

AMERICAN UNIVERSITY OF BEIRUT

AN EXPLORATORY STUDY OF
COLLABORATIVE PERCEPTION:
PHYSICIAN-NURSE COLLABORATION AND STRESS IN
AN ACUTE CARE HOSPITAL

by
NORA TOUFIC KAKATI

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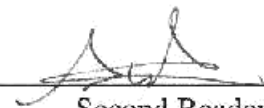
Approved by:

Clinton, Michael, PhD, RN, Professor
Hariri School of Nursing



First Reader

Fares, Souha, PhD, Assistant Professor
Hariri School of Nursing



Second Reader

Date of project presentation: April 29th, 2015

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AN ABSTRACT OF THE PROJECT OF

Nora Toufic Kakati for Master of Science
Major: Nursing

Title: An Exploratory Study of Collaborative Perception:
Physician-Nurse Collaboration and Stress in an Acute Care Hospital

Purpose: The purpose of the study is to investigate the relationship between the stress experienced by registered nurses and physicians working on clinical units and their perceptions of the interprofessional collaborative culture at their hospital. It aims to explore attitudes towards physician-nurse collaboration at AUBMC, assess perceived stress levels experienced by healthcare professionals working in critical care units as well as on open floors and ambulatory units, and investigate potential relationships between interprofessional collaboration and stress.

Method: This exploratory, descriptive study assessed responses of RNs and Physicians across intensive care areas, open floor, and outpatient clinics at AUBMC (N=138). The study was conducted using the Jefferson Scale of Attitudes toward Physician-Nurse Collaboration (JSAPNC) and the Expanded Nursing Stress Scale (ENSS).

Results: On average, nurses tended to score significantly higher on the JSAPNC scale than did physicians (RN mean total score = 3.69 vs. MD mean total score 2.97) ($p < 0.001$), indicating more positive attitudes towards collaboration. As for the ENSS, nurses also tended to be more stressed than physicians (RN mean total score = 3.04 vs. MD mean total score = 2.77) ($p = 0.002$). Older ($p = 0.058$), more experienced ($p = 0.044$), female ($p = 0.015$) RNs had a more positive perception of collaboration among RNs, while among MDs female MDs were most stressed ($p = 0.031$). JSAPNC collaboration scores and ENSS stress scores were positively, significantly correlated ($r = 0.37$, $p < 0.001$). Both groups of healthcare professionals in intensive and critical care areas as well as in ambulatory areas had a significant, moderate positive correlation between perceived collaboration and stress scores ($r = 0.45$, $p < 0.001$, and $r = 0.48$, $p = 0.020$ respectively), while those in open floors did not reveal any significant correlation between the two phenomena.

Conclusion: The findings of this exploratory study may serve as a basis for further study investigating collaborative perception and stress in a complex healthcare setting. It may also serve to encourage further assessment of interprofessional collaboration and stress in order to reach optimal patient care outcomes, and examines the relationship between interprofessional collaboration with the potential for improving healthy work environments.

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CHAPTER I

INTRODUCTION

Healthcare professionals working in critical care departments are often subjected to continuously chaotic and unpredictable challenges on a moment-to-moment basis, from severe trauma and terminal illness, to sudden death, whilst dealing with high-risk, critically ill patients. Staff members working in such units must therefore rely on effective communication and collaborative skills in order to reach efficient results under pressure, and thus tend to have higher levels of work-related stress and burnout than those working in other departments (Al-Makhaita, Sabra, & Hafez, 2014). With nurses and doctors working together at the frontline, constructive collaboration in stress-free environments is of utmost importance to reach optimal patient outcomes, as well as empower all collaborating healthcare professionals to ensure the best possible patient care provision.

Under such complex clinical situations in high-risk units, a “stress-free” environment is almost ideal and improbable to fully attain. According to the WHO (2014), work-related stress is defined as the response one may have when faced with work demands and pressures that do not coincide with one’s capabilities, and challenge coping ability. It may occur in various circumstances, namely when the individual is not recognized, with little support from colleagues, and little control over various work processes (WHO, 2014). A healthy work environment, that is one in which not only a lack of negative factors but also an abundance of positive ones, must ensue in order to efficiently succeed in various complex tasks within a proficient time frame. The Institute of Medicine’s well-renown reports *To Err is Human* (1999) and *Crossing the Quality Chasm* (2001) highlight the strategic importance of a quality safety culture.

Poor communication among health care professionals has been identified as one of the most common causes of errors: error data from the Veterans Health Administration has attributed approximately 80% of errors to communication issues (Dunn et al., 2007). A study performed by Sutcliffe, Lewton, and Rosenthal (2004) revealed that resident physicians identified collaborative communication as the leading cause of 90% of errors at a major medical institution.

Collaboration is derived from the Latin words “col” meaning with or together, and “laborare” meaning work (Dougherty & Larson, 2005). Collaboration is thus defined as “individuals with varying backgrounds and expertise communicating effectively with one another in a non-hierarchical fashion, committed to problem-solving, in search of solutions that cannot be determined with one’s own limited scope of knowledge (Tschannen, 2005). Tschannen et al. (2011) thus highlighted the importance of interprofessional collaboration to overcome this challenge as a key strategy in restricting error and optimizing patient outcomes. Thus, assessment of nurse-physician communication and collaboration strategies in critical units as well as open floors and ambulatory settings in a major healthcare institution in the Middle East is worth investigating.

It is henceforth vital to note that effective communication and collaborative skills are necessary to reach efficient results under pressure whilst ensuring safe, optimal patient care. Rather than theorizing about how such chaotic units should behave in an ideal world as in the traditional approach to change, it is imperative to approach such chaos found in critical care settings as it actually occurs in chaotic, real life situations.

A. Purpose and Significance

This exploratory cross sectional study was undertaken to answer an important research question: “To what extent do physicians and nurses perceive the presence and necessity of an interprofessional collaborative culture?” The purpose of the study is to investigate the relationship between the stress experienced by registered nurses and physicians working on clinical units and their perceptions of the interprofessional collaborative culture at their hospital.

This study is the first attempt at investigating interprofessional collaboration and stress among Registered Nurses and Physicians at the American University of Beirut, Medical Center. To the authors’ knowledge, this is the first incorporation of two scales exploring interprofessional collaboration and stress, namely the Jefferson Scale of Attitudes towards Physician-Nurse Collaboration (JSAPNC) and the Expanded Nursing Stress Scale (ENSS), and it is the first study to have amended the ENSS for use on a physician sample in accordance with the author’s permission, Dr. Susan French of McGill University. Such an investigation is clinically relevant at all levels of healthcare from the clinical unit to hospital systems, all of which require a collaborative, low-stress and safe environment for both patients and staff.

The specific objectives of the study were to:

1. Explore the relationship between RN and physician collaboration (JSAPNC) and stress (ENSS) scores.
2. Examine the relationships between demographic variables and RN and physician collaboration and stress (ENSS) scores.
3. Investigate the direction and strength of the relationship between categories of practice setting and JSAPNC and ENSS scores.

CHAPTER II

LITERATURE REVIEW

It is interesting to note the wealth of evidence found in the literature concerning interprofessional collaboration within the healthcare setting, while not many studies have directly attributed this phenomenon as it may be related to stress. Nevertheless, research has demonstrated the high toll that stress takes on the health of humankind, whether healthcare professionals or patients. Evidence has similarly been able to demonstrate the effect of collaboration on mortality rates as well as its detrimental effect on patient outcomes and overall institutional success.

A. Interprofessional Collaboration

Various studies found in the literature reveal the value and extreme importance of interprofessional collaborative practices necessary to attain optimal outcomes in the healthcare setting. From the dawn of its investigation, interprofessional collaboration was classically researched by Knaus, Draper, Wagner, and Zimmerman (1986), in which a significant relationship was found between optimal communication and collaboration, and patient mortality in major intensive care units. 5,030 patients were observed across 13 tertiary care hospitals, and were stratified by risk of death. The authors conclusively identified that interaction and coordination among staff significantly influences its effectiveness. Institutions that reinforced collaboration were found to have a patient mortality rate of 41% lower than the predicted number of deaths, while those that had poor communication and collaboration practices had surpassed their predicted number of patient deaths by 58% (Knaus et al., 1986).

Puntillo and McAdam (2006) investigated the relationship and communication between physicians and nurses in an intensive care unit and its effect on providing quality end-of-life care. A systematic literature review was conducted in order to investigate best practical approaches to improve nurse-physician communication and collaboration. When intensive care units' Registered Nurses (RNs) were more autonomous and were involved in decision-making practices, they gained more respect and recognition from their co-workers and fellow caregivers, creating a healthier work environment. An increase in collaborative communication, involvement in rounds, communication training, and following a collaborative practice model led to higher nurse, physician, family, and patient satisfaction. End-of-life care provided by satisfied, engaged professionals communicating constructively in a collaborative manner surely improved in an intensive care setting. Other studies have revealed several professional outcome variables associated with nurse-physician collaboration, namely job stress, group cohesion, and nurses' decision-making satisfaction (Boyle & Kochinda, 2004; Adams & Bond, 2000; Krairiksh & Anthony, 2001). Not enough studies have investigated the correlation between attitudes towards physician-nurse collaboration and stress within complex work settings, necessitating this initial study in Lebanon to investigate this possible correlation.

Chadwick (2010) investigated nurse-physician collaboration and relationships in the complex, chaotic setting of the operating room. In complex, stressful work environments, interprofessional dialogue and understanding will lead to respect for one another's opinions, productive conflict, trust promotion, and in turn better patient outcomes. By using the JSAPNC nurse-physician collaboration survey, perceptions of physicians and nurses towards collaboration were investigated, and whether there was a

difference between their perceptions. It also determined physicians' perceptions and readiness towards building collaborative relationships with nurses in the perioperative setting.

Sterchi (2007) has also used the JSAPNC in order to investigate the importance of nurse-physician collaboration, and deemed that their perception is vital in attempting to understand and improve interprofessional collaboration in a complex setting. Various associations such as gender, years of experience, and nursing specialty were also investigated. This study revealed that nurses were far more optimistic about interprofessional collaboration than physicians, perhaps necessitating interprofessional collaborative training interventions.

A synthesis review of the literature on nurse-physician collaboration undergone by Keenan and Tschannen (2006) revealed several major limitations. First, there is a lack of common perceptions towards nurse-physician collaboration interprofessionally. Also, the conceptual definition of collaboration and its investigation tends to vary, while major differences in global measures of collaboration exist. A common need, however, remains: the need for collaborative interdisciplinary rounds, interprofessional respect, and mutual empowerment and consideration for the other.

Research further suggests that interdisciplinary teamwork in the healthcare setting improves clinical outcomes, patient satisfaction, reduction of patient mortality, as well as significant cuts in healthcare costs (Ward et al., 2008). When considering the importance of interprofessional collaboration in an Operating Room, for example, the importance of efficient patient throughput, adequate and prompt turnover times, carrying patient acuity levels, timely patient preparation and conflicting schedules, it is clear to see that such a situation requires a tremendous amount of effort from a very

diverse team of healthcare providers, striving to work together to meet both patient as well as institutional needs (Sterchi, 2007).

