Interprofessional Teamwork in the Inpatient Psychiatric Unit

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Abstract

Interprofessional teamwork involves professionals of different disciplines working collaboratively together to meet specific goals or solve problems. Members of health care teams must effectively collaborate to promote favorable quality of care. Effective collaboration has been found to be associated with improved patient outcomes. The Healthy Teams Model (Mickan & Rodger, 2005) identified four major themes relevant to perceived interprofessional teamwork (IPT) in mental health: communication, mutual respect, roles, and team culture. This descriptive study assessed the perceptions of interprofessional teamwork by psychiatric nurses and clinical care coordinators in a psychiatric inpatient unit. Thirty-four registered nurses and eighteen clinical care coordinators completed the Modified Index for Interdisciplinary Collaboration at a Central Virginia inpatient psychiatric facility. Findings demonstrated positive evaluations of IPT by registered nurses and clinical care coordinators. Level of academic degree was found to be correlated ($r = 0.28$, $p < 0.05$) to IPT and an inverse relationship was found between age and flexibility ($r = -0.28$, $p < 0.05$). This study provides support for the Healthy Teams Model by demonstrating positive perceptions of IPT by nurses and clinical care coordinators in an inpatient psychiatric setting.

Keywords: interprofessional, interdisciplinary, teamwork, collaboration, mental health, psychiatry

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Table of Contents

Interprofessional Teamwork in the Inpatient Psychiatric Unit

Contemporary American psychiatric care continues to be an ever-changing and increasingly complex arena that requires mental health care teams to implement team-based care. The World Health Organization (WHO) and Institute of Medicine (IOM) have emphasized the importance of health care professionals working collaboratively to achieve the highest level of quality of care (Institute of Medicine, 2002; World Health Organization, 2010). Realistically, it is self-evident that no one discipline in mental health can provide comprehensive psychiatric services to meet all the recovery needs of persons with mental health problems (Rossen, Bartlett, & Herrick, 2008). Historically, mental health care has for decades involved the use of multidisciplinary teams on most inpatient psychiatric units. However, many mental health teams remain in isolative disciplines and have not migrated into a more interdisciplinary approach where team members collaborate around a common set of goals in order to make effective care decisions (Batorowicz & Shepherd, 2008). Unfortunately, with this lack of interprofessional teamwork (IPT) or interprofessional collaboration (IPC) in inpatient mental health settings, psychiatric care becomes inefficient and fragmented resulting in poorer quality care for clients.

Study Purpose

The purpose of this study was to describe the perceptions of psychiatric nurses and clinical care coordinators about IPT in an inpatient psychiatric unit.

Study Question

For this study, the following research question was proposed: What are the perceptions of IPT by psychiatric nurses and clinical care coordinators in an inpatient psychiatric facility?

Background

Teamwork is a nebulous term that has many conceptual understandings. For this review, teamwork was conceptualized as a process of involving two or more health professionals with

complementary backgrounds and skills who collaboratively assess, plan, and evaluate patient care utilizing common health goals (Xyrichis & Ream, 2008). Members of the team function interdependently, share knowledge, information, and resources, and synergistically provide solutions to problems (Bareil et al., 2015). According to Salas, Shuffler, Thayer, Bedwell, & Lazzara (2015), teamwork is more than having members of different disciplines or professions working beside each other; teamwork focuses on the processes of team members' behaviors, attitudes and cognitions to accomplish necessary tasks. In other words, what team members' do, what they feel or believe, and what they think or know are vital to the explicit functioning of the team (Salas et al., 2015). Each of these processes are contextually bound and have the ability to hinder or harmonize the team. Although harmonization of mental health team members seems essential, effective teamwork is difficult to achieve (Reeves, Lewin, Espin, & Zwarenstein, 2010).

