"Feeling the Way She Wants"

Calls her ultimate feeling her 'aura.' It is a feeling of confidence, preparedness, and happiness where she feels almost invincible, and feels motivated to take on new tasks. Her aura encompasses physical, emotional, cognitive, and social dimensions and give her 'wings,' which make her feel light and uplifted. Experiencing her aura is critical in her life because the quality of all her social interactions (e.g., preceptors, friends, patients) depends on it.

Dimension

Interrelated Dimensions

Social
 As an intensely social person, she wants to feel connected in her social relationships, more so in her everyday life than at school.

Believing social energy is contagious, as a regulatory mechanism she often draws on this energy from others, such as friends, when she wants to connect with her aura. This energy feeds her aura, giving her that light, uplifted feeling, and sense of enjoyment.

Feeling the way she wants physically often has a social source in that positive feedback from her preceptors (social) facilitates these surges of energy, which also in turn make her feel more confident and even motivated (cognitive). Taking a more active role in her physical regulation, she discovered that exercise allows her to feel physically healthy and able to 'wind down' at the end of her shifts; a time to clear her head and reflect on her day (cognitive).

As a key sensation within her aura, she wants to feel surges of energy, like she is light on her feet but strong at the same time, and feels physically healthy. All together, this allows her to feel invincible; as if she has a shield around her.

Physical

When feeling the way she wants emotionally, her thoughts seem to be positive and clear and she feels cognitively focused (cognitive). Feeling in control of her emotions gives her the confidence and motivation to take charge by focusing on the task at hand and maintaining positive thoughts (cognitive), and by physically engaging herself and using the resulting surge of energy (physical).

Wants to feel excited and happy, like she is vitalized. This is a central component of her aura.

Emotional

Her cognitive processes act as the center where she perceives, interprets, and reacts to her experiences including social, physical, and emotional data. Being aware of such data allows her to effectively self-regulate by reflecting on past performances and making appropriate adjustments that incorporate the way she wants to feel across each dimension.

Wants to feel confident, prepared to take on any task or meet any challenge, and experience an overall sense of accomplishment.

Cognitive

Undesired Felt Experiences	When she is unable to feel the way she wants, she cannot experience her aura. She has negative emotions like anxiety that are often rooted in a lack of perceived control over a situation. Cognitively, she begins to take words out of context and make negative situations out to be bigger than they are. Physically, she experiences a lack of energy, which is detrimental to her performance and overall well-being. When she does not feel in control, she has more difficulty to regulate her felt experiences.
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Note. The self-regulation of feel requires that one be aware of both desired and undesired felt experiences and how dimensions within these experiences influence each other, however, the primary focus of the resonance intervention is on developing strategies to “feel the way one wants” as often as possible. By representing a retrospective account of the student’s experiences this table depicts a culmination of the student’s experiences precipitating from the intervention sessions, thus no formal chronological progression over the intervention process is highlighted.

Table 5

Summary of Sophie's Definition, Experience, and Regulation of Interrelated Dimensions of Feel

Definition of Feel	<p>Throughout the intervention process, especially in the beginning, she found it difficult to articulate what feel was to her, and how she experienced it. As the sessions progressed while she was able, in hind and foresight, to identify how she wanted to feel cognitively (e.g., confident) and even emotionally (e.g., frustration), she was not particularly aware of how she felt in the moment beyond physical sensations, and found it difficult to identify links between the different dimensions of feel. As such, she never clearly articulated any holistic experience that could represent her feel, aside from identifying the way she wanted to feel, and the way she did not want to feel. That said, she did see feel as being primarily sensed in physical ways, in a reciprocal relationship with her social and environmental experiences, and was thus very in tune with her body in any given moment.</p>
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Desired Felt Experiences

Overall

"Feeling the Way She Wants"

She wants to feel confident, smart, physically relaxed, and devoid of negative anxiety. Not experiencing this anxiety represented normal breathing, a regular heartbeat, and an absence of negative thoughts. Her confidence is deeply rooted in her social experiences with others, and her school performance efficacy. When she feels more physical energy, she feels engaged and motivated, which in turn makes her want to work harder. When she is experiencing high confidence and sense of flow, she works on autopilot and has few conscious thoughts.

Dimension

Interrelated Dimensions

Represents a central dimension of feel for her as all others permeate from her social experiences. For instance, when she feels valued by her preceptor (social), she feels happy (emotional), confident and motivated to do more (cognitive), and feels more relaxed in her body (physical) in that any anxiety she may have does not reach a conscious level, which is when it gets too debilitating to overcome. Her breathing and heart rate also feel normal and fluid (physical).

Wants to feel connected with her social environment at school, especially with her preceptors and colleagues.

Social

The physical dimension became instrumental in the development of her ability to regulate herself. She was naturally attuned to physical manifestations within her body. Due to this heightened sense of awareness, she was able to use her physical perceptions as a precursor to or indicator of her thoughts or the way she felt cognitively such as focused or confident (cognitive) and the way she felt emotionally (emotional); she observed how this affected her performance and well-being.

Wants to feel relaxed, with a regular heart and breathing rate; does not want to consciously be aware of her body in the moment.

Physical

She came to recognize that her emotions played a role in her chronic experience of negative anxiety. Initially a physical phenomenon for her, her experience of physical anxiety (physical) was rooted in feelings of frustration and anger (emotional), such as in response to negative feedback from her preceptor (social). Since she found it difficult to manage her anxiety once it reached an intolerable physical level, she began to consciously attune to negative thoughts preventing her from feeling confident (cognitive) and a sense of enjoyment (emotional) so she could interject and attempt to regulate them before they manifested themselves even more physically.

Wants to smile and experience a sense of enjoyment in her work. Overall, she wants to feel devoid of negative emotions.

Emotional

To feel confident, focused, and flowing, she became more aware of the influence that her thoughts had in her every day experiences. This allowed her to make links to her physical sensations (physical) and she realized that her inability to feel relaxed was due to her anxiety, which also existed because of her debilitating thoughts. Her inattention to how she wanted to feel cognitively and to her thoughts in general had more to do with her discomfort to discuss them. Her feeling of confidence was coupled with low anxiety (emotional), calmness, and tension (physical). Seeking out and engaging herself in an inclusive and supportive social environment while at school greatly increases her chances of feeling confident and focused (cognitive), happy (emotional), and socially connected (social).

Wants to feel confident, and sense of flow where she is only focused on her current tasks.

Cognitive

Undesired Felt
Experiences

When she is unable to feel confident, she typically loses physical and mental energy, along with the motivation to work harder and do more. She often experiences negative anxiety which results from an inability to feel confident, calm, and socially connected to those in her performance environment. Unable to achieve that feeling of flow, she 'gets down on herself' and finds it difficult to feel engaged in her tasks. When she has high anxiety, she has trouble breathing, her heart rate increases, her hands become sweaty, she feels dizzy, had trouble seeing, and in extreme cases, she feels like she could lose consciousness.

"Not Feeling the
Way She Wants"

Note. The self-regulation of feel requires that one be aware of both desired and undesired felt experiences and how dimensions within these experiences influence each other, however, the primary focus of the resonance intervention is on developing strategies to "feel the way one wants" as often as possible. By representing a retrospective account of the student's experiences this table depicts a culmination of the student's experiences precipitating from the intervention sessions, thus no formal chronological progression over the intervention process is highlighted.

CHAPTER V

GENERAL DISCUSSION AND CONCLUDING REMARKS

The purpose of the present study was to explore the process of feel of medical students, specifically how they constructed and experienced the different dimensions of feel (e.g., physical, emotional, cognitive, and social), how these dimensions mediated each other, and how they in turn affected their performance. The present study also examined how the medical students defined and constructed performance in their medical training environment. Finally, the proposed research served to uncover whether or not the medical students could enhance their performance through the process of feel by participating in a feel-based person-centered resonance intervention.

