

Exploring Communication Between Staff and Clinicians  
on an Inpatient Adolescent Psychiatric Unit

by

Olivia Ray Friedman

B.A., University of Massachusetts, Amherst, 2014  
M.S., Antioch University New England, 2019

DISSERTATION

Submitted in partial fulfillment for the degree of  
Doctor of Psychology in the Department of Clinical Psychology  
at Antioch University New England, 2020

Keene, New Hampshire



Department of Clinical Psychology  
**DISSERTATION COMMITTEE PAGE**

The undersigned have examined the dissertation entitled:

**EXPLORING COMMUNICATION BETWEEN STAFF AND CLINICIANS  
ON AN INPATIENT ADOLESCENT PSYCHIATRIC UNIT**

presented on December 17, 2020

by

**Olivia Ray Friedman**

Candidate for the degree of Doctor of Psychology  
and hereby certify that it is accepted\*.

Dissertation Committee Chairperson:  
**Martha B. Straus, PhD**

Dissertation Committee members:  
**Barbara Belcher-Timme, PsyD**  
**George Tremblay, PhD**

Accepted by the  
Department of Clinical Psychology Chairperson  
**Vincent Pignatiello, PsyD**

on **12/17/2020**

\* Signatures are on file with the Registrar's Office at Antioch University New England.

## Acknowledgements

I would like to thank the people who have supported me through my graduate school and dissertation process—beginning with my advisor, Martha Straus, Ph.D., who graciously took me under her wing and guided me throughout my time at Antioch University. Marti, your mentorship, warmth, support, and words of wisdom have left a tremendous impact on me. Thank you for your ongoing encouragement in completing this study. George Tremblay, Ph.D., thank you for your commitment to this project. You have gone above and beyond in supporting me throughout my graduate career and I sincerely appreciate your willingness to help me in completing this project and providing your expertise on research methods. I would like to thank Barbara Belcher-Timme, Ph.D., my first mentor and a person who has consistently been my cheerleader. Thank you for your feedback and input in this process.

I would also like to thank my family and friends. To my mom, Sarah Friedman, my sister, Rachel Mello, and my partner, Tyler Allen—thank you for believing in me. To my aunt and uncle, Liz and Bob Joyce, thank you for your unwavering support. Liz, thank you for inspiring me with your brilliance and for sharing your expertise. Holly Turner, thank you for sticking by my side throughout this journey, enduring hours of assessments to help me practice, and encouraging me when I needed it the most. Richelene Cesar, I am incredibly lucky to have had a friend like you from day one. Thank you for your wisdom and friendship.

I would like to thank Brian Denietolis, Psy.D. for his ongoing support and willingness to consult about this project. Finally, thank you to the participants who took time out of their day to participate in my study.

## Table of Contents

Acknowledgements .....	iii
Abstract .....	1
Introduction.....	2
Inpatient Adolescent Psychiatric Hospitals Are Complex Settings.....	2
MHCs Have the Most Direct Contact with Patients.....	6
Collaboration Supports a Safe Therapeutic Treatment Milieu.....	8
Adolescents Benefit from Stability and Consistency on the Unit.....	11
Communication and Collaboration Affects Overall Team Functioning.....	13
The Model of Team Performance in Long-Term Care .....	15
Definition of Key Constructs.....	17
Treatment Settings.....	17
Interdisciplinary Treatment Teams.....	18
Team Performance Variables.....	19
Present Study. ....	20
Method .....	22
Setting .....	22
Participants.....	23
Measures .....	24
Procedure .....	26
Ethical Considerations.....	27
Summary of Analyses .....	28
Results .....	30
Discussion.....	36
Personal Bias.....	36
Summary of Findings .....	36
Interpretation of Findings .....	38
Clinical Implications.....	50
Hiring .....	50
Training .....	52
Hierarchy.....	53
Limitations.....	53
Future Research .....	55
Conclusion .....	56
References .....	57
Appendix A: ITPPS .....	62
Appendix B: Additional Survey Questions .....	69
Appendix C: Email Content for Recruiting Participants.....	72
Appendix D: Social Media Post Content .....	73
Appendix E: Informed Consent .....	74
Appendix F: Bivariate Scatter Plots.....	76
Appendix G: Copyright Permission.....	78

### List of Tables and Figures

Table 1. Sample Characteristics Participants.....	79
Table 2. ITPPS Domains Scores by Occupation.....	80
Table 3. Correlation.....	81
Figure 1. Team Meeting Attendance Frequency.....	82
Figure 2. Overall M for ITPPS Domains.....	83
Figure 3. M by Occupation for ITPPS .....	84
Figure 4. M Barrier Ratings by Occupation Group.....	85
Figure 5. Satisfaction M by Occupation Groups.....	86

## Abstract

This dissertation explored interdisciplinary team functioning on a long-term adolescent inpatient psychiatric unit. It compared staff perceptions (MHCs, clinicians, and nurses) of interdisciplinary coherence and unit effectiveness. This study was particularly focused on understanding MHCs perceptions of team functioning and how satisfied team members are with their level of input and involvement in team decision-making. Additionally, this study explored possible barriers to effective team functioning in this setting. Eighty-four participants in this study completed the Interdisciplinary Team Process and Performance Survey (ITPPS) to assess perceptions of team functioning. Participants answered additional questions assessing barriers to communication and collaboration and levels of satisfaction with their input in the team's decision-making process. A one-way ANOVA was conducted to compare perceptions of team cohesion and team effectiveness across occupations. Results suggest that there is a significant difference among the three occupational groups regarding their perceptions of how their team functions, with MHCs having more negative perceptions of team processes than nurses and clinicians. This team ranked the three highest barriers to communication and collaboration: (a) Differences in accountability, payment, and rewards; (b) Hierarchy; and (c) Lack of training for MHCs. Regarding levels of satisfaction, results showed that MHCs reported the lowest levels of satisfaction, while clinicians rated the highest levels of satisfaction. With these findings, recommendations were made for ways in which long-term inpatient adolescent psychiatric hospitals can work to improve their interdisciplinary team functioning to increase job satisfaction and improve patient care.

This dissertation is available in open access at AURA: Antioch University Repository and Archive, <http://aura.antioch.edu/>, and OhioLINK ETD Center, <https://etd.ohiolink.edu>

*Keywords:* interdisciplinary teams, mental health counselors, barriers to team functioning, communication, collaboration, long-term inpatient adolescent psychiatric hospitals

## Exploring Communication Between Staff and Clinicians on an Inpatient Adolescent Psychiatric Unit

This dissertation explored how mental health counselors (MHCs) on a long-term adolescent inpatient psychiatric unit communicate and collaborate with other clinicians. It compared staff perceptions (MHCs, clinicians, and nurses) of interdisciplinary coherence and unit effectiveness. This study also determined how satisfied MHCs and other clinicians are with their level of input and involvement in team decision-making, and considers their perceptions about barriers to effective team communication and collaboration.

### **Inpatient Adolescent Psychiatric Hospitals Are Complex Settings that Treat Vulnerable Populations**

The majority of lifetime psychiatric disorders develop during childhood or adolescence, and over a half million youth are admitted into inpatient psychiatric hospitals to receive mental health treatment each year (Gathright, Holmes, Morris, & Gaitlin, 2016). Child/Adolescent inpatient treatment programs are tasked with providing intensive services for the most vulnerable youth contending with persistent and pervasive mental illness. These high-need adolescents commonly have experienced physical abuse, sexual abuse, neglect and/or have threatened harm to themselves and others (Holmes, Stokes, & Gathright, 2014).

Low social support, inadequate community resources, and lack of family involvement often further complicate treatment. For many of these teens, exposure to early adversity has been compounded by chronic environmental stress. Perhaps not surprisingly, by the time they are hospitalized, the adolescents frequently present with multiple challenges for mental health care providers including a complex trauma history, mania and psychotic symptoms, substance use and abuse, serious non-suicidal self-harm and profound hopelessness. They are often hospitalized

against their will and can be very reluctant patients. They may be disruptive and aggressive at times (Holmes et al., 2014). Hospitalized adolescents are also very likely to have numerous problems managing their daily lives, including for example, emotional dysregulation, cognitive inflexibility, lack of social and interpersonal skills (Holmes et al., 2014), hyperactivity, impulsivity, aggression, learning challenges, psychotic thinking, hypervigilance, disorganized attachment, and poor physical health (Delaney, 2006; van der Kolk, 2014).

Adolescents treated in inpatient care have specific needs that differ from those of adults. Adolescents are going through a stage of development characterized by constant change, both mentally and physically. Clinicians must design and tailor treatment to provide for a patient's developmental, emotional, social, psychiatric and medical needs (American Academy of Child & Adolescent Psychiatry [AACAP], 2010). For example, a psychologist would approach treatment with a suicidal 12-year-old very differently from treatment with an 18-year-old forensic admission with a significant substance abuse history.

Treatment facilities for adolescents also commonly include educational programs so the youth can continue to attend school during their extended treatment stays. Incorporating such educational services into the multidisciplinary treatment team, while necessary, can pose a layer of challenge for staff that further distinguishes these programs from their adult counterparts. Adolescent inpatient treatment requires increased communication between the teachers and the clinical team members, as well as additional staffing to monitor youth while they are attending school. Clinicians' attempt to schedule therapy around school hours can also make scheduling more difficult.

Another difference in treating adolescents is their need for more holistic care than adults require. The best place for adolescents to receive treatment is at home with their families



(AACAP, 2010); so, when that is not possible, it is important to incorporate the family system into the youth's treatment plan. Team members need to have training in acute care with youth and also need to know about how to work with families to provide comprehensive treatment (AACAP, 2010). Further, staff should also be sensitive in supporting these youth, many of whom, in being hospitalized, are living away from home for extended periods and being separated from their primary support systems for the first time. The best programs attempt to maximize regular contact between patients and their families and provide ongoing support and care for the adolescent and their family after treatment is completed (AACAP, 2010). Finally, we know that adolescence is a time when individuals begin to experiment with risky behaviors, some of which—like drinking, smoking, and sexual experimentation—are more concerning or illegal because of their age.

Teens who have begun to use illicit drugs or self-harm require intervention to keep their maladaptive habits from becoming more entrenched over time. It is important for staff to closely monitor patients and recognize those behaviors and poor boundaries that interfere with their success in forming and sustaining relationships. Staff function “en loco parentis”—they are responsible for the teens in place of the parents during the hospitalization; as such, they need to model appropriate behaviors, nurture, and maintain positive relationships with the awareness they need to protect the vulnerable youth in their care.

Inpatient psychiatric hospitals are staffed around the clock and typically include a multidisciplinary treatment team. Treatment teams comprise psychiatrists, psychologists, social workers, occupational therapists, nurses and mental health counselors (MHCs) who work together to provide holistic treatment plans tailored to clients' age, needs and functioning levels (Ochoa, 2012). The comprehensive array of services these team members provide address

cognitive, social and emotional development, and education (Ochoa, 2012). Multidisciplinary teams have the varied skills to devise and implement the complex solutions to respond to the myriad problems of these patients. Such intensive care requires the collaboration of all team members, and effective teamwork always demands regular communication and collaboration.

Historically, interdisciplinary teams have been dominated by the most highly educated and highest-paid individuals on the team, typically the physician or the psychologist, who are responsible for diagnosis and setting and directing the course of treatment. Over the years, as residential and inpatient care has evolved, some interdisciplinary teams in inpatient settings have made efforts to move away from the traditional hierarchical structure towards a more egalitarian and democratic organization that includes all team members in providing needed information and enhancing the overall operations of the teams (Weinberg, Cooney-Miner, Perloff, Babington, & Avgar, 2011).

Such inclusive organization complements the milieu structure to which psychiatric treatment is now shifting, where care is provided through, rather than merely in the environment. That is, milieu therapy takes into consideration the multidimensional needs of patients and assumes that changes in a patient's social and physical environment will enhance the effectiveness of their overall treatment (Zimmerman & Cohler, 1998). Patients are encouraged to spend more time out of their rooms, socializing and engaging in the milieu. While this type of program and team structure requires more communication across disciplines, it ultimately allows teens to receive a more holistic treatment plan and opportunities for socialization and feelings of community, created with input from all team members.

### **In Long-term Inpatient Hospitals, MHCs Have the Most Direct Contact with Patients**

Research shows that MHCs have the most daily interactions with patients—they have the greatest potential to establish stable, long-term relationships with patients and are considered central agents of change (Ochoa, 2012). MHCs enter the job force with varying levels of education and experience in working with mentally ill populations. MHCs typically do not hold advanced degrees and may be hired with a high school diploma or an associate degree (Hodas, 2005). Despite their importance to patients in the milieu, MHCs are usually paid minimum or a low wage for their work because of their relative lack of formal education.

The quantity and quality of MHCs' training also varies. For example, most state psychiatric inpatient hospitals provide week-long orientations, which include an overview of the hospital protocols and regulations regarding safety, health and wellness, and ethics, as well as trainings in CPR and physical interventions. Some agencies provide additional trainings to educate employees about mental health (Health Research & Educational Trust, 2018). They get a great deal of intensive on-the-job training too; MHCs are often the first to respond when a patient has an emotional or physical need, is expressing overwhelming distress, or erupting in rage.

MHCs perform multiple roles, acting as parents, teachers, friends, and counselors to the patients (Killu, 1994). They are responsible for ensuring that youth complete their tasks of daily living, such as personal hygiene and chores. MHCs also watch over the youth to monitor their interactions and emotional well-being and inform the charge nurse of what is happening on the unit (Delaney, 2006). Due to the unpredictable nature of the population, staff must be flexible, quick-thinking and hypervigilant of their surroundings—ready to manage stressful and often violent crisis situations. Their qualities and expertise, *which influence the safety of the unit,*

should include compassion, emotional supportiveness, firm and objective attitudes, tolerance and patience (Ochoa, 2012). Notably, this is a set of expectations for functioning that would be challenging for most of us to sustain for hours at a time with a group of dysregulated adolescents.

The average stay for an adolescent in an intensive inpatient program—not counting the brief stabilization kinds of crisis interventions that might last just a few days or weeks—ranges from six months to three years. Adolescents living in inpatient programs spend only a fraction of their time in formal counseling. Most time is spent in the milieu doing chores, going to school, and interacting with MHCs and peers. Because MHCs spend the most time with the patients every day, they hold immense potential to be fundamental to the success of every treatment plan (Ochoa, 2012).

These interactions and activities between patients and MHCs arguably serve as the cornerstone of treatment because through them, patients can utilize social and living skills to learn how to become more functional to return to life back at home and in their schools and communities (Cangello & University of Hartford, 2006). MHCs often establish long-lasting relationships with the patients, which are among the most important elements of inpatient care and program effectiveness. Such healthy and reparative relationships help improve patients' social and adaptive functioning through practicing problem solving, decision-making, appropriate boundaries, and learning from within the positive relationship (Leichtman, 2006). MHCs may feel more accessible than other staff for another reason—they tend to be closer in age to the adolescents. The typical MHC working in long-term care with children and adolescents is female and under the age of 30 (New England Network for Child, Youth & Family Services, 2009).

Significantly, however, MHCs who are most closely involved with the patient every day are the least likely to be involved in their care plan, according to research by Temkin-Greener, Gross, Kunitz, & Mukamel (2004). Their study of interdisciplinary team performance in long-term elderly care found that exclusion of these staff members from care planning can lead to their feeling marginalized and is a factor associated with higher staff burnout and turnover among line staff. On the other hand, when the importance of their role is recognized, MHCs feel more validated and empowered as they do their hands-on work with patients; they have increased job satisfaction and, importantly, provide better overall care for the patients (Temkin-Greener et al., 2004).

Collaboration and communication between MHCs and other clinical staff are important so that MHCs can keep clinicians updated on patient behaviors and so that the team can work together every day to monitor and promote patient treatment goals. While the MHCs support patient treatment goals, they generally do not spend much time communicating with clinicians to offer their input in creating and implementing plans for the patients. Given that they have significant information to impart, it is notable that their perspective is so commonly overlooked when the interdisciplinary treatment team is making decisions.

### **Collaboration Within an Interdisciplinary Team Supports a Safe Therapeutic Treatment**

#### **Milieu**

Collaborative teamwork is defined as in-depth, cooperative effort in which experts from diverse disciplines, clinical experiences, or work settings work together to contribute to the study of a problem (Gitlin, Lyons, & Kolodner, 1994.) Collaboration requires competence, confidence, and commitment on the part of all individuals, as well as respect, trust, and patience that is required to build strong relationships with team members and develop common goals.

Interdisciplinary team collaboration “synergizes the expertise of different disciplines to make the best clinical decision for patients,” which results in a better quality of patient care (Yan, 2017, p. 5). Collaboration among team members improves patients’ treatment adherence, quality of life, and satisfaction with treatment (Yan, 2017). Collaboration is especially important when treating children and adolescents because developmental and systemic factors affect functioning idiosyncratically; mental health problems manifest differently from one adolescent to the next, and responses to treatment also vary dramatically in this age group (Walsh, 2013).

A key component of collaboration on an adolescent inpatient unit is effective communication. Teams can better monitor intended and unintended effects of treatment, and change the course of action if need be, when there is frequent communication across disciplines (Walsh, 2013). Key communication elements might include, for example, (a) jointly developing clear written plans and schedules, (b) fostering and supporting regular conversations among team members, (c) sharing accurate information, (d) keeping team members well informed of events that occurred on other shifts, and (e) ensuring that direct care staff regularly attending team rounds and weekly treatment meetings. Effective communication also enables all team members to understand patient care plans and goals, and helps MHCs work actively with clinicians to bolster youth treatment goals and promote change (Temkin-Greener et al., 2004).

Communication among staff members and across disciplines has been shown to produce benefits for both the team members and the patients they care for. One research study conducted across several hospital settings concluded that interdisciplinary teams broke down communications barriers, promoted cooperation, and countered power hierarchies (Epstein, 2014). The cohesion associated with such improved communication on a medical unit can decrease negative events (such as greater sickness, and preventable death), improve patient

outcomes, decrease patient length of stay, and increase patients' overall satisfaction in health care settings (Epstein, 2014). Being part of a cohesive, communicative treatment team also provides benefits for the direct care staff, including an improvement in job performance, decrease in negative events, and increase in job satisfaction (Epstein, 2014). While Epstein's research was conducted in health care facilities providing medical care, similarities between medical and psychiatric inpatient settings suggest that the findings are useful for understanding the importance of effective communication for inpatients more generally.

When there is frequent and consistent communication on a unit, patient safety also increases. MHCs become aware of patient safety problems faster and can focus their attention on the patient who is at risk (Kanerva, Kivinen, & Lammintakanen, 2015). Additionally, when clinicians frequently check in and pass on important information about a youth to the MHCs working in the milieu—for example, if a youth just had a difficult family therapy session or just found out her home pass was canceled—then staff are better able to support the youth and keep them safe. Once alerted to the possibility of increased distress, they will be better prepared to keep the teen safe. MHCs can, for example, anticipate distressed reactivity like self-harm and dysregulated meltdowns and offer additional support in the hours afterwards.