The literature is replete with rationales for utilizing IPT in health care settings. Primarily, IPT brings health care professionals together to handle complex situations and facilitate creative solutions (Hall, 2005; Vyt, 2008). IPT emphasizes the capacity to interactively and collaboratively examine the client's resources and problems rather than individual team members independently evaluating and reporting their findings (Herrman, Trauer, Warnock, & Professional Liaison Committee of Australia, 2002). The result is a more robust and efficient care decision. Another advantage is the mutual support IPT provides to team members (Vyt, 2008; Xyrichis & Lowton, 2008). IPT improves staff morale because client problems can be discussed amongst team members and clinical knowledge and resources can be shared culminating in improved job satisfaction and staff retention (Xyrichis & Lowton, 2008). Poorly coordinated teamwork can result in clinical mistakes that can be costly. IPT has been demonstrated to result in cost-effective measures that improve care for persons with chronic

illnesses (Hall & Weaver, 2001). Effective IPT may reduce costs by reducing unnecessary interventions and avoiding service duplication (Hall & Weaver, 2001). Finally, IPT has been found to contribute to the perception of satisfactory care by patients and families (Reeves et al., 2010). According to Reeves et al. (2010), IPT helps to address the problems of service delivery that can undermine the quality and safety of care. Thus, the team produces better work than its individual members working as solo practitioners (Herrman et al., 2002). Achieving a level of competent IPT in mental health is a complex process. There are more than a few postulated facilitators and barriers that advance the construction of IPT.

Facilitators of IPT can be delineated from a process and a structural perspective. In terms of IPT as a process, the overwhelming contributing factor to successful IPT is effective communication between team members (Al Sayah, Szafran, Robertson, Bell, & Williams, 2014; Hewitt, Sims, & Harris, 2014; Hewitt et al., 2015; McInnes, Peters, Bonney, & Halcomb, 2015; Miers & Pollard, 2009; Ponte, Gross, Milliman-Richard, & Lacey, 2010; San Martin-Rodriguez , Beaulieu, D'Amour, & Ferrada-Videla, 2005; Rossen et al., 2008; Sargeant, Loney, & Murphy, 2008). According to Sargeant et al. (2008), the social exchange of team members contributes to identifying clinical knowledge. Communication style in a successful mental health team is related to members having good interpersonal skills and the ability to convey clear messages to fellow members (Ponte et al., 2010). According to San Martin-Rodriguez et al. (2005), development of IPT necessitates professionals being able to convey how their work contributes to team objectives. Informally, team members must be able to exchange patient information and consult with each other to exhibit IPT (Sargeant et al., 2008). In addition, members should be freely allowed to openly express knowledge, opinions, and ideas while feeling supported and valued for their input. Finally, communication is not limited to spoken messages, it also requires a willingness to actively listen to others on the team. An inability to listen to fellow team

members jeopardizes team functioning and reduces the capacity of the team to make quality decisions (Ponte et al., 2010).

Two other facilitating processes that are inextricably linked to IPT are mutual respect and trust (Al Sayah et al., 2014; Hewitt et al., 2014; McInnes et al., 2015; San Martin-Rodriguez et al., 2005; Xyrichis & Lowton, 2008). Team relationships are a key factor in the development of IPT where each team member supports each other. Each team member should be approachable and receptive to interacting. Respect is demonstrated when a team member's contributions are acknowledged and valued (Al Sayah et al., 2014). For professional equality, a member must focus interactions that preserve another's individual dignity and self-esteem (Hall, 2005). Concurrently, trust is another key element of IPT development. Confidence in the professional competence of team members is essential (McInnes et al., 2015). In addition, each member must have self-confidence as a professional to convey trust. Building trust requires time to develop and must be cultivated via effort and positive experiences. San Martin-Rodriguez et al. (2005) assert that professionals tend to place more trust in more experienced and competent professionals.

Another prominent process of IPT facilitation is related to understanding the interprofessional role. The complexity of the knowledge and skills needed to provide comprehensive mental health care has resulted in increasing specialization of mental health professions (Hall & Weaver, 2001). However, there remains a need to be appreciatively cognizant of diverse team member roles. Hall (2005) posits that meaningful interactions with different professionals require team members to be familiar with the expertise and functions of one another's' roles. This begins with having a clear description of one's own role. Next, team members must learn about other team members' roles and scope of practice. Subsequently, team members integrate this new understanding of team members' roles which promotes a

complementary perspective. Having team members familiar with each other's roles increases the ability of the team to anticipate the needs of fellow members and maintain the capacity to adapt to clinical and organizational needs (Courtenay, Nancarrow, & Dawson, 2013).

