9-23-2010

Perspectives on Intern Well-Being: The Importance of Education, Support, and Professional Satisfaction

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Perspectives on Intern Well-Being:

The Importance of Education, Support and Professional Satisfaction

A Thesis Submitted to the

Yale University School of Medicine

In Partial Fulfillment of the Requirements for the

Degrees of Doctor of Medicine

and Masters in Health Science

by

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2010

PERSPECTIVES ON INTERN WELL-BEING: THE IMPORTANCE OF EDUCATION, SUPPORT, AND PROFESSIONAL SATISFACTION. Heather K. Speller, Ellen Rubinstein, Constance Guille, Srijan Sen, Robert Rohrbaugh. Department of Psychiatry, Yale University School of Medicine, New Haven, CT.

The purpose of this qualitative study was to explore interns' perspectives on how the professional environment impacts their well-being. In-depth, semi-structured interviews were conducted in March and April of 2009 with seventeen interns from residency programs in a variety of specialties at an urban teaching hospital. Investigators coded interview transcripts line-by-line, and identified recurrent themes through an iterative process of analyzing tagged quotations. Three themes (each with three sub-themes) characterized aspects of the professional environment that interns perceived as impacting their well-being: 1) high-quality education (workload, work hours, and quality and quantity of teaching), 2) professional development and satisfaction (making a meaningful contribution to patient care, positive feedback and extrinsic reward, and balance of autonomy and supervision), and 3) social and emotional support from colleagues (feeling supported by the residency program, cooperative team environment, and intern community). These aspects of the professional environment have the potential to significantly impact intern well-being, and should be taken into consideration when developing new systems, interventions and policies to improve the well-being of interns.

ACKNOWLEDGEMENTS

I'd like to thank Dr. Srijan Sen and Dr. Connie Guille, who did the unthinkable and began developing their enormously successful study on predictors of intern depression when they themselves were psychiatry interns at Yale. They took me under their wing and welcomed my ideas and contributions to the project. Their energy, creativity, persistence, and dedication have been an inspiration, and I will be eternally grateful to them for introducing me to the fascinating world of physician mental health.

I'd also like to thank Dr. Neill Epperson for serving as my research advisor throughout my fifth year. She encouraged me to pursue my interests in qualitative research and provided invaluable support and guidance as I developed this study.

I'd like to thank Dr. Robert Rohrbaugh for serving as my thesis advisor and for bearing with me as made my way through the long process of qualitative data analysis. He was endlessly patient, supportive, and trusted in the fact that I would indeed finish my thesis eventually. I'd also like to thank the other members of my thesis committee, Dr. Rajita Sinha and Dr. Rosemarie Fisher, for their input and feedback. I'd like to thank Dr. Leslie Curry and Dr. Peggy Chen for serving as resources on qualitative research methodology, and providing guidance whenever I found myself lost in a fog.

I'd like to thank the Doris Duke Charitable Foundation and the Office of Student Research for providing financial support for this project, and I'd like to thank Donna Carranzo and Mae Geter for their logistical support and (astonishingly prompt) responses to my numerous questions.

I'd like to thank Ellen Rubinstein, friend and colleague, who serendipitously appeared in my life just when I needed her the most, as I was wondering to myself, *How am I ever going to find an anthropologist or sociologist who is interested in intern well-being and would be willing to donate hours of their time to coding transcripts???* I absolutely could not have done this without her, and I will always cherish the fond memories of our thrice weekly coding meetings in the Department of Anthropology in the dead of summer.

I'd like to thank my fiancé, Matty Vestal, for his continued support throughout this process, despite the early mornings and late nights spent working, and despite the fact that I turned the apartment into a personal office space, overrun by stacks of library books on qualitative research, all because he knew how important this project was to me.

Finally, I'd like to thank the interns who dedicated their valuable time to participate in this study.

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INTRODUCTION

The Stresses of Internship

> *But house officer training, and internship in particular, is the crucial stage in moral education. It is then that the medical student with an MD is transformed into the physician with a license; then that he takes on the responsibility of medical decisions; then that he learns to work with colleagues; then that he develops a style of relating to patients. Some of what his moral education has taught him during this brief but intense period he will later partially unlearn but he can never fully forget, because the personal cost has been so high. (1)*

At the beginning of each new academic year, a fresh crop of interns find themselves facing a unique combination of challenges and stressors as they test the waters of doctor-hood—only to get thrown in head first.

The stressful and grueling nature of the work was for many years considered the defining characteristic of residency training (2). After all, the terms "resident" and "house staff" were originally coined because physician trainees actually lived in the hospital (3). Complete and total dedication to medicine was expected; there was no such thing as "work-life balance". As one attending physician put it, "Medicine is a demanding mistress…any doctor or student who is unable to make the commitment necessary to care for the patient whenever he is needed is better off in some other field of endeavor" (4).

Although great strides have been made in attempting to make residency training more humane (5-7), many of the same workplace stressors exist (8), including: long work hours, high workload (with an emphasis on service rather than educational activities), suboptimal learning environment, and chronic sleep deprivation and fatigue (9, 10). Such stressors can have wide-reaching effects on both patients and residents, and may even pose a public health risk. For example, sleep loss and fatigue in residents adversely impact cognitive performance and psychomotor function (11), and are associated with decreased personal well-being (12), and an increase in self-perceived medical errors (13) and motor vehicle accidents (14).

Other workplace stressors that residents experience have less to do with the physically taxing aspects of residency, and instead stem from the emotional and psychological demands of the work (8). These emotional stressors might include feelings of responsibility and emotional investment towards patients, fears about inadvertently harming a patient, frustration about not being respected by colleagues, anxiety about not receiving adequate support from supervisors, or uncertainty about one's career choice or plans (10, 15).

Although these stressors may affect residents of all years, they tend to weigh most heavily on interns (16). Internship in particular is characterized by a sizeable jump in responsibility, accompanied by a steep and oftentimes overwhelming learning curve (17). Interns commonly feel incompetent and insecure in their knowledge, and often experience periods of self-doubt (15, 18).

Overall, internship is a tumultuous time for many young doctors, and is often thought of as a critical period for personal and professional development (18).

It is important to note that in addition to professional stressors, personal stressors also play a large role in the lives of interns. Many interns have recently relocated to a new city, oftentimes leaving their support networks behind. With limited free time, however, interns may struggle to sustain existing relationships, let alone develop new social ties, leaving them socially isolated (2, 9). The overall lack of personal time and severe work-life imbalance serve as major stressors for interns (2, 9), as do the financial strains of managing a large educational debt (19).

Burnout and Depression Among Interns

Given the constellation of stressors associated with internship, it is not surprising that interns have high rates of burnout and depression. In fact, studies of residents (of all years) have found that burnout (20), depression (21-24), anxiety (21), anger (22), and fatigue (22) all peak during internship.

Burnout is defined as "a prolonged response to chronic emotional and interpersonal stressors on the job," and is defined by three dimensions: 1) emotional exhaustion, 2) depersonalization and cynicism, and 3) feelings of inefficacy or decreased personal accomplishment (25). The point prevalence of burnout among interns and residents tend to fall between 55 and 76% (26-28). Several work factors have been associated with resident burnout (29), including:

number of hours worked, perceptions of work as stressful, conflict between work and home life, and discord with colleagues and hospital staff (30). The consequences of resident burnout have not been well-studied (29, 31), though it has been associated with self-reported suboptimal patient care (28). Burnout has also been associated with depression (28); however the causal relationship between the two remains unclear (29).

While burnout is a phenomenon that is, by definition, limited to the work sphere, depression typically affects all aspects of an individual's life. Depression among interns, as measured in cross-sectional (23, 26, 32, 33) and longitudinal (24, 34-36) studies, has been found to range from 27-34%. This is markedly higher than the prevalence of depression in the general population, which is approximated at 9-10% (37-39).[1] These figures are particularly worrisome given that mental health problems among physician trainees often go untreated (43-47), and that the suicide rate among physicians is higher than that of the general population (47, 48). Also concerning is the fact that depressed residents have been found to have increased rates of medical errors (13, 34, 49), suggesting that

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[1] Epidemiological studies such as these tend to use standardized rating scales such as the Beck Depression Inventory 40. Beck AT, Steer RA, Carbin MG. Psychometric properties of the Beck Depression Inventory: Twenty-five years of evaluation. Clinical Psychology Review 1988;8:77-100. or Patient Health Questionnaire 41. Kroenke K, Spitzer RL, Williams JB. The PHQ-9: validity of a brief depression severity measure. Journal of General Internal Medicine 2001;16:606-613. to measure depressive symptoms based on the criteria for major depressive disorder outlined by the Diagnostic and Statistical Manual of Mental Disorders 42. American Psychiatric Association., American Psychiatric Association. Task Force on DSM-IV. Diagnostic and statistical manual of mental disorders : DSM-IV-TR. 4th ed. Washington, DC: American Psychiatric Association; 2000..

resident depression may impact not only the individual resident, but his or her patients as well. There is some evidence to suggest that this association may be bidirectional, with depression serving as both a cause and an effect of medical errors (34).

The Well-Being of Interns

Traditionally, research on the psychological health of residents has focused on distress, burnout, and depression. More recently however, attention has also been paid to positive psychological constructs such as happiness, life satisfaction, and well-being (50).

When speaking about "well-being", it important to know what this term represents. While there is no single definition for well-being, the construct of well-being was described in a seminal article by Ryff as having six dimensions: autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance (51). The psychological literature also postulates that there are three innate psychological needs—competence, autonomy, and relatedness—that are critical to enhancing well-being (52).

When residents were asked what "well-being" means to them, they described it as being a balance among multiple domains, including physical and mental health, professional development, and relationships (53). Although there are a number of different ways of defining well-being, it is generally agreed upon that well-being is not simply happiness, nor is it the absence of negative affect.

Well-being spans both the personal and professional realms, and includes a sense of purpose and satisfaction, personal growth, and meaningful relationships with others. According to one researcher, "Well-being goes beyond the absence of distress and includes feeling challenged, thriving, and achieving success in various aspects of personal and professional life" (54).