Poor communication, on the other hand, can jeopardize patient safety. Communication failures caused 65% of sentinel events in hospitals in a Joint Commission on the Accreditation of Healthcare Organizations study (2015). Sentinel events are defined as incidents involving unexpected patient death or injury not related to the natural course of a patient illness (The Joint Commission, 2015). Other treatment errors that have resulted from communications failure include (a) errors in patient records, (b) incomplete charts, (c) omitted documentation, (d) not

passing on previous observations, (e) not communicating concerns effectively, and (f) incomplete and fragmented information being relayed during change of shift (Kanerva et al., 2015).

Currently, there is little research into the intentional communication and collaboration between direct care staff and the clinicians that are responsible for creating and implementing treatment plans in adolescent inpatient psychiatric hospitals. It's notable that interdisciplinary teams in hospital settings typically hold meetings called "rounds" once a week where clinicians and charge nurses meet to discuss patient progress and address any concerns team members have. During rounds, clinicians do get feedback from other care providers. However, MHCs are normally unable to attend these meetings because they are needed on the unit to attend to the patients.

Hospitals also have meetings at the start of every shift where the charge nurse informs MHCs about what has happened on the previous shift. However, clinicians are rarely able to attend these meetings because of other responsibilities or differences in schedules. This structure leaves little to no time and few opportunities for MHCs and clinicians to formally communicate with each other. They may have a quick exchange about a patient in passing, but this "strategy" is inconsistent and unreliable. The lack of structured opportunity for information to be shared between clinicians and MHCs can lead to non-communication or miscommunications that negatively affect patient treatment and overall team functioning.

### **Adolescents in Long-term Inpatient Hospitals Benefit from Stability and Consistency on the Unit**

Patients' direct environment ultimately influences their attitudes, behaviors and symptoms, and therefore is an important factor to consider when looking at their treatment outcomes (Smith & Spitzmueller, 2016). Most patients—including adolescents—can better



regain control of their lives, illnesses, and behavior when their environment is safe and predictable across staff, interventions, and activities (Voogt, Goossens, Nugter, & Achterberg, 2015).

The structure and consistency of a milieu provides adolescent patients with a sense of stability, which allows and encourages them to practice skills they have learned and gives them safe opportunities to practice managing overwhelming feelings and emotions in a safe environment (Smith & Spitzmueller, 2016). Patients can better establish a strong helping alliance with staff and nurses when there they feel that the rules and expectations of the program are clear and consistent (Johansson & Eklund, 2004).

Patient and unit stability rely on general rules and their consistent implementation. Most adolescent inpatient programs have underlying principles that are then reinforced and enacted by the charge nurse and MHCs who work on the unit (Voogt et al., 2015). As patients progress in treatment, clinicians and nurses make decisions about what increased opportunities are available to patients, based on level of safety and functioning, which are both always changing. These decisions include the amount of independence patients have on the unit, objects they may or may not have in their room (i.e., small objects such as pens/pencils, shoe laces, jewelry, certain clothing), locations they can access in the hospital, and passes to leave the hospital for days or overnight. Clinicians commonly make these decisions in team meetings without consulting MHCs—who may only learn about the decisions made by the team in written reports. Frequent and clear communication between MHCs and clinicians about patients' behavior and progress can promote stability and consistency on the unit, which is especially important for highly dysregulated patients who have been contending with chronic stress, danger, and chaos in their families and communities prior to admission. Patients' levels of safety and functioning

change from day to day, and with somewhere between 10 and 30 adolescents to watch over (U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, 2014), MHCs need to be updated on what is happening in each patient care plan. Further, MHCs may be less effective in supporting their distressed young patients when they don't fully understand the reasoning behind a team decision that they must implement.

Inconsistent implementation and enforcement of policies has negative consequences for patients too (Alexander, 2006). In a qualitative study exploring the relationship between ward rules and patient outcomes, based on interviews with 20 patients and 29 staff on an acute psychiatric ward, Alexander found that some patients felt victimized, powerless, humiliated, isolated and rejected due to inconsistency among nurses on enforcing rules on the ward. Reaching a similar conclusion, another study found that confusion around the rules on the unit or the reasons for certain restrictions may leave patients feeling demoralized and dehumanized, (Voogt et al., 2015).

Stability and consistency in long-term adolescent treatment facilities benefit both patients and the staff who care for them. Clear, direct communication among team members about decisions, policies, and treatment strategies can foster better therapeutic milieus and help team members work most effectively.

### **Communication and Collaboration Affects Overall Team Functioning.**

Interdisciplinary teams with open communication, effective coordination, and collaborative problem-solving have been proven to produce higher levels of perceived team cohesion, quality of patient care, and lower nurse turnover rates in intensive care units (ICUs) (Shortell, Rousseau, Gillies, Devers, & Simons, 1991). However, failures in collaboration often occur when doctors make decisions without involving direct care staff or asking for their input.

Such failures commonly leave staff feeling unheard, underappreciated, and devalued. A qualitative study conducted by Totman, Hundt, Wearn, Paul, & Johnson (2011) explored staff morale across seven inpatient psychiatric units. A thematic analysis of interviews revealed that staff commonly spoke about the importance of having a voice and being a part of the decision-making process. Researchers concluded that the most highly valued positive influence on morale was collaboration and effective team working (Totman et al., 2011).

Yet team collaboration may decrease when power differentials and inequalities commonly emerge among the interdisciplinary treatment team, causing direct staff to feel like “servants” or “customers” to the psychiatrist or team leader rather than an equal team member (O’Malley & Clarke, 2009). These differentials may significantly affect MHCs, who typically have the least formal training, authority, and prestige in the team (Leichtman, 2006). Pronounced power differences create barriers to team functioning, according to a literature review by O’Leary, Sehgal, Terrell, and Williams (2012) researching interdisciplinary teamwork in hospitals.

While research has proven that non-hierarchical relationships and equality promote the effectiveness of interdisciplinary teams, survey data shows that interdisciplinary team members have disparate views about the quality of their collaboration. For example, studies exploring communication on ICUs show that nurses and doctors disagree about the quality of communication among members of the team, with doctors reporting high ratings of collaboration and nurses consistently reporting low ratings (O’Leary et al., 2012). Similarly, studies done in long-term elderly care settings found that professionals assessed their teams as performing better and more effectively than paraprofessional team members (Temkin-Greener et al., 2004).

It is notable here that the differences of perception within the hierarchical structure of health care teams conclude that those with lower power and status (i.e., nurses) describe significantly less experience of collaboration than those with more authority (i.e., doctors). Such differing perceptions suggest that communication gaps may not be as readily perceived and/or acknowledged among those with greater decision-making power—the level of communication may seem adequate to them.

Yet in long-term adolescent psychiatric settings, communication between team members is one of the most important elements in forming a cohesive team and implementing effective treatment (Ochoa, 2012). In a qualitative study examining perceptions and experiences among three direct care staff and one house manager in a long-term adolescent residential treatment center, participants commonly emphasized the importance of communication for forming a sense of community as well as dealing directly with the patients (Ochoa, 2012). Because adolescent patients can be manipulative and divisive, they noted, communication helps involved adults hold together to deal with these challenges. In units with effective collaboration, “They see that we are close and it’s harder for them to staff split,” noted one participant (Ochoa, 2012, p. 111). Staff splitting occurs when a patient revises an account of events reported to different staff members, interfering with consistent care and turning staff against each other. This study shows that when staff members communicate, they form a stronger, more cohesive treatment team that can better support each other and the youth in their care.

### **The Model of Team Performance in Long-Term Care**

The survey used in this study is grounded in the Model of Team Performance in Long-Term Care (Shortell et al., 1991), which was developed as a framework to define and measure variables that contribute to effective team performance and result in quality and

efficient patient care. Much research has been focused on the effective characteristics of interdisciplinary teams, and past studies have linked team performance to positive patient outcomes (Shortell et al., 1991; Temkin-Greener et al., 2004). Literature reviews have determined critical variables that are fundamental to effective teamwork in the health care settings (Shortell et al., 1991). These team processes are *leadership, communication, coordination, and conflict resolution* (Shortell et al., 1991). The model suggests that when team processes are effective, they result in greater *team cohesion* and *perceived team effectiveness*. A more cohesive team will ultimately deliver more effective care and better patient outcomes (Shortell et al., 1991). This model is particularly useful for conceptualizing interdisciplinary teams in inpatient long-term adolescent programs due to the complex nature of the organization and the high demands it puts on direct care staff and clinicians to work effectively together.

Shortell et al. (1991) created this model of interdisciplinary team performance to develop a valid and reliable questionnaire to measure team processes and their outcomes in a healthcare setting. Following the administration of the questionnaire, along with in-person site visits and interviews, the authors confirmed with their findings that *leadership, communication, conflict resolution, and coordination* were associated with better-performing sites and more effective patient care practices. Temkin-Greener et al. also used this model to research interdisciplinary teams working in a long-term elderly care setting and similarly found that effective team processes resulted in shorter-length patient stay and higher perceived quality of care. Specifically, researchers found that *communication* appears to impact *team cohesion and perceived team effectiveness* the most, followed by *conflict management, coordination, and leadership* (Temkin-Greener et al., 2004). Past research using this model has been done in an ICU and elderly long-term care setting. Therefore, this study was the first to use this model and

the questionnaire that supports it to examine interdisciplinary team functioning on an intensive inpatient long-term adolescent psychiatric unit.

### **Definition of Key Constructs**

**Treatment Settings.** Mental health treatment for adolescents is provided in a variety of settings. The level of care that is necessary for patients depends on the nature and severity of their mental illness, as well as their physical health, and the type of treatment recommended (Substance Abuse and Mental Health Services Administration [SAMHSA], 2016).

***Acute inpatient psychiatric care.*** Inpatient care settings represent the most intensive level of mental health care for youth who pose an immediate threat to themselves or others. They provide medical and psychiatric care to patients in a controlled, often locked setting, and are staffed 24-hours a day. Acute care is short-term, with the average length of stay ranging from 3 days to 1 month. The goal of acute inpatient care is to diagnose, care for, and stabilize individuals who are severely suffering from or having a serious episode related to their mental illness (SAMHSA, 2016).

***Long-term intensive inpatient psychiatric care.*** Long-term inpatient care is similar to an acute unit, with the facility being locked and staffed 24-hours a day. Individuals are generally admitted after the conclusion of an acute inpatient course of treatment (Mikula, 2019), and require ongoing intensive care due to a persistent and pervasive mental illness. The average length of stay ranges from six months to as long as three years (Mikula, 2019). The goal is to stabilize and increase level of functioning to discharge youth to a less restrictive setting, or back to their homes.

***Residential treatment centers.*** Residential programs are the second most restrictive level of mental health care for youth (Vargas & De Dios Brambila, 2005), and are defined as

“out-of-home, twenty-four-hour facilities that vary by therapeutic modalities, placement settings, program components and treatment populations” (Nofhle et al., 2011, p. 66). Residential treatment centers (RTCs) provide longer term treatment to youth who have not responded to outpatient treatment or who require ongoing care after an acute inpatient stay. RTCs are considered to be a less restrictive than inpatient care, and the average length of stay ranges from months to years depending on the needs of the adolescent. The goal of residential treatment is to improve a patient’s condition so they can return home (AACAP, 2010).

**Interdisciplinary treatment teams.** In long-term intensive adolescent inpatient care, interdisciplinary treatment teams can be broken down in to three separate groups, each of which reports to their own supervisor or director.

The *clinical team* includes psychiatrists, psychologists, social workers, family therapists, and occupational therapists, who are responsible for assessing patients, and planning and implementing treatment (Gathright et al., 2016). The clinical team meets weekly to discuss patient progress in rounds, where much of the decision-making about patients’ treatment is done.

The *nursing team* includes charge nurses, medication nurses and nursing supervisors. Psychiatric nurses are registered nurses (RNs) or licensed practical nurses (LPNS). The charge nurse is responsible for the safety of the unit during his or her shift, making schedules for MHCs, promoting patient engagement in treatment, and taking charge of any unit crises that may arise (Delaney & Hardy, 2008). The charge nurse attends team rounds when available. The medication nurse is responsible for dispensing routine medications throughout the shift. Nursing supervisors are responsible for coordinating and managing the nursing team.

*Mental health counselors* are responsible for keeping patients safe, alerting the charge nurse of what is happening on the unit, assisting patients with activities of daily living, and

escorting and monitoring youth throughout the day (Ochoa, 2012). Depending on the needs of the patients and the number of youths on the unit, there will be anywhere from three to eight MHCs working the floor during a shift, generally maintaining a ratio of three MHCs to one youth (AACAP Task Force on Adolescent Hospitalization, 1990).

**Team Performance Variables.** This study used the Model of Team Performance in Long-Term Care which was developed by Shortell et al. (1991) as a framework to define and measure variables that contribute to effective team performance. These team processes are *leadership, communication, coordination, and conflict resolution* (Shortell et al., 1991). The model suggests that when team processes are effective, they result in *greater team cohesion* and *perceived team effectiveness*. Additionally, Shortell et al. noted that there are a number of variables that could mediate the relationship between team process variables and team performance. The mediating variables in this model are *working conditions* and *availability of resources and staffing*.

**Leadership** is defined as “an individual’s ability to influence others toward the accomplishment of organizationally relevant goals and objectives”, including the team’s ability to set goals and standards, respond to changes and support staff members (Shortell et al., 1991).

**Communication** is measured by assessing the accuracy, effectiveness and openness of communication between team members. These dimensions measure the extent to which team members are able to say what they mean without fear or repercussion or misunderstanding, the degree to which staff members believe in the accuracy of the information being conveyed, and the degree to which patient care information is relayed promptly (Shortell et al., 1991).

**Coordination** is defined as the degree to which activities are coordinated between groups (clinicians, nurses, MHCs). Survey items measuring coordination included questions about



written plans and schedules, treatment protocols and procedures, and face to face interactions among the interdisciplinary treatment team (Shortell et al., 1991).

*Conflict Management* is measured by assessing the degree to which team members feel they can openly and collaboratively solve problems, the degree to which disagreements among staff are brought to supervisors for resolutions, and the degree to aggressive tactic are used in disagreements among team members (Shortell et al., 1991).

*Unit Cohesiveness* is defined as the degree to which people identify with the team and share common goals (Shortell et al., 1991).

*Unit Effectiveness* is measured by assessing team members perceptions of the technical quality of care on the unit and by measuring the team members' judgment of the ability of their team to meet patient and family needs (Shortell et al., 1991).

*Working Conditions* measures employees' perceptions of stress, pace of work, and distractions on the unit (Shortell et al., 1991).

*Resources and Staffing* measures the availability and quality of supplies that employees have access to in order to effectively to their job (Shortell et al., 1991).

### **There is Currently Limited Research Exploring Communication and Collaboration between MHCS and Clinicians in Long-term Inpatient Adolescent Hospitals.**

Existing research has supported that communication is one of the most integral elements of psychiatric care and is important for patient safety, treatment efficacy, and job satisfaction across members of the interdisciplinary team. Communication and collaboration difficulties, studies show, produce poorer treatment outcomes, increase stress for patients, lower job satisfaction, and increase rates of staff burnout. The vulnerable and sensitive characteristics of the adolescent inpatient population, as well as their complex needs in a treatment setting are

evident from literature descriptions. Research exploring the benefits of communication across disciplines in long-term inpatient adolescent settings is particularly useful because MHCs have a vast number of opportunities to support patient needs and promote growth during patients' extended stay in their treatment program.

Research to date indicates a correlation between collaboration and a more therapeutic work environment for team members (Ochoa, 2012; Totman et al., 2011), as well as a more effective treatment environment for the youth being cared for (e.g., Shortell et al., 1991; Temkin-Greener et al., 2004; Voogt et al., 2015). However, there is limited research specifically exploring MHCs' and clinicians' communication and collaboration on long-term inpatient psychiatric adolescent units; further, we know little about whether MHCs are satisfied with their current involvement in the team decision-making process. Finally, current research has not examined the possible barriers that impede interdisciplinary team functioning in adolescent inpatient care, and whether MHCs and clinicians perceive similar barriers to communication.

The study explored how MHCs, clinicians and nurses on a long-term adolescent inpatient psychiatric unit communicate and collaborate, and it explored staff perceptions of interdisciplinary coherence and unit effectiveness. This study also determined how satisfied MHCs, clinicians and nurses are with their level of input and involvement in team decision-making processes.

Due to my experience working as an MHC, I predicted that out of the four team processes being measured, *communication* and *leadership* would be rated the lowest across disciplines. Additionally, I expected that MHCs will report lower levels of satisfaction regarding their input in the teams decision-making process. Based on the literature, I predicted there to be

differences between MHCs' and clinicians' perceptions of *team effectiveness* and *team cohesion*, with clinicians rating higher levels of *perceived team effectiveness* (O'Leary et al. 2012; Temkin-Greener et al., 2004). The primary quantitative research questions are as follows:

RQ1: To what extent are MHCs consistently part of rounds and team meetings (to discuss patient progress) on adolescent inpatient psychiatric units?

RQ2: What is the degree of alignment between MHCs', nurses' and clinician's perceptions of interdisciplinary team cohesion and team effectiveness?

RQ3: What do MHCs, nurses and clinicians report about current barriers to communication and collaboration between team members on an adolescent inpatient psychiatric unit?

RQ4: What do MHCs, nurse and clinicians report about their satisfaction with their involvement in patient treatments and the decision-making process?

RQ5: Do the predicting and mediating variables on the ITPPS predict the outcome variables of team cohesion and perceived unit effectiveness in this setting and population?

## **Method**

**Setting.** The study examined interdisciplinary team functioning within the adolescent continuing care unit (CCU) of a psychiatric hospital located in central Massachusetts. This facility has 320 beds, serving 260 adults and 60 adolescents. Newly built in 2012, this state-of-the-art hospital was designed to reflect the "stages of recovery" from a serious mental illness by using familiar community environments to refer to locations in the hospital, such as "neighborhood" for units, and "downtown" for the shared, open space where patients can get lunch at the canteen or schedule a hair appointment at the beauty salon. The residential, less

restrictive design is intended to destigmatize the traditional idea of a psychiatric hospital and create more freedom for patients (Commonwealth of Massachusetts Department of Mental Health, 2019).

The CCU provides adolescents, ages twelve to eighteen, with intensive therapeutic services from multidisciplinary treatment teams. The program is divided into two 15-bed units and the average length of stay is six months, but can be much longer depending on the patients' needs (Mikula, 2019). Being a relatively new program, the CCU continues to change protocols and implement new ideas in an attempt to provide more efficacious and safe care. Many of the program directors and supervisors are already looking for ways to improve team functioning. Therefore, results of this study may help elucidate the possible underlying factors that may be interfering with collaboration, and pave a pathway to more effective and holistic care in the future.