Team members who engage in IPT have a shared sense of purpose and clear team goals (Al Sayah et al., 2014; Hewitt et al., 2015; Xyrichis & Ream, 2008). These common aims help to clarify which responsibilities will be pooled to produce optimal outcomes. A shared purpose enhances team members' motivation and commitment (Hewitt et al., 2015). A team's common goals provide a vision and a rationale for consistent approaches to care (Hewitt et al., 2015). Xyrichis and Lowton (2008) assert the more clear a team's purpose, the more effective the team will function. Finally, having clear goals and purpose is a catalyzing element for creative solutions to complex clinical problems.

Barriers to IPT are presented in the health care literature and must be understood in order to avoid these obstacles to effective teamwork. One of the most prolifically mentioned barriers to IPT in the literature is the lack of understanding of differing roles of healthcare team members (Choi & Pak, 2007; Herrman et al., 2002; McInnes et al., 2015; Reeves & Freeth, 2006; San Martin-Rodriguez et al., 2005; Zwarenstein et al., 2007). Unfortunately, the educational process for the development of mental health professionals does not particularly focus on the understanding of interprofessional roles. The majority of time spent within health sciences and mental health education centers on understanding the role for that particular profession (Reeves et al., 2010). Curran, Sharpe, & Forristall (2007) posit that health sciences faculty may be uncomfortable teaching about other professional roles or are not sufficiently knowledgeable to teach about them. Therefore, mental health professionals come to the team with distorted notions of other professionals based on learned culture, beliefs, and misperceptions. These distortions can lead to segregation of mental health professionals and may actively cultivate

negative stereotypical attitudes towards other professions (Barnes, Carpenter, & Dickinson, 2000). Consequently, with poor role clarity, conflict between team members can develop and team effectiveness can be hindered.

Two other barriers to productive IPT in mental health care that stem from role ambiguity are disciplinary territorialism and unequal power among disciplines. When roles are not clearly defined, professionals will seek to maintain distinct boundaries and may compete for exclusive ownership of certain roles (Herrman et al., 2002). In these instances, such rigidity creates tension and confusion in the team. Beyond that, members of the team begin to concentrate on the restriction of shared skills which harms interprofessional relationships (Herrman et al., 2002). This rigidity of skills and roles precipitates team members feeling unequal to each other and emphasizes a status differential between professionals. Members may attempt to exercise power via exclusion or challenging other members' positions. IPT is thwarted and feelings of jealousy and envy destroy group collaboration and the unified vision of the team.

There are numerous reported sources that highlight the benefits of IPT in the provision of quality health care. Extant evidence-based reviews have cited determinants and detriments to fostering IPT in various health care settings (Al Sayah et al., 2014; Courtenay et al., 2013; Courtenay et al., 2013; McInnes et al., 2015; San Martin-Rodriguez et al., 2005; Xyrichis & Lowton, 2008). Several studies have investigated the perceptions of IPT between medical health care professions, mostly between physicians and nurses (Aase, Hansen, & Aase, 2014; Matziou et al., 2014; Muller-Juge et al., 2014). However, there remains a paucity of studies examining perceptions of IPT in mental health. Evaluations of the perceived IPT among psychiatric team members have been studied but this was restricted to community mental health and psychiatric case management (Larkin & Callaghan, 2005; Simpson, 2007). Also, there is currently only one identified study since 1986 examining perceived IPT between nurses and clinical care

coordinators or social workers on inpatient psychiatric units. Therefore, additional evidence is needed to be revealed to determine the perception of IPT between disciplinary members of mental health teams.

The purpose of this proposal was to evaluate mental health care team professionals' perceptions of IPT or IPC and how these perceptions differed in various mental health settings. The following research question was addressed: What are the perceptions of IPT from psychiatric nurses and clinical care coordinators working in an inpatient psychiatric facility?

Theoretical Framework

Mickan and Rodger (2005) produced an ideal theoretical framework for the examination of IPT in health care. Using personal construct theory and inductive theory building, Mickan and Rodger (2005) used qualitative methods to collect perspectives from health care practitioners to denote productive contributions to teamwork. The collected data was analyzed and categorized into hierarchies to determine major themes of effective IPT. Four interdependent themes emerged during data analyses (i.e. environment, structure, process, and individual contribution) and were expanded to six categories that included: purpose, goals, leadership, communication, cohesion, and mutual respect. This research culminated in the Healthy Teams Model that has functional utility for contemporary health care practitioners (Mickan & Rodger, 2005).