B. Workplace Stress

In the complex hospital environment, healthcare professionals are bombarded with various stressful encounters on a day to day basis. In the continuously challenging and unpredictable world of critical care, any healthcare employee faces the stress of dealing with a dying patient, complex peer encounters, and even conflict among fellow physicians and nurses, increasing the burden of the stressful nature of the work itself. Although the adverse effects of stress were apparent to Aristotle, Hippocrates, and others, in behavioral terms, the “father of stress”, Hans Selye, considered it as the “perception of threat, with resulting anxiety, discomfort, emotional tension, and difficulty in adjustment” (Fink, 2010).

Stress has been linked throughout research to major causes of death, specifically heart disease, hypertension, and cancer, among others (Cohen, Janicki-Deverts, & Miller, 2007). It has also been more and more commonly associated with the development of major mental health issues such as major depressive disorder (MDD), post-traumatic stress disorder (PTSD), and pathologic aging (Marin et al., 2011). Research has also investigated various factors related to sources of stressors, their impact on administrative issues, and any individual mediating factors such as social support or personal attributes (French, Lenton, Walters, and Eyles, 2000). With such busy schedules, and very hectic, stressful lifestyles, it is interesting to see if in fact healthcare providers make the time to practice stress reduction techniques. It was found that among a sample of healthcare providers who in fact counsel patients regarding

stress management, namely physicians, residents, nurse practitioners, and physician assistants, a majority of the studied sample, approximately 57%, reported “rarely” or “never” practicing stress reduction techniques themselves (Avey, Matheny, Robbins, & Jacobson, 2003).

Another study was conducted to identify and analyze professional stressors of 1,000 Intensive Care Unit nurses, evaluate the level of stress, and make any correlations between perceived stress and psychological or somatic symptoms or diseases. Higher stress was attributed to physical and psychological working environments when facing patients who are suffering or dying, versus less stressful social stressors. Investigations were made between stressors and psychological or somatic symptoms such as headache, insomnia, fatigue, despair, lower back pain, and mood swings, among others, and diseases such as hypertension, myocardial infarction, stroke, diabetes mellitus, and so on. A significant correlation was indicated between work-related stress factors, most specifically concerning “death and dying” on the ENSS scale (Mean=2.87, SD=0.92) of patients cared for, and overall psychosomatic health of the ICU nurses (Milutinović, Golubović, Brkić, & Prokeš, 2012).

C. Implications for Nursing Leadership

As for implications for nursing management and overall institutional outcomes, several issues can be drawn as a consequence of workplace stress. Research has shown that it is highly associated with employee absenteeism, employee turnover, risking overall commitment to the nursing profession, impeding job satisfaction, and affecting nurses’ overall psychological well-being (French et al., 2000). For one, “disruptive behavior” defined by the American Medical Association as “verbal or physical conduct

that negatively effects or may potentially effect patient care including, but not limited to, conduct that interferes with one's ability to work with other members of the healthcare team" has been shown to be a major issue (Walrath, Dang, & Nyberg, 2010). Disruptive behavior, as such, which some concepts of the ENSS have touched on, has been identified as a threat to quality of care, nurse retention, and the overall safety culture of a healthcare institution (Walrath et al., 2010; D. Dang, personal communication, February 2nd, 2015). Studies on interprofessional, disruptive behavior in fact identified a higher rate of intra-professional disruption as opposed to inter-professional disruption (Walrath et al., 2010; Walrath, Dang, & Nyberg, 2013). As such, four components may be identified relating workplace stress and its potential impact on various nursing management issues. From a patient safety and risk management component, it is vital to note the impact of stressed healthcare professionals on patient care, and the importance of safeguarding any adverse events. From a human resources perspective, it has been seen as a challenge for RN retention, a predictor for decreased RN satisfaction, and thus leading to an increased turnover of stressed RNs in search of a healthier work environment. In turn, this leads to the third component: occupational health. RNs that will in fact be retained will be continuously stressed for a longer period of time, with increased stressors and a higher risk of chronic illnesses, thus causing a burden on patient care as well as the institution as a whole. This leads to the fourth component: institutional cost. With an overall increased cost on the institution, for both increased turnover, cost of new hires and trainees, increased sick days for stressed and ill RNs, and increased patient length of stay, among others.

D. Theoretical Framework:

Lazarus & Folkman's Transactional Model of Stress and Coping

Selye, the “father of stress”, has quoted Richard Lazarus, well-known for investigating the science behind emotions and cognitive psychology. As the term “stress” has been defined differently by scholars of many disciplines, Lazarus highlights the difficulty of reaching a specific definition, and thus sought to investigate several perspectives on “stress” as a concept. By comparing and contrasting the many definitions of stress, Lazarus was quoted to conceptualize it as follows:

“In spite of consistent confusion about the precise meaning of the term, stress is widely recognized as a central problem in human life. Scientists of many disciplines have conceptualized stress but each field appears to have something different in mind concerning its meaning. For the sociologist, it is social disequilibrium, that is, disturbances in the social structure within which people live. Engineers conceive of stress as some external force which produces strain in the materials exposed to it. Physiologists deal with the physical stressors that include a wide range of stimulus conditions that are noxious to the body. In the history of psychological stress research, there has been no clear separation between physical stressors which attack biological tissue systems and psychological stressors which produce their effects purely because of their psychological significance” (Fink, 2010, p.5).

Lazarus and Folkman's Transactional Model of Stress and Coping, the chosen theoretical framework, identifies two major factors that contribute to stress: person-environment relationships, and appraisals (Lazarus & Folkman, 1984). Person-

environment relationships include one's individual personality, values and beliefs, social networks and social support, life events, and cultural factors that interplay with one's ability to cope with stress. Appraisals, or cognitions, were investigated to explore the underlying causes of various emotional reactions such as happiness, fear, sadness, guilt, or grief. These may present as primary appraisals, which allow the individual to directly establish a significance or meaning attributed to the stressful event, and then as secondary appraisals, or coping potentials, which revolve around the individual's assessment of their ability to cope with the event and its consequences. At last, cognitive reappraisal allows one to reinterpret the initial emotional stimulus, as an emotional regulation strategy to redirect emotion. This specifically addresses the individual's active perception of a currently occurring situation and their ability to take control of it through a continuous re-evaluation of the issue as it changes (Lazarus & Folkman, 1984).

It has been hypothesized that perhaps due to the traditional socialization of physicians into their roles as the expert, autonomous, responsible, and independent factor of the healthcare team, while nurses have been socialized into a more interdependent role of deliberation and accountability as part of a team, such role concepts have been carried into the workplace (Sterchi, 2007). This may be a vital aspect to consider when delving into investigations surrounding interprofessional collaborative perceptions, communication, and perceived stress on the physician-nursing frontier. The question lies in the overlap between the two, and coming to a better understanding of perceived and real differences in power and status, as the nurse-physician relationship by nature may be considered stressful in itself, yet collaboration is not only necessary, but also inevitable (Sterchi, 2007; Chadwick, 2010).

CHAPTER III

METHODOLOGY

The research design of this exploratory study is descriptive, cross-sectional.

A. Study Population

The study was conducted at the American University of Beirut Medical Center (AUBMC) in Beirut, Lebanon. The target population of interest for the purpose of this study is bedside Registered Nurses (RNs), nurses in management exposed to the clinical setting, and Doctors of Medicine (MDs), including interns, residents, fellows, and attending physicians at AUBMC.

To date, AUBMC hosts a total of 650 nurses of all grades, including 70 in leadership positions. As for MDs, there is an estimated 200 interns, 344 residents, 63 fellows, and approximately 400 attending physicians and clinical associates.

B. Sample

From the study population, the sample was selected on the following inclusion criteria. Registered Nurses must have a Bachelor of Science in Nursing degree or equivalent, must have at least one year of professional experience, and must have current working experience at AUBMC. As for MDs, they must hold a professional title as an intern, resident, fellow, or attending physician – while medical students are excluded. They must also have at least one year of professional experience within the hospital setting, and must have current working experience at AUBMC. Practical Nurses, Auxiliary Nurses, or Nurse Aides have been excluded from the study.

Moreover, nurses not currently exposed to bedside or direct clinical care have similarly been excluded for the purpose of this investigation.

The sample is a convenience sample in which participants were approached by direct contact to be self-enrolled into the study. The convenience sample for the study is participants (RNs and MDs) recruited from the critical care units, open floors, and ambulatory units over a 4-week timeframe commencing immediately on IRB and hospital administrative approval for the study. This non-probability sample is a result of direct approach to easily accessible potential participants within the hospital setting. A total of 300 RNs and 100 MDs received questionnaires at a sum total of 400 individuals. Based on the experience of the principal investigator, the response rate was expected to be 50%. 100 questionnaires were distributed to physicians with the expectation of 50% return; 300 questionnaires were distributed to nurses with the expectation of 50% return. This 50% is based on the experience of HSON faculty in previous studies undergone at AUBMC. The estimated response rate of physicians was unknown and only estimated because this is the first time nurses have attempted to survey physicians in the study hospital. Due to work shift availability, days off, sick leaves and annual leaves taken during the study period, the estimated response rate was set at an overall 50%. The actual response rate for RNs was 32%, at 96 respondents out of a total of 300 RNs. As for the physicians, the MD response rate was 42%; 42 MDs out of a total of 100 responded. The overall response rate of a total of 400 individuals was 138 total respondents at 34.5%.

C. Instrumentation

1. *The Jefferson Scaled of Attitudes toward Physician-Nurse Collaboration*

Dougherty & Larson (2005) have performed a comprehensive review of instruments measuring physician-nurse collaboration, and have identified up to five instruments meeting standards for study criteria. All have undergone reliability and validity testing, and are recommended for future research for nurse-physician collaboration. One of the five instruments identified is the The Jefferson Scale of Attitudes toward Physician-Nurse Collaboration (JSAPNC) (Appendix C). Initially developed by Mohammadreza Hojat, Ph.D. in 1985 and revised in 1999, the JSAPNC is a well-established instrument utilized to measure perceived communication and professional collaboration processes between physicians and nurses working in healthcare institutions. It is a fifteen-item scale distributed across four domains: Shared Education and Collaborative Relationships, Caring vs. Curing, Nurses' Autonomy, and Physicians' Authority. In essence, it evaluates professionals' perception towards decision-making practices, interprofessional education and relations, psychosocial care, teamwork, and shared responsibility. All fifteen items are self-assessed by the participating nurse or physician on a four-point Likert scale from "strongly agree" to "strongly disagree". A higher total score reflects a more positive attitude towards collaboration. As for cultural relevance, the JSAPNC has been utilized in a wide variety of settings, and tested in various studies. Hojat et al. (2002) has compared the JSAPNC among American, Israeli, Italian, and Mexican healthcare professionals, showing both inter- and intra-cultural similarities and differences among study groups, supportive of the social role theory (Hardy & Conway, 1978). In a context somewhat close to the Lebanese, the JSAPNC was utilized in a study done in Turkey by Yildirim et al. (2006),

testing its psychometric properties and use in healthcare and research. It revealed a test-retest reliability of 0.75, with a Cronbach's coefficient alpha of 0.71. This study showed that the JSAPNC is a psychometrically sound tool having satisfactory measurement characteristics including construct validity and internal consistency reliability, and is deemed useful whether for enhancing collaborative practice between student physicians and nurses, or those practicing in clinical settings. Dougherty and Larson (2005) found that the JSAPNC's content validity, assessed by factor analysis with orthogonal varimax rotation, had extracted 6 factors with Eigenvalues greater than 1. There was consistency of extracted factors showing content validity when compared with the literature.