The well-being of residents has the potential to impact not only the residents themselves, but also their patients and colleagues. High well-being in trainees has been associated with increased empathy (54), and residents have observed that their state of well-being can impact their relationships with and compassion towards patients, their work performance, and the quality of patient care they provide (55). Other areas that can be affected by resident well-being include relationships with colleagues and job satisfaction and motivation (55). Some residents even perceive that decreased well-being leads to feelings of ambiguity regarding their career choice (55). The directionality of this relationship, however, remains unclear, as decreased career satisfaction could also be a *cause* of poor well-being.

Promoting Intern Well-Being

Over the past decade there has been a growing appreciation for the importance of physician well-being (50, 56). There has been a stated need for research exploring "the factors that promote well-being for physicians in training" (50), and residency programs have been called upon to "ensure that

efforts are in place to prevent, identify, and treat burnout to promote empathy and well-being for the welfare of residents and patients" (57).

However, the question of how to effectively promote intern and resident well-being remains largely unanswered. Although there have been a number of articles over the past several decades reporting on interventions to improve resident well-being, in most cases the strength of the evidence and recommendations has been limited by methodological flaws (58).

Attempts to promote resident well-being have also been made on a policy level, most notably through the development of resident duty hour regulations by the Accreditation Council for Graduate Medical Education (ACGME) (6, 59). Although there is some evidence to suggest that the work hour limitations have led to improved quality of life for residents outside of the hospital (60-63), the majority of studies have found that residents are reporting a significant decrease in formal and informal educational opportunities since the changes were implemented (62, 64). In fact, a great deal of concern has been expressed throughout the medical community regarding the potential unintended negative consequences of these changes not only on the quality of resident education, but also on continuity of care, patient safety, doctor-patient relationships, professionalism, clinical competency, and hospital finances (65-69).

Despite the fact that improving resident well-being was one of the specified goals of the ACGME work hour regulations (59), there is little data available about how the policy changes have affected the well-being of interns

and residents over the long term. The small number of studies published on this topic report improved resident well-being; however, they were conducted only one year after the work hour restrictions were implemented (63, 64). In order to continue to improve the well-being of residents, we must assess the influence of their work environment on their everyday lives (67, 70).

The Impact of the Professional Environment

If medical educators and administrators are to make changes to the work environment, such changes should be supported by empirical evidence. At present, however, little is known about which aspects of the professional environment have the greatest impact on intern well-being.

The few studies that do exist suggest that the learning environment may have a significant impact on intern well-being. For example, one study found that intern satisfaction was greatest when learning was maximized and perceived mistreatment minimized (71). Another study identified a dose-dependent association between dissatisfaction with the learning environment and burnout in medical students (72).

Other work-related factors that may impact intern well-being include job stressors such as: "emotional pressure/demands from patients" and "interruptions/time pressure". These stressors were significantly associated

with self-reported mental health problems among a sample of Norwegian interns (73).

Given these previous findings, we hypothesize that aspects of the professional environment (including factors that contribute to learning, satisfaction, and stress) have the potential to profoundly influence intern well-being. It is critical for us to understand and appreciate the contributing factors that interns deem most salient to their well-being, and to let the input of those on the "frontlines" guide the development of interventions to improve the professional environment.

STATEMENT OF PURPOSE

Using qualitative methodology, this thesis aims to elucidate the specific aspects of the professional environment that interns perceive as impacting their well-being, with the ultimate goal of providing an understanding of systemic improvements that might be made.

Specifically, this thesis aims to:

1. Explore interns' perspectives on how the professional environment impacts their well-being;
2. Identify ways in which the professional environment could be improved to better support intern well-being;

METHODS

Qualitative Research

Not everything that can be counted counts, and not everything that counts can be counted. –Albert Einstein

Strauss and Corbin defined qualitative research broadly, as "any type of research that produces findings not arrived at by statistical procedures or other means of quantification" (74). It can include data drawn from documents, field observation, and interviews, and can take the form of focus groups, in-depth case studies, or a series of one-on-one interviews. The decision to utilize qualitative methodology is often determined by the specific research question, as qualitative methods are particularly well-suited for certain types of questions. Some of the most common circumstances that might call for a qualitative approach include: exploring an area about which little is known; attempting to understand personal experiences, including underlying perceptions and interpretations thereof; or studying a complex phenomenon, the intricacies of which would be difficult to elucidate with conventional quantitative methods (75).

There are a number of different approaches to qualitative analysis. Some approaches are more deductive in nature, in which researchers develop an organizing conceptual framework based on existing knowledge, ideas, and

concepts, before they begin reviewing the data line-by-line (76). This framework serves as a jumping off point for the coding, and undergoes many revisions as the coding progresses, in order to best describe the data that is being gradually unearthed (76).

Other analytic approaches are more inductive in nature, and include *grounded theory*, an approach described by Strauss and Corbin (74). When using this approach, the researcher enters into the project with no *a priori* assumptions or preconceived theories, and is thus starting with a completely blank slate. Codes are developed only when they appear in the data, and the theory derived is completely grounded in the data (74).

There are advantages and disadvantages to both approaches. Bradley and colleagues describe an integrated approach, which "employs both inductive (ground-up) development of codes as well as a deductive organizing framework for code types (start list)" (77). Such an approach is thought to be particularly useful in the "description and explanation of complex, real-world phenomena pertinent to health services research" (77).

Design[2]

The ultimate goal of this study was to develop a better understanding of what aspects of the professional environment might be modified to improve intern well-being, from the point of view of the interns themselves. Therefore, a

[2] This study design was approved by the Human Investigations Committee of Yale School of Medicine, HIC Protocol # 0609001871

qualitative approach was chosen as the best means to explore the thoughts and experiences of interns regarding their professional environment and its impact on their well-being.

The specific method of qualitative inquiry used to elicit this data was one-on-one semi-structured interviews with interns. A semi-structured interview guide provided the framework for the topics discussed in the interview, but the interviewer was able to ask additional questions to probe more deeply into any given subject. The interview guide was adapted from a previous study of well-being in residents (53), and modifications were made by HKS[3] to ensure that the research questions of the present study were fully addressed. Attention was paid to the wording and sequencing of questions (75), and the interview guide was reviewed by advisors and qualitative experts prior to beginning the data collection.

HKS began each interview by asking the intern to describe his or her overall experiences during each rotation, and followed this up with specific questions on topics that included the intern's initial expectations regarding internship; strategies to maintain well-being; and personal and professional changes throughout the internship year. Qualitative research allows for the flexibility to modify the interview guide throughout the data collection phase, and so slight adjustments were made to the guide throughout the interview

[3] HKS = Heather K. Speller

process, informed by insights gained from the initial few interviews. The final version of the interview guide is provided in Appendix A.

This study was nested within the Yale Intern Health Study, a multi-institutional prospective longitudinal cohort study that measured rates of depressive symptoms in interns throughout the course of the year and identified predictors of intern depression (34). The interns who participated in the present study were recruited from the cohort of interns at Yale-affiliated residency programs who were enrolled in the Yale Intern Health Study during the 2008-2009 academic year.

Participants

Interns were recruited to participate in the study using the method of *stratified purposeful sampling* (75). In order to obtain a broad range of intern perspectives and experiences, the pool of interns enrolled in the Yale Intern Health study was stratified by specialty and gender, and interns randomly selected from each strata were invited to participate in the interview.

As is standard practice in qualitative research, the sample size was not determined *a priori.* When the goal of a qualitative study is to obtain maximal information, sampling ideally continues until theoretical saturation is reached (78). That is, when "no new information seems to emerge during coding," or when "the 'new' that is uncovered does not add that much more to the explanation," and thus "collecting additional data seems counterproductive"

(74). It has been noted, however, that "sampling to the point of redundancy…works best for basic research, unlimited timelines, and unconstrained resources" (75).

In this study, the goal was to interview all the interns at approximately the same time of year, as it has been well established that interns' attitudes, moods, and perspectives tend to undergo drastic (and somewhat predictable) shifts over the course of the year (18). Thus, the decision was made to conduct as many interviews as possible within a six-week window, and to assess for the degree of theoretical saturation during the data analysis phase, after the interviewing was complete.

In assessing the appropriateness of sample size, it is important to recognize the differences in methodologically sound sampling approaches for quantitative versus qualitative research (79). Quantitative research requires large, randomly selected and statistically representative samples, to allow for generalization of the results to a larger population. In contrast, "the validity, meaningfulness, and insights generated from qualitative inquiry have more to do with the information richness of the cases selected and the observational/ analytical capabilities of the researcher than with sample size" (75).

Data Collection

Interns who were selected for recruitment (via stratified purposeful sampling) received an e-mail invitation containing a brief description of the

study, and were instructed to contact HKS to schedule an interview appointment if they were interested in participating.

All interviews were conducted by HKS over the telephone. Telephone interviews were chosen (rather than in-person interviews) in order to maximize convenience for busy interns. It was also thought that the telephone might provide a greater sense of anonymity and thus interns might be more forthcoming in describing their experiences. HKS conducted all interviews while in a quiet, private office, while interns were able to participate at any time or location that was convenient for them. Informed consent was obtained prior to each interview, and all participants received a $30 gift card to amazon.com after completion of the interview.

The interviews were recorded using an Olympus VN-3200 Digital Voice Recorder, and were uploaded over a secure server to Connecticut Secretary, a professional and confidential transcription service. HKS checked all transcripts for accuracy against the original audio files, and removed all personal identifiers from the transcripts.

Data Analysis

Data analysis in qualitative research is typically an ongoing process that begins while data collection phase is still underway (75). However, as mentioned above, because the goal was to interview all the interns at

approximately the same time of year, formal data analysis did not begin until all of the interviews were completed.

The first step in the data analysis was to re-read each transcript in order to become completely immersed in the data, and to develop a general understanding of the thematic concepts and their contexts (80).

The next step was to code the transcripts. Coding is a process in which the researchers use labels to assign meaning to chunks of text in order to help identify themes across transcripts, as well as to facilitate the process of retrieval and organization of the coded text (76). We adopted an integrated approach to developing the code structure that employed elements of both the inductive and the deductive approaches to qualitative data analysis (77).

A team of three researchers, which included the author (HKS), a psychiatrist (CG[4]), and an anthropology graduate student (ER[5]), each read through one third of the transcripts and took notes on themes that they observed in the data. The three researchers convened to share and discuss their thematic findings, and worked together to create an initial coding structure based on the identified themes. This initial conceptual framework was born directly from the data (inductive), but also served as a jumping off point with which to begin the line-by-line coding (deductive), thus integrating both approaches.