**Participants.** Eighty-four participants from both adolescent units at the hospital were included in the study, meeting the sample size original targeted. When this study was conducted, this hospital employed approximately 70 MHCs, 26 nurses, 5 social workers, 3 psychologists, 3 psychiatrists, 2 occupational therapists, and 1 primary care physician. A total of 89 individuals opened the survey link and began participation, but five did not complete all of the questions. The participants varied in age, gender, race, and years of employment. Participants consisted of MHCs, clinicians (psychiatrists, psychologists, social workers, occupational therapists) and nurses currently or previously employed at the adolescent CCU. Because of the frequent staff turnover within this program, this study included individuals who had worked at the hospital within the past two years. The recruitment strategy involved sending out emails and Facebook notifications to potential participants with a link attached to the informed consent and survey.

Two emails were sent to the program coordinator requesting that he notify employees about the survey with the staff verbally in morning meetings. The director was receptive to both emails and reported that he did relay the message to the employees. The Facebook post was shared once a month over four months.

**Measures.** The Interdisciplinary Team Process and Performance Survey (ITPPS) was used to assess team member's perceptions about the communication and collaboration among the interdisciplinary team. This measure is derived from an instrument developed by Shortell et al, (1991) which was originally designed to assess interdisciplinary team process and performance in acute and intensive care settings. Temkin-Greener et al. (2004) adapted the measure to address the functioning of interdisciplinary teams working in long-term care, specifically those at the Program of All-Inclusive Care for the Elderly (PACE). It is designed to evaluate four team processes: *leadership*, *communication*, *coordination*, and *conflict management*, as well as two team outcomes: *team cohesion* and *perceived team effectiveness*. Questions regarding demographics (e.g., age, gender, race/ethnicity, education) and work experience are also included in the ITPPS.

The literature on team processes and past research on the ITPPS suggests that effective leadership, communication, coordination, and conflict resolution are expected to result in greater team cohesion. Taken together, the team processes and team cohesion domains influence team performance, referred to here as team effectiveness. The measure also considers a number of variables that could mediate the relationship between the team processes and team performance. The mediating factors include *working conditions* (e.g., stress, pace of work, and distractions and availability of resources) and *staffing* (e.g., availability and quality of supplies).

The ITPPS questionnaire is a self-report measure with 59 items and uses a 5-point Likert-type scale ranging from strongly disagree (1) to strongly agree (5). Items include, for example, “All team members work hard to solve a problem” and “Others in my team have a good understanding of patient care plans and goals.” To calculate scores for each domain in the measure, an average was computed by adding the numerical values for each question in a domain and dividing by the number of questions in the domain. A score of 1 represents the most negative appraisal of a domain, while 5 represents the most positive appraisal.

Temkin-Greener et al. (2004) separately evaluated the reliability and validity of the measure on a full sample of both paraprofessionals and professionals. The internal reliability was measured using Cronbach’s alpha, resulting in values of 0.73-0.87 for paraprofessionals and 0.78-0.91 for professionals. Validity was assessed by evaluating face, construct, and construct validity. All team processes (i.e., *leadership, communication, coordination, and conflict management*) were positively and significantly related to *team cohesion* and *perceived team effectiveness* ( $p < 0.001$ ; Temkin-Greener et al., 2004). Items on this measure answered quantitative research questions by having individuals respond to Likert-scale questions regarding frequency of attending rounds, satisfaction with communication and coherence among team members, and perceptions of feeling valued amongst the team (see Appendix A for ITPPS question items and scoring system).

The items on the ITPPS measured interdisciplinary team coherence and perceived unit effectiveness, but did not address possible barriers that could’ve be interfering with communication and collaboration. Eight 5-point Likert-type scale questions were added to the online survey to answer these research questions (see Appendix B for additional questions addressing barriers). The additional question included barriers that are commonly referenced in

research as impeding interdisciplinary team collaboration, such as *differences in schedules, understaffing, lack of training, hierarchical team structure, differences in culture/ethnicity, differences in accountability, concerns regarding clinical responsibility, and personality differences* (O'Daniel & Rosenstein 2008). Participants were asked to rate the extent to which they experience the barriers. A score of 1 indicated they do not experience that variable as a barrier at all, while 5 indicated they experienced the barrier as significantly interfering with communication/collaboration across disciplines.

A final question, also on a Likert scale, addressed satisfaction with input and involvement in the team's decision-making process, with a score of (1) representing Extremely Dissatisfied, and a score of (5) representing Extremely Satisfied (see appendix B for question addressing satisfaction). On average, participants took 20 minutes to complete the ITPPS and the additional survey questions.

**Procedure.** Before proposing this study, I met with one of the clinical directors at the hospital's CCU to introduce the study and speak about the process of including the program's employees in the study. I also contacted UMass Medical School's IRB to query about their IRB process. After speaking with the director of the CCU program and UMass Medical School's IRB department, it was determined I did not need to submit an IRB through their institution. Once I submitted and gained approval from the IRB at Antioch University New England, I began collecting data from employees at the CCU.

Participants were recruited by electronic mail (Appendix C) and through sharing a post on a social media site, Facebook. (Appendix D). The email and social media post included a description of the purpose of the study, along with a link to access the Informed Consent (Appendix E). I also distributed the description and link to the consent form and survey to staff

that I personally know who are no longer employed at the hospital. The informed consent notified participants of a raffle incentive for completing the survey. After reading the information on the informed consent, the participants were prompted to provide their consent to participate. If they consented, they clicked to the next page, *the ITPPS Measure and Additional Questions* which were followed by the ITPPS demographic questions. After the participants completed the survey and demographic questions, they had the opportunity to send me an optional email to enter the raffle and/or to request a summary of the analyzed data following the completion of the study. I temporarily saved their email address in a locked file, and deleted it immediately following the raffle. Participants were able to ask questions or address concerns through email at any point, which was provided in the recruitment email and in the informed consent.

Data collection took place over the course of four months. When data collection began in December, the original incentive was set as entering a chance to win one of three \$20 Amazon gift cards. Respondent rates began to decrease in February, therefore, the incentive was increased to a chance to enter to win one of two \$50 amazon gift cards. I made participants aware of the change in incentive through posts on the social media site, Facebook. The increase in incentive helped me to reach the desired target population. A total of 89 individuals opened the link to the survey and provided consent. However, five participants were disqualified from the study for the following reasons: (a) not indicating their occupation, and (b) not completing all survey questions.

### **Ethical Considerations**

Before beginning the survey, participants agreed to the Informed Consent, which provided sufficient information so individuals understood the implications of participating in this study. The informed consent included a statement that prospective participants were being



recruited for a research project and a brief summary about its purpose. Participants read an explanation of the procedures, including the amount of time expected to complete the survey and the potential risks and benefits of participation. While the study presented little to no risk, participants were made aware that they might experience discomfort due to thinking about difficult work experiences and job stress. Benefits included contributing to the literature on interdisciplinary team functioning in adolescent psychiatric settings. Participants were notified that participation was voluntary and they had the right to withdraw from the study at any stage. If they decided to withdraw from the study, their data would not have been included in the results. No participants withdrew from this study.

Privacy and anonymity of respondents was of the utmost importance; all participants were unidentifiable and their responses kept confidential. Participants were not required to provide their email address for the raffle, and thus, could choose to remain anonymous. There will be no reports about this study that contains any identifying information about participants. Participants were also made aware that their employer would not be notified of their choice to participate or not to participate in this study. However, I did inform them that I intended to share results with the clinical directors and participants at the CCU.

### **Summary of Analyses**

For the purposes of this study, *clinicians* were defined as participants in roles that included psychiatrists, psychologists, social workers, and occupational therapists [clinicians N= 18]. Sample characteristics are presented in Table 1.

**RQ1:** A chi-square test of independence was performed to examine whether frequency of attending team meetings differs by occupation.

**RQ2:** Survey responses were compiled to produce descriptive statistics, including means and standard deviations, for each domain of the ITPPS including process domains (*leadership, communication, conflict management, and coordination*), mediating factors (*workplace resources and workplace conditions*) and outcome domains (*perceived team effectiveness and team cohesion*). Results are displayed first depicting the total mean of the interdisciplinary team for each domain (see Figure 2) and then broken down by occupation groups (see Figure 3). Differences between group means of the MHCs', clinicians', and nurses' responses across all domains of the ITPPS were assessed using a one-way ANOVA (see Table 2). Cohen's *d* was calculated to determine the effect size between domain means for each pairwise comparison (MHCs vs. clinicians; MHCs vs. nurses; nurses vs. clinicians).

**RQ3:** Descriptive statistics, including means and standard deviations, were calculated for the Likert-type scale questions about barriers (see Figure 4).

**RQ4:** Descriptive statistics, including mean and standard deviation for all three occupation groups, was calculated for the Likert-scale question asking about satisfaction with input in the teams' decision-making process and overall job satisfaction (see Figure 5).

**RQ5:** The ITPPS conceptual model proposes that team processes influence *workplace conditions* and *resources and staffing*, which in turn drive *perceived team effectiveness*. While I did not formally evaluate this causal sequence, I did examine the degree of association among these variables. Based on the model, we would expect to see a meaningful correlation between the ITPPS domain scores for *leadership, communication, coordination, and conflict management* and *workplace conditions* and *resources and staffing*, and between *workplace conditions* and *resources and staffing* and *perceived team effectiveness*. A correlational analysis was conducted to determine if *leadership, communication coordination, conflict management*—all measured

with the ITPPS—are associated with *team cohesion* and *perceived unit effectiveness* in this setting (Table 3).

## Results

### Quantitative Data

**Sample Characteristics.** Table 1 depicts demographic and employment statistics for the study sample. There were 48 female participants and 25 male participants; 11 participants chose not to identify their gender. Participants ranged in age from (a) 18-24 (8%), (b) 35-34 (42%), (c) 35-45 (14.8%), (d) 55-64 (8%), (e) 65 + (1.1%), and (f) 13 participants did not specify their age. Over 65% of participants identified as White/Caucasian, 15.5 % as Black/African, 3.6 % as Asian/Asian American, 2.4 % as Hispanic/Latino, and 1.2% as other, with 11 participants choosing not to specify. Sixty-three percent of participants indicated that their job title was mental health worker/direct care staff. The remaining participants identified as follows: (a) Nurse (15.5%), (b) Social Worker (8.3%), (c) Psychologist (7.1%), (d) Psychiatrist (3.6%), and (e) Occupational Therapist (2.4%). Nearly half of the participants (45.2%) reported their employment status as full-time, 32.1% were part-time employees, 19% were per-diem, and 3.6% reported they were no longer employed. The mean number of years employed was 3–5, with a range of less than one year to 10+ years. The majority of participants received a college education (51.2%), followed by a post graduate education (28.6%), a high school diploma (16.7%), 1.2% reported having less than a GED, and 2 participants chose not to specify.

***RQ1: To what extent are MHCs consistently part of rounds and team meetings (to discuss patient progress) on adolescent inpatient psychiatric units?***

A chi-square test of independence was performed to examine whether frequency of attending team meetings differs by occupation. The Likert-scale responses for the question

asking about the frequency of interdisciplinary team meeting attendance were: 1 (weekly), 2 (monthly), and 3 (less than monthly; See Figure 1). Results from the chi-square of independence indicate that the relationship between these variables was significant,  $\chi^2(6, N=84) = 34.3$ ,  $p = .000$ . Clinicians were most likely to attend team meetings weekly, while MHCs were most likely to attend team meetings less than monthly.

***RQ2: What is the degree of alignment among MHCs', clinicians' and nurses' perceptions of interdisciplinary team cohesion and perceived team effectiveness?***

Process variables assessed by the ITPPS include *leadership, coordination, conflict management, and communication*; Mediating factors include *workplace resources and workplace conditions*; Outcome variables are *team cohesion and perceived team effectiveness*. While the research question is directly looking at the differences in outcome variables across occupations, additional information is described in Figure 1 and Figure 2. The mean scores across all occupation groups are displayed in Figure 2 for each domain of the ITPPS. Figure 3 depicts mean scores broken down by occupation groups (MHCs, nurses, and clinicians). Lastly, results from the one-way ANOVA are described, which directly answer the question regarding the degree of alignment among MHCs', clinicians' and nurses' perceptions of interdisciplinary team cohesion and perceived team effectiveness (see Table 2).

**ITPPS results collapsed across occupation.** Ignoring differences between occupations, the range of scores across ITPPS dimensions was **3.59** to **2.98** (Figure 2). *Leadership* was the highest rated process variable ( $M = 3.36$ ,  $SD = .780$ ) and *communication* the lowest ( $M = 2.98$ ,  $SD = .639$ ). *Coordination* ( $M = 3.19$ ,  $SD = .823$ ) and *conflict management* ( $M = 2.99$ ,  $SD = .489$ ) fell closely in the middle. Among the outcome variables, *team cohesion* ( $M = 3.59$ ,  $SD = .774$ ) scored marginally higher than *team effectiveness* ( $M = 3.33$ ,  $SD = .622$ ).

**Occupational differences in ITPPS scores.** Shifting to an examination of occupational differences in ITPPS subscales, for the outcome variables of team cohesion and team effectiveness (the focus of this research question), clinicians provided the highest ratings, followed by nurses and MHCs (see Figure 3).

**Clinicians report higher team cohesion and effectiveness than nurses or MHCs.** A One-way ANOVA was conducted to compare perceptions of *team cohesion* and *team effectiveness* across occupations within the interdisciplinary treatment team (see Table 2). An analysis of variance showed that the effect of occupation on perceptions of *team cohesion* was statistically significant,  $F(2, 81) = .443, P = .015$ . Perceptions of *team effectiveness* also differed significantly by profession,  $F(2, 81) = .486, P = .010$ . Post-hoc comparisons using Cohen's  $d$  indicated that clinicians had more positive perceptions of both *team cohesion* and perceived *team effectiveness* than both nurses and MHCs.

**MHCs and clinicians have significantly different perceptions across all team process and outcome variables.** Post-hoc comparisons revealed that significant differences occurred between the group of MHCs and clinicians across all team process and outcome variables. The largest effect size was found when doing a pairwise comparison between MHCs and clinicians on the process domain of *leadership* ( $d=1.04$ ), with clinicians having significantly more positive views of leadership than MHCs. Furthermore, pairwise comparisons of MHCs and clinicians revealed significant effect sizes among all of the remaining variables (*communication*:  $d=.799$ , *coordination*:  $d=.753$ , *conflict management*:  $d=.789$ , *team cohesion*:  $d=.893$  and *team effectiveness*:  $d=.830$ ).

***RQ3: What do MHCs, nurses, and clinicians report about current barriers to communication and collaboration among team members on adolescent inpatient psychiatric units?***

**Barrier results across occupation.** Mean and standard deviation for all three occupation groups were calculated for each Likert-scale question [(1) not a barrier to (5) extreme barrier] addressing barriers to team communication and collaboration (see Figure 4). The barrier ranked highest across all occupations was *MHCs do not receive enough income to have an incentive to communicate and collaborate with clinicians (differences in accountability, payment and rewards;  $M=4.24$ ,  $SD=.926$ )*. The second largest barrier was *Clinicians do not invite input from MHCs (Hierarchy;  $M=3.98$ ,  $SD=.969$ )*. The third largest barrier was *Lack of training for MHCs which limits their ability to enforce patient treatment goals ( $M=3.96$ ,  $SD=.898$ )*. *Understaffing* was also ranked high as a barrier ( $M=3.71$ ,  $SD=1.06$ ).

**Barrier results broken down by occupation.** For the highest ranked barrier of *MHCs do not receive enough income to have an incentive to communicate and collaborate with clinicians*, the groups of MHCs had the highest average score ( $M=4.43$ ,  $SD=.747$ ), followed by nurses ( $M=4.08$ ,  $SD=.945$ ), and clinicians ( $M=3.78$ ,  $SD=1.22$ ).

For the second largest barrier of *Clinicians do not invite input from MHCs (Hierarchy)* MHCs, again, had the highest score ( $M=4.15$ ,  $SD=.928$ ), followed by nurses ( $M=3.92$ ,  $SD=.954$ ), and clinicians ( $M=3.50$ ,  $SD=.985$ ).

*Lack of training for MHCs which limits their ability to enforce patient treatment goals* followed a different pattern, with clinicians having the highest average score, ( $M=4.33$ ,  $SD=.907$ ), followed by MHCs ( $M=3.62$ ,  $SD= 3.91$ ), and nurses ( $M= 3.60$ ,  $SD=.855$ ).

*Understaffing* was ranked highest by nurses ( $M=3.92$ ,  $SD=.954$ ), followed by clinicians ( $M=3.71$ ,  $SD=.857$ ), and MHCs ( $M=3.62$ ,  $SD=1.06$ ).

***RQ4: What do MHCs, clinicians, and nurses report about their satisfaction with their involvement in patients' treatments and the decision-making process?***

**MHCs are least satisfied with their level of input in the teams decision-making process.** Mean and standard deviation for all three occupation groups was calculated for the Likert-scale question asking about satisfaction with input in the teams' decision-making process and overall job satisfaction (see Figure 5). Cohen's  $d$  was also calculated to determine the effect size between occupation groups (see Table 2). Occupation had a very large effect ( $d=1.23$ ) when comparing MHCs and clinicians, and a large effect ( $d=1.15$ ) when comparing MHCs and nurses. Interestingly, by contrast, the effect size was quite small ( $d=.113$ ) for the pairwise comparison of nurses and clinicians. While nurses and clinicians have similar levels of satisfaction with input into team decision-making, by contrast, MHCs report low levels of satisfaction with their input in the team's decision-making process.

**Satisfaction with input in the team's decision-making process has a strong positive relationship to overall job satisfaction and perceptions of team functioning.** Additional exploratory analyses were conducted using Pearson's correlation to measure the strength of the association between satisfaction with input in the team's decision-making process and overall job satisfaction. There is a strong positive correlation between satisfaction with input and overall job satisfaction,  $r=.754$ ,  $n=84$ ,  $p = .000$ .

Additionally, a strong positive correlation was observed between satisfaction with input and perceptions of team cohesion ( $r=.669$ ,  $n=84$ ,  $p = .000$ ). Similarly, there is a strong positive correction between satisfaction with input and perceptions of team effectiveness ( $r= .558$ ,  $n=84$ ,  $p=.000$ ). The result indicates that those who have a higher degree of job satisfaction tend to have higher perceptions of team cohesion and effectiveness.

***RQ5: Do the predicting and mediating variables on the ITPPS predict the outcome variables in this setting?***

**The process variables are positive and significant predictors of the outcome variables in this setting.** Correlations were computed to determine if the predicting and mediating variables on the ITPPS are associated with the outcome variables in this setting (see Table 3). Leadership, communication, coordination and conflict management are positive and significant predictors ( $p < .05$ ) of team cohesion and team effectiveness. Regarding the relative importance of the various team process variables, leadership is most closely associated with team cohesion, followed by conflict management, coordination and communication. Conflict management is most closely associated with team effectiveness, followed by coordination, communication, and leadership. Workplace conditions and workplace resources are not significantly associated with either team cohesion or team effectiveness.