Prior to this study, research examining feel as a multidimensional phenomenon was virtually absent in the context of medicine. Results showed that for Ruby, Emelia, Marissa, and Sophie, the concept of *feel* at the completion of the intervention represented an experience that was dynamic, subjective, holistic and multidimensional, which is congruent with the results of past research on feel (Arcand et al., 2007; Callary & Durand-Bush, in press; Durand-Bush et al., 2005). While each student identified the social, emotional, physical, and cognitive dimensions as being relevant and meaningful, the degree to which each played a role within their performance environment varied. For instance, in the case of how they wanted to feel emotionally, each participant experienced this in their own unique way based on their perceptions and appraisals of situations. By recognizing how their emotions influenced other dimensions of their felt experiences, they were able to use them as data and prepare for their onset and consequences (Botterill & Brown, 2002).

While many health care providers are beginning to consider how they feel and how this affects how they interact with patients and colleagues, it is unclear if students are doing the same throughout their medical training (Westberg & Jason, 2001). This study showed that it is important for students to not only identify how they want to feel in their medical environment but also to develop ways to self-regulate, particularly in the face of stressors or obstacles, as it can help enhance performance and well-being. More specifically, it can lead to better relationship with their patients and colleagues, and take better care of themselves, which was reported by Ball and Bax (2002) to be an extremely vital component of medicine.

Each student offered that how they felt socially in their performance and/or personal contexts should be taken into consideration. For Ruby and Emelia establishing positive social connections with their patients was of the utmost importance, Marissa placed a great deal of emphasis on her social relationships outside of school, and because Sophie relied heavily on external feedback, the relationships she formed with her preceptors played a critical role in her experience of optimal performance.

Another seemingly influential social resource in the intervention process was the interviewer/researcher. During the pre-intervention interviews and intervention sessions in which trust was continuously established, Ruby, Emelia, Marissa, and Sophie each felt that the interviewer/researcher effectively facilitated the process. For instance, Emelia felt that because this person helped validate what she was feeling, actively listened to her experiences, and challenged her to evolve throughout the process, it motivated her to continue developing ways to reconnect to the way she wanted to feel. Since self-regulatory processes can be acquired and sustained through social as well as self-sources of influence (Zimmerman, 2000), it appears that the intervention facilitator plays an important role in the promotion and development of effective

self-regulatory skills. Since self-regulation processes are inherently cognitively and physically demanding under any condition, many people may forego implementation if they feel tired, disinterested, or uncommitted (Zimmerman, 2000) Therefore, it is reasonable to suggest that the art of developing and maintaining sound self-regulatory abilities could be maximized through a combination of personal commitment, motivation, and self-awareness, and external intervention processes, such as the person centered, feel-based intervention carried out in the present study.

Pursuing the discussion of external social influences, it is noteworthy that feedback emerged as an important theme throughout the intervention process. Having both internal and external sources of feedback seemed to be more advantageous for effective self-regulation and optimal performance. While the medical students were used to attuning to external feedback at the onset of the study, their desire and ability to consider and evaluate internal sources of feedback varied. Internal processes were addressed by Zimmerman (2000) who reported that accurate self-observation is critical because individuals who misperceive or distort their behavior, actions, or environmental stimuli cannot effectively correct and inform subsequent behavior. Violato and Lockyer (2006) also feel this is important because medical students, residents, and experienced physicians who cannot accurately assess themselves are unlikely to design, pursue, or seek appropriate and adequate continuing education and professional development experiences. In any case, given the potential for dissonance within self-observation processes, interventions focused on developing and maintaining effective self-observation skills while collecting both external and internal data seem to be justified and warranted. By proactively taking control of their own learning to enhance areas of deficiency (Shokar et al., 2002), the medical students seemed to be able to maximize their reflection as they incorporated

both internal and external sources of information to feel the way they wanted and improve their performance.

As Schmidt and Rikers (2007) suggested, medical students should devote more time to reflecting on their performance environment and experiences in order to deepen their understanding. In the current study, the intervention process seemed to foster a climate of reflective thinking in which each participant learned to pay attention to themselves and their environment and make decisions that lead to enhanced felt experiences. This supports past research suggesting that self-awareness and self-reflection are crucial elements in the self-regulation of felt experiences (Arcand et al., 2007; Callary & Durand-Bush, in press; Doell et al., 2006).

Despite being a critical step, little effort had been made to date to link self-regulated learning processes with specific interventions (Schunk & Ertmer, 2000). The resonance intervention process implemented in this study addressed this gap as it focused on the introspective processes of medical students, specifically for the development of personal self-regulation strategies that allowed them to strive for and sustain optimal felt experiences and performance in their medical environment.

A unique approach to this study was that participants were given the opportunity to explore more internal facets of their performance. As Willson (2006) stated, medical students need to consider the areas of medicine in which subjectivity is inevitable and indeed useful. Thus, by learning to gauge their performance from within in tandem with what was required from them in their environment, they could better rely on and prepare themselves to respond to inevitable stressors they encountered. Ruby and Emelia largely identified performance as being an internally defined process, while Marissa initially felt that performance was primarily

connected to the opinions of others. However, over the course of the intervention, her perception shifted and she embraced more internal means of performance appraisal. While Sophie eventually conceded that being able to internally appraise performance was somewhat important, performance remained very much an externally defined process. It is possible that Ruby and Emelia defined performance more internally because they were residents and more accustomed to making independent assessments within their performance environment. As they were only beginning their clerkship training, Marissa and Sophie were not far removed from more objective, traditional forms of performance appraisal, which could explain why external appraisal means were so significant to them. As such, the innovative and unique approach of giving participants the opportunity to explore performance from a personal perspective proved to be an insightful, and indeed useful, element of the intervention process.

Unlike previous research on resonance and feel (e.g., Arcand et al., 2007; Lussier-Ley, 2006), none of the four medical students specifically identified a spiritual dimension of their felt experiences, however, due to the subjective nature of the intervention process, it cannot be suggested that the spiritual dimension is not a component of feel for medical students. Speculatively, perhaps they did not identify this dimension because it was inherent in other dimensions, that is, how they emotionally or cognitively felt. Although unintentionally, my role as the interviewer/researcher could have influenced this based on what I chose to probe and highlight throughout the intervention. Thus, despite the person-centered nature of the intervention, my facilitative involvement as the interviewer/researcher must be acknowledged. In any case, in light of the empirical evidence supporting the social, physical, cognitive, and emotional dimensions of feel, perhaps future research should focus specifically on the prevalence, relevance, and/or experience of the spiritual dimension of feel.

A particular strength of the present investigation was the exploration of self-regulatory processes in a natural setting, which addresses Fitzsimons and Bargh's (2007) observation that in the real world, as opposed to in controlled research settings, people may have different perceptions and demonstrate different abilities. The present study allowed for the observation and analysis of "real life" processes unique to each medical student as they interacted within, and experienced their performance environment over time. Thus, they were able to explore how they felt and performed in the moment, as well as collect and reflect on personal data gathered from true events. Indeed, it appears that these students benefitted from actively learning in an authentic context (Schutz & Davis, 2000).

Another novel approach was the use of concept maps to create a holistic and visual representation of feel and performance. Although the maps were not analyzed per se, each participant constructed their map upon the completion of the intervention process with the help of the interviewer/researcher. Medical schools have become interested in the benefits of concept mapping as a learning strategy for medical students (Pinto & Zeitz, 1997). Maps can serve as a means for integrating new knowledge acquired during residency training with the knowledge accumulated and retained during medical school (Rendas et al., 2005). According to these authors, learning does not stop upon completion of residency training and thus concept mapping skills can and should be used as a strategy for life-long, self-directed learning. For these reasons, concept mapping could serve as an effective tool and be further explored in future studies implementing resonance interventions. However, because the participants only completed their maps after the intervention, perhaps the full benefit of concept mapping was not realized. A logical step in future research would be to ask the participants to construct their map as the intervention evolves and determine how this impacts their reflection and learning.