Cronbach's alpha was 0.84 when assessing medical students and 0.85 when administered to nursing students, in contrast to another study by Hojat et al. (2001) when used on a large sample size (N=639), alpha reliability ranged from 0.74 for nurses to 0.78 for physicians. Item-score total correlations of combined groups ranged from 0.40 to 0.65, with an average of 0.61. Strengths found for the JSAPNC were that it can be used for both physicians and nurses, and has been used primarily to measure attitudes of nurses and physicians towards collaboration in various countries. Permission to use the JSAPNC has been attained from Dr. Mohammadreza Hojat. This study aims to take one step further in this regard within a well-known health care institution in Lebanon.

The JSAPNC has been widely used throughout research literature to measure attitudes towards physician-nurse collaboration. Hughes and Fitzpatrick (2010) have utilized the JSAPNC to evaluate attitudes towards collaboration among RNs and MDs within an acute care community hospital setting. Their study sample consisted of 118 RNs and 53 MDs, with a goal to build baseline data to initiate promotion and enhancement of programs geared towards further development of collaborative practice.

The Cronbach alpha reliability coefficient in this study was 0.75 for the total sample of RNs and MDs (N=171) with 0.68 for nurses, and 0.81 for physicians. Hughes and Fitzpatrick (2001) encountered a higher total score than had Hojat et al. (2001) for physicians, with a slightly lower total score for nurses. This study interestingly found that both physicians and nurses had positive attitudes towards collaboration with the exception of a significant difference on two subscales, namely shared education and physician's authority (Hughes & Fitzpatrick, 2010).

The scoring for the JSAPNC was conducted as per the instructions of the author, Dr. M. Hojat. Reverse scored items 8 and 10 (Subscale 4: Physician's Authority) were scored as per instructions. If missing values are encountered, mean substitution is conducted for individuals having at least 80% of items complete. In our study, only one respondent had one item missing. Imputation was thus done accordingly by substituting the total mean score. Scores were adjusted for a significance of $p < 0.05/5$, indicating significance at $p < 0.01$.

In our study, the Cronbach alpha reliability coefficient was 0.92 for the total sample of RNs and MDs (N=138), ranging from 0.78 to 0.87 across the four subscales. The "shared education and teamwork" subscale attained a reliability coefficient of $r = 0.87$. "Caring versus curing" attained a reliability coefficient of $r = 0.78$. "Nurses' autonomy" attained a reliability coefficient of $r = 0.80$. "Physician's authority" attained a reliability coefficient of $r = 0.86$.

2. The Expanded Nursing Stress Scale

The Expanded Nursing Stress Scale (ENSS) (Appendix D and E) is used to evaluate workplace stress and nurse-physician stress perception. It is an expanded

version of the Nurse Stress Scale (Gray-Toft & Anderson, 1981) which is the best known and most widely used nurse stress assessment tool (French et al., 2000). The expanded ENSS is designed to measure nurse-related stress attributed to 9 subscales, namely death and dying, physician conflict, inadequate preparation, problems with peers and supervisors, workload, uncertainty concerning treatment outcomes, and relationship with patients which is the added subscale to the NSS (French et al., 2000). It is a 57-item questionnaire, expanded from the NSS 39-items. It is rated according to a 5-point Likert-response scale where 0 = Not Applicable, 1 = “Never Stressful”, to 4 = “Always Stressful”. The ENSS questionnaire is considered a valid and reliable tool (French et al, 2000). Confirmatory factor analyses meet set study standards, with alpha coefficients of the 9 subscales at 0.70 or higher, having concurrent and construct validity assessments providing strong support for the use of the ENSS among other tools (French et al., 2000). Cronbach alpha coefficients assessed by French et al. (2000) on each of the 9 subscales ranged from 0.65 to 0.88. As used by AbuAlRab (2004), the alpha coefficient for the entire scale was 0.90, with those from subscales ranging between 0.70 and 0.87.

Permission to use the ENSS has also been attained from Dr. Susan French, who has also permitted modifications for use with physicians as per the relevance of this study (Appendix D for Nurses, and Appendix E for Physicians). Alterations were only limited to re-wording of “nurse” to “physician” and vice versa whence inquiring about intra-professional or inter-professional phenomena. No other alterations were made. This amendment was made with permission from Dr. S. French for the purpose of this study to compare physician-nurse responses. To our knowledge, no previous use of the ENSS has been undergone on a physician sample.

The scoring for the ENSS was conducted as per the instructions of the author, Dr. S. French. Upon communication with the author, and as used in other studies (author quoted correspondence with Dr. R. Lenton), instructions suggested to exclude a “0” response of “Not Applicable” from scale and subscale score calculations as zeros lead to falsely low stress scores, when such situations were in fact not applicable, or not encountered. If missing values are encountered, subscale mean substitution is conducted for individuals having the majority, or at least 50% , of subscale items complete. Otherwise, subscales were not constructed and reported as missing for that particular subscale. In our study, 13 respondents (8 RNs and 5 MDs) had imputed values for at least one subscale score. Scores were adjusted for a significance of $p < 0.05/10$, indicating significance at $p < 0.005$.

In our study, the Cronbach alpha reliability coefficient was 0.87 for RNs and MDs, ranging from 0.59 to 0.85 across the nine subscales. The “death versus dying” subscale attained a reliability coefficient of $r = 0.80$. “Conflict with physicians/nurses” attained a reliability coefficient of $r = 0.59$. “Inadequate emotional preparation” attained a reliability coefficient of $r = 0.66$. “Problems relating to peers” attained a reliability coefficient of $r = 0.77$. “Problems relating to supervisors” attained a reliability coefficient of $r = 0.85$. “Workload” attained a reliability coefficient of $r = 0.74$. “Uncertainty concerning treatment” attained a reliability coefficient of $r = 0.75$. “Patients and their families” attained a reliability coefficient of $r = 0.66$. “Discrimination” attained a reliability coefficient of $r = 0.70$.

D. Other Variables

Other variables utilized as collected from the demographics and background information assessment include age, gender, marital status, highest level of education or practice, years of experience, clinical area, work shift, hours of sleep, stress reduction techniques practiced as well as frequency of practice.

E. Procedure

After securing the approval of both the Institutional Review Board (IRB) at the American University of Beirut (AUB), as well as the AUBMC hospital administration's approval, 400 color-coded packages (300 white envelopes for RNs, and 100 manila envelopes for MDs) were assembled, each containing an Informed Consent (Appendix F), and the relevant package for RNs (Demographic and Background Information for Nurses – Appendix A, the JSAPNC – Appendix C, and the ENSS for Nurses – Appendix D) as well as that for MDs (Demographic and Background Information for Physicians – Appendix B, the JSAPNC – Appendix C, and the ENSS for Physicians – Appendix E). Color-coded survey box folders were placed within each unit across the hospital with a copy of the Informed Consent information attached to the outside to reinstate the ethical guidelines pertaining to the background of this study. This also served as an announcement of the study to encourage a higher response rate.

Distribution of questionnaires took place sequentially from upper to lower floors of each of AUBMC's relevant buildings within 24 hours during a day shift and evening shift rotation. Throughout the 4-week study period, RNs and MDs were directly approached and informed about the background, objectives, clinical relevance, and ethical considerations of the study. Upon distribution and during daily rounds, this

information was communicated to the Nurse Manager of each floor when available, and the RNs and MDs present at the time of contact. Rounds took place during day and evening shifts, on weekdays, weekends, and holidays. Further reinforcement was conducted during inter-shift reports and with follow-up with available Nurse Managers. As noted in the Informed Consent (Appendix F), participants were instructed to complete the survey at home or off duty so as not to interfere with the participant's work. The completed questionnaires were returned and deposited in the color-coded box folders in sealed envelopes with no other identifiers. Color-coding was used only to specify RN versus MD questionnaires for the purposes of data analysis relevant to this study. On a regular basis, every second or third day, collection rounds were conducted and the box folders were regularly emptied throughout a period of 4 weeks. After the 4-week data collection period, box folders were removed from all floors, and both completed as well as empty packages were collected. A total of 138 completed questionnaires (RN respondents = 96, MD respondents = 42) were returned and collected for inclusion in the study. All participants who complied with completion criteria for JSAPNC and ENSS scales were included in the data analysis as specified in accordance with the IRB.

F. Ethical Considerations

Approval was obtained from the Social and Behavioral IRB at AUB, after which approval of all documents was granted by the AUBMC administration. The research was henceforth conducted by the researcher who is CITI (Collaborative Institutional Training Initiative) certified. As specified in accordance with the IRB, all data collection, from participant demographics to responses are kept anonymous and

confidential. No participant identifiers can be recognized from demographic data, and all completed questionnaires are kept under lock and key in a secured locker at the AUB Hariri School of Nursing (HSON). Questionnaires collected in minorities (i.e. less than 10 questionnaires from one unit) were grouped within a larger departmental group in order to avoid identification from one specific area and thus protect the identification of these participants. Both the informed consent and the questionnaire are attached with directions not to include the participants' name, or any further identifiers or comments beyond what is asked of them so as to protect the data collected from being identified towards any particular participant. After data is collected, all questionnaires kept under lock and key were analyzed on a password protected laptop which only the Principle Investigator and researchers contributing to this project have access to. After the allotted research period, all raw data will be responsibly discarded.

G. Data Analysis

SPSS version 22.0 was utilized for data entry and analysis via both descriptive and inferential statistics. Descriptive statistical analyses were conducted to assess demographics of the study sample. The JSAPNC and ENSS data analysis of scores for comparisons across physicians and nurses were conducted via Independent Samples *t*-test. Bivariate associations between JSAPNC and ENSS scales and participant demographics were conducted using the ANOVA *F*-test followed by Bonferroni's multiple comparisons. To study the correlation between the mean total JSAPNC and ENSS scores, Pearson's *r* correlation coefficient analysis was conducted.

CHAPTER IV

RESULTS

Out of the 400 distributed questionnaire packages, 300 of which were distributed to RNs and 100 to MDs, 147 sealed packages were collected. 9 of these packages were empty or incomplete and were thus omitted from inclusion in the study. 96 out of 300 RN respondents were included (32%), and 42 out of 100 MD respondents (42%) were included, at a total response rate of 34.5%.

As all participants had completed the JSAPNC (with the exception of one imputed item for one individual), several respondents of the ENSS had not completed all the required percentage of items necessary for inclusion. Otherwise, 13 respondents (8 RNs and 5 MDs) had imputed values for at least one subscale score. Thus, as per the author's instructions, only those who met the specified criteria were included in the data analysis.

Moreover, as mentioned, those falling into minority groups were grouped with larger portions to maintain anonymity and protect against identification. Other groupings were made for the sake of the purpose of this study.

A. Demographic Characteristics

The demographic characteristics of the study participants are presented in Table 1A. Among RNs (N=96), most were in the younger age group of 20 – 29 years of age (56.3%), female (74%), and single (61.5%). The majority of the RN sample held a Bachelor of Science in Nursing (BSN) degree (78.1%). The distribution of years of experience was relatively even, with 40% having less than or equal to 5 years of experience, and almost equal remaining for 6 – 10 years and greater than or equal to 11

years of experience. Approximately 41% of RNs worked in intensive/critical care units, with approximately 40% working on open floors, while only almost 20% are working in outpatient clinics. Work shifts varied from those working strictly 8-hour day, or evening, or night shifts at almost half (49%) versus those rotating between 8-hour day, evening, and night shifts.