HKS and ER next began the process of using the coding structure to independently code each transcript. After the first transcript was coded, HKS

[4] CG = Constance Guille, MD
[5] ER = Ellen Rubinstein

and ER met to discuss and resolve coding discrepancies. Discrepancies oftentimes were a result of ambiguous or loosely defined codes, the misapplication of a well-defined code, or the introduction of a previously unidentified theme. Most commonly, however, discrepancies simply reflected expected variations in the subjective interpretation and analysis of the interview data (81). Of note, multiple coders were used not so much to ensure inter-rater reliability (which has questionable appropriateness in qualitative studies (81)), but more to enhance the richness of interpretations and guard against researcher bias (80). Thus, unless there was clear agreement that a discrepant code was applied in error and should be discarded, codes from both researchers were retained in the final coded transcripts.

Discrepancies could also lead to modifications of the coding structure, through the addition of new codes or clarification or reorganization of existing codes, in order to most accurately reflect and describe the themes discussed by participants. This method of constantly comparing and adding new data to existing codes is a well-established technique referred to as *constant comparison* (82), and is an iterative process that requires codes to be updated and revised as data are analyzed. Each newly revised coding structure would then be used to code the next transcript.

This iterative process was repeated until all transcripts were independently coded and discussed by HKS and ER. The coding structure was gradually refined throughout this process, but required no further adjustments

after the 11th transcript was coded. HKS re-reviewed the first 11 transcripts and re-coded them using the final consensus coding structure (Appendix B). Only one of the researchers conducted the re-coding because for the large majority of transcripts only minor adjustments were required.

Coded transcripts were uploaded to the qualitative data analysis software program Atlas.ti to facilitate further analysis (83). For each code, all quotations coded as such were retrieved, reviewed for accuracy and consistency, and sorted (to distinguish the quotations with rich content from the rest). The common underlying themes were analyzed, and contrasting perspectives were identified. As the analysis proceeded, the themes were rearranged in various ways, relationships were identified, and new groupings emerged (84). Ultimately, three distinct themes emerged (each with three sub-themes) describing aspects of the professional environment that interns perceived as impacting their well-being.

RESULTS

Of the 41 interns who were invited to participate in the study, 22 responded with interest. A total of 17 interns were interviewed, and the remaining five either did not respond to inquiries about scheduling an interview appointment, or were not utilized because of time and scheduling limitations. All interviews were conducted over the course of a six-week period in March and April of 2009. The majority of interviews lasted between 45 and 60 minutes.

The participants represented a range of specialties, including Internal Medicine, Psychiatry, Surgery, Pediatrics, Primary Care, Emergency Medicine, and Med/Peds. Participants' demographics are displayed in Table 1.

Characteristic	Value
Mean age (range), *y*	27.7 (24-33)
Female, *n* (%)	8 (47)
Specialty, *n* (%)	
Internal Medicine[6]	5 (33)
Psychiatry	3 (18)
Surgery[7]	3 (18)
Pediatrics	2 (12)
Primary Care[8]	2 (12)
Emergency Medicine	1 (6)
Med/Peds	1 (6)
Marital Status, *n* (%)	
Single	9 (53)
Engaged	4 (24)
Married	4 (24)
Moved to a different country for residency, *n* (%)	2 (12)

Table 1. Characteristics of Study Participants

[6] Includes four categorical Internal Medicine interns and one preliminary intern
[7] Includes one categorical General Surgery intern and two interns in surgical sub-specialties
[8] Includes two categorical Primary Care interns only

Three major themes (each with three sub-themes) were found to characterize the perspectives of interns regarding factors within their professional environment that impact their well-being: 1) High-Quality Education, 2) Professional Development and Satisfaction, and 3) Social and Emotional Support from Colleagues (see Figure 1). Each of the themes and sub-themes will be individually discussed and elaborated on in the text below.

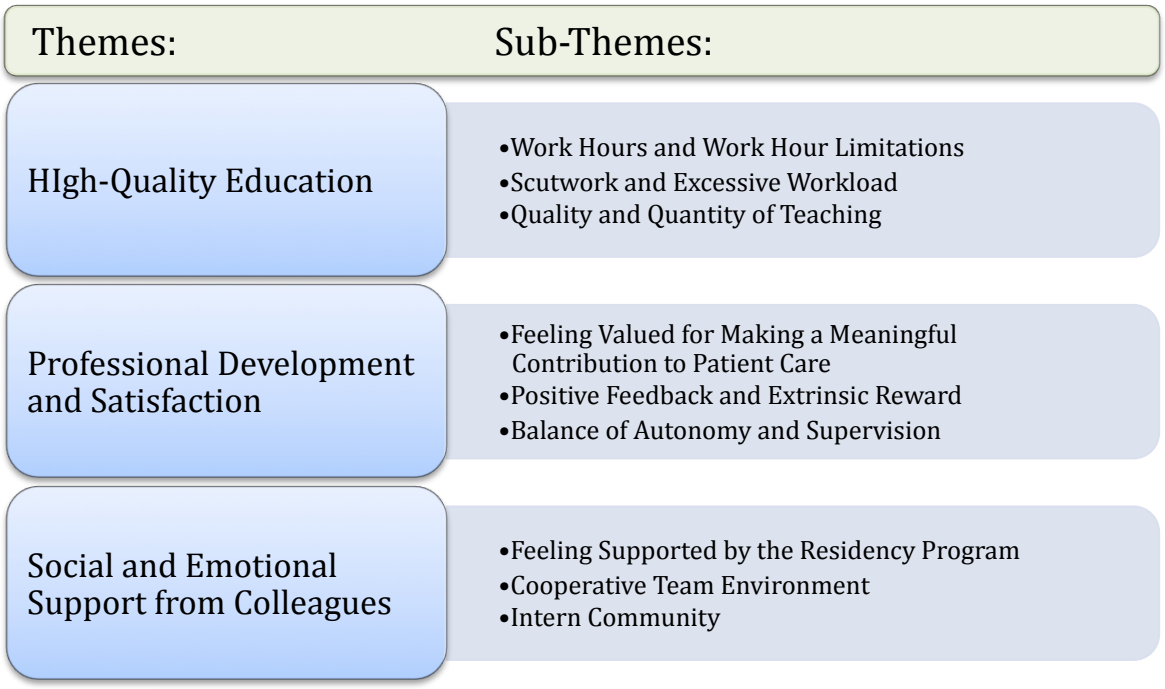

Figure 1. Themes and sub-themes describing aspects of the professional environment that impact intern well-being

HIGH-QUALITY EDUCATION

The three sub-themes of work hours, scutwork, and teaching all had the ability to impact intern well-being by either adding to or detracting from the quality of interns' educational experiences.

Work Hours and Work Hour Limitations

"If you're going to decrease the hours, you have to concentrate on what is important about the education."

Interns expressed a range of opinions about how work hours and work hour limitations affect their educational experiences and their well-being.

For some interns, the exhaustion that came with long shifts and excessive work hours led to decreased motivation to learn and an impaired ability to retain knowledge.

> *You stop learning after working for ten hours. You don't learn anything. You're too tired. After ten hours, it's over. You're not learning anything... You want to go home and sleep, and you don't care.* 3[9]

This intern recalls an instance of an educational opportunity that was missed because it occurred at the end of a long shift:

> *I remember this one shift there was a lumbar puncture and the senior resident wanted to show me. And my shift was over at eleven and it was twelve-thirty at night. And you know, I was exhausted. But I was like, whatever, I'll watch. And I watched, and I didn't learn it. But that's something really important that I should have learned, but I was too fatigued, too tired, didn't care enough to even think about learning. So there have been a lot of learning opportunities lost due to lack of interest or just being too tired and not caring about what's going on. Which is sad...* 3

Interns noted that a decrease in work hours could lead to improvements in their physical and mental health, which could in turn facilitate learning and improve the quality of patient care that they were able to provide.

> *If [interns] work less they will feel better, and they will be able to care for patients*

---

[9] In order to ensure total anonymity of participants, identifying information (such as age, gender, or specialty) is not included alongside individual quotations. Instead, numbers are used to distinguish participants (1 through 17) and are provided at the end of each quotation.

> *more. They will have more time and so they'll read more and follow up more on reading. They will know more. If they know more they will help the patients more, hopefully.* 14

Other interns believed, however, that because the learning that occurs during internship is experiential, it is directly proportional to the time spent in the hospital. Although further cuts to work hours might improve their personal lives, some interns were concerned that such benefits could be outweighed by negative effects on their education.

> *Even though it sucks when you're tired and you've been awake for twenty-eight hours, it's the patient that'll come in at two o'clock in the morning... What if you had to be asleep at that time? You would miss that. And that's what I'm afraid of. I'm afraid that if you cut the hours back even more, you're not going to see the patients, you're not going to have the learning part.* 2

Interns observed that when work hours were reduced without a corresponding reduction in workload, it was the educational activities that were at risk of first being jettisoned. Such changes could leave interns feeling more stressed and less satisfied with their educational experience.

> *If you're going to decrease the hours, you have to get rid of the stuff that just takes time without contributing at all to your education. So I'm all for having more time to live outside of the hospital, but there are lessons to be learned in every rotation, and there are just straight-up facts we need to learn, and so any shortening of time just has to go along with a more efficient use of that time.* 10

Overall, most interns were in support of work hour limitations, but only under the condition that corresponding adjustments be made to the system of residency training. Otherwise, work hour limitations could have the paradoxical effect of putting education, patient safety, and intern well-being at risk.

Scutwork and Excessive Workload

"My biggest regret about this year is just the amount of time I've spent copying the medications onto little daily progress notes."

Interns used a variety of different names to describe it—"busy work", "administrative tasks", "paperwork", "secretarial work"—though it is probably best known as "scutwork". For most interns, there was a clear distinction between time spent doing scutwork and time spent furthering their education, and it was the missed opportunities for learning that interns found to be most frustrating.