**All domains demonstrate good-to-high reliability.** Cronbach's Alpha for assessing reliability scales was used to determine the degree to which the measures probe the underlying constructs. A score of  $\alpha > .70$  indicates good internal relatedness between items on a scale. The leadership scale consisted of 9 items ( $\alpha = .802$ ), the conflict management scale consisted of 10 items ( $\alpha = .499$ ), communication scale consisted of 10 items ( $\alpha = .795$ ), and the coordination scale consisted of 6 items ( $\alpha = .788$ ). The outcome scale of team cohesion consisted of 8 items ( $\alpha = .798$ ), and the team effectiveness scale consisted of 7 items ( $\alpha = .671$ ). The scales of conflict management and team effectiveness fell beneath the cut off for good reliability. This could be due to the small number of items within the scale. All of the other scales were found to be significantly reliable.



## Discussion

### Personal Bias

Before discussing the results, I outline personal biases that may have influenced my analysis and interpretation of the results. For several years, including at the beginning of this study, I worked as an MHC on one of the adolescent inpatient units. Working as part of the interdisciplinary team was central to my job. I have seen the detrimental effects that a lack of communication can have on morale of MHC staff members and the overall cohesiveness of the team. I wanted to learn more about this topic but went into the exploration with first-hand knowledge and expectations about what I might find.

### Summary of Findings

My primary goal for this study was to investigate how MHCs on a long-term adolescent inpatient psychiatric unit communicate and collaborate with other clinicians and nurses. I examined the perceptions of clinicians, nurses, and MHCs of interdisciplinary coherence and unit effectiveness. I also determined how satisfied MHCs, nurses, and other clinicians are with their level of input and involvement in team decision-making and explored barriers to effective team functioning.

*RQ1: To what extent are MHCs consistently part of rounds and team meetings (to discuss patient progress) on adolescent inpatient psychiatric units?* The findings obtained in the study supported my hypotheses that MHCs would likely attend rounds most infrequently, and are consistent with other accounts in the literature (Hodas, 2005; Ochoa, 2012).

*RQ2: What is the degree of alignment between MHCs' nurses' and clinician's perceptions of interdisciplinary team cohesion and team effectiveness?* The primary research question investigated the degree of alignment between MHCs' nurses' and clinician's

perceptions of interdisciplinary team cohesion and team effectiveness. I hypothesized there would be differences between their perceptions of team effectiveness and team cohesion, with clinicians rating higher levels of perceived team cohesiveness and effectiveness. The findings obtained in the study did support the primary question and hypotheses.

**RQ3: *What do MHCs, nurses, and clinicians report about current barriers to communication and collaboration among team members on adolescent inpatient psychiatric units?*** Research has been conducted exploring barriers to team functioning in health care settings. However, current research has not examined the possible barriers that impede interdisciplinary team functioning in adolescent inpatient care so there are no comparative studies exploring specifically whether MHCs, nurses, and clinicians perceive similar barriers to communication. More generally, however, past research shows that paraprofessionals and professionals differ in their attitudes and perceptions about interdisciplinary team functioning (Bloom & Parad, 1997; O’Leary et al., 2012); results from this study align with those previous findings. The highest 3 ranked barriers were as follows:

1. MHCs do not receive enough income to have an incentive to communicate and collaborate with clinicians (differences in accountability, payment and rewards);
2. Clinicians do not invite input from MHCs (Hierarchy); and
3. Lack of training for MHCs which limits their ability to enforce patient treatment goals.

**RQ4: *What do MHCs, nurses and clinicians report about their satisfaction with their involvement in patient treatments and the decision-making process?*** This study investigated levels of overall job satisfaction and levels of satisfaction with input in the team’s decision-making process. I hypothesized that MHCs would report lower levels of satisfaction regarding their input in the team’s decision-making process. The findings obtained in this study did support the primary research question and hypotheses.

***RQ5: Do the predicting and mediating variables on the ITPPS predict the outcome variables of team cohesion and perceived unit effectiveness in this setting and population?*** In this study, I conducted a correlational analysis to determine if the predictor variables on the ITPPS (i.e., *leadership, communication coordination, and conflict management*) predicted the outcome processes of *team cohesion*. All four process variables were found to be positive and significant predictors ( $p < .05$ ) of *team cohesion* and *team effectiveness*.

### **Interpretation of Findings**

***RQ1: To what extent are MHCs consistently part of rounds and team meetings (to discuss patient progress) on adolescent inpatient psychiatric units?*** The first research question investigated the extent to which MHCs are consistently part of weekly interdisciplinary team meetings (to discuss patient progress) on the adolescent inpatient psychiatric units of the hospital. The results indicated that clinicians most consistently attend team meeting, followed by nurses, and least frequently, MHCs. The data confirmed that while MHCs do spend the most time with patients on a day to day basis, they are in reality, the least involved in the core team assessment and planning process.

Based on my personal experience working in an inpatient hospital setting, and consistent with the literature on how interdisciplinary team's typically structure their meeting times, (e.g., O'Mahony, S., Mazur, Charney, Wang, & Fine, 2007), these results suggest that the bulk of MHCs interdisciplinary team contact is during "report" or "team huddle." Report is typically a brief, 20-minute mandatory meeting held at the start of each change of shift where the charge nurse informs MHCs about what has happened on the previous shift. However, clinicians are rarely able to attend those meetings because of other responsibilities or differences in schedules.

When clinical staff are meeting, the MHCs need to be tending to patients, as is consistent with previous research and expectation.

Taken together, these results indicate that, in the course of a typical week, MHCs and clinicians are more likely to meet with nursing staff and have little to no time and few formal opportunities to communicate with each other. The lack of structured opportunity for information to be shared between clinicians and MHCs is notable for a couple reasons. First, greater communication among staff members and across disciplines has been shown to improve patient outcomes, decrease patient length of stay, and increase patients' overall satisfaction in health care settings (Epstein, 2014). Because the whole team meets together so rarely to discuss patient treatment, there is an increased likelihood of non-communication, miscommunications and treatment errors—all of which negatively affect patient treatment. Second, MHCs then have little opportunity to have their voices heard. They don't feel as though they are central to the team's decision-making process. Research on other inpatient populations has demonstrated that such marginalization can further decrease team cohesion and overall team functioning (e.g., Shortell et al., 1991; Temkin-Greener et al., 2004).

Interestingly, while I did expect to find a significant difference between MHCs' and clinicians' attendance at interdisciplinary meetings ( $d=1.78$ ), I was surprised to find a similarly large difference between nurses and clinicians' attendance ( $d=1.38$ ). These results indicate that nurses attend interdisciplinary rounds almost as infrequently as MHCs. It is important to note that these results are based on a very small sample of nursing staff. Out of the near 30 nurses employed, just 13 participated in this study. Additionally, nurses have distinct roles in the hospital. For example, it is more common for charge nurses to attend rounds than medication nurses. Of the 13 nurses that participated in the study, (a) 7 identified as charge nurses,

(b) 3 as medication nurses, (c) 1 as a nursing supervisor, and (d) 2 did not specify. While MHCs and nurses are both “floor staff,” the charge nurse is responsible for the safety of the unit during his or her shift, promoting patient engagement in treatment, and taking charge of any unit crises that may arise. Therefore, it is both critical that the charge nurse is aware of patients’ treatment goals and stays informed on changes to their treatment plan. However, because of their essential role on the floor, it is less likely that they can take significant time off to attend meetings. The data indicates that it is predominantly the clinical part of the team—psychologists, psychiatrists, and social workers—that is consistently attending the team meetings.

One apparent barrier that could potentially interfere with nurses’ ability to attend rounds is their obligation to have round-the-clock availability on the unit. There is only one charge nurse on a unit per shift. Therefore, if there is a behavioral issue with any of the 15 youth, the charge nurse will likely be called back to the unit to assist. Due to the volatility of hospitalized adolescents, this can be a frequent occurrence depending on the degree of acuity of the youth being treated at any given time. Perhaps not surprisingly then, nurses ranked “understaffing” as the second overall highest barrier to team communication and collaboration—they reported this concern as greater for them than either MHCs or clinicians.

Thus, staffing issues may partly explain why nurses report attending rounds less frequently than expected. This concern is described in a study conducted by Hanrahan, Aiken, McClaine and Hanlon (2010). These researchers examined organizational factors of inpatient psychiatric environments associated with psychiatric nurse burnout. Results showed that psychiatric nursing staffing levels have a significant effect on psychiatric nurse burnout in the US (Hanrahan et al., 2010). A recent report from the American Psychiatric Nursing Association (APNA) and the U.S. Department of Health and Human Services (HHS) similarly warns about

the current shortage of psychiatric nurses in mental health workforce, which is projected to grow, leaving the country 250,000 professionals short of the demand by 2025 (APNA, 2019). The shortage of nurses is a concern for many reasons. My findings underscore the problem. Patient care can only be improved if nurses—as well as MHCs—have a greater opportunity to attend team meetings and collaborate with clinicians on patient treatment plans.

***RQ2: What is the degree of alignment between MHCs' nurses' and clinician's perceptions of interdisciplinary team cohesion and team effectiveness?***

**Team Cohesion and Perceived Team Effectiveness.** Similar to findings in previous research (O'Leary et al., 2012; Temkin-Greener et al., 2004), MHCs and clinicians have vastly different perceptions of how well their team functions and how cohesive they feel their team is; clinicians consistently endorse holding more positive perceptions than both MHCs and nurses. The data indicate that an individual's role within the interdisciplinary team has an impact on their perceptions of team functioning. In other words, individuals with advanced degrees (clinicians and nurses) view their teams as being more cohesive and effective than individuals in entry level positions (MHCs).

Similar to Temkin-Greener et al. (2004) findings about health care teams, the difference of perceptions within the hierarchical structure of this inpatient mental health care team suggests that those with lower power and status (i.e., MHCs and nurses) report significantly lower perceptions of collaboration than those with more authority (i.e., clinicians). It is possible that communication gaps may not be as readily perceived or acknowledged among those with greater decision-making power; the level of communication and team cohesion may seem reasonable and adequate to them (Temkin-Greener et al., 2004). Greater attention to team building across disciplines could be important in improving both overall team cohesion and team effectiveness.

**Team Processes.** Although there has not been significant research in this area, based on my experience as an interdisciplinary team member, I predicted that out of the four team processes being measured (*communication, coordination, conflict management and leadership*), *communication* and *leadership* would be rated the lowest when looking at the total mean scores of the entire interdisciplinary team (including all participants: MHCs, nurses, and clinicians). As predicted, *communication* had the lowest total mean score (M=2.98): the team as a whole perceived communication to be a relative weakness. However, contrary to my expectation, *leadership* actually had the highest total mean score (M=3.36). In other words, when looking at the mean responses of the team as a whole, participants experience relatively greater comfort with the leadership structure compared to other team processes. Interestingly, perceptions of leadership differed significantly between MHCs (M=3.17) and clinicians (M=3.9).

When looking at the data broken down into occupational groups, results indicated that, when compared with MHCs and nurses, clinicians actually assessed their teams as functioning better on every one of the team process constructs: *communication, coordination, conflict management, team cohesion, perceived team effectiveness*, and most of all, *leadership*. Pairwise comparison from the four team processes highlights the large disparity between MHCs and clinicians on how they perceive their team to function. In each domain, clinicians had the most positive perceptions, followed by nurses, and then MHCs. Pairwise comparisons indicated that MHCs and nurses tend to have similar perceptions of how their team is functioning.

Interestingly, post hoc analysis indicated that clinicians and MHCs differed most significantly on their perceptions of *leadership* in their team ( $d=1.021$ ): MHCs assessed leadership more negatively than clinicians. This finding is consistent with the idea that those identified with leadership roles would be most likely to have positive feelings about it. The more

positive perceptions of the team processes, and specifically leadership, from the group of clinicians could also be attributed, at least in part, to their greater involvement in the treatment planning and decision-making process (Temkin-Greener et al., 2004).

The differences in perceptions of leadership could also be further explained by the structure of this interdisciplinary team. MHCs, clinicians and nurses all report to different supervisors, therefore, leadership may be experienced differently due to the disparate leadership styles among each group's supervisors. Indeed, research has found that leadership and strong management can have a profound effect on the emotion and mental well-being of team members—as well as quality of the inpatient care environment and patient outcomes (Hanrahan et al., 2010). Individuals acting in leadership and managerial positions in inpatient psychiatric settings are crucial to balancing everyday responsibilities (e.g., handling intakes and discharges), while also maintaining a safe and therapeutic environment for patients and staff. Supervisors in this setting also act as the liaison with upper-level management to represent the needs of the staff and the unit (Hanrahan et al., 2010). It may be possible that MHCs, who ranked leadership significantly lower than clinicians, may feel that their leaders/supervisors are not representing their needs to upper-level management or that they are generally not getting their supervisory needs met.

These findings provide a basis for the argument that this organization may need to re-evaluate the training provided to supervisors and team leaders. Given these findings, it seems clear that improvements in leadership style and efficacy would be helpful for the well-being of MHCs. Better-trained leaders and supervisors might be more effective mediating occupational stress, reducing burnout, and increasing job satisfaction and collaboration across occupations— but especially for MHC's.



***RQ3: What do MHCs, nurses, and clinicians report about current barriers to communication and collaboration among team members on adolescent inpatient psychiatric units?***

**Differences in accountability, payment and rewards.** The highest ranked barrier across disciplines was: *MHCs do not receive enough income to have an incentive to communicate and collaborate with clinicians* (Differences in accountability, payment, and rewards). MHCs and nurses ranked this as the largest barrier to collaboration, and clinicians ranked it as the second highest barrier. Interestingly, post hoc analysis revealed a medium effect size between MHCs' and clinicians' responses ( $d=.644$ ), indicating that clinicians do not perceive this to be as big of a barrier as MHCs. Notably, post hoc analysis revealed a small effect size ( $d=.287$ ) between nurses' and clinicians' responses, indicating that both groups had similar perceptions and found this to be less of a barrier than MHCs. On this dimension, nurses and clinicians are relatively more aligned in their perceptions.

Research shows that MHCS are more likely to live in poverty, earn low salaries, lack health insurance, and work under higher levels of emotional and physical stress than their clinical counterparts (Institute of Medicine, 2008). On average, the hourly wage for direct care staff falls around \$11 an hour or about \$22,000 a year (New England Network for Child, Youth & Family Services, 2009), while the average base pay for a clinical psychologist is nearly \$80,000 (Salary: Clinical Psychologist, 2018). Additionally, MHCs typically do not hold advanced degrees and enter the job force with a high school diploma or an associate degree (Hodas, 2005). Hospitals are hierarchical institutions maintained by significant power differentials; at a disadvantage in both education level and pay, MHC's have significant responsibility but little authority. Feeling marginalized by those more powerful, some MHC's

may well be less motivated to take the extra step to become more involved in patient's treatment. It is notable that clinicians do not similarly seem to acknowledge the *differences in accountability, payment, and rewards* as a significant barrier. Such lopsided disparity in payment between clinicians and direct care staff can contribute to more systemic imbalances within a hospital and may well add to the challenges of multidisciplinary collaboration (Freeth, 2001).

These findings align with previous research exploring the effects of organization conditions on job satisfaction. Of course, being paid more is strongly associated with increased job satisfaction (Acker, 2004); however, as MHC' have pointed out, salary does not necessarily reflect either their level of responsibility, or the degree of impact that they have on the youth in their care (Hodas, 2005). On an adolescent psychiatric unit, the greatest burden for maintaining day-to-day safety and following through on behavior management plans falls to the least trained and paid staff. This inequitable structural arrangement may inherently create a stressful working environment for front line workers, even apart from team relationships.

Many MHCs have to hold two or more jobs. They may come to work tired; they may spend less time with their own families, and consequently have increased challenges balancing personal needs with effective patient care. Additionally, the lack of opportunity for career advancement in this line of work commonly results in staff viewing their positions as "dead end" and "time-limited" until a better opportunity presents itself, adding to the high-rate of direct care staff turnover (Hodas, 2005). It makes sense that MHCs, with significant responsibility, along with inadequate pay and limited voice, would be less satisfied with their work conditions than better paid, educated, and empowered team members.

**Hierarchy.** The second highest ranked barrier, both across all occupations and by the group of MHCs, was *Clinicians don't invite input from MHCs (Hierarchy)*. A review of the

literature on communication in health care teams shows that hierarchies are a common barrier to effective communication and collaboration (O'Daniel & Rosenstein, 2008). Similarly, results from this study suggest that there may well be an association between MHCs' experiences of poor team communication and the hierarchical structure of the unit. Post hoc analysis show that MHCs' and clinicians' perceptions of the hierarchical barrier differ significantly ( $d=.679$ ), with MHCs perceiving this to be much more a barrier than clinicians. Those with greater power are less likely to see it as a problem.

Consistent with these findings, researchers exploring communication in medical settings similarly found that communication failures often arise from hierarchal differences, specifically regarding role conflict and struggles with interpersonal power and conflict (Sutcliffe, Lewton, & Rosenthal, 2004). Communication may be distorted or withheld in situations when one person is concerned about appearing incompetent or perceives that the other is not open to communication (O'Daniel & Rosenstein, 2008). Additionally, intimidating behavior by individuals at the top of a hierarchy can hinder communication and give the impression that they are unapproachable (O'Daniel & Rosenstein, 2008). While I did not explore the underlying experiences of hierarchy in a similar level of detail, these findings offer some possible explanation for the significant hierarchical barriers identified across my participant groups, and particularly by the MHCs.

While research has proven that non-hierarchical relationships and equality promote the effectiveness of interdisciplinary teams, collaboration decreases when power differentials and inequalities emerge among members of the interdisciplinary treatment team, causing MHCs to feel like "servants" to the team leader, rather than an equal team member (O'Malley & Clarke, 2009). As results from this study show, and similar to the literature, these pronounced power

differentials disproportionally affect MHCs, who also have the least formal training, authority, and prestige in the team (Leichtman, 2006).

**Lack of training for MHCs.** The third overall highest ranked barrier was *Lack of training for MHCs which limits their ability to enforce patient treatment goals*. Interestingly, clinicians ranked this as being the largest barrier to interdisciplinary collaboration. While MHCs and nurses ranked this within their top three barriers, post hoc analysis revealed a medium effect size between nurses and clinicians ( $d=.736$ ) and MHCs and clinicians ( $d=.469$ ), meaning that clinicians find MHCs' lack of training to be a larger issue than both MHCs and nurses.

Research has found that managers on inpatient psychiatric wards view offering additional training to direct care staff as beneficial (Totman et al., 2011). Ward managers noted that such training improved standards on the unit, increased role clarity, and increased confidence and morale among staff.