While journaling has been implemented with medical students to facilitate their reflective process (Pitkala & Mantyranta, 2004), its uniqueness in the present study is that it was used as an intervention tool rather than a means to collect data. Due to the results suggesting that the students benefitted from the journaling process because it promoted self-reflection and self-regulation, it could have direct applications within medical education contexts. Another innovation stemming from the journaling process was allowing students to journal electronically. Because of stringent time constraints placed upon them, some students found it more useful to reflect by summarizing their thoughts into an e-mail and sending it to the interviewer/researcher before each session. This was also reported by Callary and Durand-Bush (in press) who examined the felt experiences of university student-athletes. Future research should continue to include this approach to increase both the efficiency and effectiveness of the journaling process.

There were some limitations in the present investigation. First, while the small sample size was not of concern because the focus was on individual experiences and not on the generalization of results, a larger number of medical students would have broadened the scope of experiences available for analysis and discussion. However, there was an issue of feasibility due to the lengthy individual intervention carried out with each of the four participants. Focusing on these four cases also allowed for an in-depth exploration of each medical student's experiences. Any expansion would have been done at the expense of the depth, detail, and insight provided in each case. Second, all four medical students were women and men could have provided diverse perspectives. However, men were not purposefully excluded; the sample was chosen based on interest, commitment, and availability. Third, all students were recruited from the School of Medicine of the University of Ottawa, thus their experiences might reflect the philosophy of this particular school and accordingly differ from those reported by students enrolled in a different

program or university. Finally, while two participants were medical residents and two were medical students in their clerkship years, all reported similar learning and performance environments, that is, they each moved through a series of rotations (e.g., family medicine). This led to a focus on medical learning experiences emerging from more practical and applied settings, and less emphasis on classroom or lecture-type learning experiences that students in their first two years of a medical degree would typically encounter. Thus, it is unclear whether or not the medical students' experiences in this study would differ from those of students beginning their training.

It must also be acknowledged that data derived from constructivist inquiry represent individual constructions to be taken into account in the migration toward consensus (Guba & Lincoln (1990). The present study was exploratory in nature as it attempted to highlight individual constructions, potentially influencing future inquiries. The relative interpretations of the participants could not, admittedly, be validated in terms of historical truth, and is an inherent limitation of the constructive/narrative mode of inquiry in that the information gathered from the participants solely represented their constructed meanings and realities (Patton, 2002).

Prior to this study, the resonance process had yet to be applied in the field of medicine. Specifically, the process of feel, including its relevant multiple dimensions, and how it affects performance and well-being has not been explored in the medical literature. Moreover, scarce attention has been devoted to the empirical study of optimal performance as an individually constructed process. As such, the present study will add to existing research on feel, performance, medical education, and the growing literature on resonance and the RPM. From an applied perspective, the present study could eventually lead to changes in university medical courses or feel-based counseling opportunities for students to help them manage how they feel

and optimize their performance throughout their medical training program. Overall, the present study could have significant implications for not only future research, but physicians, other medical practitioners, medical school administrators, and students. It is hoped that the unique focus on performance as a self defined process will lead to future empirical investigation into the facilitative role that such an approach could have in the formal medical education process and lifelong, self-regulated learning. It is unclear whether or not the skills the medical students learned through the intervention will be sustained over time without the presence of the interviewer/researcher. Therefore future studies should take this into account and examine if benefits of resonance interventions are maintained over a longer period of time.

The journeys of Ruby, Emelia, Marissa, and Sophie have illustrated that exploring concepts related to the self, such as feel and performance, is often an arduous and time-consuming process. However, it appears that if and when individuals are willing to explore their felt experiences through an introspective process, they can develop personalized skills that could help them achieve and maintain optimal performance. Discovering how one wants to feel and how the way one feels affects and is affected by one's external environment is clearly not something that can be rushed nor forced. As such, the construction of each student's process took a great deal of personal commitment, desire, openness, and introspection. Whether directly or indirectly, each student nevertheless felt that it was worth their while because the skills they acquired and the lessons they derived from this process will help them achieve their optimal standards of performance, and allow them to become better medical practitioners in their future career.

Although to varying degrees, each medical student seemed to be able to achieve optimal levels of performance, however, it cannot be said that they were able to consistently sustain such

performance levels, nor can results predict future efforts to do so. In reality, each admitted they experienced ups and downs in their performance environment but they conceded it was important for them to experience sub-optimal performance during the process in order to collect data about themselves, for example, how they reacted and what they needed to do to move forward. Indeed, they needed to know how and why they fell down, before they could learn to stand.

It is important to reiterate that this intervention did not represent a means-to-an-end, and in fact should only be considered as an initial step in any lifelong process of self-discovery and adaptation. Thus, the steps that these students take from this point forward rests with them. Nevertheless, in the very least, the results support Ball and Bax's (2002) assertion that by encouraging medical students to make their performance and how they feel priority early on in their medical training. This process can help them build a solid foundation for becoming attuned physicians, better able to serve patients by first addressing their own needs. As such, an invaluable final lesson that may be shared based on Ruby, Emelia, Marissa, and Sophie's experiences is that they will one day be in a position of significant responsibility, providing people with a critical service within our society, and fortunately know that their ability to perform and regulate how they feel is crucial for themselves and those for whom they provide care (Remen, 2001).

To conclude on a more personal note, the journey throughout this study was valuable for not only each medical student but also for myself as well. As the interviewer/researcher I felt like I was there with the students each step of the way, living their experiences, growing with them, hearing their stories, and helping them achieve their goals. Most importantly, I genuinely believe that I learned as much from Ruby, Emelia, Marissa, and Sophie as they did from their

participation. Overall, my hope is that their stories will inspire other students and researchers to explore the concepts of feel, resonance, performance, and self-regulation, and lead to opportunities for medical professionals to become more self-directed and self-regulated lifelong learners who are attuned to the way they feel and continually strive for optimal standards of performance.