As for physicians, the majority of the sample also fell into the younger age group of 20 – 29 years of age (78.6%), with more males (57.1%) than females (42.9%), and were mainly single (83.3%). Most were interns (73.8%) and accordingly had less than or equal to 5 years of experience (95.2%). More than half (57.1%) were working in intensive/critical care units, with 26.2% working in outpatient clinics, and 16.7% working in open floors.

Table 1A – Participant Demographics

Characteristic	RNs (N=96) N (%)	Physicians (N=42) N (%)
Age		
20-29	54 (56.3)	33 (78.6)
30-39	25 (26.0)	7 (16.7)
≥ 40	17 (17.7)	2 (4.8)
Gender		
Male	25 (26.0)	24 (57.1)
Female	71 (74.0)	18 (42.9)
Marital Status		
Single	59 (61.5)	35 (83.3)
Ever Married	37 (38.5)	7 (16.7)
Highest Level of Education or Practice		
<i>Registered Nurses</i>		
Bachelor of Science in Nursing	75 (78.1)	-
Master's Student, Degree, or Higher	19 (19.8)	-
Other	2 (2.1)	-
<i>Physicians</i>		
Intern	-	31 (73.8)
Resident, Fellow, or Attending	-	11 (26.2)
Years of Experience		
≤ 5 years	38 (40.0)	40 (95.2)
6 – 10 years	29 (30.5)	-
≥ 11 years	28 (29.5)	2 (4.8)
Area of Practice		
Intensive / Critical Care	39 (40.6)	24 (57.1)
Open Floors	38 (39.6)	7 (16.7)
Outpatient Clinics	19 (19.8)	11 (26.2)
Years of Experience in Current Institution		
≤ 5 years	49 (51.0)	40 (95.2)
6 – 10 years	22 (22.9)	-
≥ 11 years	25 (26.0)	2 (4.8)
Work Shift		
8-hour day or evening or night duties only	47 (48.9)	-
8-hour rotating days, evenings or nights	48 (50.0)	-

Participants were also surveyed about their sleep, relaxation, and stress reduction techniques (Table 1B). A minority of participants, both RNs and MDs, were found to be getting the required 8 hours of sleep (17.7% for RNs and 2.4% for MDs). The majority fell into the range of 6 – 7 hours per night, with 53.1% for nurses and 61.9% for MDs. 29.2% of RNs reported getting less than or equal to only 5 hours of sleep per night, while 35.7% of MDs reported similarly. Almost half of both RNs (43.8%) and MDs (54.8%) reported exercising as a relaxation of stress reduction technique practiced, while 36.5% of RNs and 21.4% of MDs reported no practice of any relaxation or stress reduction techniques.

Table 1B – Participant Sleep, Relaxation, and Stress Reduction Techniques

Characteristic	RNs (N=96) N (%)	Physicians (N=42) N (%)
<i>Hours of Sleep</i>		
≥ 8	17 (17.7)	1 (2.4)
6 – 7	51 (53.1)	26 (61.9)
≤ 5	28 (29.2)	15 (35.7)
<i>Frequency of Relaxation/Stress Reduction Practices</i>		
Routinely	7 (7.3)	4 (9.5)
Sometimes	28 (29.2)	17 (40.5)
Rarely	32 (33.3)	14 (33.3)
Never	29 (30.2)	7 (16.7)
<i>Relaxation/Stress Reduction Techniques Practiced</i>		
Exercise	42 (43.8)	23 (54.8)
Creative Activity	15 (15.6)	13 (31.0)
Meditation/Yoga	1 (1.0)	3 (7.1)
Imagery/Audio Therapy	6 (6.3)	7 (16.7)
Mindfulness	8 (8.3)	6 (14.3)
Deep Breathing Exercises	12 (12.5)	14 (33.3)
Other	12 (12.5)	3 (7.1)
None	35 (36.5)	9 (21.4)

B. JSAPNC and ENSS Analyses

Distribution of Subscale Mean JSAPNC Scores across Nurses and Physicians

JSAPNC subscale mean scores were analyzed across each of the four subscales for both nurses and physicians (Table 2). Across all four, RNs scored significantly higher subscale means ($p < 0.001$) than MDs, with an average total for RNs at 3.69(SD=0.34) and an average total for MDs at 2.97(SD=0.41). The most significant

difference between scores was seen in subscale 4, Physician's Authority which is reverse scored, at a higher score of 3.49(SD=0.67) for RNs and lower at 1.68(SD=0.52) for MDs.

Table 2 - Distribution of Subscale Mean JSAPNC Scores Across Nurses and Physicians

Subscales	Nurses (N=96)	Physicians (N=42)	<i>p-value</i>
Shared Education and Teamwork	3.70 (0.36)	3.04 (0.53)	<0.001
Caring vs. Curing	3.66 (0.45)	3.11 (0.49)	<0.001
Nurses' Autonomy	3.80 (0.40)	3.48 (0.43)	<0.001
Physician's Authority	3.49 (0.67)	1.68 (0.52)	<0.001
Total score	3.69 (0.34)	2.97 (0.41)	<0.001

These results reveal that nurses tend to emphasize the importance of assuming a collaborative practice environment based on interprofessional educative preparation and teamwork more than physicians. It is also shown that RNs believe in a more positive effect on their ability to meet psychosocial and educational needs of the patient, and function as an integral part of the healthcare team. RNs are also found to have a stronger belief in the importance of their involvement in patient care decisions and policy decision-making, although it is interestingly the highest scoring factor among MDs. As for the reverse scored fourth factor, MDs are shown to believe more in their authoritative standpoint as opposed to the collaborative decision-making process of incorporating RN expertise, possibly reflecting the traditional socialization of MDs into their healthcare role.

Distribution of Subscale Mean ENSS Scores across Nurses and Physicians

ENSS subscale mean scores were also analyzed across each of the nine subscales for both nurses and physicians (Table 3). Again, RNs were found to score higher than MDs across all factors, indicating a higher perceived stress level. Both RNs and MDs were found to score highest on the same factor, Death and Dying, indicating that it is the most stressful encounter. RNs scored a subscale mean of 3.23(SD=0.54) for this factor while MDs scored a close 3.22(SD=0.72). Both RNs and MDs also scored the lowest on the same factor, Problems Relating to Peers, i.e. nurse-nurse or physician-physician problems. RNs scored a subscale mean of 2.57(SD=0.70) while MDs scored a subscale mean of 2.26(SD=0.65) ($p=0.020$). At the adjusted significance of $p<0.05/10 = 0.005$, only three factors were found to be significant: Conflict with Physicians and Nurses (interprofessionally) ($p<0.001$), Problems Relating to Supervisors ($p<0.001$), and Workload ($p<0.001$).

Table 3 - Distribution of Subscale Mean ENSS Scores Across Nurses and Physicians

Subscales	Nurses		Physicians		p-value
	N	Mean (SD)	N	Mean (SD)	
Death and Dying	90	3.23 (0.54)	35	3.22 (0.72)	0.956
Conflict with Physicians/Nurses	90	3.14 (0.52)	35	2.60 (0.46)	<0.001
Inadequate Emotional Preparation	92	2.89 (0.72)	37	2.82 (0.68)	0.610
Problems Relating to Peers	90	2.57 (0.70)	36	2.26 (0.65)	0.020
Problems Relating to Supervisors	88	3.15 (0.67)	35	2.66 (0.57)	<0.001
Workload	88	3.08 (0.52)	35	2.70 (0.47)	<0.001
Uncertainty Concerning Treatment	90	3.05 (0.55)	35	2.98 (0.49)	0.494
Patients & Their Families	89	3.11 (0.53)	35	2.84 (0.36)	0.007
Discrimination	77	2.69 (0.96)	32	2.30 (0.71)	0.040
Total score	86	3.04 (0.44)	35	2.77 (0.41)	0.002

Bivariate Associations between JSAPNC and ENSS scores across RNs and MDs

Bivariate associations were also made between each of the scales (JSAPNC and ENSS) and participant demographics by status (RNs and MDs). Interestingly, for RNs, significant findings were only found across the JSAPNC, while no significant findings

were seen on the ENSS (Table 4A); moreover, for MDs, one significant finding was only found for the ENSS, while no significance was seen on the JSAPNC (Table 4B). Significant associations between the JSAPNC and RN demographics were found for age (marginal significance), gender, and years of experience. As for MDs, only one significant association between the ENSS and MD demographics was for gender. All other associations were found to be insignificant.

Table 4A – Bivariate Associations between Scales and Demographic Variables (RNs)

Variable	RNs	
	Total JSAPNC	Total ENSS
Age		
20-29	3.62 (0.41)	3.00 (0.46)
30-39	3.79 (0.18)	3.21 (0.38)
≥ 40	3.77 (0.21)	2.95 (0.41)
p-value	0.058	ns
Gender		
Male	3.55 (0.50)	2.92 (0.45)
Female	3.74 (0.25)	3.09 (0.43)
p-value	0.015	ns
Marital Status		
Single	3.71 (0.36)	3.02 (0.47)
Ever Married	3.66 (0.29)	3.07 (0.38)
p-value	ns	ns
Highest Level of Education or Practice		
Level 1*	3.68 (0.36)	3.06 (0.40)
Level 2*	3.71 (0.30)	3.04 (0.54)
p-value	ns	ns
Years of Experience		
≤ 5 years	3.61 (0.46)	3.02 (0.52)
6 – 10 years	3.66 (0.26)	3.09 (0.34)
≥ 11 years	3.82 (0.17)	3.01 (0.43)
p-value	0.044	ns
Area of Practice		
Intensive/Critical Care	3.64 (0.45)	3.06 (0.49)
Open Floors	3.68 (0.25)	2.99 (0.40)
Outpatient Clinics	3.82 (0.23)	3.09 (0.40)
p-value	ns	ns
Work Shift		
8-hour day or evening or night duties only	3.74 (0.22)	3.03 (0.40)
8-hour rotating days, evenings or nights	3.64 (0.06)	3.08 (0.43)
p-value	ns	ns
Hours of Sleep		
≥ 8	3.75 (0.22)	3.07 (0.36)
6 – 7	3.73 (0.26)	3.09 (0.39)
≤ 5	3..58 (0.49)	2.93 (0.54)
p-value	ns	ns
Practice of Stress Reduction and Relaxation Techniques		
Yes	3.69 (0.38)	3.01 (0.45)
No	3.69 (0.27)	3.10 (0.41)
p-value	ns	ns

*Note: Level 1 RNs = BSN Nurses, Level 2 RNs = Master’s Student or Master’s Degree in Nursing or Other, or above

Table 4B –Bivariate Associations between Scales and Demographic Variables (MDs)

Variable	Physicians	
	Total JSAPNC	Total ENSS
Gender		
Male	2.96 (0.45)	2.64 (0.40)
Female	2.96 (0.36)	2.95 (0.37)
<i>p-value</i>	ns	0.031
Marital Status		
Single	2.93 (0.42)	2.78 (0.40)
Ever Married	3.13 (0.33)	2.64 (0.56)
<i>p-value</i>	ns	ns
Highest Level of Education or Practice		
Level 1*	2.97 (0.45)	2.75 (0.38)
Level 2*	2.96 (0.28)	2.81 (0.53)
<i>p-value</i>	ns	ns
Area of Practice		
Intensive/Critical Care	2.98 (0.41)	2.80 (0.38)
Open Floors and Outpatient Clinics	2.94 (0.41)	2.71 (0.48)
<i>p-value</i>	ns	ns
Hours of Sleep		
6 or more	2.99 (0.39)	2.75 (0.39)
≤ 5	2.92 (0.44)	2.80 (0.45)
<i>p-value</i>	ns	ns
Practice of Stress Reduction and Relaxation Techniques		
Yes	3.01 (0.32)	2.78 (0.39)
No	2.80 (0.64)	2.71 (0.50)
<i>p-value</i>	ns	ns

*Note: Level 1 MDs = Interns, Level 2 MDs = Residents, Fellows, and Attending Physicians

Older RNs were found to have a more positive approach to collaborative perception than those in the younger age group (Figure 1). RNs 40 years and above had a mean score of 3.77(SD=0.21) with a trend significance of 0.058, while those in the 30-39 year range had a mean score of 3.79 (SD=0.18) versus the youngest age group of 20-29 years having a mean score of 3.62 (SD=0.41).