> *I certainly could be spending my time much more wisely: reading, operating more, didactics, educational opportunities…a whole lot more than what I do now. But like I said, the only things I do are chasing people down and making phone calls and returning pages. That is of no education value.* 6

One intern explained that one of her best rotations of the year had been her month in the Intensive Care Unit, because although the hours were long and she was on call every third night, there were more opportunities for learning.

> *I felt like [my oncology rotation] was a lot of paperwork and a lot of busy work and not a lot of patient management... So I would say from a learning perspective I much preferred the ICU to floors like oncology, because if I have four critical patients that I can really think about, I think that's a very productive experience which makes me learn about medicine and learn about patients.* 16

Although many interns viewed scutwork as being inversely proportional to education, one intern observed that the repetition of basic activities of patient care does in fact contribute to learning, albeit in less overt ways.

> *It's hard because while we're there we're learning. Yeah I complain about it, yeah I say I work so hard, I work so many hours… But at the same time, because I'm there, because I'm working – even though I hate writing my notes – that's all [part of] the first steps of learning. That's how you methodically think about a*

> *patient. Even though you think that you're not thinking very much about the patient, you are.* 2

Other interns echoed the importance of having time to think about and learn from their patients. A major impediment to this, however, was a high patient load, which not only impaired the ability of interns to learn from their patients, but also led to a perceived decrease in the quality of patient care.

> *I know that I'm not doing my best. I know that I'm not writing the best note that I can write. I know that I'm not gathering a lot of background information that I could be gathering. I know that I'm not reading up as much as I could be reading, and I'm not checking up on my patients as [often as] I could be. But I'm doing as much as I can within my time limit, you know what I mean? It's like if I have twelve patients, and I have twelve notes to write, then they can't all be prize winning. And I think, if I had fewer patients, or if I got more sleep, I would be doing better with those things.* 16

When interns encountered a rotation with a lower patient cap, and thus a better learning to scutwork ratio, they found work to be much more satisfying. Internal medicine interns experienced this shifted emphasis from scutwork to learning on a rotation called "I-Team", where the team consists solely of an intern and an attending. The patient cap on this rotation is deliberately low, and cases are assigned to the I-Team specifically for their perceived educational value. One intern marveled at the amount of time that was spent on learning:

> *We would round twice a day, we would call patients a week after discharge, we went through 70 papers the whole month. There was so much time to teach because there was a four patient cap at any time, and one admission per day.* 12

Another intern enjoyed the luxury of having time to really get to know her patients while on I-Team, and even felt that she was able to provide better clinical care:

> *I felt as though finally I had time again to read about my patients. And I just felt like I had a much better relationship with my patients, just by having the time to really go by and see them a couple times a day and adjust their Ativan regimen or their pain regimen or their insulin regimen more frequently than I would be able to if I had twelve patients. So I thought that was really, really great.* 16

Surgical interns experienced a similar shift towards education on sub-specialty rotations that hired Physician Assistants (PA's) to help out with the floor work. The presence of a PA allowed interns to spend more time in the operating room, thus dramatically improving their educational experience, level of satisfaction, and overall well-being.

> *I think having staff support really eases the pressure and the stress from the residents, because now you can operate, you can focus on one thing. You don't have to worry about your beeper going off every five seconds and being distracted [by the] stuff that goes on on the floors…"This patient is nauseous, this patient wants this, this patient's in pain." These are not things that require an MD, an MD's presence.* 7

> *But the fact is, a PA costs much more than an intern. You couldn't pay a PA to work the hours I do with the income I make. But if they had more mid- or low-level providers, that certainly would free me up from having to spend the time I do on non-educational activities. That's how it could be vastly improved.* 6

Quality and Quantity of Teaching

"He was not interested in teaching at all, and that was really hard for me to deal with."

Many interns spoke about the fact that because of the immense workload they carried and the long hours they put in, it simply wasn't feasible for them to spend extra time reading up on their patients. Given that interns had so few opportunities to learn on their own, they had an enormous appreciation for

attendings and senior residents who were both skilled at and dedicated to teaching.

> *Clearly you can tell from talking to me that learning is really important to me, and learning is so intertwined with being a good doctor. Since I don't have time to [learn] on my own when I'm out of the hospital, if I get it in the hospital – especially with really great patients and really good attendings who are willing to take the time out to teach us stuff all the time – then it's worthwhile for me to be there.* 2

One intern recalled that her best rotation of the year was characterized by the feeling that the other team members truly valued teaching and cared about her education.

> *I think what I imagine as being above average is my interaction with my residents, as far as their teaching. The resident that I was with was great. He would explain how to do some of the more detailed parts of the physical exam, and taught me how to do a lot of procedures, and whenever we had off time he would discuss articles with me. And I thought that was a very positive educational experience.* 16

> *And I felt that the didactics on that rotation were above average too. The way [attending rounds] were run, my attending printed out the cases and questions and little summaries of what to do with an HIV patient with pneumonia, stuff like that... My attending always seemed very prepared. Whereas sometimes I feel like on attending rounds, your attending takes you in a room and says, "Okay what do you guys want to talk about?" It's like, "Well, I don't know..." And this was very different.* 16

In contrast, another intern described her extreme dissatisfaction on a rotation that lacked this sense of dedication to teaching.

> *He wasn't interested in teaching me anything. He was just interested in loading on patients, one after the other, and I don't learn anything from that. He was not interested in teaching at all, and that was really hard for me to deal with. So for the past two weeks, I've been really unhappy on the service.* 11

Although the general sentiment was that dedicated time for teaching was a major factor that could impact an intern's well-being, it was also noted that

didactic time could sometimes be an enormous burden. One intern recalled an instance when this became an issue post-call:

> *We had morning rounds until 8:30, then had grand rounds, which was followed by attending rounds, and there was literally half an hour to get work done… And then [the attending] would say to you, "Oh, you have to be out of the hospital by noon." It's impossible.* 5

Other interns admitted that they were so constantly overloaded with work that they often felt pressured to skip didactic sessions, such as noon conferences. Interns particularly appreciated intern report as the one hour per week of truly protected didactic time, during which the pressures of clinical service were temporarily suspended (the resident would hold their pager), and interns could focus solely on learning.

PROFESSIONAL DEVELOPMENT AND SATISFACTION

Three sub-themes were identified as having the potential to impact intern well-being by affecting the intern's sense of professional development and job satisfaction. These included: making a meaningful contribution to patient care; receiving positive feedback about one's performance; and being granted an appropriate balance of autonomy and supervision.

Feeling Valued for Making a Meaningful Contribution to Patient Care

"If you feel like work is a place where you're really making a difference, you invest more of yourself into it."

A theme that came up several times throughout the interviews was the

importance of senior colleagues valuing the intern's opinions and input, thus allowing the intern to feel that he or she was making a meaningful contribution to patient care.

Interns described experiencing a much higher level of satisfaction at work when their opinions about patient management were valued by their seniors.

> *It felt very nice to have my opinion not just be listened to but also be valued and expected.* 10

Being asked for their clinical opinions in this way had beneficial effects on interns' professional development (e.g. helping them build confidence in their clinical judgment) and job satisfaction (e.g. allowing them to make a meaningful contribution to patient care), in addition to being an important tool for teaching.

> *That was actually the rotation where my confidence in making decisions actually got established… And my attending would always help us out, but he would always ask you "What do you think?" He would never tell us what to do. He'd say, "What do you think?" So I really had to make my decisions and learn to make arguments for them.* 1

> *I felt like my attending and my resident were very receptive to what I wanted the plan to be for the patient. And so that's kind of gratifying, being able to make the decisions.* 16

When interns were actively involved in patient management, they felt that their colleagues respected them for their intellect. This was often a drastic shift from the status quo, as the majority of the time interns felt valued solely for their ability to accomplish tasks.

> *So much of your value is placed on how well and how quickly you can get things done.* 2

A major factor in maintaining well-being was the knowledge that while at

work interns were doing something meaningful and worthwhile. However, when an intern's primary job was to accomplish tasks that did not require a medical degree, his job satisfaction plummeted:

> *You've given up so much of your life to devote towards residency: you give up family, friends, a spouse… And then for you to be spending that time on things that seem kind of pointless, that someone with a high school degree could do, it gets frustrating. I think that my quality of life would be a lot different if I were considered a little bit more of value, if my assessment and plan were taken a little bit more seriously, and I wasn't just there to get numbers and make phone calls and call consults. I think that would certainly make my life in the hospital feel much more valuable, and I would feel like I was playing a much larger role. And therefore I think that out of the hospital I'd be a lot more happy and satisfied with what I do on a daily basis.* 6

In this case, instead of scutwork impacting well-being by eclipsing educational activities, as discussed above, scutwork is preventing the intern from achieving a sense of professional satisfaction. In spite of all of his personal sacrifices and hard work, this intern does not feel that what he is doing is meaningful or gratifying.

Feeling like one is making a valuable contribution at work not only has the potential to improve intern satisfaction and well-being, but it may also have beneficial effects on motivation and patient care.

> *I think if you feel like work is a place where you're really making a difference you invest more of yourself into it and you try harder for people, which is ultimately what we should be doing. The patient should always be first.* 11

Positive Feedback and Extrinsic Reward

"When you actually get some positive feedback that is meaningful, it kind of keeps you going."

Another important contributor to intern well-being is the concept positive

feedback. If an intern is dedicating so much of his time and energy to his job, not only does he want to feel like he is doing something that is intrinsically meaningful and valuable, but he also yearns for extrinsic recognition and appreciation for his efforts. Positive feedback serves as a reward for his hard work.

> *You have to make those sacrifices, and it's fine. It just gets hard when you feel like what you're doing isn't always appreciated. And I think that sometimes you're like, well why am I working so hard, if people don't care? ... And it gets hard because you feel like you're working so hard and you're sacrificing a lot, and at the same time sometimes you don't feel appreciated for what you're doing, and that can emotionally wear on you, I think.* 2

A lack of positive feedback can negatively impact an intern's motivation to continue to work hard, and can lead to feelings of discouragement and despair.

> *There are certain things that help people work harder, be happier. And number one is reward, being rewarded for things you do right. [If] you don't get rewarded for anything you do, you don't feel motivated to continue to work hard. You get scolded and people don't recognize the work you've put in. So despite what you do, it's a linear thing: there's no positive feedback for positive things you do. So it's a very discouraging situation.* 7

Some participants noted that, as interns, they were frequently getting scolded or yelled at, and that their role was often to be the scapegoat for the team when something went wrong.