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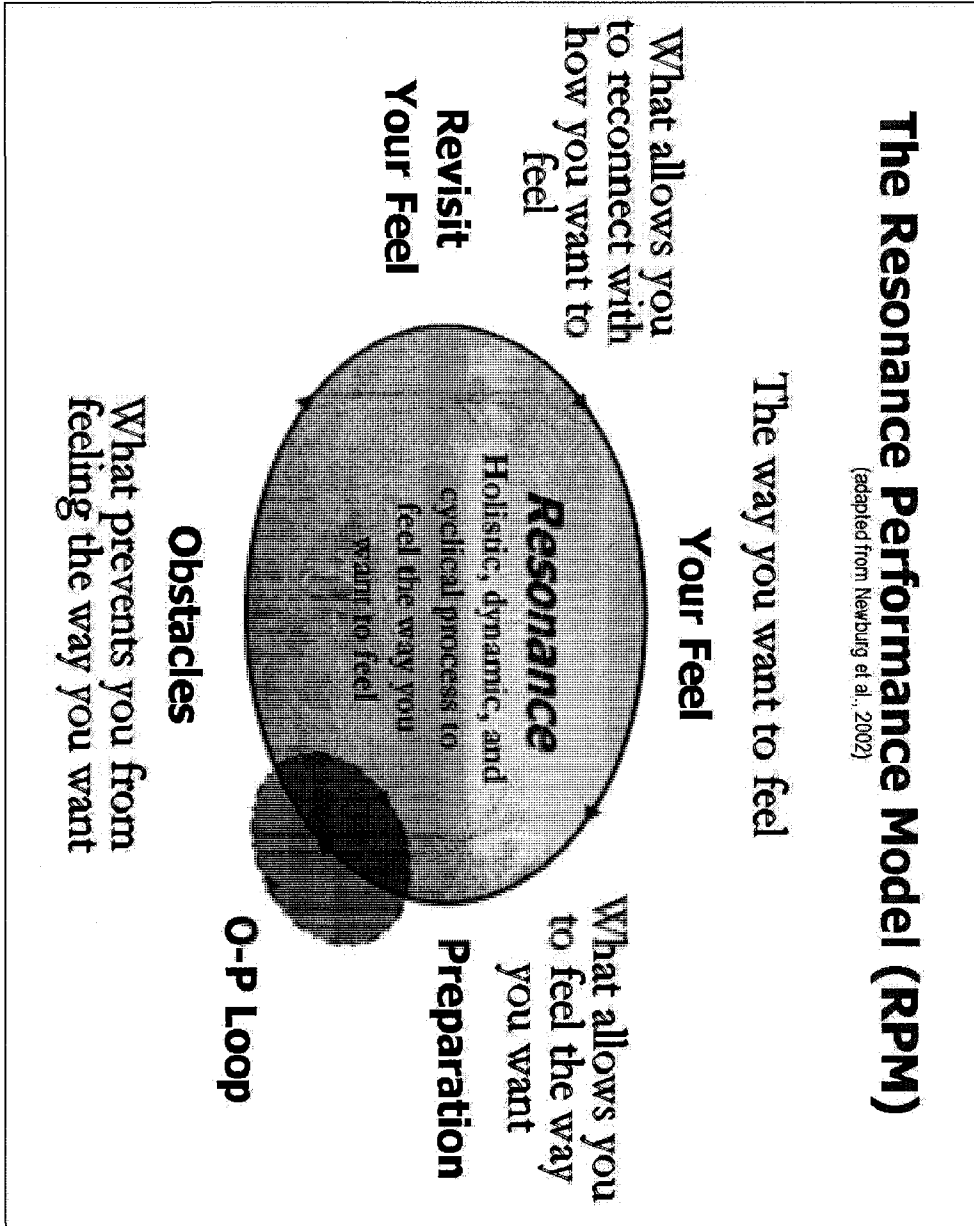
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Appendix A

The Resonance Performance Model
(adapted by Wolfe, 2006, from Newburg et al., 2002)



Appendix B

*Letter of Information and Consent Form***LETTER OF INFORMATION*****Recruitment of medical students for a 17-week study aimed at exploring the process of feel and its impact on performance in medical school***

Dear medical student,

As part of my M.A. thesis, I will be conducting a study under the supervision of Dr. Natalie Durand-Bush, a professor at the University of Ottawa in the School of Human Kinetics who also works as a performance psychology consultant. The purpose of my study is to explore the process of feel of medical students, specifically in relation to how it affects their performance in medical school. Through a resonance (i.e., feel-based, person centered) intervention, participants will explore how they feel and want to feel in their performance environment. They will also learn to regulate how they feel and observe how this affects how they perform.

If you are interested, you will be asked to participate for a total of 17 weeks. Your involvement will consist of:

- Attending a pre and post-intervention interview and 6 intervention sessions conducted every 2 weeks throughout the 12-week intervention period:
 - a. One pre-intervention interview (approximately 1-2 hours) (Week 1)
 - b. Six intervention sessions (approximately 1 hour) (Weeks 3, 5, 7, 9, 11, 13)
 - c. One post-intervention interview (approximately 1 hour) 4 weeks after completing the intervention (Week 17)
- Completing a journal on a daily basis throughout the 12-week intervention, which should take approximately 5-10 minutes per day. You may be asked to submit journal entries via e-mail prior to an intervention session.
- Reading your narratives created based on the data collection to verify that the information reflects your perceptions and reality and to change any information that you do not want included in the final report.

The interviews will be audio recorded and scheduled at a time convenient to both you and myself. The information you will share throughout the study will remain strictly confidential. Audio recordings and transcripts of the interviews and intervention sessions will be stored in a locked filing cabinet in the resonance laboratory, and only the research team, including Dr. Durand-Bush and myself, will have access to the data. Anonymity will be maximized by assigning a number to your file so that your name will not appear on or identify any transcript. If you choose to participate, the information that you share may be used for the purposes of conference presentations and publications in scientific journals, however, anonymity is guaranteed. You will be able to receive, by providing a mailing address below, a summary of the findings of this research, which will be available by December 2007. As a participant, you must be able to read, and speak English as each interview will be conducted in English only, although you will have the option to journal in French if desired as the journal content will not be analyzed.

Benefits of this study: Recent studies conducted in the context of sport have shown that athletes benefited from participating in similar feel-based studies as they provided an excellent opportunity for them to become aware of what they can do to feel the way they want in their performance environment and perform at an optimal level. All participants reported positive effects in their sport and daily life (i.e., increased well-being, motivation, and perceptions of athletic performance). The person-centered intervention will involve multiple sessions facilitated by an experienced consultant so this could be a valuable and rewarding learning experience for you.

Potential risks involved: The risks involved in this study are minimal although you will be asked to share how you feel throughout the study. You will be asked to participate for a period of 17 weeks, however, you will be able to

withdraw at any time without any repercussion. Should you feel at any point in time during or at the completion of the intervention that additional support would be of benefit to you, arrangements will be made for an appropriate referral. Please do not hesitate to make any concerns known to the researchers throughout the study.

CONSENT

By agreeing to participate in this study, I, _____, understand that my involvement will consist of sharing personal information about my academic and personal experiences and that the research will not pose any serious risk. The purpose of this study is not to evaluate my abilities as a medical student but to gain insight into how medical students feel, how this affects how they perform, and how that information can be used to enhance performance. I also understand that a long-term goal of this research is to use the information from medical students to develop feel-based interventions that medical administrators and teachers could implement to enhance students' performance. I am also aware that the results of this study will be presented at conferences and/or published in scientific journals but that my name will not be mentioned at any time.

I understand that I am free to withdraw from the study at any time. I can also refuse to participate in certain aspects of the study, decide to withdraw shared information from interview transcripts and narratives, and refuse to answer verbal or written questions without any consequences or prejudice.

Any information requests or complaints about the ethical conduct of the project may be addressed to the Protocol Officer for Ethics in Research, Tabaret Hall, 550 Cumberland Street, Room 159, Ottawa, ON, K1N 6N5, tel.: 613-562-5841, e-mail: ethics@uottawa.ca. There are two copies of the consent form: one for the medical student and one for the researcher.

Researcher's signature: _____ Date: _____

Medical Student's signature: _____ Date: _____

Should you have any questions regarding this research project, please contact

Dr. Natalie Durand-Bush at:
Tel. number: (613) 562-5800 ext. 4281
Fax number: (613) 562-5149
E-mail address: ndbush@uottawa.ca
School of Human Kinetics
Faculty of Health Sciences
University of Ottawa

OR

Christopher Simon at:
Tel. number: (613)
Fax number: (613)
E-mail address:
School of Human Kinetics
Faculty of Health Sciences
University of Ottawa

Please mail a summary of the results to:

Appendix C

Interview Guide based on RPM (adapted from Newburg et al., 2002)

A) Pre-Intervention Interview

Goal: Introduce concepts of performance and feel in order to identify participants' initial understanding and experience of these phenomena.

1. General opening questions

- Tell me about yourself and medical school.
- Why did you decide to go to medical school/ why did you decide to become a doctor?
- What is important to you in medical school? How so?

*2. Primary questions and probes*Performance

- What is performance to you (i.e. define it)? Is it multifaceted? How do you measure it?
- Describe your performance environment (i.e. areas in which you are required to perform). How is your current performance given your performance environment? What leads you to experience optimal and sub-optimal performance? Can you enhance your performance, if so, how?