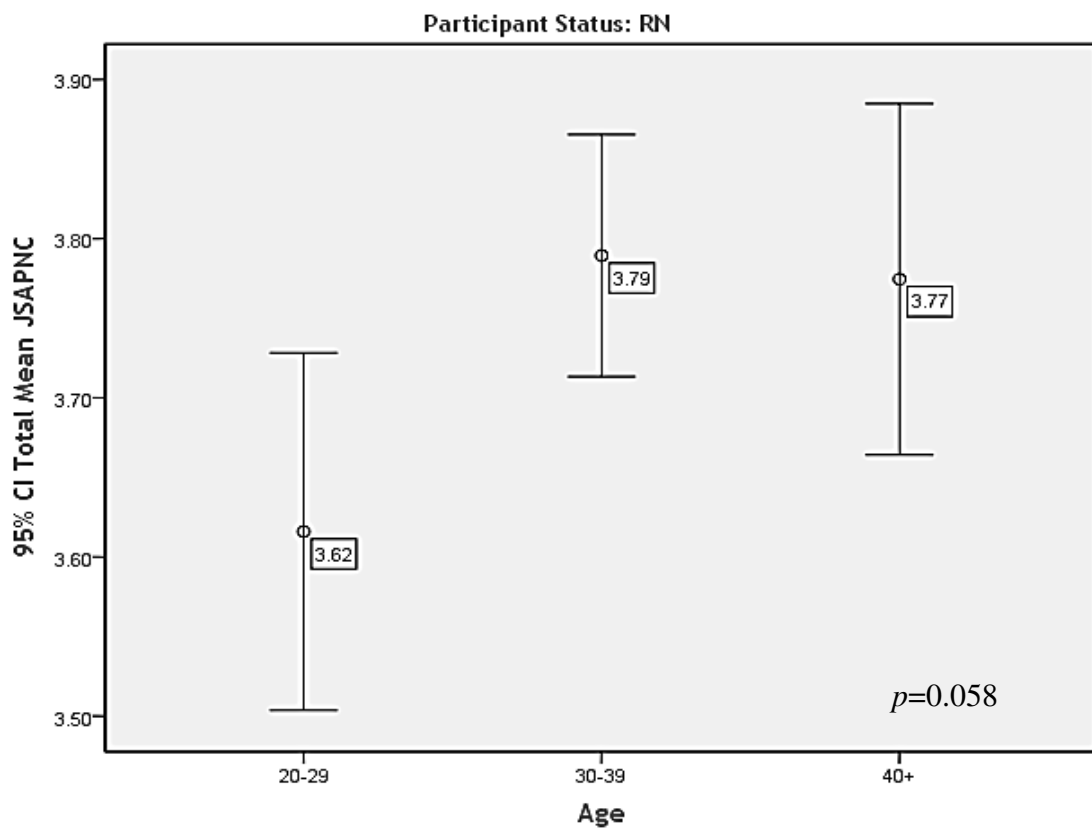


Figure 1. Significant Bivariate Associations between JSAPNC and Age (RNs)

Females were found to have a more positive approach towards collaborative practice at 3.74(SD=0.25) than males at 3.55 (SD=0.50) ($p=0.015$), although male responses varied greatly (Figure 2).

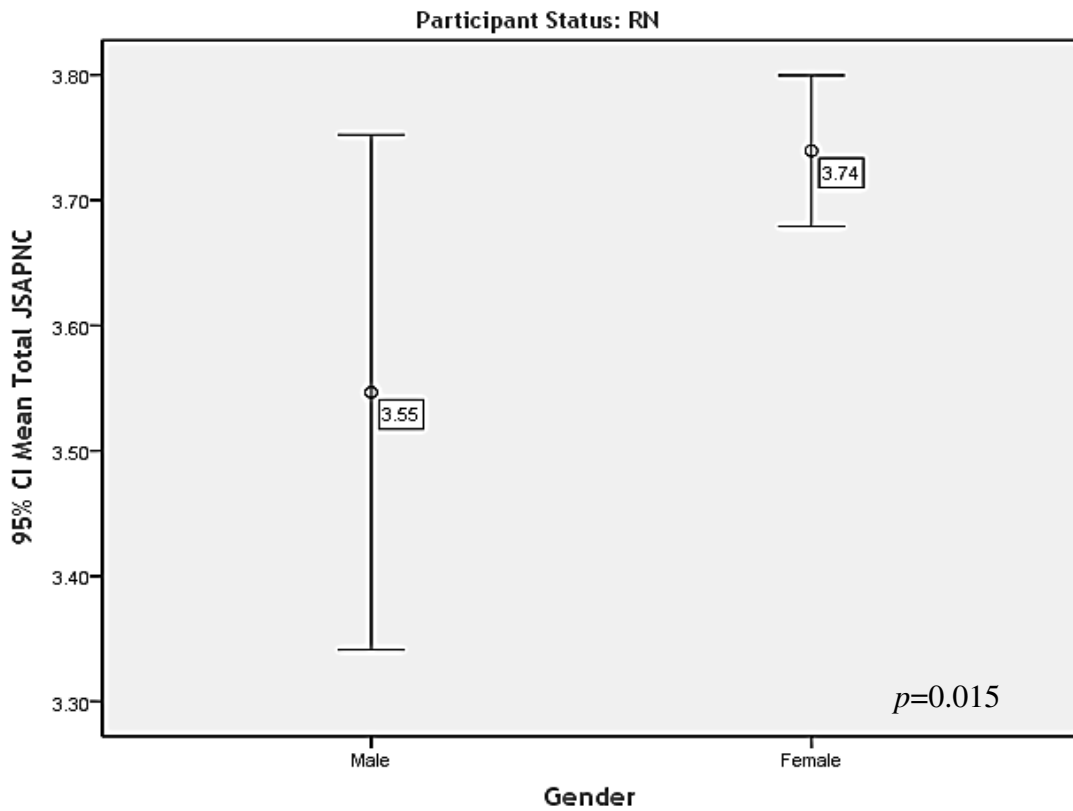


Figure 2. Significant Bivariate Associations between JSAPNC and Gender (RNs)

When comparing Years of Experience among RNs (Figure 3), RNs with 11 or more years of experience were also concurrently found to have a more positive approach towards collaborative practices than those with 1-5 years of experience (Bonferroni post hoc $p=0.043$).

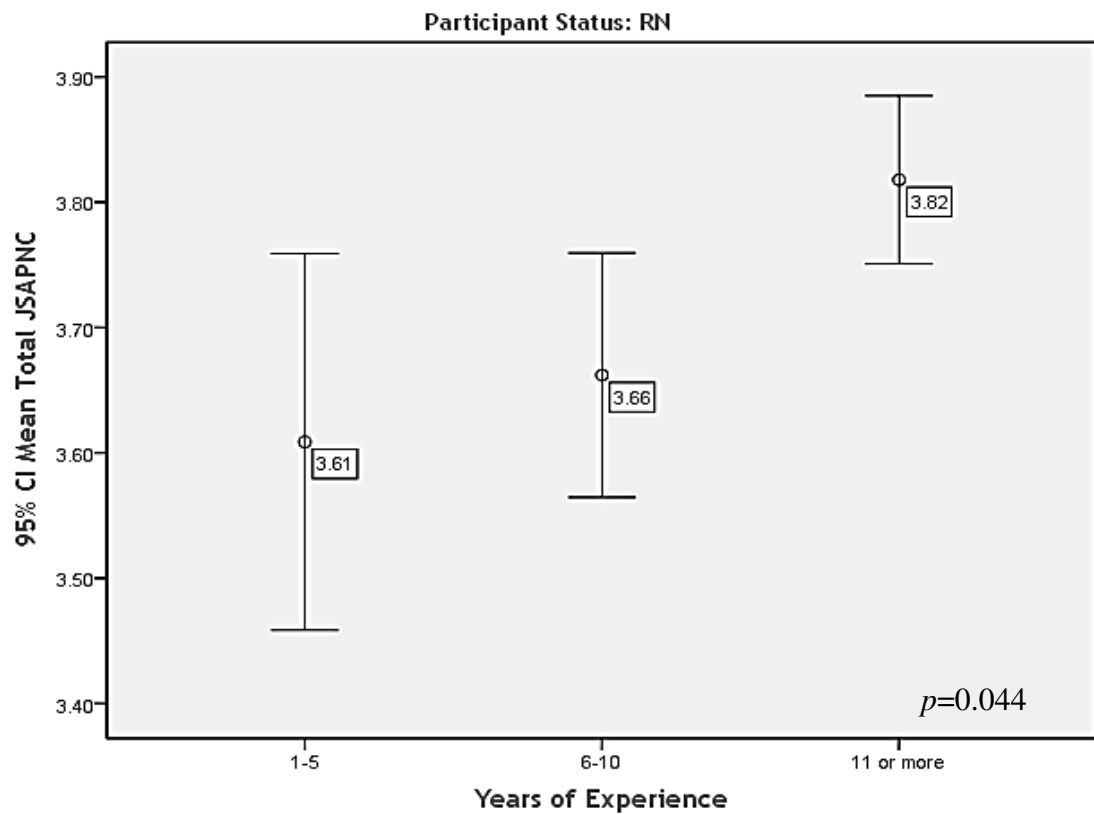


Figure 3. Significant Bivariate Associations between JSAPNC and Years of Experience (RNs)

As for MDs, only one significant bivariate association was found between the ENSS and gender (Figure 4). Female MDs were found to have significantly higher stress scores than their male counterparts at 2.95(SD=0.37) versus 2.64(SD=0.40) respectively ($p=0.031$).