Within a large cohort of MHCs employed at any given time, it is likely that there will be wide disparities of education, past experience/training, and overall understanding of mental health. Training provides a common foundation of information and can improve communication when it fosters the development of a shared psychological language. It's also possible that clinicians would be more motivated to collaborate with MHCs whom they know have received salient continuing education.

Adolescent inpatient psychiatric settings pose extreme and specific challenges. Therefore, it is very important that MHCs get the proper training and psychoeducation about the population they are working with—both to understand their behavior and to develop the skills to reinforce treatment goals when assisting volatile teens throughout their daily activities. If clinicians do not

have confidence in MHCs' ability to understand the purpose behind specific interventions, it is also less likely clinicians will seek out ways to collaborate with staff to promote treatment goals.

Clinicians, nurses, and MHCs all identified training barriers. Aside from the need for trainings on topics of mental health and working with vulnerable populations, research has cited an additional possible training need: developing skills to function as part of an interdisciplinary team (Temkin-Greener et al., 2004). Notably, it is not only MHCs who might benefit from such additional education. All of the team members may be unprepared for teamwork because team skills are rarely taught in medicine, nursing, social work or other disciplines (Temkin-Greener et al., 2004).

This challenge is particularly true for MHCs who may have had little no experience working on teams or practicing these skills in previous educational or occupational settings. Even if the structure were adapted to become more inclusive and collaborative, MHCs would benefit from additional support engaging in the role challenges of teamwork. For example, MHCs might be offered greater leadership opportunities through facilitating team meetings and rotating participation in rounds and other team meetings.

***RQ4: What do MHCs, nurses and clinicians report about their satisfaction with their involvement in patient treatments and the decision-making process?*** This study investigated levels of overall job satisfaction and levels of satisfaction with input in the team's decision-making process. I hypothesized that MHCs would report lower levels of satisfaction regarding their input in the teams decision-making process. The findings obtained in this study did support the primary research question and hypotheses. Similar to past research exploring differences in paraprofessionals and professionals job satisfaction (Chang, Ma, Chiu, Lin, & Lee, 2009), results showed that MHCs reported the lowest levels of satisfaction, both for overall job satisfaction as

well as satisfaction with their input in decision-making. Perhaps unsurprisingly, clinicians rated the highest levels of satisfactions on both questions.

Studies have shown that exclusion of direct care staff in treatment planning and decision making can lead to their feeling marginalized and is a factor associated with higher staff burnout and turnover among line staff, as well as poorer job performance and job satisfaction (Epstein, 2014). Notably, however, when the importance of their role is recognized, MHCs feel more validated and empowered as they do their hands-on work with patients; they have increased job satisfaction and, importantly, provide better overall care for the adolescents (Temkin-Greener et al., 2004). In fact, researchers have concluded that the most highly valued positive influence on team morale was collaboration and effective teamwork (Totman et al., 2011). Results from this study suggest that MHCs are, indeed, dissatisfied with their level of input, and would likely benefit from the opportunity to feel more valued and involved.

***RQ5: Do the predicting and mediating variables on the ITPPS predict the outcome variables of team cohesion and perceived unit effectiveness in this setting and population?***

This study used a survey instrument that was grounded in a comprehensive theoretical model that explains how team processes affect perceived team performance. Two previous research studies done by Shortell et al. (1991) and Temkin-Greener et al. (2004) tested the validity and reliability of this measure to assess interdisciplinary team processes and perceived team performance in an ICU setting and a long-term care facility for the elderly. In this study, I conducted a correlational analysis to determine if the predictor variables on the ITPPS (i.e., *leadership, communication coordination, and conflict management*) predicted the outcome processes of *team cohesion* and *perceived team effectiveness* in a long-term psychiatric hospital setting.

As postulated in the theoretical model, and similar to previous findings (e.g., Shortell et al., 1991; Temkin-Greener et al., 2004), all four variables are positive and significant predictors ( $p < .05$ ) of *team cohesion* and *team effectiveness*. In other words, as in other settings, on adolescent inpatient units the experience of *team cohesion* and *team effectiveness* is strongly associated with perceptions of *leadership, communication, coordination, and conflict management* adding further evidence for the utility of this framework.

### **Clinical Implications**

The results from this study have important clinical implications for inpatient psychiatric facilities, employers, and interdisciplinary team members. The findings could be useful in identifying potentially modifiable characteristics that could help improve interdisciplinary team functioning. Moreover, my hope is that results from this study will help give voice to, and empower MHCs, with the ultimate goal of forming more cohesive and collaborative interdisciplinary teams to improve patient care. Given the study's results highlighting the importance of training and combating hierarchical and marginalizing structures within interdisciplinary teams, I have developed guidelines and recommendations to assist institutions in promoting more skilled, communicative and cohesive team functioning. Results from this study identified the three largest barriers to team collaboration as (a) MHCs are hired at a very low level of pay, (b) MHCs are inadequately trained for the specific challenges of the job, and (c) Clinicians don't invite collaboration and input from MHCs.

**Hiring.** Improving communication and collaboration amongst interdisciplinary team members starts with the hiring process. MHC positions are entry level jobs that vary in percentage (full-time, part-time, per-diem), with full-time positions being more desirable due to the additional benefits and overtime pay. Being thoughtful in the hiring process would likely lead

to a higher retention of staff and less staff turnover, which research has determined improves patient outcomes (Brandt, Bielitz, & Georgi, 2016)

Relevant to the current discussion, in 2005 the Department of Human Services (DHS) in the state of New Jersey assembled a task force to examine state inpatient psychiatric hospitals in efforts to improve treatment outcomes and patient and staff safety. The task force examined the qualifications required for front line staff across multiple inpatient psychiatric hospitals (Governor's Mental Health Task Force, 2005). Their findings indicated that having more qualified staff had a positive effect on patient outcomes (Governor's Mental Health Task Force, 2005). Therefore, DHS recommended that it revise its practices and direct hospitals to hire the most qualified job applicants with relevant experience into permanent, higher level, full-time staff positions, and offer better pay and benefits. Additionally, DHS began to require that applicants take an exam before employment to assess their abilities (Governor's Mental Health Task Force, 2005). The committee reviewed their action plan in 2012 and outlined their progress, including improvement in staffing patterns and overall safety on the units (Governor's Mental Health Task Force, 2012).

The inpatient hospital where data from this study was collected may benefit from adopting some of the aforementioned ideas, beginning by looking at job titles in the hiring process. This hospital has two job titles for MHCs: (a) MHC I, and (b) MHC II. The positions require nearly identical qualifications and share multiple overlapping job responsibilities. It may benefit the organization to begin to hire more MHC IIs and invest in their training. Research shows that higher wages lead to lower rates of turnover among direct care workers (Sherard, 2002). Therefore, organizations should reexamine payment and benefits allocated to MHCs.



Investing in educating the staff and filling higher payed positions would likely promote consistency on the units, decrease staff turnover, and ultimately improve patient care.

**Training.** The findings from this study reveal that a lack of sufficient training for MHCs interferes with the team's ability to communicate and collaborate. Not only did clinicians and nurses rate this as a top barrier, but MHCs endorsed this to be an issue as well. MHCs acknowledging this as a barrier offers support for their possible interest in gaining greater skills and understanding mental health through ongoing opportunities for relevant training. Efforts should be made to provide proper trainings to MHCs to prepare them for the hard work and emotional challenges they will inevitably face while intervening every day with this population.

While the ability to form and maintain therapeutic relationship with troubled adolescents may come naturally for some, it is important for managers who are hiring and training staff to remember that this is a skill that can and must be taught (Hodas, 2005). Hodas outlines a number of general therapeutic skills that are essential for MHCs to receive training in to properly care for the troubled youth. These include an understanding of: (a) the therapeutic boundary, (b) relationship building skills, (c) developmental needs of adolescents, (d) function of behaviors for youth that have suffered trauma, (e) how to employ de-escalation techniques, (f) listening skills, and (g) professional self-awareness and self-control (Hodas, 2005).

Lastly, beyond the therapeutic skills that are essential for staff to have, there are certain areas of knowledge that are also imperative for team members to have a basic understanding of when working with this population, including trauma-informed care. Hodas (2005) outlines various positive benefits of educating staff on trauma-informed care, including: (a) protection against re-traumatization, (b) decrease in restraints, (c) decrease in staff and patient injuries,

(d) reduced length of stay, (e) enhancement of therapeutic skill set of staff, (f) development of a more therapeutic treatment milieu, (g) increase in job satisfaction, and (h) reduction of secondary trauma.

In the past, this organization has made efforts to educate staff on trauma-informed care through workshops. However, these trainings should be on going and reinforce the skills and knowledge relayed in these brief trainings. This is particularly important when considering the high rates of staff turnover; it would be useful for new hires to have access to the same range of training experiences as their colleagues.

**Hierarchy.** The data from this survey showed that the team identified that clinicians fail to invite input from MHCs, impeding communication and collaboration amongst team members. There is an intrinsic hierarchical nature within interdisciplinary teams. It takes efforts on part of each team members to acknowledge it is there, and actively work towards creating an environment that promotes and fosters communication and collaboration. Based on the literature on hierarchical structures in interdisciplinary teams, it is generally understood that team members may not speak up if they feel intimidated or as though their input is not valued (O'Malley & Clarke, 2009). Surely, it would benefit all team members, and the functioning of the team as a whole, if individuals knew and had warm, collegial relationships with one another. Team building workshops and exercises that include all disciplines would likely lead to a more cohesive team unit. Such familiarity might lead clinicians to invite MHCs more frequently to share their perspective on the youth with whom they spend many hours a day.

### **Limitations**

This study has several limitations that are important to note. First, data for this study were collected from the two adolescent units of a single long-term inpatient psychiatric hospital. The

small sample's findings may not be generalized to all interdisciplinary teams working in long-term inpatient psychiatric hospitals. The sample size was limited enough that further study should include other long-term inpatient adolescent psychiatric programs to compare staff experiences.

Certain limitations were imposed on this study because it was a doctoral dissertation that interfered with recruitment of participants and my ability to obtain a larger sample size, including limited resources for advertisement and dissemination of the survey, and a restricted timeframe for data collection. It is notable that, even with my connections at that hospital, I struggled to get staff to complete the surveys. It was a big ask of people who are already over-worked and underpaid to find precious time to fill out questionnaires for a research project.

The research design is built upon self-report data which could lead to bias in responses that threaten the accuracy or validity of the study. For example, responses could be biased by respondents' feelings at the time they filled out the survey, perhaps if they had an especially difficult day or week at work. Lastly, this assessment of team performance was measured at a single point in time. A program or team structure may change over the years, depending, for example, upon the values of leadership and the strength and engagement of team members. It is possible that a reassessment of team processes would reveal different strengths and weaknesses of the team performance at another point in time (Temkin-Greener et al., 2004).

Even in spite of these limitations, this study produced significant results and contributes to the scarce literature on interdisciplinary team functioning in long-term inpatient adolescent psychiatric hospitals. This study was conducted at one of the largest settings of its kind and gathered data from a substantial number of individuals. With a sample size of 53 MHCs, I feel that this study was successful in capturing the experiences of the floor staff at this hospital. The

results from this study have potential to help guide interdisciplinary teams working in similar settings in improving their communication and collaboration, and ultimately providing better care to the youth.

### **Future Research**

Four areas would be fruitful to consider for future research. First, it would be helpful to do a similar project with a qualitative aspect to get a better understanding of what team members report as impeding communication, collaboration, and team processes. Specifically, it would be advantageous to inquire more deeply into the particular aspects of communication, organizational structure, and leadership that staff perceived to be particularly challenging. Second, it would be interesting to replicate this study with a larger sample, including other long-term adolescent inpatient psychiatric facilities to increase the generalizability of findings. Comparing experiences in inpatient settings with different structures would further help our understanding of the kinds of leadership, communication, coordination, and conflict management that are associated with greater team cohesion and effectiveness. Fourth, it would be beneficial to take a closer look at the variability among MHCs, including race, gender, age, and numbers of years employed. Additionally, it would be interesting to explore the qualities of the MHCs who are the most involved in-patient care and the team's decision-making process. Researchers could explore these qualities by speaking with members of the clinical team to outline the qualities of a committed and engaged MHC. Finally, the current study focused on revealing staff perspectives and experiences. In order to work towards improving the quality of care, future research might also include the voices and experiences of the youth themselves.

## **Conclusion**

The goal of this study was to contribute to and expand upon the current literature on interdisciplinary team functioning. Specifically, this study explored the similarities and differences among MHCs' nurses', and clinicians' perceptions of team processes in an adolescent long-term inpatient psychiatric program, and identified barriers that interfered with team communication and collaboration.

Multiple factors underlie the importance of exploring how teams work together to treat youth with pervasive and persistent mental illness. It should be the priority of clinicians and staff working with these traumatized teens to continue to evaluate and work to improve treatment outcomes. Efforts on all parts of the team to work together, listen to each other, ask for and accept feedback, and trust one another will likely lead to better care for this high-need vulnerable population. Further, ongoing commitment to interdisciplinary team communication might vastly improve the working conditions for MHCs. Beyond improved teamwork, payment disparities will continue to be an issue for front line staff. Adequate staffing, training, and pay are also essential to protect, support, and retain front-line workers.

Results from this study highlight some of the fundamental aspects of team performance, including the need for team members to feel included, respected, valued, and heard. It is my hope that information from this study will help guide supervisors and managers in offering greater engagement of MHCs in patient care. When every member has a voice, the team gets closer to their shared goal of providing the best possible care to the youth.

## References

- Acker, G. M. (2004). The effect of organizational conditions (role conflict, role ambiguity, opportunities for professional development, and social support) on job satisfaction and intention to leave among social workers in mental health care. *Community Mental Health Journal*, 40(1), 65–73. <https://doi.org/10.1023/B:COMH.0000015218.12111.26>
- Alexander, J. (2006). Patients' feelings about ward nursing regimes and involvement in rule construction. *Journal of Psychiatric and Mental Health Nursing*, 13, 543–553. <https://doi.org/10.1111/j.1365-2850.2006.00977.x>
- American Academy of Child & Adolescent Psychiatry [AACAP]. (2010). *Principles of Care for Treatment of Children and Adolescents with Mental Illness in Residential Treatment Centers*. Washington, D.C.: AACAP.
- American Academy of Child & Adolescent Psychiatry. Task Force on Adolescent Hospitalization. (1990). *Model for Minimum Staffing Patterns for Hospitals Providing Acute In-patient Treatment for Child and Adolescents with Psychiatric Illness*. Washington, D.C.: AACAP.
- American Psychiatric Nurses Association. (2019). *Expanding Mental Health Care Services in America: The Pivotal Role of Psychiatric-Mental Health Nurses*. American Psychiatric Nurses Association. [https://www.apna.org/files/public/Resources/Expanding\\_Mental\\_Health\\_Care\\_Services\\_in\\_America-The\\_Pivotal\\_Role\\_of\\_Psychiatric-Mental\\_Health\\_Nurses\\_04\\_19.pdf](https://www.apna.org/files/public/Resources/Expanding_Mental_Health_Care_Services_in_America-The_Pivotal_Role_of_Psychiatric-Mental_Health_Nurses_04_19.pdf)
- Bloom, B. L., & Parad, H. J. (1976). Interdisciplinary training and interdisciplinary functioning: A survey of attitudes and practices in community mental health. *The American Journal of Orthopsychiatry*, 46(4), 669-77. <https://doi.org/10.1111/j.1939-0025.1976.tb00965.x>
- Brandt, W. A., Bielitz, C. J., & Georgi, A. (2016). The Impact of Staff Turnover and Staff Density on Treatment Quality in a Psychiatric Clinic. *Frontiers in psychology*, 7, 457. <https://doi.org/10.3389/fpsyg.2016.00457>
- Cangelo, A. & University of Hartford. Graduate Institute of Professional Psychology, (2006). *Milieu treatment with children and adolescents: A training manual for direct care staff*. (Doctoral dissertation, University of Hartford, 2006). University of Hartford.
- Chang, W., Ma, J., Chiu, H., Lin, K., & Lee, P. (2009). Job satisfaction and perceptions of quality of patient care, collaboration and teamwork in acute care hospitals. *Journal of Advanced Nursing*, 65(9), 1946-1955. <https://doi.org/10.1111/j.1365-2648.2009.05085.x>
- Commonwealth of Massachusetts Department of Mental Health. (2019). *Welcome to the Massachusetts Department of Mental Health Worcester Recovery Center and Hospital*. Retrieved from: <https://www.mass.gov/files/documents/2016/07/tx/wrch-brochure.pdf>

- Delaney, K. R. (2006). Top 10 milieu interventions for inpatient child/adolescent treatment. *Journal of Child and Adolescent Psychiatric Nursing, 19*(4), 203–214. <https://doi.org/10.1111/j.1744-6171.2006.00072.x>
- Delaney, K., & Hardy, L. (2008). Challenges faced by inpatient child/adolescent psychiatric nurses. *Journal of Psychosocial Nursing and Mental Health Services, 46*(2), 21-4. <https://doi.org/10.3928/02793695-20080201-04>
- Epstein, N. (2014). Multidisciplinary in-hospital teams improve patient outcomes: A review. *Surgical Neurology International, 5*(7supplement), 302. <https://doi.org/10.4103/2152-7806.139612>
- Freeth, D. (2001). Sustaining interprofessional collaboration. *Journal of Interprofessional Care, 15*(1), 37–46. <https://doi.org/10.1080/13561820020022864>
- Gathright, M., Holmes, K., Morris, E., & Gatlin, D. (2016). An innovative, interdisciplinary model of care for inpatient child psychiatry: An overview. *The Journal of Behavioral Health Services & Research: Official Publication of the National Council for Behavioral Health, 43*(4), 648-660. <https://doi.org/10.1007/s11414-015-9484-5>
- Gitlin, L., Lyons, K., & Kolodner, E. (1994). A model to build collaborative research or educational teams of health professionals in gerontology. *Educational Gerontology, 20*(1), 15-15. <https://doi.org/10.1080/0360127940200103>
- Governor’s Mental Health Task Force (2005). *New Jersey’s long and Winding Road to Treatment, Wellness and Recovery Final Report*. New Jersey Division of Mental Health and Addiction Services. <https://dspace.njstatelib.org/xmlui/bitstream/handle/10929/24859/m5492009a.pdf?sequence=1>
- Governor’s Mental Health Task Force. (2012). *Review of the Wellness and Recovery Transformation Action Plan from 2008-2010*. New Jersey Division of Mental Health and Addiction Services. [https://www.nj.gov/humanservices/dmhas/initiatives/wellness/WRTAP\\_Review\\_Summer\\_2012.pdf](https://www.nj.gov/humanservices/dmhas/initiatives/wellness/WRTAP_Review_Summer_2012.pdf)
- Hanrahan, N. P., Aiken, L. H., McClaine, L., & Hanlon, A. L. (2010). Relationship between psychiatric nurse work environments and nurse burnout in acute care general hospitals. *Issues in Mental Health Nursing, 31*(3), 198–207. <https://doi.org/10.3109/01612840903200068>
- Health Research & Educational Trust. (2018). *Delivering High Quality Behavioral Health Care: Practices and Innovations*. Chicago, IL: Health Research & Educational Trust. Accessed at [www.hret-hiin.org](http://www.hret-hiin.org).