According to Mickan and Rodger (2005), effective teams have a well-defined purpose that is associated with the goals and objectives of the organization. Team members express a shared ownership of purpose in order to serve patients. The team's goals are linked to the team's purpose and outcomes. Goals are set collaboratively and able to be clearly measured. These goals help to define the team's task and how they could be accomplished. With clear team goals, this increases the focus of the development of strategies for achievement.

Leadership is important for the attainment of team goals and objectives. Mickan and Rodger (2005) posit that optimal leaders are able to maintain an appropriate structure for making decisions. Team leaders effectively manage conflict and coordinate tasks equally and encourage the sharing of ideas and information. Good leaders provide feedback about the team members' contributions while maintaining an environment where members feel heard, supported and trusted.

Healthy teams have discernable patterns of communications where all members are freely able to share knowledge and ideas. Communication within healthy teams incorporate the diversity of team members' communication styles while continuing to provide efficient information with each other (Mickan & Rodger, 2005). Effective teams share a sense of camaraderie that develops over time into a cohesive group. Team members have commitment to the team and trust the professional expertise of each member (Mickan & Rodger, 2005). A cohesive team has a unique team spirit and individuals are proud of the team's endeavors.

All team members have a high level of mutual respect for one another (Mickan & Rodger, 2005). Each professional contribution is acknowledged and validated by other team members. There can be disagreement between team members; however, diverse opinions or beliefs are openly expressed by group members and respected accordingly.

According to Reeves and Freeth (2006), IPT is perceived as strong if interprofessionals believe they share a team identity and able to work collaboratively together to solve problems. The tenets of the health teams model have been cited multiple times in the research literature as contributing to the development of IPT. The model describes important aspects of effective teamwork and can be used to critically evaluate and enhance team functioning.

Review of Literature

For this review, a total of 152 articles were extracted from all databases based on inclusion and exclusion criteria. The John-Hopkins Nursing Evidence-Based Practice Research Evidence Appraisal tool was utilized to determine the strength and quality of the evidence. Inclusion criteria for article selection were the following: (1) primary research articles; (2) published between years 1985 and 2015; (3) were based in a mental health setting; (4) addressed the concept of perceived IPT or IPC among psychiatric professionals. Exclusion criteria included the following: (1) case studies, case series, editorials, and commentaries; (2) non-English language articles; (3) studies that were not situated in the mental health environment; (4) perceptions of IPT or IPC were not addressed. A Prisma flow diagram is included in *Figure 1* illustrating key decisions in the inclusion and exclusion of articles. Five studies that met criteria for final inclusion. A table of citations summarizing pertinent study findings from selected studies is provided in Table 1.

Study Descriptions

Toseland, Palmer-Ganeles, & Chapman (1986) found for the majority of respondents (72.6%) that teams were more effective than individual approaches to psychiatric care (Toseland, Palmer-Ganeles, & Chapman, 1986). According to Toseland, Palmer-Ganeles, & Chapman (1986), role ambiguity was found to be the most profound detractor of IPT. Larkin and Callaghan found the majority of professionals had a clear definition of their role; however, members of the team did not perceive their roles as being validly recognized or understood by other team. Chong, Aslani, & Chen (2013) posited that team members with clear goals were perceived as having more effective IPC.

Ødegård and Strype (2009) findings indicated that IPC characteristics of communication, coping and organizational domain were more associated with women than men (Ødegård &

Strype, 2009). The most prominent aspects of IPC were motivation, followed by leadership and social support (Ødegård & Strype, 2009). Simpson (2007) found that collaboration, communication and information sharing were enhanced when team members perceived each other as being respectful. Team members acknowledged the need to have a supportive environment where they could openly explore work-related difficulties and feel supported and empowered by team members. Members expressed the more support he or she received from the team, the greater the collaborative effort that could occur within the team.

The studies reviewed have both similarities and contrasts. For example, Larking and Callaghan (2005), findings are supported by Chong et al. (2013) where a lack of understanding of member roles was considered a significant barrier to IPC. Similar to Simpson (2007), Chong et al. (2013) concurred that clinicians who reported having a good level of IPC believed their work environment incorporated mutual respect between team members. In relation to Ødegård and Strype (2009), results of this study support Simpson (2007) that supportive environments foster the perception of IPT. Finally, participants reported the importance of communication between members via weekly team meetings and IPT (Simpson, 2007), which is contrasted by Larkin and Callaghan (2005) findings that team meetings had no impact on perceived IPT.