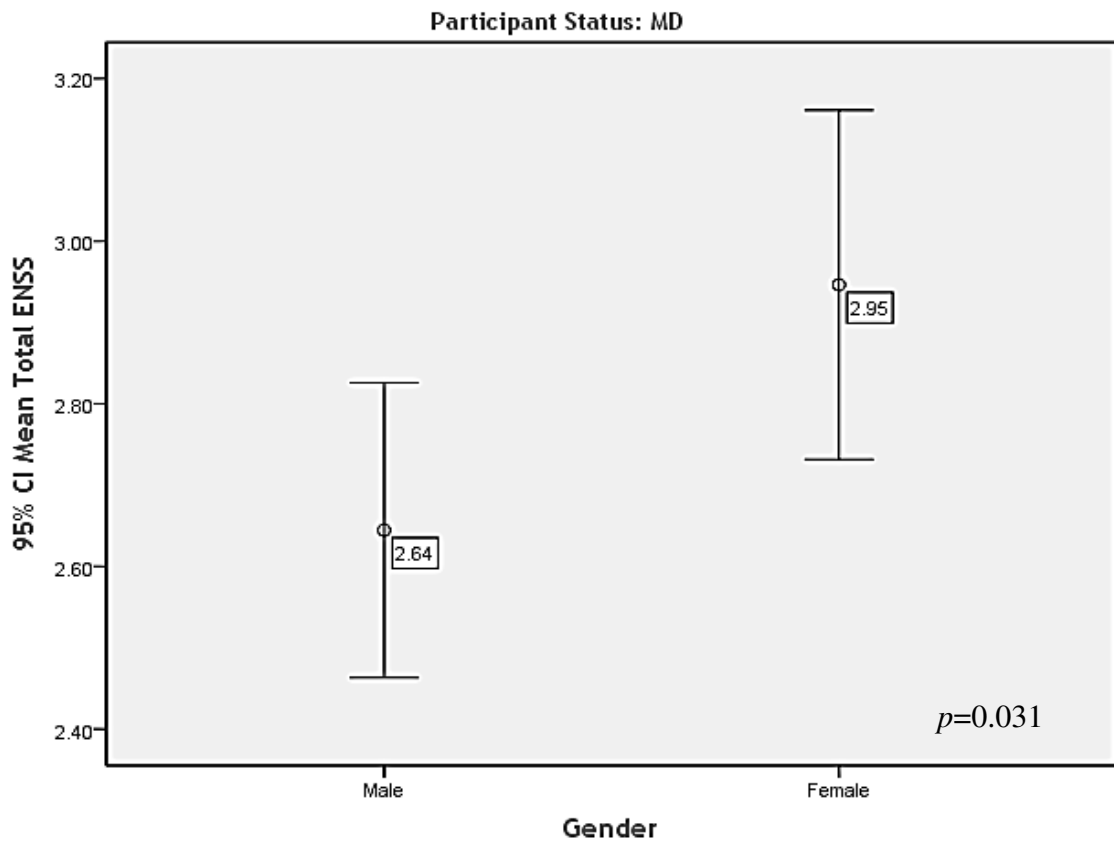


Figure 4. Significant Bivariate Associations between JSAPNC and Gender (MDs)

Correlations between Mean Total ENSS and Mean Total JSAPNC Scores

When correlating mean total ENSS scores and mean total JSAPNC scores (Table 5), a significant, low to moderate, positive correlation was observed of 0.37 ($p<0.001$). As for correlations across clinical areas, significant, moderate, positive correlations were observed across intensive/critical care areas of 0.45 ($p<0.001$) and outpatient clinics at 0.48 ($p=0.020$).

Table 5 – Correlations between Mean Total ENSS and Mean Total JSAPNC Scores

	JSAPNC	<i>p-value</i>
ENSS	0.37	<0.001
By Clinical Area		
Intensive / Critical Care	0.45	<0.001
Open Floors	0.06	Ns
Outpatient Clinics	0.48	0.020

CHAPTER V

DISCUSSION

A. Analysis of Results

The resulting finding that increased stress levels as measured by the ENSS were positively, significantly correlated with the increased perception of “should-be” collaboration may likely be due to the fact that healthcare professionals working in highly stressful, clinical areas have a greater perceived need of the “should-be” need for collaboration, nurse autonomy, and have a greater belief in shared education and teamwork.

Although research has shown that higher stress occurs in more critical and intensive care areas, it was interesting to note that a positive, significant correlation was also seen between collaboration and stress in ambulatory settings, however not significantly so in open floors. In critical, intensive care areas, where there is high proximity amongst the healthcare team, they are dealing with very high acuity patients, although there is lower volume. This implies that in the stressful intensive care areas, there is a demand for high collaboration. As this is simply an exploratory study, it would be interesting to assess whether teams working in inevitably stressful critical care units tend to collaborate worse as a result, or function better collaboratively as a healthcare team, each with their collaborative function despite the stressful environment. As for the open floor units, the correlation between stress and collaboration was possibly insignificant due to moderate proximity among the healthcare team, as RNs and MDs are not in constant contact as in the ICUs, moderate acuity of patients, in moderate volume. Interestingly however, this study shows that a positive, significant correlation between stress and collaboration is also seen in

ambulatory settings, just as in ICUs. Although highly unexpected, one may consider that this may be due to high stress secondary to high volumes of ambulatory patients, albeit with low acuities, however in high proximity with the MDs due to continued patient turnover. This demands proper collaboration and organization of administrative and clinical processes within the healthcare team.

As registered nurses were found to be increasingly positive towards physician-nurse collaboration as compared to physicians, this reveals that they perceive themselves as an integral part of the decision-making scheme of the healthcare team more than physicians do. While physician's had a higher (reverse scored) belief in Physician's Authority, this indicates a more authoritative approach to patient care and decision-making, reflecting the autonomous role that physicians are socialized into.

Differences among RN and MD perceptions may be due to the concept that each may perceive the value and need for collaboration differently. Professional education of RNs and MDs does not generally include interdisciplinary experiences in communication, planning and decision-making. RNs and MDs may in fact practice as traditionally taught, with physicians conducting primarily independent decision-making, and nurses making more inter-dependent decisions while coordinating and communicating throughout with the healthcare team, as engrained into their undergraduate curricula.

Although RNs were seen to have a stronger belief in the importance of their involvement in patient care decisions and policy-making, it was interestingly the highest factor observed for MDs. This may shed some light towards hope for a future of improved collaborative understanding.

As for gender differences, it is important to consider that while females may have scored higher stress scores across both physician and nurse groups, a possible explanation may be that males may tend to either control their stress or report their stress less secondary to cultural factors. Furthermore, while a significant difference was seen between male and female collaborative practices in the RN group, there was greater ambivalence of male responses. This may similarly be due to cultural issues as in male role ambiguity in the predominantly female nursing profession. This may also serve as another area to further explore in future research studies.

B. Comparison with Previous Research Findings

Sterchi (2007) found that registered nurses are generally more positive towards collaborative practice than physicians. However, gender differences could not be determined. Moreover, nursing specialty was not deemed a significant factor towards collaboration.

Chadwick (2010) reported that nurses felt more strongly towards involvement in patient care and policy decision-making, whereas physicians did not feel similarly. Nurses also embraced a more collaborative approach towards shared education and teamwork. However, there was no significant difference between nurse and physician attitudes concerning “caring versus curing”. Both believed that nurses positively affect the psychosocial and educational needs of patients. Dechairo-Marino, Jordan-Marsh, Traiger & Saulo (2001) similarly found a strong correlation between nurses’ positive perceptions of collaborative relationships with physicians and their satisfaction with decision-making.

Milutinović et al. (2012) utilized the ENSS to identify and evaluate professional stressors on a group of ICU nurses, and investigated the correlation between perception of stress and psychological or somatic symptoms or diseases expressed among the nurses in their sample. The authors identified Death and Dying as the highest stress factor among the nine JSAPNC subscales with a mean total score of 2.87(SD=0.92) and identified Problems with Peers as the lowest factor with a mean total score of 2.09(SD=0.93) for the total sample of ICU nurses. At AUBMC, the same two highest and lowest JSAPNC factors were identified within our study. As the ENSS has not yet been used in research literature to compare nurse-physician responses, comparison with previous research findings is thus limited in this regard. To the author's knowledge, this is the first use of the ENSS comparatively between physicians and nurses, and its first use in relation with the JSAPNC.

C. Limitations

This study has a number of important limitations. The data collection period was constrained to 4-weeks which limited opportunities to recruit physicians and limited the overall response rate. A limited sample of RNs and MDs who are not representative of the AUBMC nursing and medical workforce were, therefore, recruited to the study. Although data were collected during day and evening shifts, on weekdays, weekends, and holidays, nurses and physicians on leave did not have the opportunity to participate. Similarly nurses on night shift were not included in the study sample. As this is an exploratory study, it would have been interesting to see further investigation of specific relationships between and among subscales of the JSAPNC and ENSS. Finally, RNs at

AUBMC are becoming an over researched population which may have resulted in less than careful attention to filling out the study questionnaire.

D. Implications

A systematic literature review was conducted by Puntillo and McAdam (2006) investigating the best practical approaches to improve nurse-physician communication and collaboration. It was found that when intensive care units' RNs were more autonomous and involved in decision-making practices, they gained more respect and recognition from their co-workers and fellow care-givers, creating a healthier work environment. This may hypothetically create potential for empowerment of nurses, and lead to increased satisfaction and retention. This review, furthermore, showed that this in fact led to an increase in collaborative communication, involvement in multidisciplinary rounds, positivity in attitudes towards communication training, and more readiness to follow a collaborative practice model, all of which lead to higher nurse, physician, patient, and family satisfaction, thus improving the reputation and overall success of the institution. It was shown that end of life care – although facing the highly stressful “death and dying” theme – provided by satisfied, engaged professionals who were communicating constructively in a collaborative manner, significantly improved (Puntillo & McAdam, 2006). As such, it may be implied that even in the most stressful of situations, when dealing with terminally ill patients, “death and dying”, high RN satisfaction can be attained. Although the highest stressor among ENSS subscales as seen in this study as well as among other research findings, those providing end of life care were readily able to become more positive and more collaborative interprofessionally.

Further research is required to make even more substantive relationships between workplace stress and interprofessional relationships. This study may serve as a base for future research opportunities as the first of its kind within this field of interest. As it is perhaps a newly introduced study in comparing the JSAPNC and ENSS, perhaps it would be interesting to delve further into culture-related or gender-related inferences in investigating the significant findings seen.

E. Recommendations

As an approach towards possible recommendations for improvement, interprofessional education, even and especially at an undergraduate level, between medical students and undergraduate nursing students, may be deemed beneficial. As such, the barrier of socialization into traditional roles of the independent physician versus the nurse as only a part of the healthcare team may be re-defined into a norm of equilibrium among all parties. Perhaps this may be one step towards breaking down such barriers, and improving collaborative perceptions. It is, however, vital to note that differences among members of the team – whether leading to conflict or added benefit – often, if not always, has its benefits. Constructive conflict is a concept that may drive “different” parties to better appreciate functioning together within a team, with each member adding their role of expertise.

As for recommendations for amelioration workplace stress, the ultimate goal is to create a safe, healthy workplace environment in which patients, staff, and family members can thrive. In stressful times, any individual among these three groups must rely on their “personal attributes” aspect of Lazarus & Folkman’s transactional model of stress and coping. One aspect is the social network and social support system. As such,

an interesting and possibly beneficial model to follow may be that of the “R.I.S.E.” program enacted at Johns Hopkins Hospital, Baltimore, MD. The “R.I.S.E” program, or Resiliency in Stressful Events program, led by Ms. Cheryl Connors, is based on a peer support system for “second victims” (sic). As errors are inevitable in healthcare, and no human can be error free, as “To Err is Human”, very little focus has been placed on those caregivers left traumatized after facing devastating events within the workplace. Thus, these healthcare workers are left traumatized, anxious, guilty, and fearful, and may even be questioned as vitally functioning members of the team by their co-workers. This may be extremely detrimental, and may even lead to mortifying outcomes, not only negatively impacting those “first victims” (sic) – or patients who were affected by the incident – but also allowing it to destructively propagate onto the healthcare employees. R.I.S.E.’s mission is “to provide timely support to employees who encounter stressful, patient-related events”.