- Hodas, G. (2005). *Empowering direct care workers who work with children and youth in institutional care*. Harrisburg: Pennsylvania Office of Mental Health and Substance Abuse Services
- Holmes, K., Stokes, L., & Gathright, M. (2014). The use of collaborative problem solving to address challenging behavior among hospitalized children with complex trauma: A case series. *Residential Treatment for Children & Youth, 31*(1), 41-62. <https://doi.org/10.1080/0886571X.2014.878581>
- Institute of Medicine (US) Committee on the Future Health Care Workforce for Older Americans. (2008). *Retooling for an Aging America: Building the Health Care Workforce*. Washington (DC): National Academies Press (US); 5, The Direct-Care Workforce. <https://doi.org/10.17226/12089>
- Johansson, H., & Eklund, M. (2004). Helping alliance and ward atmosphere in psychiatric inpatient care. *Psychology and Psychotherapy, 77*, 511–523. <https://doi.org/10.1348/1476083042555415>
- Kanerva, A., Kivinen, T., & Lammintakanen, J. (2015). Communication elements supporting patient safety in psychiatric inpatient care. *Journal of Psychiatric & Mental Health Nursing, 22*(5), 298-305. <https://doi.org/10.1111/jpm.12187>
- Killu, K. (1994). The role of direct care staff. *Behavioral Interventions, 9*(3), 169-176. <https://doi.org/10.1002/bin.2360090304>
- Leichtman, M. (2006). Residential treatment of children and adolescents: Past, present and future. *American Journal of Orthopsychiatry, 76*(3), 285-294. <https://doi.org/10.1037/0002-9432.76.3.285>
- Mikula, J. (2019, January 11). *The Massachusetts Health Policy Forum's Student Forum*. [PowerPoint Slides]. <https://heller.brandeis.edu/mass-health-policy-forum/student-forum/pdfs/2019/2019-mikula-slides.pdf>
- New England Network for Child, Youth & Family Services. (2009). *Supporting the Direct-Service Workforce in Behavioral Health Programs for Children & Youth in New Hampshire*. Charlotte VT.
- Noftle, J.W., Cook, S., Leschied, A., St. Pierre, J., Stewart, S.L., Johnson, A.M. (2011). The trajectory of change for children and youth in residential treatment. *Child Psychiatry and Human Development, 42*, 65-77. <https://doi.org/10.1007/s10578-010-0200-7>
- Ochoa, M. (2012). Staff perceptions and experiences at a residential treatment center. *Ursidae: The Undergraduate Research Journal at the University of Northern Colorado, 2*(2). <http://digscholarship.unco.edu/urj/vol2/iss2/8>



- O'Daniel, M., & Rosenstein, A. (2008). Professional Communication and Team Collaboration. In *Patient Safety and Quality An Evidence-based Handbook for Nurses*. Rockville, MD: Agency for Healthcare Research and Quality.
- O'Leary, K. J., Sehgal, N. L., Terrell, G., & Williams, M. V. (2012). Interdisciplinary teamwork in hospitals: A review and practical recommendations for improvement. *Journal of Hospital Medicine*, 7(1), 48-54. <https://doi.org/10.1002/JHM.970>
- O'Mahony, S., Mazur, E., Charney, P., Wang, Y. & Fine, J. (2007). Use of multidisciplinary rounds to simultaneously improve quality outcomes, enhance resident education, and shorten length of stay. *Journal of General Internal Medicine*, 22(8), 1073-1079. <https://doi.org/10.1007/s11606-007-0225-1>
- O'Malley, F., & Clarke, N. V. (2009). The Child or Adolescent Psychiatric Inpatient. In *Principles of Inpatient Psychiatry* (pp. 359-376). Philadelphia, PA: Lippincott Williams & Wilkins.
- Salary: Clinical Psychologist. (2018). Glassdoor.com. Retrieved July 31<sup>st</sup>, 2018 from [https://www.glassdoor.com/Salaries/clinical-psychologist-salary-SRCH\\_KO0,21.htm](https://www.glassdoor.com/Salaries/clinical-psychologist-salary-SRCH_KO0,21.htm)
- Sherard, B. D. 2002. *Report to the Joint Appropriations Committee on the impact of funding for direct staff salary increase in adult developmental disability community-based programs*. [http://pascenter.org/documents/WY\\_2002.pdf](http://pascenter.org/documents/WY_2002.pdf).
- Shortell, S., Rousseau, D., Gillies, R., Devers, K., & Simons, T. (1991). Organizational assessment in intensive care units (ICUs): Construct development, reliability, and validity of the ICU nurse-Physician questionnaire. *Medical Care*, 29(8), 709-726. <https://doi.org/10.1097/00005650-199108000-00004>
- Smith, Y., & Spitzmueller, M. C. (2016). Worker Perspectives on Contemporary Milieu Therapy: A Cross-Site Ethnographic Study. *Social work research*, 40(2), 105–116. <https://doi.org/10.1093/swr/svw003>
- Substance Abuse and Mental Health Services Administration. (2016). *National Mental Health Services Survey (N-MHSS): 2014. Data on Mental Health Treatment Facilities*. BHSIS Series S-87, HHS Publication No. (SMA) 16-5000. Rockville, MD.
- Sutcliffe, K. M., Lewton, E., & Rosenthal, M. M. (2004). Communication failures: an insidious contributor to medical mishaps. *Academic Medicine: Journal of the Association of American Medical Colleges*, 79(2), 186–94. <https://doi.org/10.1097/00001888-200402000-00019>
- Temkin-Greener, H., Gross, D., Kunitz, S. J., & Mukamel, D. (2004). Measuring interdisciplinary team performance in a long-term care setting. *Medical Care*, 42(5), 472-481. <https://doi.org/10.1097/01.mlr.0000124306.28397.e2>

- The Joint Commission. (2015). *Sentinel event data: Root causes by event type*. Retrieved from: [http://www.jointcommission.org/assets/1/18/Root\\_Causes\\_Event\\_Type\\_2004-3Q\\_2015.pdf](http://www.jointcommission.org/assets/1/18/Root_Causes_Event_Type_2004-3Q_2015.pdf)
- Totman, J., Hundt, G., Wearn, E., Paul, M., & Johnson, S. (2011). Factors affecting staff morale on inpatient mental health wards in England: A qualitative investigation. *Biomed Central Ltd*. <https://doi.org/10.1186/1471-244X-11-68>
- U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration. (2014). National Mental Health Services Survey (N-MHSS): 2014, Data on Mental Health Treatment Facilities. Retrieved from [https://www.samhsa.gov/data/sites/default/files/2014\\_National\\_Mental\\_Health\\_Services\\_Survey.pdf](https://www.samhsa.gov/data/sites/default/files/2014_National_Mental_Health_Services_Survey.pdf)
- Vargas, L. A., & De Dios Brambila, A. (2005). Inpatient Treatment Models. In *Handbook of Mental Health Services for Children, Adolescents, and Families* (pp. 133-149). New York, NY: Kluwer Academic / Plenum.
- van der Kolk, B. A. (2014). *The body keeps the score: Brain, mind, and body in the healing of trauma*. New York, NY, US: Viking.
- Voogt, L., Goossens, P., Nugter, A., & Achterberg, T. (2015). The patient's perspective on "Providing structure" in psychiatric inpatient care: An interview study. *Perspectives in Psychiatric Care*, 51(2), 136-147. <https://doi.org/10.1111/ppc.12076>
- Walsh, A. S. (2013). *Interdisciplinary Collaboration for Youth Mental Health: A National Study* (Unpublished master's thesis). University of South Florida.
- Weinberg, D., Cooney-Miner, D., Perloff, J., Babington, L., & Avgar, A. (2011). Building collaborative capacity: Promoting interdisciplinary teamwork in the absence of formal teams. *Medical Care*, 49(8), 716-723. <https://doi.org/0.1097/MLR.0b013e318215da3f>
- Yan, L. (2017). A concept analysis of interdisciplinary collaboration in mental healthcare. *Nursing & Healthcare*, 1(2). <https://doi.org/10.31031/COJNH.2017.01.000506>
- Zimmerman, D. P., & Cohler, B. J. (1998). From disciplinary control to benign milieu in children's residential treatment. *International Journal of Therapeutic Communities*, 34, 123-146. [https://doi.org/10.1300/J007v18n02\\_02](https://doi.org/10.1300/J007v18n02_02)

## Appendix A: ITPPS

<p><b>Directions:</b> Please answer the following questions by circling the number from 1 to 5 that most accurately describes your work environment, with 1 meaning Strongly Disagree and 5 meaning Strongly Agree.</p> <p><b>Definitions:</b> <u>Team:</u> Co-workers with whom you share responsibility for patient (participant) care.</p> <p><u>Team Leader:</u> Generally, this is the person to whom you report. However, there may be more than one person you consider your team leader. If this is the case, please check the answer that most closely corresponds to your overall impression of your leadership.</p>
--

Section I: Part A	Strongly Disagree	2	3	4	Strongly Agree
1) When possible, my team leader allows team members to solve their own patient care problems.	1	2	3	4	5
2) As a team member, I am able to influence my team leader as much as she/he influences me.	1	2	3	4	5
3) My team leader does not encourage me to solve my own problems.	1	2	3	4	5
4) My team leader gives me opportunities for personal growth and development.	1	2	3	4	5
5) I am uncertain where I stand with the team leader.	1	2	3	4	5
6) My team leader stresses standards of excellence to the team.	1	2	3	4	5
7) My team leader does not make her/his expectations clear to team members.	1	2	3	4	5
8) My team leader is sensitive to the needs of the team.	1	2	3	4	5
9) The team leader does not encourage members to take the first step.	1	2	3	4	5
<b>Section I: Part B</b>					
1) I look forward to working with others each day.	1	2	3	4	5
2) My team has goals that are different than my own.	1	2	3	4	5
3) I am proud of being part of my team.	1	2	3	4	5
4) I identify with the goals and objectives of my team.	1	2	3	4	5
5) In our team meetings, we talk about and resolve the necessary issues.	1	2	3	4	5

<b>Section I: Part B (continued)</b>	<b>Strongly Disagree</b>			<b>Strongly Agree</b>	
6) If I had the chance to change teams for the same pay and same work, I would not want to.	1	2	3	4	5
7) We usually do not get much done in team meetings.	1	2	3	4	5
8) Our team meetings are disorganized.	1	2	3	4	5
9) I feel that I am part of my team.	1	2	3	4	5
<b>Section I: Part C</b>					
1) Written plans and schedules within our team, are very effective.	1	2	3	4	5
2) It is not easy to talk to other members of the team.	1	2	3	4	5
3) I never have to double-check information given to me by other team members.	1	2	3	4	5
4) When team members talk, we all understand each other.	1	2	3	4	5
5) I find it easy to ask the advice of others in my team.	1	2	3	4	5
6) I have received incorrect information from others in this team more than once.	1	2	3	4	5
7) I enjoy talking to other members of the team.	1	2	3	4	5
8) Information passed between team members is accurate.	1	2	3	4	5
9) I feel that certain team members do not totally understand the information they receive.	1	2	3	4	5
10) Team members are easily available to assist each other.	1	2	3	4	5
11) Others in my team have a good understanding of patient care plans and goals.	1	2	3	4	5
12) There is effective communication between most team members about patient care.	1	2	3	4	5
13) I feel that I have a good understanding of patient care plans.	1	2	3	4	5

<b>Section I: Part C (continued)</b>	<b>Strongly Disagree</b>			<b>Strongly Agree</b>	
14) Team members are not well informed regarding events that happen on other shifts.	1	2	3	4	5
15) I look forward to working with my team each day.	1	2	3	4	5
<b>Section I: Part D</b>					
1) All team members work hard to solve a problem.	1	2	3	4	5
2) Our team does a good job in meeting family member needs.	1	2	3	4	5
3) A dispute between team members will not be resolved until everyone is happy with the decision.	1	2	3	4	5
4) All team members contribute based on their experience and expertise to produce a quality solution.	1	2	3	4	5
5) When two members of a team disagree, they generally involve their team leader in resolving their issue.	1	2	3	4	5
6) Our team does a good job in meeting patient care needs.	1	2	3	4	5
7) Disagreements between team members are ignored or avoided by other team members.	1	2	3	4	5
8) Our team responds well to emergencies.	1	2	3	4	5
9) Often, when team members disagree, they will ignore the problem, pretending it will 'go away'.	1	2	3	4	5
10) Our team leader rarely has to resolve a dispute between team members.	1	2	3	4	5
11) Our team almost always meets its patients' care needs.	1	2	3	4	5
12) Team members tend to withdraw from a conflict.	1	2	3	4	5
13) Although there are a variety of patients, our team's outcomes are very good.	1	2	3	4	5
14) Overall, our team functions very well together.	1	2	3	4	5
15) In this team, there are problems that regularly need to be referred to someone higher up.	1	2	3	4	5
16) Within our team, all points of view are considered when solving a problem.	1	2	3	4	5

**Section II:**

**Do you ever attend the WEEKLY INTERDISCIPLINARY TEAM (also known as Intake and Assessment Team) meetings?**

**No -- SKIP TO SECTION III on page 5**

**Yes -- How often?**

Weekly

Monthly

Less than monthly

**Please answer the following based on the WEEKLY INTERDISCIPLINARY (or Intake and Assessment) TEAM meetings you have attended.**

	<b>Strongly Disagree</b>			<b>Strongly Agree</b>		
1) Most of the time team members are well prepared for case presentations and discussion.	1	2	3	4	5	
2) People are reluctant to speak their minds during the meetings.	1	2	3	4	5	
3) All disciplines are well represented in our team meetings.	1	2	3	4	5	
4) Our discussions often focus on quality of life and on psychosocial issues as they relate to patient care.	1	2	3	4	5	
5) At times meetings are dominated by one or two individuals.	1	2	3	4	5	
6) There is a lot of respect between team members for each other and for different points of view.	1	2	3	4	5	
7) The team meetings often seem to drag and we don't get everything that needed to be done, done.	1	2	3	4	5	
8) Often, team members lack knowledge about case details.	1	2	3	4	5	
9) During discussions people tend to be defensive and do not react well to different points of view.	1	2	3	4	5	
10) The facilitator creates a comfortable atmosphere, fosters communication, and reinforces members input.	1	2	3	4	5	
11) Most of our discussions about patient care focus on medical issues and interventions.	1	2	3	4	5	
12) Team members are held accountable for the things they agree to do.	1	2	3	4	5	
13) Sometimes the meetings are very tense .	1	2	3	4	5	
14) Often the facilitator tends to dominate the discussion.	1	2	3	4	5	
15) Generally we discuss each patient care issue with a specific goal in mind and reach a resolution.	1	2	3	4	5	
16) Meetings are often dominated by one discipline.	1	2	3	4	5	

<b>Section II: continued</b>	<b>Strongly Disagree</b>			<b>Strongly Agree</b>	
17) The meetings offer a safe place to discuss most ideas and concerns.	1	2	3	4	5
18) Generally, the meetings are run quite efficiently and we accomplish a lot.	1	2	3	4	5
19) It is clear who is responsible for what actions at the end of the discussion.	1	2	3	4	5
20) Some issues come up over and over again, even though they have been addressed before.	1	2	3	4	5
21) One or two team members seem to get blamed frequently when problems arise.	1	2	3	4	5
22) Discussion is often scattered, and at times we have a difficult time reaching consensus.	1	2	3	4	5

**Section III: Please circle the number that most accurately describes your workplace.**

**Part A**

On an average day.....

1) My workplace is	<b>Hectic</b>	1	2	3	4	5	<b>Calm</b>
2) My workplace is	<b>Stressful</b>	1	2	3	4	5	<b>Pleasant</b>
3) My workplace is	<b>Unnecessarily noisy</b>	1	2	3	4	5	<b>Reasonably quiet</b>
4) My workplace has	<b>Many distractions</b>	1	2	3	4	5	<b>Few distractions</b>
5) The temperature in my workplace is	<b>Too hot or cold</b>	1	2	3	4	5	<b>Comfortable</b>
6) The supplies I use are of	<b>Low Quality</b>	1	2	3	4	5	<b>High Quality</b>
7) The supplies I need are usually	<b>Out of Stock</b>	1	2	3	4	5	<b>Available</b>
8) The supplies I need are usually	<b>Not Organized</b>	1	2	3	4	5	<b>Well Organized</b>
9) The supplies available are usually	<b>Not enough</b>	1	2	3	4	5	<b>Sufficient</b>
10) We are usually	<b>Under Staffed</b>	1	2	3	4	5	<b>Well Staffed</b>

**Section III: Part B**

Overall, how satisfied are you in your job? (Mark an X on the correct symbol)

**Section IV: BACKGROUND INFORMATION**

To mark your answer, please check the correct box or PRINT your answer in the space provided.

**1) Education:**

- a) Highest Education level:  Less than High School: Last grade completed: \_\_\_\_\_  
 High School  College Graduate  
 More than High School  Post Graduate  
 Other (specify): \_\_\_\_\_

- b) Specialty training/certification:  No  
 Yes (specify): \_\_\_\_\_

**2) Experience:**

- a) Your current occupation or profession:  Aide  Nurse  
 Social Worker  Physician  
 Other (Specify): \_\_\_\_\_
- b) Years employed in your current occupation or profession: \_\_\_\_\_ years
- c) Employee status in this PACE program:  Employee  Contract
- d) Full-time or Part-time employee:  Full-time  Part-time  Per Diem
- e) Years at current organization: \_\_\_\_\_ years
- f) Current Job Title: \_\_\_\_\_
- g) Years in current position \_\_\_\_\_ years
- h) Within your PACE program, name the center(s) you work with or at:  
 \_\_\_\_\_
- i) Is your team leader a:  Nurse  Social Worker  
 Physician  Other specify:  
 \_\_\_\_\_

**3) Demographics:**



a) Age: \_\_\_\_\_

b) Gender:  Female  
 Male

c) Marital Status:  Married  Divorced  
 Single  Widowed  Other(specify): \_\_\_\_\_

d) How many children under 18 live in your household? \_\_\_\_\_

e) How would you describe your ethnicity/race (specify) \_\_\_\_\_

f) Primary language used at work IF other than English (specify) \_\_\_\_\_

If there is anything else about your work environment that you believe directly affects patient outcomes, and that was not captured in this questionnaire, please feel free to let us know on this page or on the back.