> *Interns essentially off-load the pressures because you're an easy target for everything, and you're an easy scapegoat for a lot of things. It's easier to blame the intern than the senior resident, whose fault it may be, or the system itself.* 7

In this context, positive feedback for interns was particularly important in order to balance out the criticism.

Having the opportunity to periodically sit down with the senior resident or

attending for feedback sessions throughout a rotation could serve to bolster the intern's motivation and sense of accomplishment. Interestingly, for some interns, positive feedback was so important that it could actually serve to counterbalance the negative aspects of a very demanding rotation.

> *We have really demanding schedules and it's very tiring and work can be tedious. But when at the end of the month, someone writes you a good letter or gives you good feedback, it kind of makes it worth it. You're almost willing to go through it as long as you're getting some sort of positive feedback. And the times when I've gone long periods and no one's telling me how I'm doing, or my evaluations are just generic, like real short things, like "Oh, it was nice to have him on service," like typical average things... But when you actually get some positive feedback that's meaningful, it kind of keeps you going.* 12

Balance of Autonomy and Supervision

"I was expected to know something and was just generally given a little bit more responsibility. That made a big difference."

Interns lack the knowledge and experience required to independently manage a patient's medical care, and thus require close supervision by residents and attendings. However, if supervision is not balanced by an appropriate amount of autonomy, professional growth may be impeded and intern well-being may suffer.

For one intern, a lack of guidance and supervision led her to feel abandoned, angry, and burnt out:

> *I had some very difficult patients, and I felt like I wasn't getting guidance. So around February I began feeling very frustrated, very angry with the whole rotation. Feeling like I'd kind of been abandoned… So I would have these waves of burnout, and I feel like the burnout happens when I feel like I'm alone. When I feel like people above me, the people who I'm working with, they don't care about me. They just want to get their work done… But then, I don't have the knowledge [to*

> *care for the patient by myself], and so that leads to this sense of a lack of control, helplessness, hopelessness, feeling like I'm trying to help. But there are only so many things I can Google or UpToDate in a day, in addition to the normal work that an intern has to do.* 11

However, she "felt a lot better" after a new attending came on-service and took the time to sit down and help her with the challenging aspects of her patients, thus providing her with a more appropriate level of supervision.

Addressing the issues of autonomy and supervision with interns is important because it can be equally, if not more detrimental to an intern's well-being when he or she is *not* given a sufficient amount of independence and autonomy.

> *We assume no more responsibility and do very little other education things. We make no decisions whatsoever on the floor, even regarding Tylenol dosing. It's one of those things where you really doubt why you show up each day because you can't make any calls, you're just a secretary.* 6

When an intern is not being given enough autonomy, he may feel bored, unfulfilled, and denied of potential learning opportunities. Many interns described some of their best rotations as ones where they were allowed to assume a higher level of responsibility.

> *Those rotations that allow me or that expect me to be independent – like the Emergency Room where I'm expected to see the patient and suggest a plan – those rotations were the best ones for me because I was expected to know something and was just generally given a little bit more responsibility. That made a big difference.* 10

Some interns, however, were actually less frustrated by the lack of autonomy than they were by the *inconsistency* in the amount of autonomy they were given from rotation to rotation. In fact, it was not uncommon for interns to

experience abrupt decreases in autonomy as the year progressed, as they presumably became more knowledgeable and skilled.

> *This month I'm at [a different hospital] which is the complete opposite. The attendings disappear, the residents really run the show and have all the autonomy...One month I'm somehow capable of making important decisions, doing interventions, etc., whereas the next month I'm incapable of doing anything, and I need to run everything by someone else.* 6

> *When I left from that rotation [where I had a lot of responsibility] and went to another one where every little thing was supposed to be run by the chief and the fellow, it just felt like a big step back.* 10

In some ways, this experience of "going backwards" undermines the very principles that the medical education system is based on: that a trainee's responsibility and autonomy should be progressively increased as he or she develops skills and gains knowledge.

SOCIAL AND EMOTIONAL SUPPORT FROM COLLEAGUES

Three key sources of support within the professional environment were found to impact intern well-being. It was critical that the interns felt supported by their residency programs, their clinical team members, and their co-intern colleagues.

Feeling Supported by the Residency Program

"I just think people need to feel supported."

When discussing sources of professional support, many interns noted the importance of feeling generally supported and cared about by their residency

program. It was reassuring for interns to know that they were in a program that valued the well-being of its residents, and that they had a program director and chief residents who were looking out for them.

However, even if an intern was struggling, his or her threshold for confiding in a chief resident, for example, was oftentimes fairly high. Thus, it was critical that chiefs and attendings paid close attention to the well-being of interns and were proactive about checking in if something seemed amiss.

> *The chief residents are very, very supportive and approachable, but even if you don't actively approach them, they're watching out for you. I actually had one of the chief residents see me post-call and saw that I had been crying overnight. She took me aside after one of the noon conferences and said, "Hey, what's going on? What's wrong? How can we help?" And just that [she let me know that she] didn't think badly of me because I didn't feel good about internship or about how I was doing, was an important message.* 1

Checking in gives the intern an opportunity to talk with someone about any difficulties they've been having, reinforcing the idea that the intern is not alone in his or her struggles, and reducing any feelings of shame that the intern might be experiencing.

> *I remember the attending pulled me aside and brought me into her office and asked me what was going on, if I was okay and whatnot. And I just felt that that was good. That there's faculty out there that are looking out for you, to make sure that you're happy. And I told her my concerns. She has a couple kids and could relate to my feelings, and she talked with me for a little bit, about five minutes. So that was good. I think it's those little things that work for me.* 9

Many interns had a clear sense as to whether their residency programs cared about them as individuals or viewed them as cogs in a wheel, just there to do a job.

> *I just really think that people really need to think more about residents' well-being.*

> *And I really think sleep and mental health are really important. And I don't think anyone emphasizes it, no one cares, no one asks. All they care about is if you show up and get your job done. You're just like a number, really. And that can be kind of hard sometimes, to keep the momentum, to keep going, and doing that. So yeah, I would say there needs to be a lot more focus on preserving well-being.* 3

Residency programs varied widely: in some programs interns felt that well-being was never addressed or discussed, either directly or indirectly, while in other programs well-being was clearly a priority, with the program sponsoring regular events, support groups, and retreats.

Some interns found that they didn't appreciate the supportive nature of their own residency program until they rotated through another specialty that was strikingly less so.

> *I realized how special [my specialty] was... They took the work hours very seriously. They would really try to get me out if I was staying there [longer than] I was supposed to, whereas [my new resident] doesn't care. And he made it very clear that he didn't care. And then the attending was like, "Oh, well, I worked far more than that when I was in your position." And so that really felt like, wow, that's really sad that their department is like this.* 11

As illustrated above, interns also tended to feel supported by programs that consistently enforced work hour limitations. It was important for programs to serve as advocates for their interns. Other interns felt that their programs had no regard for work hour limitations, and that the only source of protection they had was the ACGME.

> *Attendings complain all the time about us, about us being lazy or us not working hard enough or not caring for patients... And it's the ACGME who steps in and says, "No, these hours have to be protected. If you don't, we're going to threaten your residency program and take it to the administration." That keeps the people, us, protected. And every now and then you get an attending who really advocates for the residents, or you have a good chairman who advocates for residents and their education. When that happens you thank whoever it is out there – God, or*

> *whatever it is – that you're in the situation that you're in and that you're under the guidance of a leader who cares about everyone and their well-being.* 7

Cooperative Team Environment

"There's no such thing as 'intern work'."

The impact of the team environment on intern well-being cannot be overstated. In a safe and supportive team environment, the question "What would you do?" would likely be a welcome and non-anxiety provoking opportunity for learning. However, in a team environment that felt hostile, antagonistic, or competitive, even the smallest of inquiries could turn into a traumatic experience of public humiliation.

One intern described his experience on a rotation with just such a hostile team environment as "the worst professional experience in any job I've ever done in my entire life."

> *I had some very difficult seniors who would bust my balls, and every day was an exercise in this hierarchical part that I don't like… That month was very difficult because each morning at rounds, especially when I had slept zero minutes, I felt as if I was just going to be gutted like a fish in front of my colleagues. So that was sort of tough.* 8

Factors that can contribute to a hostile team environment include seniors' unrealistic expectations of what the intern should be able to accomplish in a given period of time. This can lead to persistent feelings of failure and shame for the intern, particularly when the intern feels like his seniors are interrogating him solely to expose his failures.

> *What is frequently challenging is that you're expected to know everything about the*

> *patient and you see them from seven-fifteen to seven-twenty-two, and you present them at seven-thirty. And seniors, who have sat down and talked about them for the last thirty minutes with their colleagues in a more efficient way, say things like, "What do you mean you don't know the dose of vancomycin they're on?" So that is the challenge of inpatient medicine. Like, "Well, did you feel a liver edge?" It's like, "You know, quite frankly I didn't have time to palpate the abdomen as thoroughly as I probably should have, but thank you for pointing that out in front of all my colleagues. I am embarrassed. That's great."* 8

To promote a more supportive team environment, interns noted that it was important for senior members of the team to point out the underlying purpose behind their questions, thus taking those opportunities to illustrate teaching points.

> *The hard part has always been, for me, when you feel as if there's no empathy at the other side of the table as they ask you questions to which they know the answer, just to expose you in front of your colleagues. So I would try not to do that, or I would learn to preface [questions] with, "I realize you may not have had time to do this but…" or "The reason I'm asking this question is…" or "Maybe, have you considered this…"* 8

Oftentimes a hostile team environment would serve as a daily reminder that the intern was at the very bottom of the medical hierarchy. In contrast, however, cooperative team environments tended to have the opposite effect of leveling the hierarchy and making the intern feel more like an equal.

> *That was probably the best month I've had this whole year… I had an incredible resident who just made the experience really phenomenal… His philosophy was, "We are a team" – the medical student, him, and me, and the other intern – and that he can do my job just as well as I can do his job. He'd help out where he could, and he'd allow me to take higher responsibility and kind of do his job in some ways. So I felt really invested and like part of a team... He was very cohesive in terms of making being at work a really fun place, being on call a really fun time.* 11

There was a remarkable difference between this sort of team environment and one that lacked an environment of mutual respect and cooperation. The positive

team atmosphere that this intern experienced had the power to turn overnight call into "a really fun time". A negative team environment can engender feelings of paranoia and defensiveness.