This program thus aims to provide non-judgmental, multi-disciplinary peer support (MDs, RNs, social workers, pharmacists, risk management, patient safety officers, among others) by individuals who may have been through similarly traumatizing encounters, allowing healthcare employees to have access to healthy coping strategies in order to enhance overall well-being, and thus ease the individual back into their fully functioning role as a healthcare team member. As this concept may be new to AUBMC, as well as to the Lebanese culture, there may be some barriers towards implementing this program. Some skepticism towards safeguarding the non-judgmental approach may result, as well as the challenge of having employees not fear any stigmatization from fellow healthcare providers. A study conducted within a Jordanian culture by AbuAlRub (2004) investigated not only the effect of job stress on

performance of hospital nurses, but also the effect of social support from coworkers on the job-stress relationship. Results revealed that perceived social support from coworkers in fact enhanced the level of reported job performance, and thus decreasing the level of reported job stress, indicating the importance of social support from fellow employees (AbuAlRub, 2004). Although there may be a certain degree of acceptance within our Lebanese culture, perhaps the R.I.S.E. program may be initiated as a trial within a small group before developing into a hospital-wide program. At present, employees may reach out for psychiatric counseling via referral through the University Health Services. There is also ongoing focus group therapy for others facing the many emotional challenges of breast cancer. Although overcoming such contributing factors, among many others, to workplace stress, it may be worth a well-deserved trial. Perhaps, as a multidisciplinary, collaborative concept towards tackling stressful events, it may bridge the gap and ameliorate the stress of those working in high impact areas through multidisciplinary, interprofessional collaboration and support from other healthcare professionals of other disciplines, inevitably leading to a healthier, happier work environment.

CHAPTER VI

CONCLUSION

An emphasis on teamwork enhancement and interprofessional collaboration is thus deemed vital for making solid efforts towards improving relationships between registered nurses and physicians, both as they progress through their education as well as further onwards during their collaborative careers. According to Coeling and Cukr (2000), simply advising healthcare professionals to collaborate without providing the adequate and appropriate skills will not have any positive implication towards actually propelling its occurrence. As one step towards understanding any relationships for interprofessional collaboration, the JSAPNC may be used for assessment at various levels: undergraduate, graduate, as well as in actual hospital settings when aiming to improve patient outcomes while targeting higher nursing and physician levels of healthcare professionals (Ward et al., 2008). The incorporation of undergraduate, graduate, and professional multidisciplinary education, coupled with the possible implementation of the R.I.S.E. program within Lebanon and specifically at AUBMC may challenge the status quo. It is vital to note that such programs, as feasible and manageable as they are, require not much more than the mingling of disciplines and time to collaborate.

It is important to keep in mind that stress perception may in fact be highly subjective, with a wide variation in individualized sources of stress. As the main sources of stress have been identified as workload, leadership or management style, professional conflict, or emotional cost of caring, there is much disagreement over the magnitude of their impact (McVicar, 2003). Support of individuals may thus be hindered by the lack of understanding of the exact sources of stress within different clinical areas within the

hospital setting, the lack of the predictive power of the various assessment tools in the literature, and lack of understanding of the interrelation of personal and workplace stressors, according to McVicar (2003). As such, it may be interesting to redirect focus towards stress preventive measures and relaxation techniques, however this will require further research study.

As seen in the literature, the implementation of the aforementioned recommendations may possibly lead to an increase in satisfaction rates of all stakeholders – from patients, to families, to nurses and physicians, and as a result the institution as a whole, ensuring better patient safety and optimal patient outcomes, all the while decreasing institutional costs in a healthier work environment.

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APPENDIX

APPENDIX A

Collaborative Perception:
Physician-Nurse Communication and Stress in an Acute Hospital
DEMOGRAPHICS AND BACKGROUND INFORMATION
For Nurses

1. Age:
 - a. 20 – 29
 - b. 30 – 39
 - c. 40 – 49
 - d. 50 or above

2. Gender:
 - a. Male
 - b. Female

3. Marital Status:
 - a. Single
 - b. Married
 - c. Divorced or Separated
 - d. Widowed

4. Highest Level of Education:
 - a. Bachelor of Science in Nursing
 - b. Master's of Science in Nursing (or other) Student
 - c. Master's of Science in Nursing (or other) Degree
 - d. Other: _____

5. Years of Experience as an RN:
 - a. <1
 - b. 1 – 5
 - c. 6 – 10
 - d. 11 – 15
 - e. 16 – 20
 - f. 21 or more

6. Area of Practice:
 - a. Medical /Surgical
 - b. Hematology/Oncology
 - c. Intensive Care (ICU, RCU, CCU, PICU, NICU)
 - d. Operating Room
 - e. Emergency Room
 - f. Pediatrics
 - g. CCCL – In
 - h. Psychiatry
 - i. Other: _____

7. Years of experience in current institution:
- a. 1 – 5
 - b. 6 – 10
 - c. 11 – 15
 - d. 16 – 20
 - e. 21 or more
8. Which of the following best describes your work shift?
- a. 8-hour day duties only
 - b. 8-hour evening duties only
 - c. 8-hour night duties only
 - d. 8-hour rotating days and evenings
 - e. 8-hour rotating days, evenings, and nights
 - f. 12-hour day duties only
 - g. 12-hour night duties only
 - h. 12-hour rotating days and nights
9. How many hours of sleep, on average, do you get daily?
- a. More than 9
 - b. 8 – 9
 - c. 6 – 7
 - d. 5
 - e. Less than 5
10. How often do you practice relaxation or stress reduction techniques?
- a. Routinely
 - b. Sometimes
 - c. Rarely
 - d. Never
11. Which of the following stress reduction techniques, if any, do you practice on a regular basis? (Please circle all that apply)
- a. Exercise
 - b. Creative activity (art, writing, playing an instrument, etc.)
 - c. Meditation or Yoga
 - d. Imagery or Audio Therapy
 - e. Mindfulness
 - f. Deep breathing exercises
 - g. Other: _____
 - h. None

APPENDIX B

Collaborative Perception:
Physician-Nurse Communication and Stress in an Acute Hospital
DEMOGRAPHICS AND BACKGROUND INFORMATION
For Physicians

1. Age:
 - a. 20 – 29
 - b. 30 – 39
 - c. 40 – 49
 - d. 50 or above

2. Gender:
 - a. Male
 - b. Female

3. Marital Status:
 - a. Single
 - b. Married
 - c. Divorced or Separated
 - d. Widowed

4. Highest Level of Practice:
 - a. Intern
 - b. Resident
 - c. Fellow
 - d. Attending

5. Specialty/Area of Practice:
 - a. Anesthesiology
 - b. Cardiology
 - c. Dermatology
 - d. Endocrinology
 - e. Family Medicine
 - f. Pediatrics
 - g. General Surgery
 - h. Hematology/Oncology
 - i. Infectious Diseases
 - j. Neurology/Neuroscience
 - k. Neurosurgery
 - l. Obstetrics and Gynecology
 - m. Orthopedic Surgery
 - n. Psychiatry
 - o. Radiology
 - p. Urology
 - q. Other: _____

6. Years of experience in current institution:
 - a. 1 – 5
 - b. 6 – 10
 - c. 11 – 15
 - d. 16 – 20
 - e. 21 or more

7. How many hours of sleep, on average, do you get daily?
 - a. More than 9
 - b. 8 – 9
 - c. 6 – 7
 - d. 5
 - e. Less than 5

8. How often do you practice relaxation or stress reduction techniques?
 - a. Routinely
 - b. Sometimes
 - c. Rarely
 - d. Never

9. Which of the following stress reduction techniques, if any, do you practice on a regular basis?
(Please circle all that apply)
 - a. Exercise
 - b. Creative activity (art, writing, playing an instrument, etc.)
 - c. Meditation or Yoga
 - d. Imagery or Audio Therapy
 - e. Mindfulness
 - f. Deep breathing exercises
 - g. Other: _____
 - h. None

APPENDIX C

JSAPNC – Jefferson Scale of Attitudes Toward Physician-Nurse Collaboration

**JEFFERSON SCALE OF ATTITUDES
TOWARD PHYSICIAN-NURSE COLLABORATION**

INSTRUCTIONS: Please indicate the extent of your **agreement** or **disagreement** with each of the following statements by circling the appropriate number. For the purposes of this survey, a nurse is defined as “a registered nurse (RN) who is engaged in providing or directly supervising the care of hospitalized patients.

	Strongly Agree	Tend to Agree	Tend to Disagree	Strongly Disagree
1. A nurse should be viewed as a collaborator and colleague with a physician rather than his/her assistant	4	3	2	1
2. Nurses are qualified to assess and respond to psychological aspects of patients’ needs	4	3	2	1
3. During their education, medical and nursing students should be involved in teamwork in order to understand their respective roles	4	3	2	1
4. Nurses should be involved in making policy decisions affecting their working conditions	4	3	2	1
5. Nurses should be accountable to patients for the nursing care they provide	4	3	2	1
6. There are many overlapping areas of responsibility between physicians and nurses	4	3	2	1
7. Nurses have special expertise in patient education and psychological counseling	4	3	2	1
8. Doctors should be the dominant authority in all health care matters	4	3	2	1
9. Physicians and nurses should contribute to decisions regarding the hospital discharge of patients	4	3	2	1
10. The primary function of the nurse is to carry out the physician’s orders	4	3	2	1
11. Nurses should be involved in making policy decisions concerning the hospital support services upon which their work depends	4	3	2	1
12. Nurses should also have responsibility for monitoring the effects of medical treatment	4	3	2	1

- | | |
|--|---------|
| 13. Nurses should clarify a physician's order when they feel that it might have the potential for detrimental effects on the patient | 4 3 2 1 |
| 14. Physicians should be educated to establish collaborative relationships with nurses | 4 3 2 1 |
| 15. Interprofessional relationships between physicians and nurses should be included in their educational programs | 4 3 2 1 |
-

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APPENDIX D

Expanded Nursing Stress Scale – For Nurses

Below is a list of situations that commonly occur in a work setting. For each situation you have encountered in your **PRESENT WORK SETTING**, would you indicate **HOW STRESSFUL** it has been for you.

Enter the number in the right hand column that best applies to you.

If you have not encountered the situation, write '0'.