#### Team Performance Scales

Domain/Scale	Survey Questions (refer to Survey Instrument)	Total Number of Items Per Scale
Leadership	Section I, Part A: Q.1-9	9
Team Cohesion	Section I, Part B: Q. 1-4, 6,9 Section I, Part C: Q. 15	7
Communication	Section I, Part C: Q. 2-9, 12, 14	10
Coordination	Section I, Part B: Q. 7,8 Section I, Part C: Q. 1,10,11,13	6
Conflict Management	Section I, Part B: Q. 5 Section I, Part D: Q. 1,3,5,7,9,10,12,15,16	10
Team Effectiveness	Section I, Part D: Q. 2,4,6,8,11,13,14	7
<i>Workplace Conditions</i>	Section III, Part A: Q. 1-5	5
<i>Workplace Resources</i>	Section III, Part A: Q.6-10	5
<b>Team Meeting Sub-Scales</b>	NOT USED IN THE <u>MEDICAL CARE</u> PAPER	
Readiness & Effectiveness	Section II: 1,3,4,7,8,11,15,18,20	
Communication	Section II: 2,6,9,13,17	
Leadership	Section II: 5,10,12,14,16, 19,21,22	

Rank order on all questions needs to be standardized so that 1 indicates a strong response against the concept being measured. Scoring for the following questions needs to be reversed.

Section I, Part A: Q. 3,5,7,9  
Section I, Part B: Q. 2, 7, 8  
Section I, Part C: Q. 2,6,9,14  
Section I, Part D: Q. 7, 8,12,15

\*Survey adapted from Shortell and Rousseau (1998), The adapted ITPPS was first used in the following study: Temkin-Greener, H., Gross, D., Kunitz, S. J., & Mukamel, D. (2004). Measuring interdisciplinary team performance in a long-term care setting. *Medical Care*, 42(5), 472-481. <https://doi.org/10.1097/01.mlr.0000124306.28397.e2>

## Appendix B: Additional Survey Questions

1. Please indicate the extent to which you experience any of the following barriers to communication/collaboration across disciplines in your interdisciplinary team (where “barrier” means anything that prevents receiving and understanding information team members convey, or prevents team members from working together toward a common goal).

	Not a barrier (Do not experience this at all)	Rarely a barrier	Somewhat of a barrier	Moderate barrier	Extreme barrier (Interferences significantly with communication/collaboration across disciplines)
<b>Differences in schedules and professional routines</b> that makes it difficult to find time to communicate.	1	2	3	4	5
<b>Understaffing</b> which limits time for interdisciplinary collaboration	1	2	3	4	5
<b>Lack of training</b> for MHCs which limits their ability to enforce patient treatment goals	1	2	3	4	5
Clinicians don't invite input from MHCs <b>(Hierarchy)</b>	1	2	3	4	5

<b>Differences in Culture and Ethnicity</b> (in some cultures, individuals refrain from being assertive or challenging opinions & may communicate in less direct ways)	1	2	3	4	5
MHCs do not receive enough income to have an incentive to communicate and collaborate with clinicians. <b>(Differences in accountability, payment, and rewards)</b>	1	2	3	4	5
<b>Personality differences</b> (lack of trust/respect among team)	1	2	3	4	5
<b>Concerns regarding clinical responsibility</b> (clinicians accustomed to assuming total responsibility; unease with allowing others to be involved in clinical decision-making)	1	2	3	4	5

- Please indicate your level of satisfaction with your input and involvement in the team's decision-making process (e.g. decisions about patient opportunity status, how often you are consulted about patient behaviors and safety).

Extremely Dissatisfied								Extremely Satisfied
1	2	3	4	5				

### **Appendix C: Email Content for Recruiting Participants**

Hello,

My name is Olivia Friedman and I am a clinical psychology doctoral student at Antioch University of New England, in Keene, New Hampshire. I am writing to invite you to participate in my research study looking at how mental health counselors and clinicians work together as part of an interdisciplinary team. I would be very grateful if you would be willing to participate in this research.

I am emailing to ask if you would take about 15-20 minutes to complete a survey and offer your views on how well people on your team work together. Your participation is completely voluntary. The whole project is online and your identity and answers will remain anonymous and confidential. If you choose not to participate or decide to withdraw from the study at any time, you can do so without penalty or loss of benefit to yourself.

If you would like to participate in the study, please click on the following secure link to the consent form. Once you do that, you will be able to complete the surveys:

If you have any questions or concerns about the current study, please do not hesitate to contact me.

Thank you for your time.

Sincerely,

Olivia Friedman

## Appendix D: Social Media Post Content

Hello!

I am writing to invite you to participate in my research study looking at how mental health counselors and clinicians work together as part of an interdisciplinary team. Your participation in this research would help us better understand the benefits and challenges of working as part of a team to make shared decisions for the youth in your care. I would be very grateful if you would be willing to participate in this research.

Are you...

- 18 years old or older?
- A current or recent (worked within the past two years) employee of the [unit and hospital surveyed]?

If you answered yes to both of the above questions then you qualify for participation!

The study will involve filling out an anonymous online survey and a couple other questions about how your team works together.

Individuals who agree to participate in this study will be able to enter in a raffle to receive one of two **\$50 Amazon gift cards**. After finishing the 15-20-minute survey, you have the option to send me an email to be entered into the raffle. All of your personal information and responses will be kept **confidential**.

**Are you interested in participating?** If so, please read and sign the informed consent form, which is linked below. This document will give you more information about the nature and purpose of the study, including your rights as a participant and any potential risks and benefits you may receive through participation.

Once you have read and signed the informed consent form, you can then click a link to fill out the brief online survey. Thank you so much for your consideration. If you have any questions or concerns, please do not hesitate to contact me.

Thank you for your time.

Sincerely,

Olivia Friedman

## **Appendix E: Informed Consent**

### **TITLE OF STUDY:**

Exploring Communication Between Staff and Clinicians on an Inpatient Adolescent Psychiatric Unit

### **PRINCIPLE INVESTIGATOR:**

Olivia Friedman, M.S.  
Department of Clinical Psychology  
Antioch University of New England  
40 Avon St., Keene, NH, 03431

### **PURPOSE OF STUDY:**

You are being asked to participate in a research study that involves an online survey. Before you decide to participate in this study, it is important that you understand why the research is being done and what it will involve. Please read the following information carefully. Please ask the researcher if there is anything that is not clear or if you need more information.

The purpose of this study is to look at communication and collaboration between mental health counselors and clinicians on long-term inpatient psychiatric hospitals. The study is exploring if mental health counselors and clinicians differ in their perception of interdisciplinary team coherence and effectiveness. Barriers to communication and collaboration will also be explored.

### **Explanation of Procedures:**

As a research participant, you will be asked to complete an online questionnaire. When accepting the terms of the informed consent, you will be presented with demographic questions, the Interdisciplinary Team Process and Performance Survey (ITPPS), and two additional questions. It is estimated to take fifteen to twenty minutes to complete.

### **Potential Risks:**

The research involves no more than minimal risk and is not expected to produce any discomfort. You are also free to end your participation at any time without any explanation.

**There is a small possibility that you may experience discomfort in responding to items that inquire about difficulties on your team at work. Other than possible discomfort in thinking about your job stress, we do not anticipate any risk to you.** In the case that the questionnaire or specific items on it are too stressful, you are welcome to skip any question or stop filling out the online questionnaire.

### **Confidentiality:**

Participant data will be kept confidential. Your name will not appear on any form. If you choose to send me an email to enter the raffle and/or a summary of the analyzed data, your email will be temporarily saved in a locked file, and will be deleted following the raffle. No reports about this

study will contain identifying information. Your employer will not be notified of your choice to participate or not to participate.

### **Potential Benefits**

After participating in this study, you have the option to send me an email (thus providing your email address) to be entered into **a raffle to win a \$20 Amazon gift card**. Your email address will be kept in a locked file separate from the data. If you desire, by emailing me you can also ask me to send you the results from this project when the data are available.

### **Voluntary Participation**

Your participation in this study is voluntary. It is up to you to decide whether to take part in this study. If you decide to take part in this study, you will be asked to sign a consent form. After you sign the consent form, you are still free to withdraw at any time and without giving a reason. Withdrawing from this study will not affect the relationship you have, if any, with the researcher. If you withdraw from the study before data collection is completed, your data will not be included in the results.

### **Contact Information**

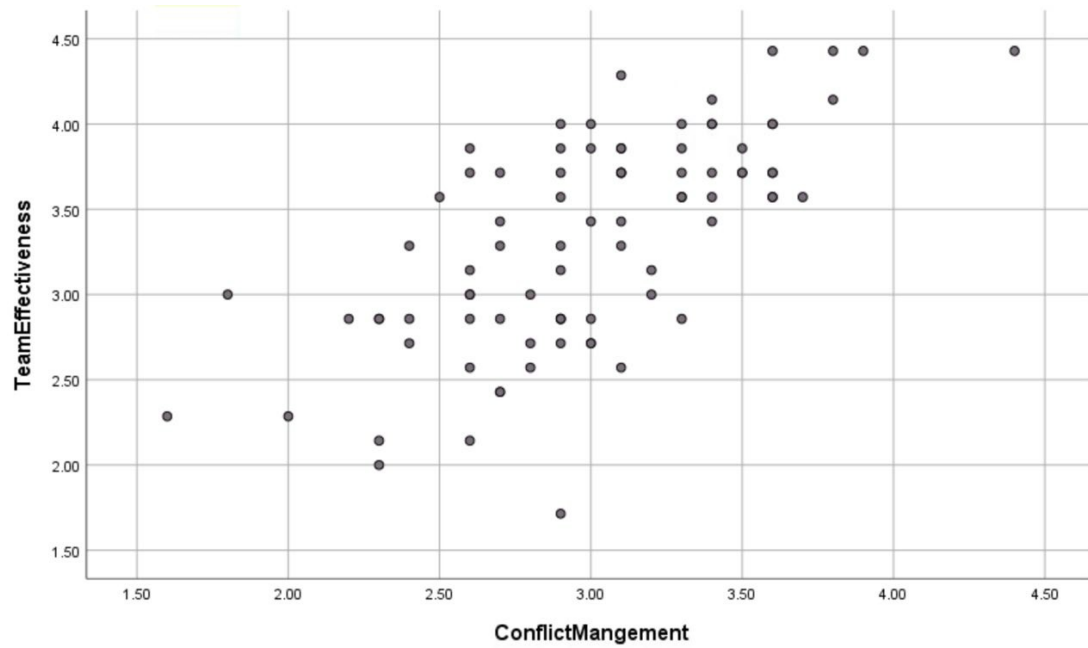
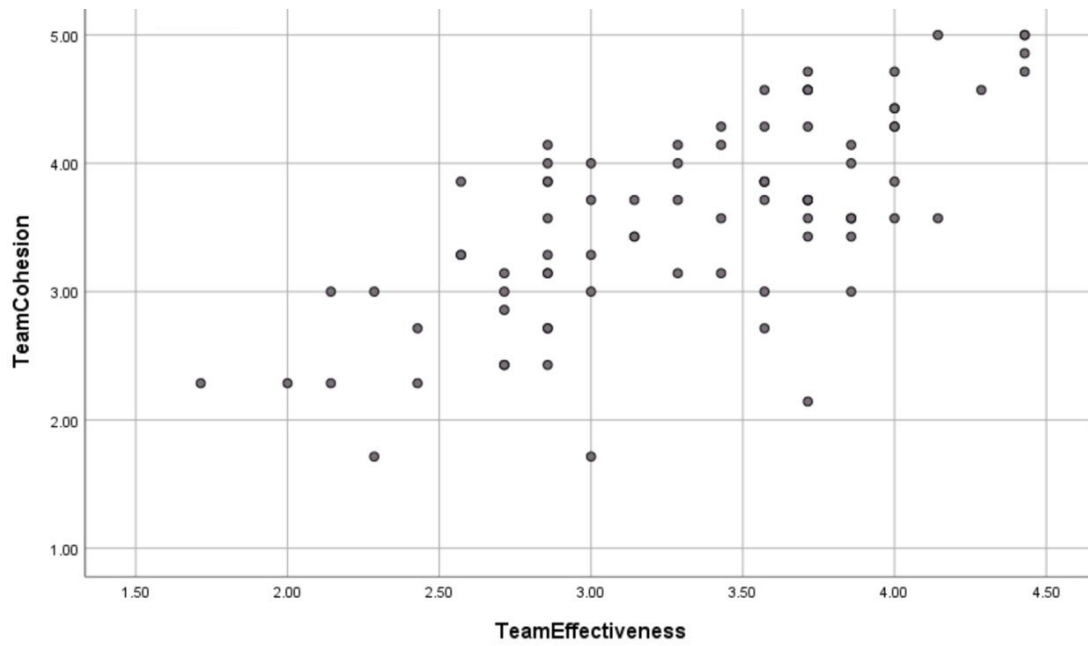
If you have questions at any time about this study, you may contact the researcher whose contact information is provided on the first page. If you have questions regarding your rights as a research participant, or if problems arise which you do not feel you can discuss with the Primary Investigator, please contact the Chair of the Antioch University New England Institutional Review Board.

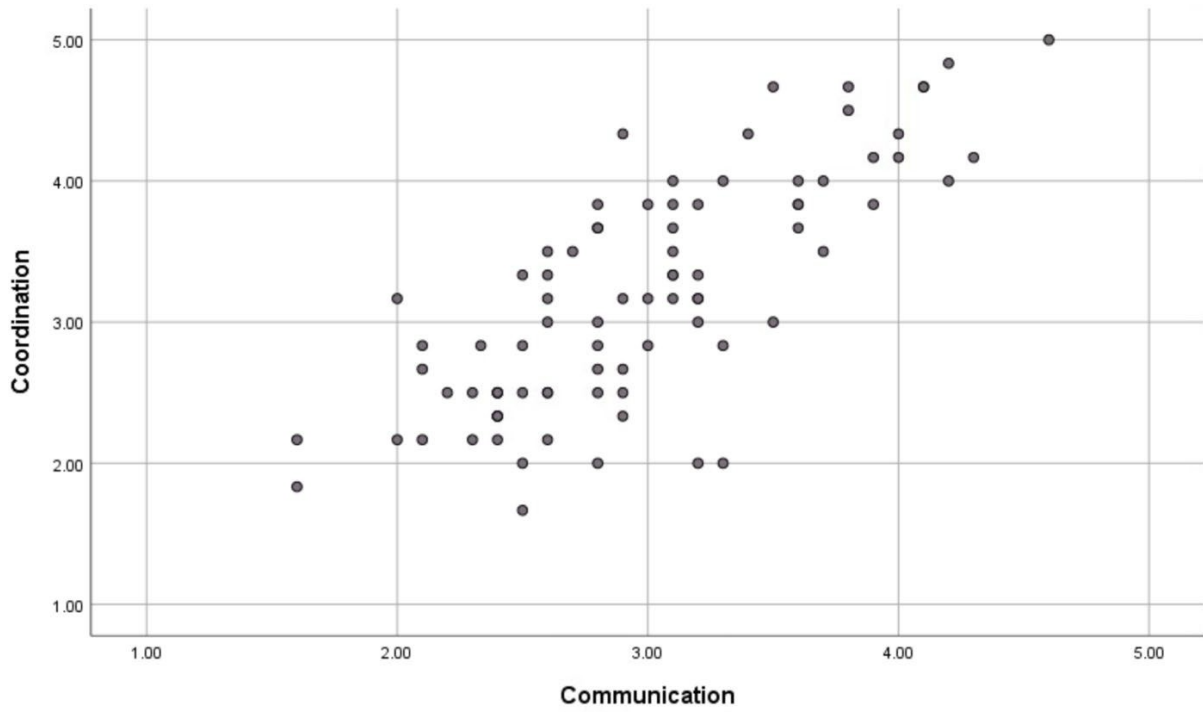
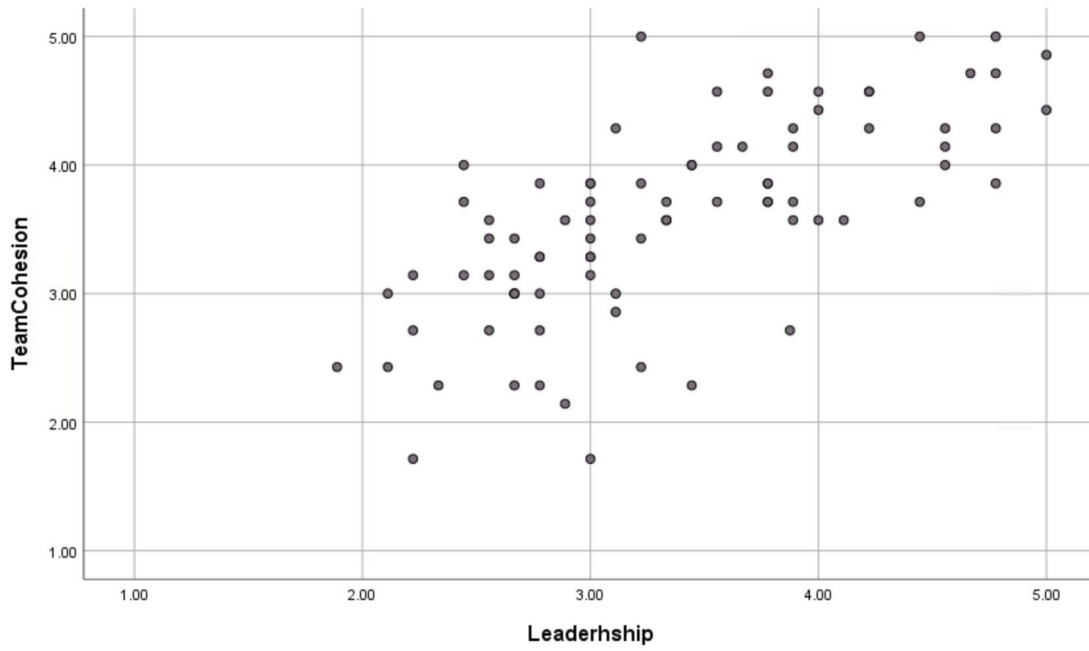
Thank you for your time!