> *I don't want to stereotype all the attendings in that department, but the vast majority of them are not exactly willing to treat residents like human beings. So that's what gets old, what I think makes life difficult. It seems like someone's always out to get you: "What? You didn't tell me about the CT scan result?" or whatever. There just doesn't seem to be this cohesive teamwork environment.* 6

Interns described some of their best senior residents as being able to put themselves back in the intern's shoes. The seniors would empathize with the plight of the intern, and they were not above pitching in if the intern was overloaded.

> *I do have some upper-levels that are just fantastic. They have that mentality where if there's work to be done, there's work to be done. It doesn't mean it has to be an intern who does it. There's no such thing as "intern work".* 6

> *I think they understand what it's like to be us. My senior kept saying, "I was just an intern like a week ago. I know what it's like to be you. And I know what it's like to have the things that you have to deal with, and I'm here to help you." And I think some people forget that. Or they think that being an intern is supposed to be this horrible experience.* 11

Many interns were frustrated by the fact that some of their senior residents and attendings did not express understanding or empathy, but instead embraced a sort of "hazing" attitude.

> *With a lot of people, it's just that old school mentality: "I went through it, so you have to go through it."* 3

> *There are some upper-levels who could care less about how I'm doing and what it's like. They say, "Hey, that's what it was like for me, so you can get through it too."* 6

Seniors who took this stance were much less likely to help out when they saw

that the intern was overloaded with work. When the intern had admitted twelve patients overnight, for example, instead of offering to write some of the notes, these seniors might instead simply comment, "Yeah, when I did it we had twenty-two kids." This sort of attitude engendered a sense that it was "every man for himself," and reinforced to the intern that he was not being supported by his team, but abandoned by them.

Overall, it was clear that the members of the team often had an enormous impact on the intern's experience of that rotation and well-being.

> *[My well-being] really varies upon the rotation, the people I'm with. The hours don't really seem to be a problem, at least for me. It's a really a reflection as to who I'm working with. I could be working sixty hours a week with some of the residents I've worked with and it's awful. On other [rotations] I don't have a problem working more than eighty hours because we get along and I like the rotation. And that's a reflection as to my well-being and how I feel. Sometimes it feels great, I'm enjoying everything. Other times it's a constant question as to why I'm here, what am I doing, why I'm doing it, why don't I just do something else.* 6

Intern Community

"The biggest thing that helps everybody cope is just that sense of collegiality: we're all in this together."

Although interns discussed the importance of feeling supported by the senior colleagues on their team and feeling cared about by their residency program, far and away the most frequently discussed source of support within the work environment was the intern community.

One of the most critical functions of co-interns was to provide an opportunity for venting. Many interns described venting as a primary coping

mechanism, and though some interns also vented to family and friends outside of medicine, there appeared to be something particularly therapeutic about venting to co-interns, especially early on in the year.

> *One thing that helped a lot was that my intern class is actually a fantastic class... We're really sticking together, and we're watching out for each other... It helped me, especially post-call I met up with friends, and I vented. We were going for hot chocolate and we were just saying, "Oh, this call was so bad because…", and we would just be venting, and that helped a lot.* 1

Many interns talked about having a close-knit and supportive intern class, and they described the importance of maintaining a sense of collegiality among interns.

> *I think the biggest thing that helps everybody cope and sets the mood for things is just that sense of collegiality: we're all in this together. And people being helpful, or around, or just sympathetic, or listening to one complain or be proud of having done something… You can get through a lot.* 15

Many interns had recently relocated to a new city for internship, leaving their previous social networks behind. Some interns found that making new friends, especially friends outside of medicine, was challenging, considering their limited free time and rigid schedules. Given the frequent and close contact among co-interns, the intern class oftentimes helped to jumpstart the process of developing a new social circle.

> *I have a couple close friends in the program that I socialize with pretty regularly and are kind of an outlet for when there's something that's frustrating or anything like that. You have somebody to talk to who knows what you're actually talking about.* 17

Another important role of the intern community was to serve as a sounding board for challenges that arose, and to reassure interns that they were not alone

in their experiences.

> *One of the best [coping mechanisms] is just talking with other co-interns and realizing, well, my rotation on [that service] was a nightmare, but [my co-interns] had the same experience. So, okay, maybe it's not me. Maybe I'm not all that awful of an intern, it just happened to be the service.* 6

This is particularly important because internship can be an extremely isolating experience. An intern who is feeling exhausted, burnt out, and disillusioned could easily feel like he is the only one struggling with these issues.

> *There have been times when I thought that everyone else must be doing really great, and I'm the only person who is tired of being on call and tired of having really long hours. I think it's easy to feel isolated. But talking to all of my friends that are also interns… In my opinion we all have pretty similar outlooks these days about how things are.* 10

Co-interns could also be invaluable in helping to identify colleagues who were struggling. Not only did the presence of an intern community reassure interns that they had people looking out for them, but it also served as a safety net to help prevent interns from slipping through the cracks.

> *Certainly you have the eyes and ears of your colleagues… Everyone sort of looks after each other and you can say, "Are you okay? How do you feel about this?" So that is reassuring.* 8

DISCUSSION

The purpose of this study was to explore interns' perspectives on how the professional environment impacts their well-being, and to identify ways in which the professional environment could be improved to better support intern well-being. In one-on-one interviews, seventeen interns discussed their experiences of internship, as well as specific aspects of their work environment that impacted their well-being.

Interns felt that their well-being was best preserved when they were working in an environment that provided ample opportunities for education, facilitated professional development and job satisfaction, and left them feeling well-supported by colleagues (Figure 2).

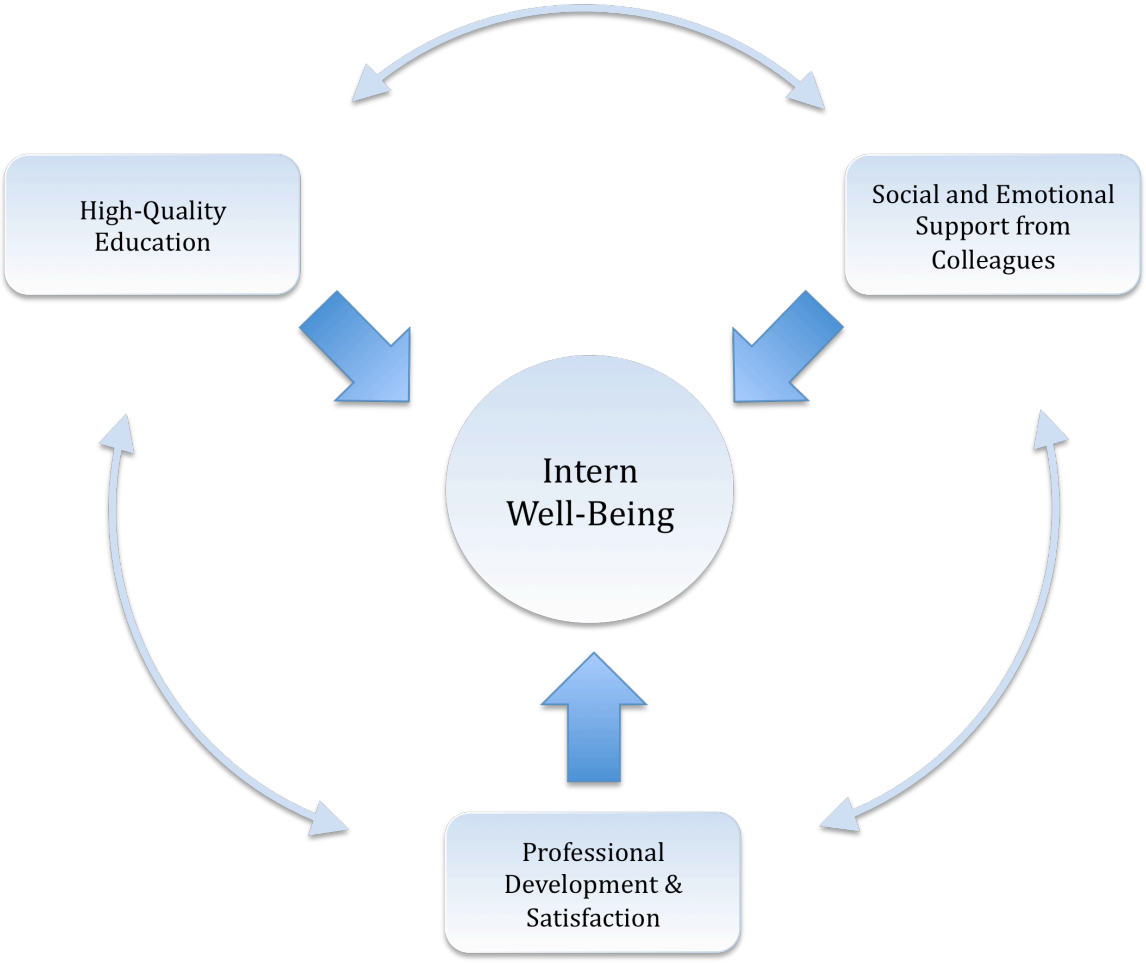

Figure 2. Conceptual model illustrating aspects of the professional environment that impact intern well-being

High-Quality Education

The quality of an intern's educational experience was found to be a major determinant of his or her well-being. Given the long hours, heavy workloads, and high stress that interns endured, it was important for them to feel that their work experiences were contributing to their education. Their motivation, satisfaction, and well-being improved when they were given

sufficient time for learning, and when they felt that their supervisors valued their education.

Interns described a tension between clinical service and educational activities—a concept often referred to in the literature as the "service-education balance"—which has been recognized as an important factor in residency education (85). Previous studies have found that interns spend much of their time engaged in activities that have low educational value and that do not contribute directly to patient care (86, 87). In fact, a high workload in particular has been associated with decreased participation in educational activities (88) and can have a negative impact on patient care (89).