Feel

- What does the word "feel" mean to you? How would you define feel?
- How do you experience it on a daily basis (e.g., does it have more than one facet)?
- What role does feel play in your daily life? Medical school?
- How might you become more aware of how you feel? How might you measure it?

B) Intervention Sessions

Goal: Help participants explore how they perceive and experience feel (i.e., physically, emotionally, cognitively, socially, and spiritually) and performance (i.e., optimal and sub-optimal) across time and in different situations. Empower them to design their personal process of resonance as a way to regulate how they feel in their performance context and daily life.

*1. First session*The way you want to feel

- How do you typically feel in medical school? Be as explicit and descriptive as possible.
- How would you like to feel in medical school, that is, when you perform in that environment? Describe this feeling to the best of your ability. If it helps, think of a time in this context when you felt the way you wanted. As you relive it in your mind, describe it to me.

- Is this feeling that you seek the same when you do your school work or study compared to when you do exams or tests? What about how you want to feel in other performance environments and in your daily life? Explain why and how if it is different.
- Can you summarize how you want to feel when you perform in medical school in a few words or sentences? If it helps, think of a picture or image (i.e., of yourself or something else) that represents how you want to feel. Describe this picture or image, including any relevant dimension (ex. visual, auditory, kinesthetic, and olfactory) to make it as vivid as possible.

Preparation

- What allows you to feel the way you want (i.e., thoughts, behaviors, environmental factors, strategies, goals, etc.)
- Tell me more about those situations in your performance environment where you experience this feeling.
- How often do you feel the way you want? How often would you like to experience this feeling?
- Can you regulate how you feel on a daily basis, if so, how; if not, why? What do you need to do to feel the way you want more often?

Obstacles

- What prevents you from feeling the way you want on a daily basis? Internal and external barriers?
- Tell me about some of the obstacles you have faced in the past in medical school?
 - What happened?
 - How did you feel?
 - Did you overcome them, if so how? If you did not, what prevented you from doing so, and in hindsight is there anything you feel you could have done better or differently?
- How do these obstacles affect (a) your preparation, (b) performance, and (c) well-being?
- Do negative feelings carry over in other aspects of your life? If so, how?
 - What can you do to make things better in these kinds of situations?
 - What can you learn from experiencing these obstacles?
- Did an obstacle ever get so big in your life that you quit what you were doing, or at least considered it? How did you feel? Describe why and what you did or did not do.

Revisiting the way you want to feel

- When you face an obstacle in medical school, what is your first reaction to it? What do you do after? How do you feel then? Give me an example.
- Do you do anything to reconnect with the feeling you previously described? If so, how? If not, why? Explain.
- What could be some benefits of revisiting the way you want to feel on a regular basis?

Effect on performance

- Does feeling the way you want or not feeling the way you want in medical school affect your performance? Explain why and how.
- What else might feeling the way you want or conversely not feeling the way you want affect in your performance environment and daily life (i.e., anxiety, self-confidence, motivation, well-being, enjoyment, satisfaction).

Summary

- What are your thoughts at this point of the interview?
- Let's summarize together some key points that you have mentioned so far (use RPM as tool to do this summary and get participant to write down points)
- I'd like to talk to you about a journaling process (explain journal process, content, and how it will be an integral part of resonance intervention and invite participant to start completing the journal) and learning process (explain components of feel-based learning and invite participant to engage in this process and reflect on the questions while journaling).
- Do you have any concerns or questions or need clarification on some of the things we discussed? Thank you for participating in this first interview.

2. Remaining sessions

- Tell me about the last two weeks. How have you felt at school? In your daily life?
- Based on our initial discussion of what feel and performance is to you, how would you say you are experiencing feel? Performance?
- Have you been able to feel the way you want? In which situations? What helped or didn't help?
- Describe the obstacles you faced. How did you respond (e.g., did you see the obstacle as an external or internal one? Do you feel you had control over the situation?). Were you able to reconnect with how you want to feel? What allowed you to do or not do this?
- Can you talk about your awareness? Has it changed at all? What are the results of this?
- Tell me about the journaling process; any difficulties or challenges, positive experiences, or key reflective moments? Have you been engaging in regular reflection? What are the results of this?
- Overall, what are the lessons for these last two weeks?

C) Post-Intervention Interview

Goal: Explore (a) the participants' overall experiences during the study, (b) what they have learned through the intervention, (c) how they view their experience of feel and performance in light of their process of resonance now that the intervention has been completed for a month, (d) if and how their experience changed over the course of the study, and (e) if and how they believe this process will guide them in their future career in the medical field.

- Tell me about the last four weeks since we completed the intervention.
- Tell me more specifically about your experience of feel and performance (probe for multi facets or dimensions). Did your perceptions evolve over time? If so, how and what effect has that had?
- What can you say about the resonance process that you developed throughout the intervention to help regulate your performance and how you feel?
- How do you feel now? Can you better regulate how you feel and perform in school and in your daily life? Explain.
- Tell me about the journaling process. Have you continued it on your own? Has reflection through the process of journaling facilitated your learning and development? If so, how?
- What are your overall impressions of the last 16 weeks? What are the biggest lessons you have learned?
- Do you feel these lessons will help you in your future career as a medical practitioner? Explain.
- Is there anything you would like to add?
- Thank you so much for participating in this study!

Appendix D

Recruitment Poster



ATTENTION MEDICAL STUDENTS & RESIDENTS



Does how you feel affect how you perform? As a student? As a resident? In your daily life?

If you answered yes there is a unique opportunity for you to enhance your performance and well-being as a student or resident, in the medical field, and in your daily life.

Recruitment of medical students for a 17-week study aimed at exploring the process of feel in medical students and residents and its impact on performance

Involvement over 17 weeks consists of:

- Attending a pre and post-intervention interview and 6 intervention sessions conducted every 2 weeks over 12 weeks.
- Completing a journal throughout the 12-week intervention.

Benefits of this study:

- *Recent studies have shown athletes benefited from participating in similar studies.*
- *Opportunity to become aware of what you can do to feel the way they want in your performance environment.*
- *Learn to regulate how you feel and enhance your performance.*
- *Learn to perform to the best of your ability.*
- *Positive effect on and daily life and well-being.*

This opportunity can not only benefit you in your aspirations as a medical professional and in your quality of life, but your future patients as well. Medicine is more than a diagnosis or a problem to be solved; it's also about the quality of our lives and consequently the quality of our performance.

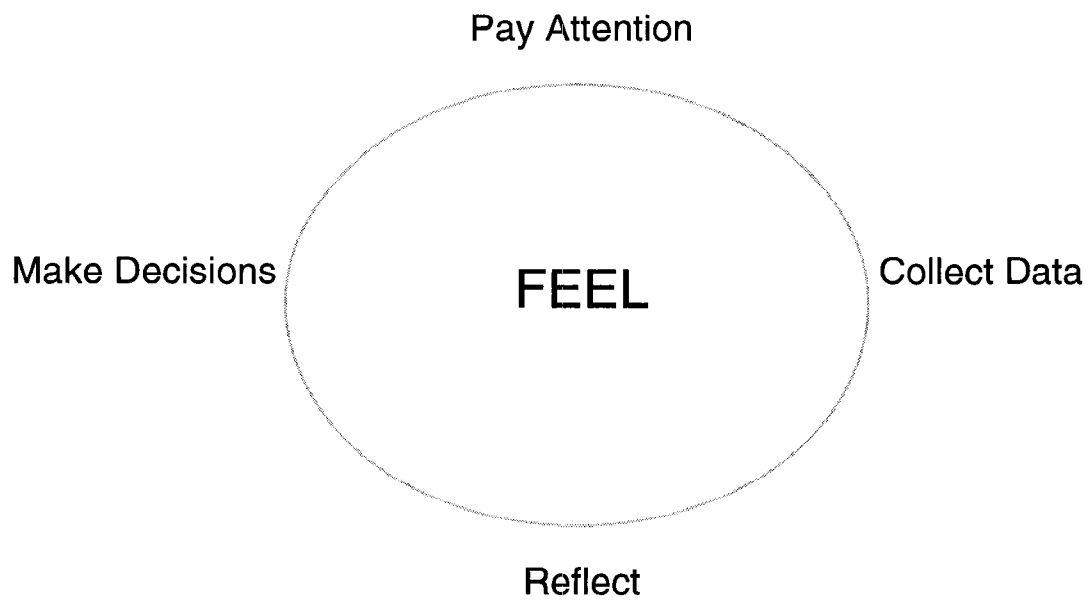
If you interested in being a participant and/or would like to request more information respond to the contact information below.