	Never Stressful	Occasionally Stressful	Frequently Stressful	Always Stressful	Does Not Apply
	1	2	3	4	5
1.	Performing procedures that patients experience as painful_____				___
2.	Criticism by a physician or nurse_____				___
3.	Feeling inadequately prepared to help with the emotional needs of a patient's family_____				___
4.	Lack of opportunity to talk openly with other personnel about problems in the work setting_____				___
5.	Conflict with a supervisor_____				___
6.	Inadequate information from a physician regarding the medical condition of a patient_____				___
7.	Patients making unreasonable demands_____				___
8.	Being sexually harassed_____				___
9.	Feeling helpless in the case of a patient who fails to improve_____				___
10.	Conflict with a physician or nurse_____				___
11.	Being asked a question by a patient for which I do not have a satisfactory answer_____				___
12.	Lack of opportunity to share experiences and feelings with other personnel in the work setting_____				___
13.	Unpredictable staffing and scheduling_____				___

	Never Stressful	Occasionally Stressful	Frequently Stressful	Always Stressful	Does Not Apply
	1	2	3	4	5
14.	A physician ordering what appears to be inappropriate treatment for a patient _____				_____
15.	Patients' families making unreasonable demands _____				_____
16.	Experiencing discrimination because of race or ethnicity _____				_____
17.	Listening or talking to a patient about his/her approaching death _____				_____
18.	Fear of making a mistake in treating a patient _____				_____
19.	Feeling inadequately prepared to help with the emotional needs of a patient _____				_____
20.	Lack of an opportunity to express to other personnel on the unit my negative feelings towards patients _____				_____
21.	Difficulty in working with a particular nurse (or nurses) in my <u>immediate</u> work setting _____				_____
22.	Difficulty in working with a particular nurse (or nurses) <u>outside</u> my immediate work setting _____				_____
23.	Not enough time to provide emotional support to the patient _____				_____
24.	A physician not being present in a medical emergency _____				_____
25.	Being blamed for anything that goes wrong _____				_____
26.	Experiencing discrimination on the basis of sex _____				_____
27.	The death of a patient _____				_____
28.	Disagreement concerning the treatment of a patient _____				_____
29.	Feeling inadequately trained for what I have to do _____				_____
30.	Lack of support of my immediate supervisor _____				_____
31.	Criticism by a supervisor _____				_____
32.	Not enough time to complete all of my nursing tasks _____				_____

	Never Stressful	Occasionally Stressful	Frequently Stressful	Always Stressful	Does Not Apply
	1	2	3	4	5
33.	Not knowing what a patient or a patient's family ought to be told about the patient's condition and its treatment _____				___
34.	Being the one that has to deal with the patients' families _____				___
35.	Having to deal with violent patients _____				___
36.	Being exposed to health and safety hazards _____				___
37.	The death of a patient with whom you developed a close relationship _____				___
38.	Making a decision concerning a patient when the physician is unavailable _____				___
39.	Being in charge with inadequate experience _____				___
40.	Lack of support by nursing administration _____				___
41.	Too many non-nursing tasks required, such as clerical work _____				___
42.	Not enough staff to adequately cover the unit _____				___
43.	Uncertainty regarding the operation and functioning of specialised equipment _____				___
44.	Having to deal with abusive patients _____				___
45.	Not enough time to respond to the needs of patients' families _____				___
46.	Being held accountable for things over which I have no control _____				___
47.	Physician(s) not being present when a patient dies _____				___
48.	Having to organise doctors' work _____				___
49.	Lack of support from other health care administrators _____				___
50.	Difficulty in working with nurses/physicians of the opposite sex _____				___
51.	Demands of patient classification system _____				___

	Never Stressful	Occasionally Stressful	Frequently Stressful	Always Stressful	Does Not Apply
	1	2	3	4	5
52.	Having to deal with abuse from patients' families _____				___
53.	Watching a patient suffer _____				___
54.	Criticism from nursing administration _____				___
55.	Having to work through breaks _____				___
56.	Not knowing whether patients' families will report you for inadequate care _____				___
57.	Having to make decisions under pressure _____				___

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APPENDIX E

ENSS – For Physicians

Below is a list of situations that commonly occur in a work setting. For each situation you have encountered in your **PRESENT WORK SETTING**, would you indicate **HOW STRESSFUL** it has been for you.

Enter the number in the right hand column that best applies to you.

If you have not encountered the situation, write '0'.

Never Stressful	Occasionally Stressful	Frequently Stressful	Always Stressful	Does Not Apply
1	2	3	4	5
1. Performing procedures that patients experience as painful _____				
2. Criticism by a physician or nurse _____				
3. Feeling inadequately prepared to help with the emotional needs of a patient's family _____				
4. Lack of opportunity to talk openly with other personnel about problems in the work setting _____				
5. Conflict with a supervisor _____				
6. Inadequate information from a nurse regarding the medical condition of a patient _____				
7. Patients making unreasonable demands _____				
8. Being sexually harassed _____				
9. Feeling helpless in the case of a patient who fails to improve _____				
10. Conflict with a physician or nurse _____				
11. Being asked a question by a patient for which I do not have a satisfactory answer _____				
12. Lack of opportunity to share experiences and feelings with other personnel in the work setting _____				
13. Unpredictable staffing and scheduling _____				

Never Stressful	Occasionally Stressful	Frequently Stressful	Always Stressful	Does Not Apply
1	2	3	4	5
14. A nurse suggesting what appears to be inappropriate treatment for a patient _____				
15. Patients' families making unreasonable demands _____				
16. Experiencing discrimination because of race or ethnicity _____				
17. Listening or talking to a patient about his/her approaching death _____				
18. Fear of making a mistake in treating a patient _____				
19. Feeling inadequately prepared to help with the emotional needs of a patient _____				
20. Lack of an opportunity to express to other personnel on the unit my negative feelings towards patients _____				
21. Difficulty in working with a particular physician (or physicians) in my <u>immediate</u> work setting _____				
22. Difficulty in working with a particular physician (or physicians) <u>outside</u> my immediate work setting _____				
23. Not enough time to provide emotional support to the patient _____				
24. A nurse not being present in a medical emergency _____				
25. Being blamed for anything that goes wrong _____				
26. Experiencing discrimination on the basis of sex _____				
27. The death of a patient _____				
28. Disagreement concerning the treatment of a patient _____				
29. Feeling inadequately trained for what I have to do _____				
30. Lack of support of my immediate supervisor _____				
31. Criticism by a supervisor _____				
32. Not enough time to complete all of my tasks _____				

Never Stressful	Occasionally Stressful	Frequently Stressful	Always Stressful	Does Not Apply
1	2	3	4	5

33. Not knowing what a patient or a patient's family ought to be told about the patient's condition and its treatment _____
34. Being the one that has to deal with the patients' families _____
35. Having to deal with violent patients _____
36. Being exposed to health and safety hazards _____
37. The death of a patient with whom you developed a close relationship _____
38. Making a decision concerning a patient when the nurse is unavailable _____
39. Being in charge with inadequate experience _____
40. Lack of support by hospital administration _____
41. Too many non-physician tasks required _____
42. Not enough staff to adequately cover the unit _____
43. Uncertainty regarding the operation and functioning of specialised equipment _____
44. Having to deal with abusive patients _____
45. Not enough time to respond to the needs of patients' families _____
46. Being held accountable for things over which I have no control _____
47. Nurse(s) not being present when a patient dies _____
48. Having to organise nurses' work _____
49. Lack of support from other health care administrators _____
50. Difficulty in working with nurses/physicians of the opposite sex _____
51. Demands of patient classification system _____

Never Stressful	Occasionally Stressful	Frequently Stressful	Always Stressful	Does Not Apply
1	2	3	4	5
52. Having to deal with abuse from patients' families _____				
53. Watching a patient suffer _____				
54. Criticism from hospital administration _____				
55. Having to work through breaks _____				
56. Not knowing whether patients' families will report you for inadequate care _____				
57. Having to make decisions under pressure _____				

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APPENDIX F INFORMED CONSENT



American University of Beirut Medical Center

Collaborative Perception: Physician-Nurse Communication and Stress in an Acute Hospital

Principal Investigator:

Dr. Michael Clinton, Rafic Hariri School of Nursing, American University of Beirut.

Email: mc42@aub.edu.lb; Telephone: 01- 350-000 Extension: 5956.

Co-Investigator:

Ms. Nora Kakati BSN RN, MSN student: Email: ntk03@aub.edu.lb

Consent Document (Attached as first page of Study Questionnaire)

We are inviting you to participate in a **research study**. The study is being undertaken to meet part of the requirements of Ms. Kakati's AUB Master of Science in Nursing Program. Please read the information below and feel free to ask any questions that you may have.

A. Project Description

1. In this study, you will be answering a survey on your perception of physician-nurse collaboration and stress. The survey instruments have been widely used to study interprofessional collaboration and stress in hospital settings in the United States and other countries. Some of the questions you will be asked are sensitive and may cause mild distress due to their personal nature.
2. The purpose of the study is to investigate the relationship between the stress experienced by registered nurses and physicians working on clinical units and their perceptions of the interprofessional collaborative culture at their hospital.
3. The estimated time to complete this survey is approximately 15-20 minutes. If you voluntarily agree to take part in the study, please complete the survey at home and return it sealed in the envelope provided in the color-coded drop box at the nursing station on your unit (or in the Operating Room for operating theatre nurses).
4. This study has been approved by the AUB Social and Behavioral Sciences Institutional Review Board and AUBMC administration. AUBMC is the approved research site for the study. The IRB has approved the investigators to recruit participants by direct approach in clinical areas.

5. 400 survey packages will be distributed. All returned questionnaires with responses to more than 50% of the survey items will be analyzed.

6. The study has been approved for implementation at AUBMC by hospital administration.

Please note: To participate in this study, you must have been employed at AUBMC for at least 12 months as a physician or registered nurse.

Should you have experienced harassment or discrimination, you can contact the AUBMC Human Resources Department for assistance. E-mail: hrdmc@aub.edu.lb Phone: +961-1-350000, Extension 6110

If you feel upset by anything in the questionnaire and would like to talk to a health professional, please contact Ms. Rita Doudakian, University Health Services.

E-mail rd01@aub.edu.lb Telephone: +961-1-350000 or +961-1374374 Extension 3015 for advice and referral to someone who can help.

B. Risks and Benefits

Your participation in this study does not involve any physical or emotional risk to you beyond the risks of daily life.

You will receive no direct benefit from participating in this research study. However, your participation will help researchers to better understand existing perceptions towards physician-nurse collaboration, which may lead to strategies that will improve collaborative practices and optimal patient outcomes. The results of this research study will be posted in clinical units at the end of the study.

C. Privacy and Confidentiality

This survey is anonymous. We will not collect any information that may identify you. All completed questionnaires will be kept in a locker and will be analyzed on a password protected computer kept in a secure office in HSON. Data access is limited to the Principal Investigator and researchers working directly on this project. All data will be destroyed responsibly after the required retention period of three years. Your privacy will be maintained in all published and written accounts of the study. As the study is anonymous, your name cannot be mentioned or used in our reports or published papers. You do not need to sign this consent document, because it is attached to the survey. Returning a completed questionnaire confirms your consent to take part in our study.

D. Contact Information

1) If you have any questions or concerns about the research you may contact:

Nora Kakati, E-mail: ntk03@aub.edu.lb, or Dr. M. Clinton, E-mail: mc42@aub.edu.lb at the Hariri School of Nursing at 01-350000, Ext. 5956.

2) If you have any questions, concerns or complaints about your rights as a participant in this study, you can contact the Social & Behavioral Sciences Institutional Review Board at AUB, Telephone: 01-350000, Ext. 5454.

E. Participant rights

Participation in this study is entirely voluntary. **You have the right not to take part in the study, and to discontinue participation at any time without giving a reason. Refusing to take part in the survey or discontinuing participation will involve no penalty of any kind and will not affect your relationship with AUBMC or the Hariri School of Nursing.**

Submission of a survey instrument confirms your voluntary participation in this research study. Please do not put your name or any other identifying information on the survey questionnaire. This will help us to protect your privacy. Please complete this survey at home if at all possible to minimize the impact of the study on patient care.

F. Audit of records

Please note that the research records and materials for this study can be audited without breaching privacy and confidentiality.