When interns were overloaded by work, they often had to sacrifice the more valuable and satisfying parts of their day just to accomplish their task list. These included spending time with their patients, conducting a sufficiently thorough history and physical and providing good clinical care, reading up on and their patients and their disease processes, and attending educational conferences. These sacrifices often led interns to feel overwhelmed, unsatisfied, guilty, and frustrated. Not only did interns lack the time for learning, but they also felt forced to provide what they considered to be sub-par patient care.

Interns expressed the additional sentiment that an unintended consequence of work hour limitations, when not accompanied by corresponding decreases in workload, was a loss of time for educational activities. This concern regarding work hours was recently acknowledged by the Association of Program

Directors in Internal Medicine: "Many believe that resident level tasks and responsibilities have not changed, despite the need to work fewer hours thus creating work compression for residents that leads to greater fatigue and burnout. In order to control resident duty hours, the learning environment must be carefully examined with respect to overall work load, clerical tasks, and resident supervision" (5).

Work hour limitations were implemented with the hope of improving resident well-being, education, and patient care (59). In the last several years however, there has been growing concern about the negative effects of these policy changes on education and patient care (67, 70). The results of this study suggest that decreases in intern learning and satisfaction may actually serve to counteract the potential benefits of work hour limitations on intern well-being, making it even more imperative to understand the range of factors within the professional environment that interns perceive as impacting their quality of life. Of note, there is now an even greater sense of urgency to optimize the learning environment following a recent Institute of Medicine report that recommends further work hour restrictions for residents (90).

Residency programs play a critical role in optimizing the learning environment and minimizing the unintended consequences of work hour limitations. First and foremost, programs must support and enforce the current limitations. Many programs have made major changes to the structure of inpatient coverage in order to ensure that interns remain under the 80-hour limit

(e.g. by implementing a day float/night float system). However, in spite of the changes, interns experience a number of barriers to complying with work hour limitations. It is crucial for residency programs to actively assess and address these barriers by soliciting feedback from interns on an ongoing basis.

Given that interns are now spending less time in the hospital, it is imperative that the time is well spent. Medical educators must ensure that interns' education remains a priority and does not get overshadowed by clinical service. Some approaches that interns in this study found to be particularly useful included shifting more of the routine patient care activities to non-physician healthcare providers (e.g. PAs and nurse practitioners) (91), and thinking creatively about how to lower patient caps for interns (5, 92). Unfortunately, little is known about how to implement such changes in a financially sustainable way. Thus, it is imperative that residency programs and academic institutions publish the results of any attempted interventions so that medical educators and administrators across the country can learn from the successes and failures of others. Other countries could also serve as models for health care systems that are less dependent on the relatively inexpensive labor of interns and residents.

In shifting some of the workload away from interns, it is important to be aware of the potential negative effects on attending physicians, who may be forced to carry a greater clinical load. Possible downstream effects of the extra workload include increased stress, decreased time for teaching, and decreased

well-being among attendings.

Interns felt that the quantity and quality of teaching, both formal and informal, that they received from senior residents and attendings had a profound impact on their sense of satisfaction and well-being. Specifically, it was important for interns to feel that their supervisors were dedicated to teaching by, for example, actively teaching on rounds, creating a safe learning environment, and ensuring that protected didactic time was used effectively.

The findings from the present study provide support for the hypothesis that "if the learning is high enough, residents are willing to tolerate a certain amount of discomfort, whether stemming from the educational environment in general or from specific individuals within it. However, if the level of discomfort is too high or the amount learned declines, frustration rises and satisfaction wanes" (71).

Quality of teaching can be vastly improved by providing formal instruction to faculty on how to be an effective teacher (93). In the hierarchical system of medical education, interns and residents play a critical role in teaching other trainees (including medical students), yet the great majority receive absolutely no instruction on this topic. Medical schools and residency programs would be well-advised to integrate seminars on methods of effective teaching into the didactic curricula of medical training.

Professional Development and Satisfaction

Maintaining a sense of professional satisfaction in the face of the daily stresses and frustrations of internship was critically important for the well-being of interns. Interns experienced the greatest sense of satisfaction when they felt that their work was both intrinsically meaningful (in that they were making a valuable contribution to patient care) and extrinsically rewarding (through the recognition and appreciation of their efforts by others), and when they felt a sense of accomplishment and progression in their own professional development as physicians.

Generally, people feel they are making a meaningful contribution when they find their work to be challenging, worthwhile, and rewarding (94). For interns, this occurred when their supervisors ensured that they were actively participating in patient care. Interns noted significant improvements in their quality of life when their opinions about patient management were expected and valued by their team. In such instances, not only did interns find work to be more gratifying, but they were also actively learning and developing confidence in making decisions.

In order to appropriately address this issue, attendings and senior residents need to be aware (and periodically reminded) of the importance of encouraging the active involvement of the intern in patient care decisions. It is also important for there to be a culture within the residency program or department that expects interns to be involved in clinical decision-making.

Interns should also be encouraged to take the initiative and participate in patient care whenever possible, and they should feel comfortable to speak up if they are not satisfied with their level of involvement.

Given that the work was not always intrinsically rewarding, extrinsic rewards also played an important role for interns. One common discouraging experience was a lack of acknowledgment or appreciation for their hard work. Receiving positive feedback, reassurance, and words of encouragement from supervisors could have a profound effect on their motivation and self-confidence. Belief that one's efforts are being recognized and appreciated can increase the perceived meaningfulness of the work**,** thus improving an intern's satisfaction and sense of accomplishment (94, 95). A lack of appreciative support from supervisors, however, has been associated with emotional exhaustion in residents (96).

One way of conceptualizing the discrepancy between effort and reward that is commonly felt by interns is through the model of Effort-Reward Imbalance. According to this model, a combination of high effort and low reward (e.g. low pay, lack of esteem and approval, and/or doing a job that is inconsistent with one's educational background) can lead to significant occupational stress (97). Interns in the present study were expressing just this; they put in an enormous amount of effort only to be met with little or no reward.

In the few studies that have been conducted on effort-reward imbalance in residents, this imbalance was associated with decreased physical and mental

well-being and life satisfaction (98) and increased rates of depression (99). Using the reward-imbalance model to help conceptualize stress, burnout, and decreased well-being in interns helps to facilitate a deeper understanding of this phenomenon, and underscores the importance of providing interns with encouragement, positive feedback, and appreciative support on a regular basis. Senior residents and attendings should be aware of the beneficial effects that positive feedback can have on intern well-being, and they should be regularly reminded to provide formal and informal feedback and encouragement to interns on a consistent basis.

Another important contributing factor to job satisfaction was a sense of professional growth and development. Interns needed to feel like they were progressing in their training, and that they were being afforded opportunities to utilize their developing knowledge and skills. Medical education has long embraced a tradition of progressive independence, with the supervisor affording the trainee an increasing amount of autonomy as he or she develops clinical competence (100). Interns in the present study noted the importance of maintaining an appropriate balance of autonomy and supervision, and described the ways in which their well-being was affected when the balance was tipped.

The literature supports this concept as well, with one study of surgical and medical interns finding that independent decision-making and good back-up support were key contributors to the development of confidence in interns (101). On the other hand, "rigid and inflexible management control over work

methods is likely to signal that management has little trust in employees or confidence in their abilities to carry out job duties without close supervision" (94). For interns, this occurred when supervisors did not allow them to be involved in decisions regarding patient management. In such instances, interns were given little responsibility and were expected to simply do as they were told, affording them no opportunity for independent thinking or clinical decision-making.

The difficulty, however, is that the ideal balance of autonomy and supervision varies widely depending on a number of factors, such as the particular intern, the severity of illness, or the time of year. Kennedy and colleagues found that, in assessing trainee competence, clinical supervisors tended to take into account not only the trainee's knowledge and skill, but also his awareness of his own limitations, his level of conscientiousness, and his general truthfulness (102).

Thus, in order for an attending or a senior resident to provide an appropriate level of supervision, he or she would be wise to speak directly with the intern early on in the supervisory relationship, to assess the intern's skills, knowledge, and confidence. This could help the supervisor find the ideal balance of autonomy and supervision for each individual intern.

Facilitating the professional development of interns requires skills that can and should be taught to the residents and attendings who so often serve as supervisors for interns. Academic institutions should offer workshops to teach

trainees and faculty techniques on how to be an effective supervisor, including topics such as giving effective feedback, assessing for competence, facilitating progressive independence, and balancing supervision and autonomy.

Social and Emotional Support from Colleagues

In addition to requiring support in the form of clinical supervision, it was also important for interns to receive social and emotional support from their residency programs and attendings, their resident team members, and their co-interns.

Residency programs contributed to intern well-being by ensuring that interns felt cared about. It was helpful for interns to know that their program directors, attendings, and chief residents were looking out for their best interests, and that they were available to provide support if the intern encountered a problem. The importance of social and emotional support from supervisors has also been demonstrated in previous studies. One study found that dissatisfaction with emotional support from supervisors was a predictor of burnout in residents (96).

Intern well-being should be a priority for residency programs, and when programs address the topic of physical/mental health and wellness early in the year (e.g. during orientation), they are sending the important message to interns that the program values and cares about their well-being. Residency programs should provide interns with a wide range of sources to turn to for

help, and should ensure that interns perceive the program as providing a supportive and non-punitive environment. Faculty, program directors, and chief residents should always be on the lookout for interns who are struggling, and should have a low threshold for checking in with such interns to provide support.

Also important to an intern's well-being were the colleagues that the intern worked closely with on a daily basis. Several interns acknowledged that no matter how light or grueling the rotation, the particular co-workers on their team and the overall team environment could truly make or break the experience. Well-functioning teams were characterized by factors such as mutual respect and cooperation, a safe learning environment, and regular check-ins and feedback. Effective team leaders had realistic expectations of and could empathize with the intern, never turning to techniques of hazing, public humiliation, or other forms of punishment. Such leaders often tried to minimize the hierarchical distinctions, and would not hesitate to help out with so-called "intern work" if the intern was overloaded.

The ability of teamwork to minimize work stress has also been discussed in the literature (103). In one study, teamwork was a predictor of perceived stress, while working more than 80 hours per week was not (104). Teams might even be thought of as "micro-organizations that are capable of innovative approaches to making on-call commitments both practicable and bearable—perhaps even fulfilling" (105).