**Christopher Simon, M.A. (c)
School of Human Kinetics
Faculty of Health Sciences
University of Ottawa
(613) 884-7981
csimo085@uottawa.ca**

Appendix E

*Reflective Journal Handouts: Journal Forms Base on Feel-Based Learning Model
(adapted from Durand-Bush et al., 2007)*

A Process for Learning



A Process for Learning

Am I ready to do this?

Am I committed to this way of life?

Do I own this process?

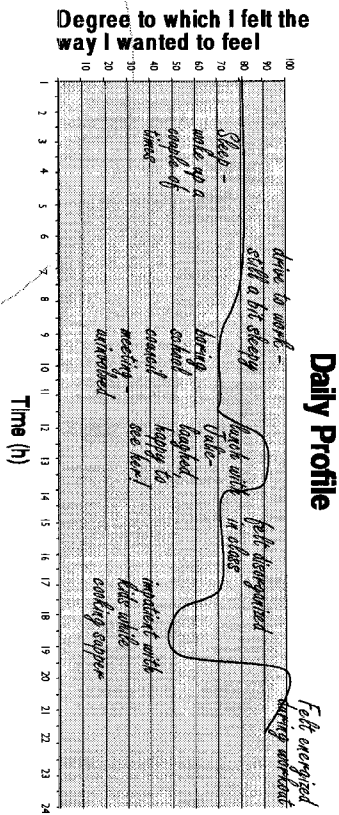
Am I checking in regularly throughout the day?

Am I becoming more aware?

FEEL



A Process for Learning



FEEL Collect Data

- Am I collecting data about myself (e.g., how I feel, thoughts, actions) and my environment?*
- How can I best keep track of data over time?*
- Should I be journaling on a regular basis?*
- Are words and/or numbers helpful?*
- Am I sticking to it?*

A Process for Learning



A Process for Learning

**Make
Decisions**

FEEL

What is important for me to consider?

What are the benefits vs costs?

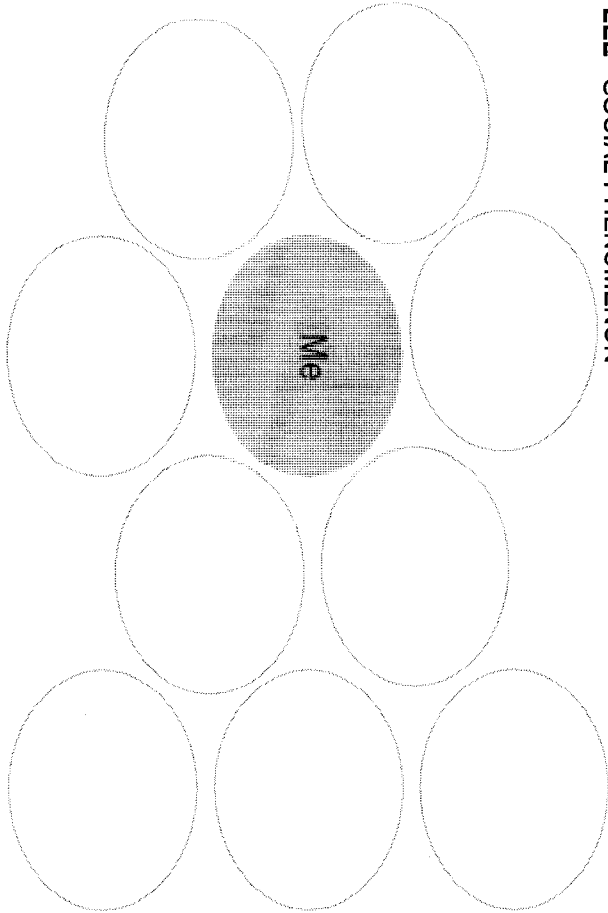
Will this decision give me freedom or responsibility?

Am I keeping my desires greater than my fears?

How will this decision make others feel?

Is this decision in line with how I want to feel?

FEEL - SOCIAL PHENOMENON

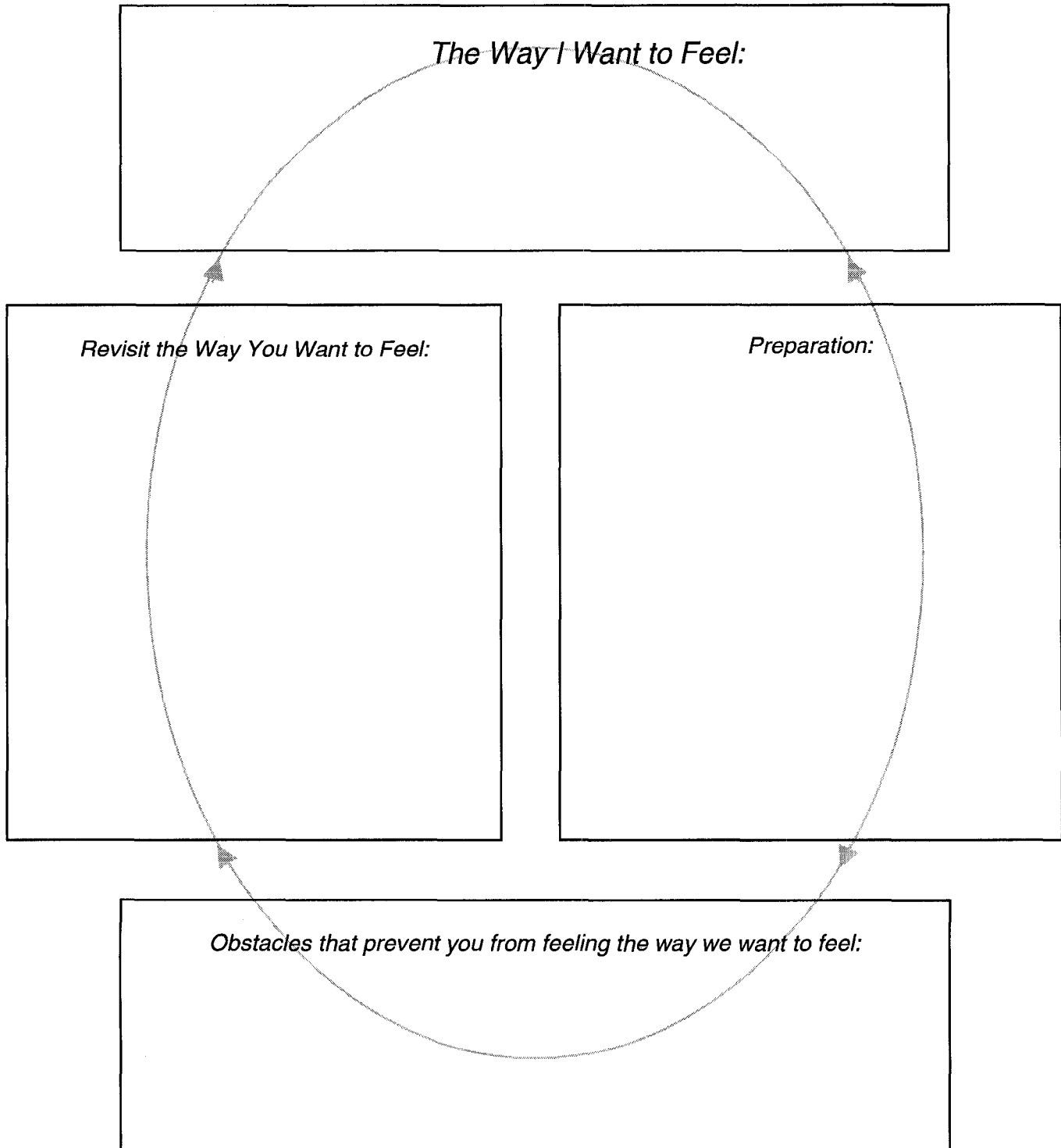


Do I know how others in my life feel and want to feel?