From the five studies presented, four primary themes related to IPT emerged upon analyzing research outcomes: communication, professional roles, mutual respect, and team culture.

Communication

The concept of communication is certainly one that is well entrenched in the domain of IPT and considered to be foundational for interdisciplinary collaboration. A well-functioning mental health team involves having members who can competently share various information clearly while actively listening to diverse ideas and suggestions for patient care (Simpson, 2007;

Ødegård & Strype, 2009). For effective IPT, team members frequently have both informal and formal interactions and able to adapt these modes of interactions based on the information required to convey. According to Simpson (2007), efficient communication cultivates the professional relationship between team members and produces improved outcomes in mental health work. Poor communication may complicate patient issues and stagnate the team from meeting its objectives. Without effective communication, team members are not able to actualize their contributions to team objectives and have the potential to create conflict between professionals.

Roles

Two of the qualitative studies presented in this review have alluded to professional roles as a criteria of good IPT (Chong et al., 2013; Larkin & Callaghan, 2005). To have effective IPT, each team member must be able to define his or her role in the operation of the team. Chong et al. (2013) posit that if healthcare providers were not able to define their roles based on professional skills and training, then IPC would be sub-optimal. Despite the majority of professionals in the Larkin and Callaghan (2005) study reporting being clear about their individual roles, many did not view their role as being understood by other team members. Consequently, this perceived lack of understanding of roles is a significant contributing factor to segregation and unintentional stereotyping of other disciplines.

Mutual Respect

Similar to effective communication, mutual respect is considered to be a hallmark of productive IPT. In the qualitative studies by Chong et al., (2013) & Simpson (2007), providers involved in mental health reported that a good level of IPC was present in the work environment when each professional afforded a sense of respect for other team members. From the evidence, mutual respect can be further demonstrated in IPT with the allowance that all team members

perceive the ability to freely communicate knowledge and ideas without fear of inconsideration or invalidation (Simpson, 2007). However, some participants in the Simpson (2007) study felt that individuals with notable power in the team were condescending to viewpoints contrary to their own. Such antagonism created tensions in the team and impacted the quality of team functioning. This limited evidence suggested that when team members felt disrespected, the result was an impairment in the provision and coordination of patient care.

Team Culture

The cultural environment of the mental health team is crucial to IPT. Professionals in the Ødegård and Strype (2009) study suggested that having social support from the team was an important aspect of IPC. According to Ødegård and Strype (2009), professionals have a need to experience support while working with difficult cases. Those teams which have support are a key proponent of IPC. Support for members can also be elicited from a team that effectively utilizes appropriate humor during times of stressful situations (Simpson, 2007). Humor could actually be used to unite team members while attenuating anxieties. Specific demographic characteristics of professional team members could influence the team culture and IPC. However, in the study by Odegard and Strype (2009), professional education, work experience, and age did not significantly affect perceptions of IPC. Results of this exploratory study suggest that diversity of professional backgrounds and clinical experiences among mental health care professionals are less representative aspects of perceived IPC.

Recommendations

Even though demonstrative limitations were present in this review, there was level 3 evidence that supported mental health care professionals viewed communication, roles, mutual respect, and team culture as necessary components of perceived IPC. Naturally, an intervention study to improve IPT between psychiatric professionals was warranted. However, with the

paucity of present evidence related to IPT in American inpatient mental health units, it was more essential to first assess perceived IPT among inpatient mental health professionals. Therefore, further research was need to address IPT on psychiatric units in the US among mental health providers. In addition, research was needed to be implemented involving perceived IPT between specific mental health disciplines such as nurses and clinical care coordinators or social workers and did not include other professional psychiatric disciplines. Once perceptions of IPT between nurses and clinical care coordinators have been explored, then intervention studies based on IPT principles may be formulated for the improvement of patient outcomes and professional clinical relationships.