According to interns, the team environment was oftentimes largely dictated by the senior residents, with whom the intern usually worked more closely than the attending. In this vein, it could be beneficial to provide senior residents with additional training on effective management and leadership skills, thus improving their ability to create a maximally supportive and educational rotation experience for the interns they supervise.

Across the board, interns also described the important role that the intern community played in helping to maintain their well-being. Co-interns were invaluable in helping interns to cope with the challenges and stressors of internship. They provided a sense of collegiality, they listened when their colleagues needed to vent, and they were able to reassure an intern that he was not alone in his experiences. Co-interns not only served as a built-in social network, but they also looked out for each other, and offered valuable support when a fellow intern was struggling. Previous research also suggests that in addition to supporting well-being (106), co-worker support may actually serve to "buffer the negative effects of work demands" (107).

Residency programs can indirectly encourage supportive relationships between co-interns by providing ample opportunities for bonding during orientation, as well as throughout the year. Examples include annual or semi-annual retreats, intern support groups, or weekly social lunches for interns, giving interns an opportunity to socialize, vent, provide advice and support, and share common experiences.

Limitations

This study has several potential limitations. First, the perspectives elicited from interns represent their opinions at a single point in time. It is quite likely that their thoughts regarding the impact of internship on their well-being vary depending on the time of year. In this study, interviews took place during March and April, which is traditionally thought to be a period that straddles the depression and cynicism of the winter, and the sense of accomplishment and brightened mood that occurs in the spring (18). However, empirical evidence actually demonstrates that rates of depression rise dramatically at the beginning of the year, and remain elevated through the end of internship (34), suggesting that there may not be such a predictable pattern of mood progression after all.

Another limitation of this study is sampling bias. Although efforts were made to obtain a wide variety of perspectives by interviewing interns of both genders from a number of different specialties, all participants were drawn from a pool of voluntary participants in an ongoing survey-based study of intern depression. Interns who chose to participate in this longitudinal study might have had differing perspectives on the impact of internship on well-being from those who chose not to participate, and the process of filling out the quantitative surveys might have sensitized them to these issues.

In addition, out of the interns who were invited to participate in the qualitative interview study, 46% declined. It is possible that the interns who

agreed to be interviewed were more dissatisfied with their internship experiences and thus more motivated to participate. However, we believe that we captured the full range of intern satisfaction, as a number of the participants describing being quite satisfied with their experiences. Furthermore, this response rate is consistent with other interview-based studies of residents (55), and was not unexpected, given that interns were being asked to donate 45 minutes of their time.

It is also important to note that all participants were drawn from a single institution, and it is likely that some of the factors that impact their well-being are institution-specific, and may differ from those of other institutions.

Because of the small sample size and the nature of qualitative research, no stratification by specialty, gender, marital status, ethnicity or other factors which might have important contributions to well-being were able to be identified or controlled for in the study.

Recommendations for Future Research

This study examined intern well-being solely from the perspective of interns. Future qualitative studies might explore the perspectives of attendings, residents, nurses, patients, or spouses, as each of these groups is likely to have a unique view of the experience of internship and issues related to intern well-being. In a similar vein, a longitudinal study could be conducted to explore how

the perceptions of intern year change over time as the intern becomes a resident and then an attending.

The present study has also elucidated a number of important topics that should be followed-up with quantitative research. A potential next step would be to design a questionnaire to measure in a large sample the factors within the professional environment that were identified as impacting intern well-being. This would allow for a quantification of their relative impact on well-being, as well as the identification of predictive and mediating factors.

Perhaps most importantly, however, the current data might be used to guide the development of interventions and/or changes within the professional environment, such as those suggested above. Such interventions would require rigorous outcome studies to measure their effectiveness. Developing, implementing, and assessing innovative changes to the system of medical education are the critical next steps toward creating a more humane training environment.

Conclusions

Thirty-two years ago Samuel Shem penned the classic satirical novel on medical internship, *The House of God*. Looking back on that time, it is clear that internship and the system of medical education have changed immensely, yet at the same time, paradoxically, the experience of internship has in many ways remained the same.

Towards the end of the novel, the narrator's girlfriend reflects on the experience of internship:

> *"It's been inhumane," she said. "No wonder doctors are so distant in the face of the most poignant human dramas… Most people have some human reaction to their daily work, but doctors don't… [It's] a terrific repression that makes doctors really believe that they are omnipotent healers. If you hear yourselves saying, 'Well this year wasn't really that bad,' you're repressing, to put the next group through it."*
>
> *"Well, then, my clever woman," said Gilheeny, "why is it that these fine young men do this at all?"*
>
> *"Because it's so hard to say no. If you're programmed from age six to be a doctor, invest years in it, develop your repressive skills so that you can't even recall how miserable you were during internship, you can't stop."*
>
> *Finally,…Gilheeny asked softly, "These men are wounded. Can anything still be done?"* (108)

Despite the many changes, the system of medical education continues to produce too many wounded healers. So we ask ourselves that age-old question: *What* can *be done?*

A lot, it turns out. But we need to know where to focus our energy. However slowly, the culture of medical education has gradually been shifting towards a more humane training, though there is still a long way to go.

Given the amount of time an intern spends in the hospital, it is not surprising that the professional environment has the potential to profoundly impact an intern's well-being. Intern well-being is affected by the quality of education, the opportunities for professional development and satisfaction, and emotional and social support from colleagues. Attempts to improve the

professional environment should take into consideration all three of these interrelated factors, as improvements in one realm may detract from the others. Thus, in striving to improve intern well-being, we must endeavor to create a system of medical education that maintains a balance, upholding all three.

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APPENDIX A: INTERVIEW GUIDE

Thanks so much for agreeing to speak with me today. Before we get started I just want to go over a couple of things.

As you read in the consent form, the purpose of this study is to learn more about the experience of internship, from the intern's point of view, and to learn about how internship impacts well-being. The interview typically lasts approximately 45-50 minutes.

I'd like to emphasize that all the information that you provide during the interview will be completely confidential. I will be recording the interview, however any potentially identifying information will be omitted from the interview transcript, and the final transcript will be completely anonymous. If, however, there is anything you'd like to say with the audio recorder off, please let me know and I will turn it off.

We are ultimately planning on publishing the findings of this research, and future publications may include quotations from the transcripts. However, no quotation will be used if there is even the slightest possibility that it could serve to identify the interviewee.

You may refrain from answering any questions you do not wish to answer, and you may choose to discontinue the interview at any time.

Do you have any questions about the interview or the research study in general?

I'll be asking you questions throughout the interview but please don't hesitate to speak freely and elaborate on whatever comes to mind. I will ask follow-up questions or re-direct you if I'd like to hear more about a specific topic, but keep in mind that nothing is off-topic or irrelevant if it is something you'd like to talk about.

Do you have any questions before we begin?

Overview of internship experiences

- I'd like to start by getting a feel for what your year has been like from a rotation point of view. So, starting back in June, could you walk me through the different rotations you've done, and give me a quick description of what each one was like for you?

How internship has affected your well-being

- How would you describe your state of well-being over the course of the intern year?
- How do you think your well-being compares to that of your colleagues?
- What aspects of internship have you found to be particularly challenging?
- What other stressors have you experienced during internship?
- In what ways have these challenges and stressors affected your well-being?
- How has your well-being affected your professional development during internship? How has it affected you personally?

Strategies to maintain well-being

- What types of coping strategies have you used to deal with these challenges and stressors?
- What else has helped you maintain well-being during this year?
- What exists now in your residency program to help interns maintain well-being?
- What improvements could be made to help interns maintain their well-being?

How internship has changed you

- How do you think your experiences during internship have changed you? As a person? As a physician?
- How has internship influenced the way you interact with and empathize with patients?
- What sort of long-term impact do you think internship will have on you, as a physician, as a person?
- What do you think could be done to help maximize the positive changes and minimize the negative changes that occur as a result of internship?

Expectations regarding internship

- Prior to starting internship, what were your expectations regarding your intern year?
- How has your experience of internship been similar to or different from your initial expectations?

Wrap-up

- Do you have any other thoughts or comments about the experience of internship or about what could be done to improve interns' experiences?

APPENDIX B: CONSENSUS CODING STRUCTURE

Coding Structure: Understanding Intern Well-Being

Research Question: What are the factors that positively and negatively impact intern well-being, and how might intern well-being be improved?

1. Adaptation/Transition
- a. New responsibilities
- b. Learning the system
- c. Personal/social transitions
- d. Pre-internship experiences
- e. Pre-internship expectations

2. Rotation-Specific/Situational Factors
- a. Clerical work/administrative duties/paperwork/scutwork
- b. Schedule and work hours
- c. Patient load
- d. Systemic and institutional flaws/strengths
- e. Team-related factors
- f. Expectations about upcoming rotations

3. Work Interactions and Relationships
- a. Intern community, peer support (or lack thereof)
- b. Senior colleagues
- c. Impact of well-being and sleep deprivation on work relationships in general
- d. Ancillary staff
- e. Patients and patients' families
- f. Hierarchy and respect

4. Professional Development
- a. Professional skills – development or lack thereof
- b. Professional/existential reflections
- c. Emotional development/experiences
- d. Expectations/opinions/evaluations of the intern by colleagues
- e. Career development
- f. Medical errors/mishaps/near misses

5. Personal Life/Personal Health

a. Physical health
b. Mental/emotional/psychological/spiritual health
d. Work-life balance
e. Individual personality traits/characteristics
f. General/other coping strategies

6. Personal Relationships and Social Supports

a. Receiving support from family/friends/significant other
b. Feeling isolated from supports
c. Tension/friction in existing personal relationships
d. Superiority and selfishness in personal relationships
e. Supports being within versus outside of medicine

7. Programmatic/Systemic/Institutional Factors (when not rotation-specific)

a. Educational activities
b. Social activities
c. Feeling supported by the program
d. Program and departmental structure and culture
e. Work hour limitations
f. Suggested programmatic/systemic/institutional improvements

8. Experiences Unique To Certain Groups (challenges, advantages, factors)

a. Specialty-specific
b. Pregnant women
c. Being a parent
d. Older interns/previous career
e. Gender
f. IMGs
g. MD/PhD

99. Key Quotes