How can I help them feel the way they want without compromising how I want to feel?

How often do I ask 'How can I help you feel the way you want today?'

*Reflective Journal Handouts: Blank Resonance Performance Model Form
(adapted from Wolfe, 2006)*



Reflective Journal Handouts: Electronic Journal Questions

ELECTRONIC JOURNAL

Instructions: Use the following questions as a guide in your reflection of your daily experiences in your performance environment and everyday life. You are *not* required to answer all questions, as they are merely designed to help guide your reflective process.

DAILY QUESTIONS

DATE:

<i>How did I feel today in general? In specific situations?</i>
<i>What specific performance situations did I encounter in my performance environment today?</i>
<i>In general, was I able to feel the way I wanted today? If so how, and if not why do I think this happened?</i>
<i>Has the way I felt been affected by my performance environment?</i>
<i>Was I aware of how I felt? If so, in what way(s)?</i>
<i>Have I used any of the data I have gathered prior to today in how I approached situations in my performance environment? If so, how did this affect how I felt?</i>
<i>Did I perform optimally, sub-optimally, or both today?</i>

<i>If I performed sub-optimally today what barriers/obstacles brought-on these situations?</i>
<i>Did I meet any barriers/obstacles during optimal performance? How did I manage them in order to maintain optimal performance?</i>
<i>If I was met with obstacles today, was I able to revisit/reconnect with how I wanted to feel? What prompted these obstacles, and how I reacted to them?</i>
<i>Has reflection played a role in my performance, and/or how I felt, this week?</i>
<i>What general thoughts, ideas, observations, lessons, or key moments did I have today?</i>

WEEKLY QUESTIONS

DATE:

<i>Has the way I define feel changed/evolved in any way this week? If so, how?</i>
<i>Has the way I define performance changed/evolved in any way this week? If so, how?</i>
<i>Has the way I measure performance changed/evolved in any way this week? If so, how?</i>
<i>In general, how much of a role did feel play in my performance this week?</i>

<i>Using how I measure performance, how did I perform this week (optimally or sub-optimally)?</i>
<i>Were there any specific points of interest in relation to my performance and/or the way I felt this week to highlight?</i>
<i>Has my awareness changed in any way this week? If so, how?</i>
<i>What allowed me to perform, or not perform, the way I wanted this week? What specific situations did I experience these instances of optimal or sub-optimal performance?</i>
<i>What allowed me to feel, or not feel, the way I wanted this week? What specific situations did I experience these instances of feeling the way I wanted, or not?</i>
<i>If I was able to regulate how I felt, how did I accomplish this? If I was unable to, why not?</i>
<i>Did any of my experiences (positive or negative) in my performance environment carry-over into my everyday life, and visa-versa?</i>
<i>What general thoughts, ideas, observations, lessons, or key moments did I have this week?</i>

Reflective Journal Handout: Definition of Performance and Feel Form

Performance

How I define performance...

Using feel to assess and monitor my performance...

**What is Optimal
Performance?**

**What is
Sub-Optimal
Performance?**

Date:

Feel

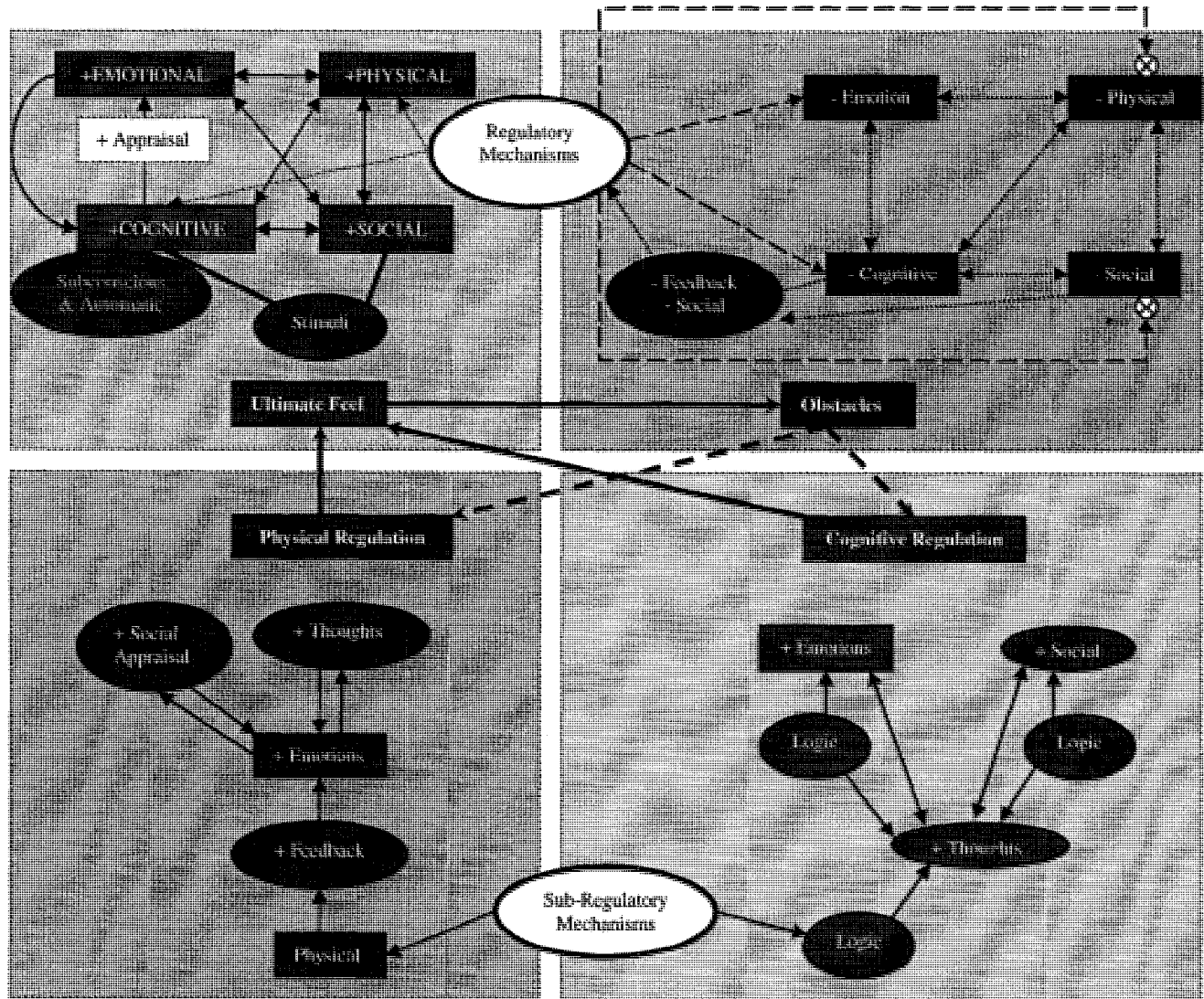
How I define feel...

How I experience feel...