Button to Press "Accept"

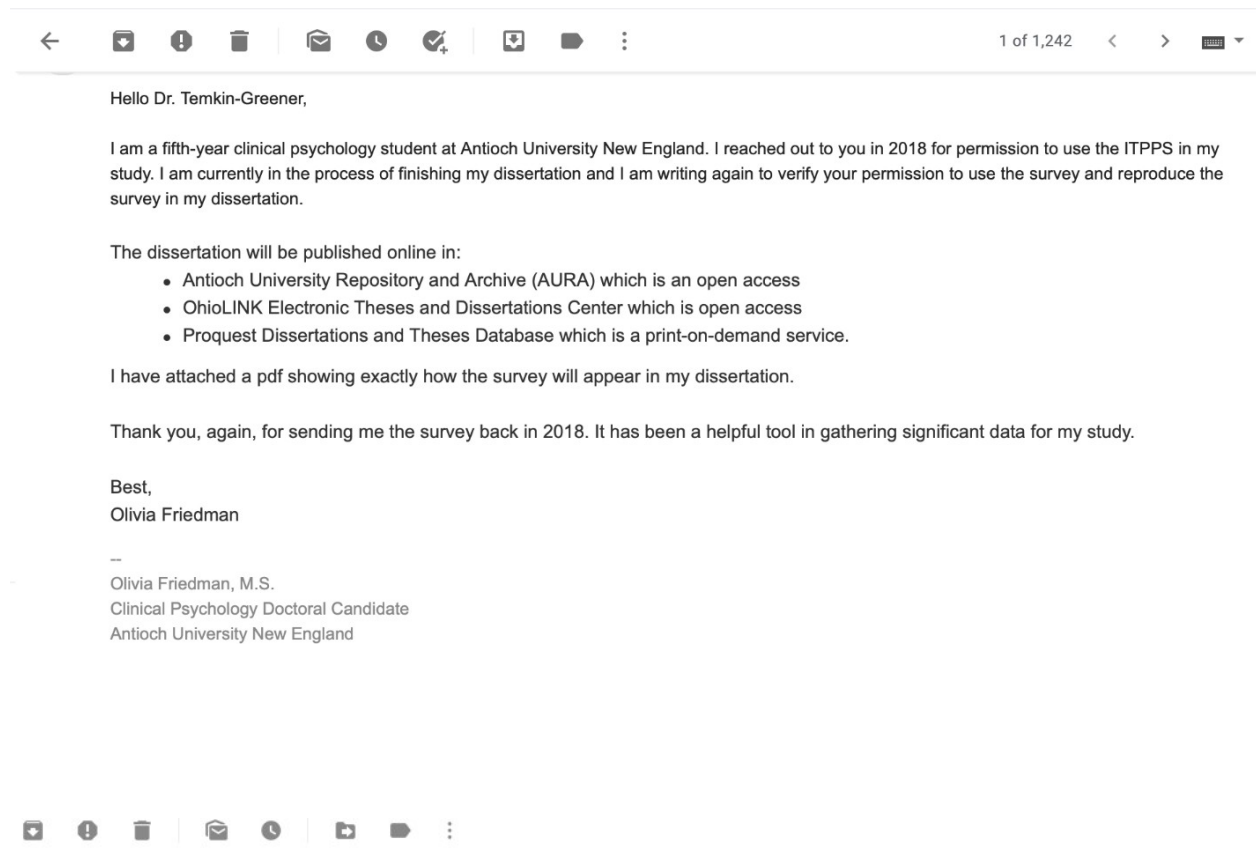


## Appendix F: Bivariate Scatter Plots





## Appendix G: Copyright Permission



**Temkin-Greener, Helena**

to me ▾

9:14 AM (10 hours ago)



Dear Olivia,

First of all, congratulations on completing your dissertation! Yes, you are free to use and to reproduce the survey tool in your dissertation. **However**, you should appropriately note the source for the tool (perhaps on the last page of the tool), and my publication in which it was first used.

Best regards,

Helena

-----  
**Helena Temkin-Greener, PhD**

*Professor*

Table 1. Sample Characteristics of Participants (n= 84)

Characteristic	n	Frequency %
<b>Gender</b>		
Female	48	57.1%
Male	25	29.8%
<b>Age</b>		
18-24	7	8.3%
25-34	37	44%
35-44	13	15.5%
55-64	7	8.3%
65+	1	1.2%
<b>Ethnicity</b>		
White/Caucasian	55	65.5%
Black/African American	13	15.5%
Hispanic/Latino	2	2.4%
Asian/Asian American	3	3.6%
<b>% of Employment</b>		
Full-time	38	45.2%
Part-time	27	32.1%
Per-Diem	16	19%
No longer employed	3	3.6%
<b>Years Employed</b>		
Less than 1 year	12	14.3%
1-2 years	23	27.4%
3-5 years	26	31%
6-10 years	11	13.1%
10+	12	14.3%
<b>Education</b>		
GED	1	1.2%
High School	14	16.7%
College Graduate	43	51.2%
Post Graduate	24	28.6%
<b>Position</b>		
Mental Health Counselor	53	63.1%
Occupational Therapist	2	2.4%
Social Worker	7	8.3%
Psychologist	6	7.1%
Psychiatrist	3	3.6%
Nurses	13	15.5%

Table 2. ITPPS Domain Scores by Occupation

Scales	All Team Members N=84			MHC N=53	Clinicians N=18	Nurses N=13	Cohen's D Pairwise Comparisons		
	Mean Score	F-Stat	P Value	Mean Score	Mean Score	Mean Score	MHC vs Clinicians	MHC vs Nurses	Clinicians vs Nurses
<b>Team Constructs</b>									
Leadership	3.36	6.780	.002*	3.17	3.90	3.39	1.021***	.297*	.720**
Coordination	3.2	3.911	.024*	3.03	3.64	3.26	.753**	.303*	.449*
Conflict Management	2.99	2.365	.101	2.90	3.24	3.05	.789**	.335*	.473*
Communication	2.98	4.418	.015*	2.84	3.33	3.07	.799**	.394*	.475*
Team Cohesion	3.59	4.433	.015*	3.43	4.03	3.62	.839***	.256*	.604**
Team Effectiveness	3.33	4.857	.010*	3.18	3.33	3.47	.830***	.530**	.422*
<b>Control Variables</b>									
Workplace conditions	2.38	.348	.707	2.34	2.42	2.51	.110	.094	.097
Workplace resources	3.02	.703	.498	2.77	3.02	2.98	.281*	.245*	.046
Satisfaction with decision-making	2.93	13.336	.000*	2.49	3.72	3.62	1.23***	1.15***	.113
*Differences in means between occupations are statistically significant at P<0.05.						* Effect size d=0.2 (small)*, d=0.5 (medium)**, d=0.8 (large)***			

Table 3. Correlations

Process Variables		Outcome Variables							
Mediating Variables									
Variable		2	3	4	5	6	7	8	
1. Leadership	1.0								
2. Communication	.560*	1.0							
3. Conflict Management	.545*	.724*	1.0						
4. Coordination	.674*	.777*	.709*	1.0					
5. Team Effectiveness	.565*	.658*	.679*	.696*	1.0				
6. Team Cohesion	.697*	.644*	.672*	.665*	.700*	1.0			
7. Workplace Conditions	.371	.463	.436	.432	.366	.460	1		
8. Workplace Resources	.337	.537*	.446	.515*	.387	.439	.499	1	

\*Correlation is significant at  $p < .05$

\*The interested reader can refer to bivariate scatter plots in Appendix F

Figure 1. Team Meeting Attendance Frequency

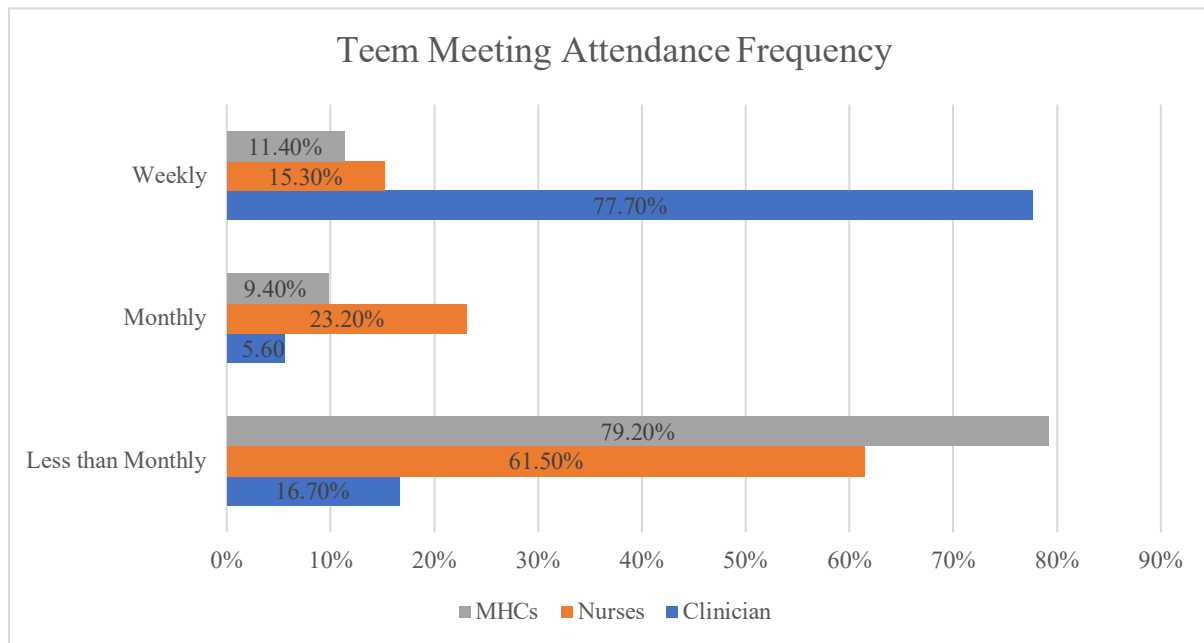
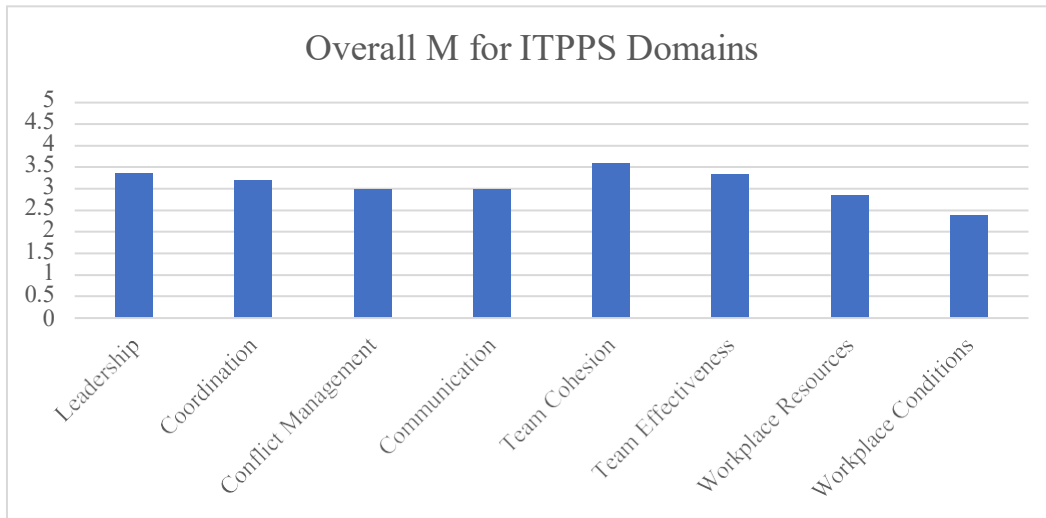


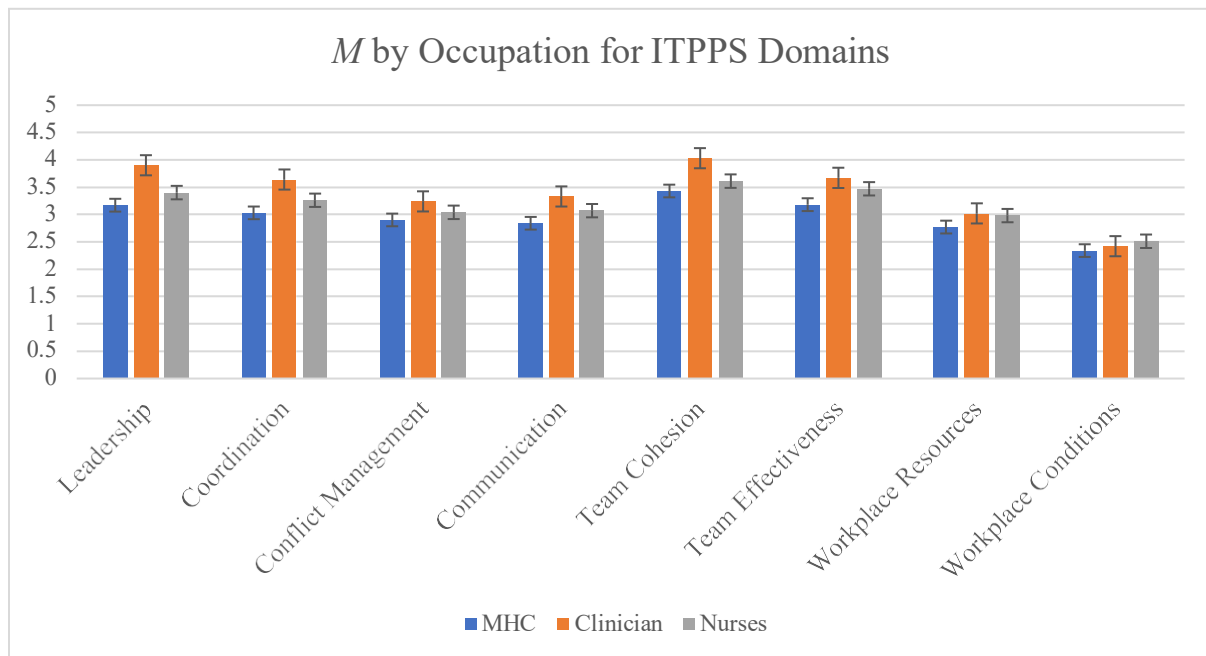
Figure 2. Overall M for ITPPS Domains



*\*1=most negative; 5=most positive*

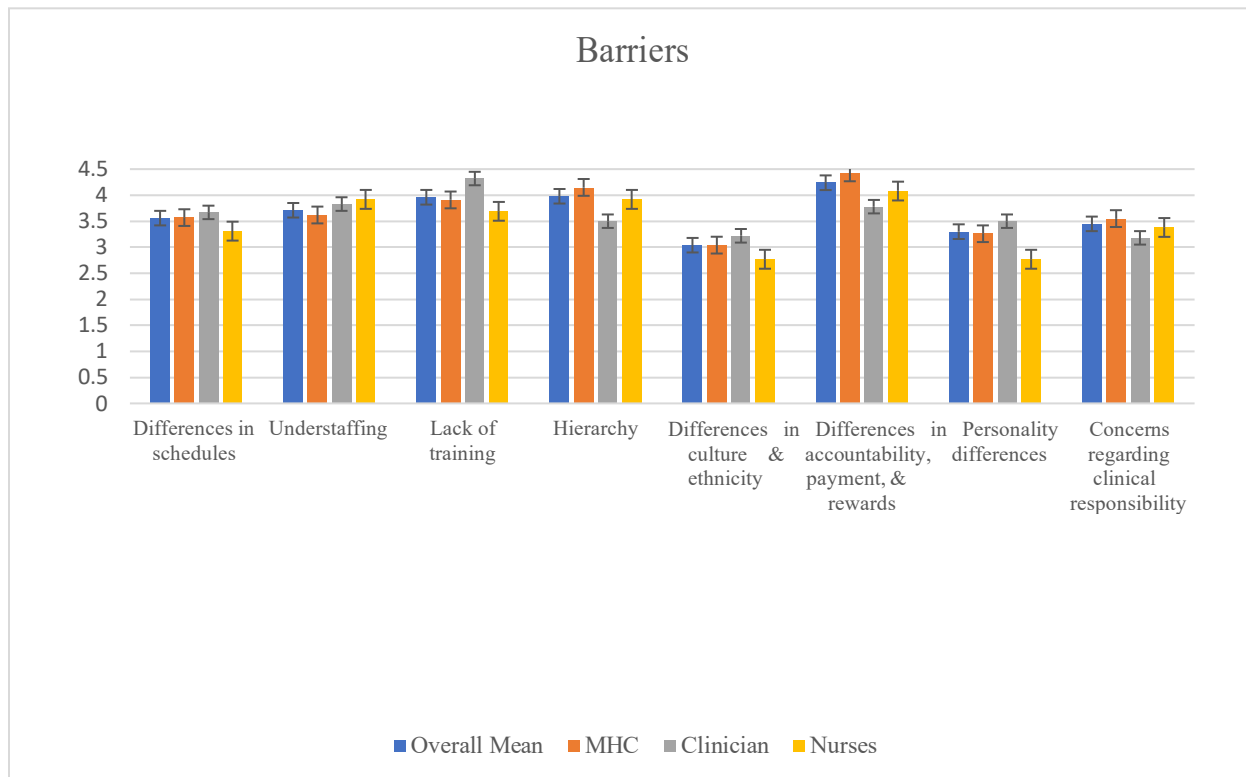


**Figure 3. M by Occupation for ITPPS Domains**



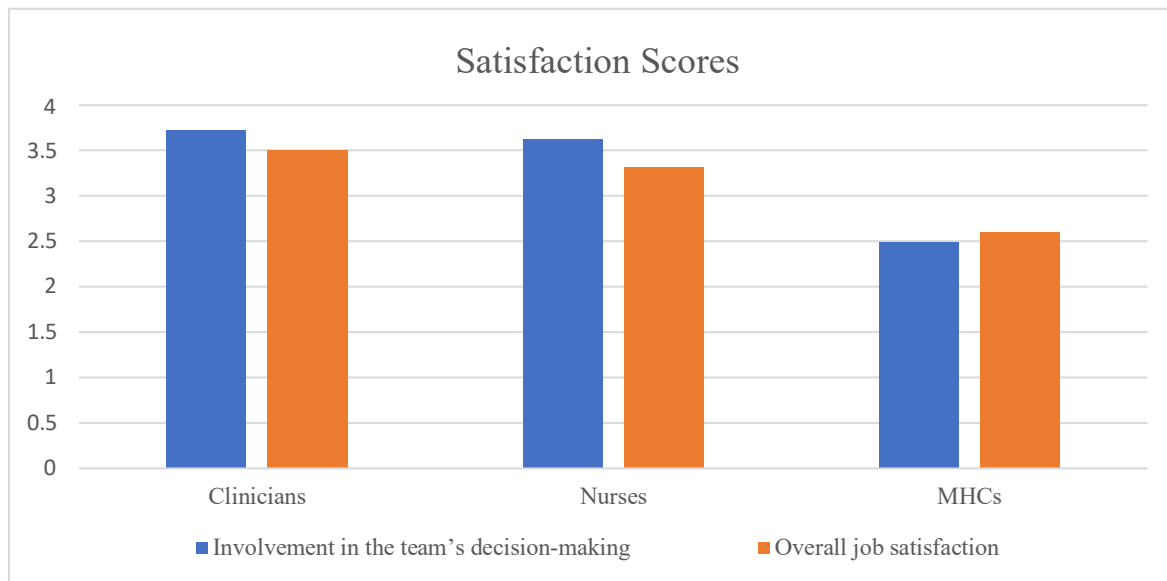
\*1=most negative; 5=most positive

**Figure 4. M Barrier Ratings by Occupation Group**



\*1=Not a barrier; 5=Extreme Barrier

Figure 5. Satisfaction M by Occupation Groups



*\*1=most negative; 5=most positive*