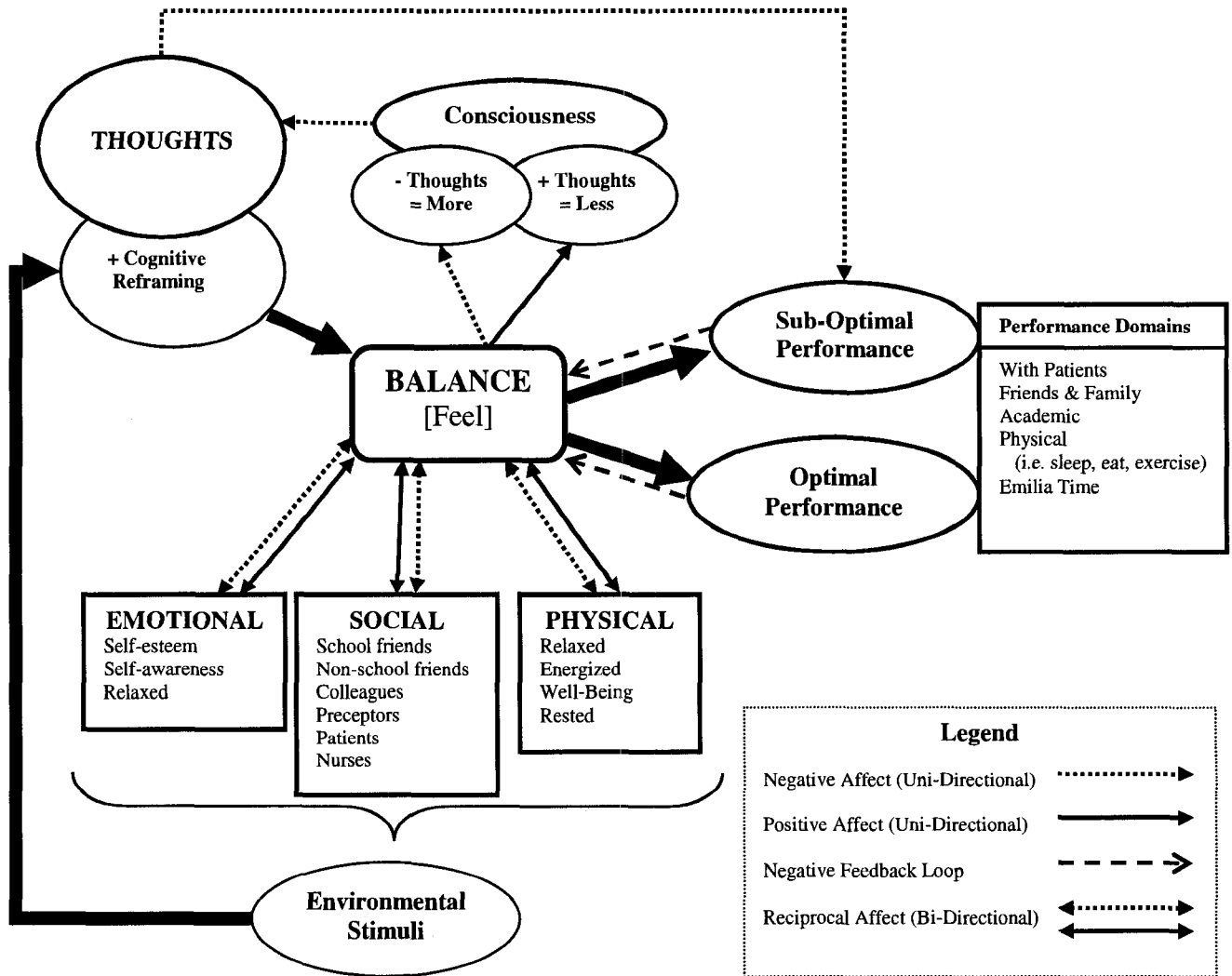
Date:

Appendix F

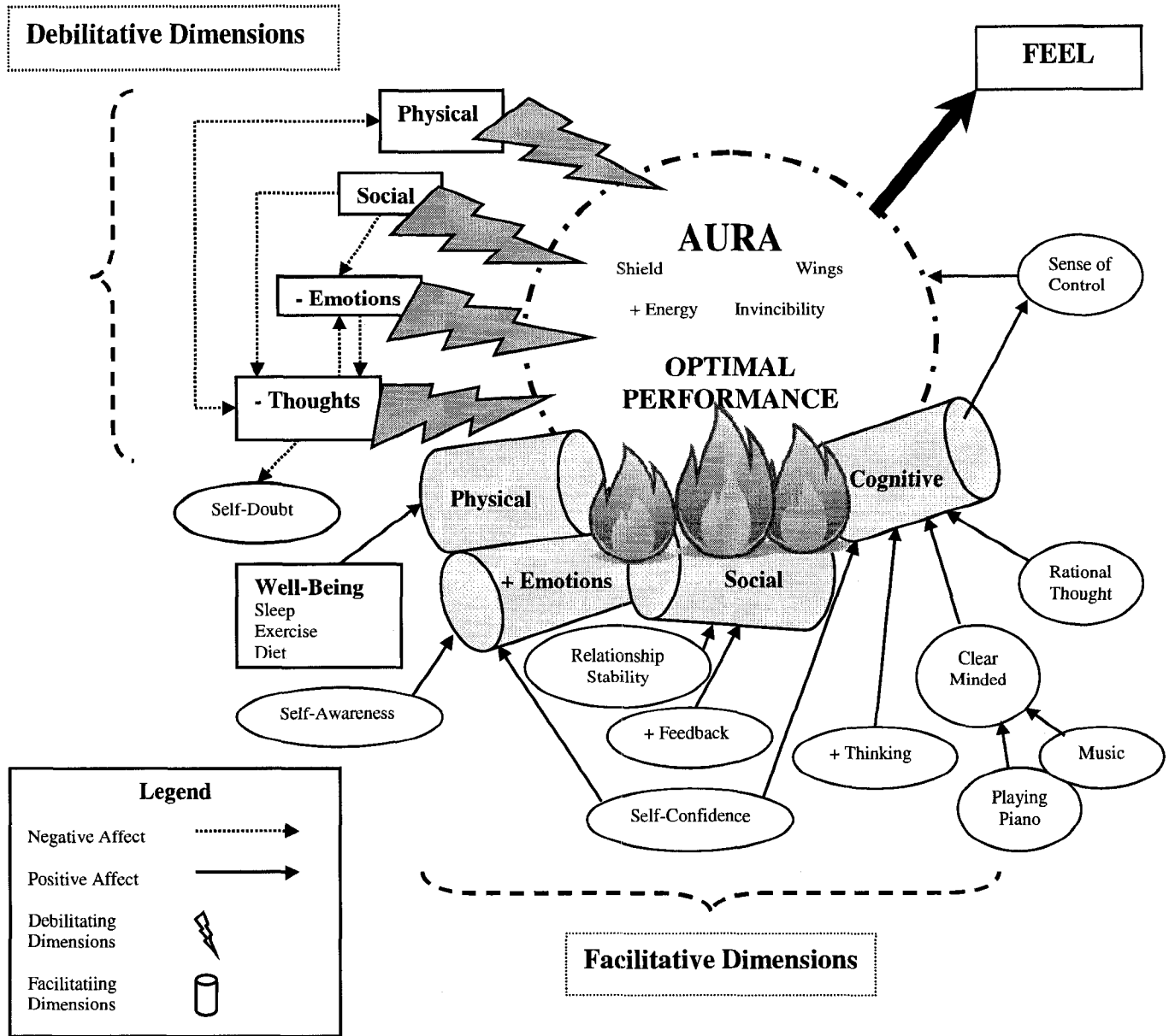
Post-Intervention Co-Constructed Concept Map: Ruby



Post-Intervention Co-Constructed Concept Map: Emelia



Post-Intervention Co-Constructed Concept Map: Marissa



Post-Intervention Co-Constructed Concept Map: Sophie