Effective interdisciplinary functioning in psychiatric-mental health care requires a high level of perceived IPT. The level of teamwork needed in psychiatric care is not intuitively constructed but must be consciously cultivated from all team members. This review informed mental health professionals such as psychiatric nurses of factors that facilitate IPT and contributed to improved team member relations, efficient problem management, goal and objective attainment, and a generalized sense of accomplishment. With increasingly complex needs for patients with mental health problems and limited resources, it remains exigent that mental health professionals must collaboratively work together to achieve the best outcomes for those being served. Research on IPT among mental health professionals on inpatient psychiatric units will contribute to better understanding how to optimize the clinical environment to promote the recovery of those suffering from mental disorders.

Methods

The methods utilized in this project were employed to answer the research question.

Study Purpose

The purpose of this study was to describe the perceptions of psychiatric nurses and clinical care coordinators regarding IPT in an inpatient psychiatric unit.

Definition of Terms

Interprofessional teamwork (IPT) was operationally defined for this study, as a type of work between disciplinary professionals who share a team identity and work collaboratively together to solve problems and deliver care to clients (Reeves et al., 2010). Clinical care coordinators have similar education and work duties as a social worker. The clinical care coordinator works to find resources in the community for the client's optimal functioning. The clinical care coordinator is involved in placement of the client beyond the inpatient facility and performs family therapy.

Study Design

A comparative descriptive design was used to describe the perceptions of IPT by psychiatric nurses and clinical care coordinators.

Study Setting

The study was conducted at a community-based hospital psychiatric facility in the Central Virginia metropolitan area. The psychiatric facility provided inpatient behavioral health services to children, adolescents, adults, and elderly persons living in Virginia. The facility contained 137 licensed beds on six units that is a part of the combined 752 acute care beds that makeup the entire medical center.

Approval from the appropriate administrative managers from nursing and clinical care coordinators was obtained (see *Figure 2* for signed approval letter).

Sample

The study sample was compromised of two groups: psychiatric nurses and clinical care coordinators who were working in an inpatient psychiatric unit serving children, adolescents, adults, and elderly persons with psychiatric disorders. The inclusion criteria was twofold: (1) staff who are either registered nurses or clinical care coordinators and (2) have completed facility orientation. The exclusion criteria included the following: (1) working as a temporary or per diem registered nurse or clinical care coordinator, (2) working as a floater staff member, (3) has not completed facility orientation, (4) not functioning as a registered nurse or clinical care coordinator on the unit, and (5) opposed to completing study survey data. The study sample was limited to registered nurses and clinical care coordinators. Nursing assistants and licensed practical nurses were not included in the sample in order to have a well-defined study group.

A convenience sample of 45 registered nurses and 20 clinical care coordinators were approached for participation in the study. Forty-three nurses (96%) and 19 clinical care coordinators (95%) signed consent for the study. Thirty-four registered nurses and eighteen clinical care coordinators completed and returned questionnaires for a return rate of 79% and 95% respectively for final analysis. Demographic data is represented in Table 2. The sample contained 65.4% registered nurses and 34.6 % clinical care coordinators. Females represented the majority of the sample with 88.5% and males were 11.5% of the sample. Similar to the overall sample, registered nurses contained 91.2% females and 8.8% males while the clinical care coordinators had 83.3% females and 16.7% males. The average age of registered nurses was 42.4 $\pm$ 11.5 years and the average age of the clinical coordinators was 42.3 $\pm$ 11.8 years. The mean number of practice experience years was 10.8 years for registered nurses and 13.2 years for clinical care coordinators. Most registered nurses held an Associate degree (55.9%) or Bachelor of Science in Nursing (35.3%) as their highest educational degree. The majority of the

clinical care coordinators held a Master's degree (94.4%). There were no significant differences found between registered nurses and clinical care coordinators in regards to sex, age, and years of experience.

Study Procedure

Eligible registered nurses and clinical care coordinators were invited via printed flyer that was posted on the unit and via email correspondence to attend a brief information session describing the study. The sessions were held twice weekly at various times for two-weeks in July 2016 for improved convenience of attendance. During these sessions, the study purpose and study question were described to potential participants. IPT was defined for the audience. The importance of the study in relation to the uniqueness of the research question and potential products of the study was described. The primary investigator confirmed that participation was voluntary and that all completed surveys were kept confidential and anonymous. The mechanics of data collection via collection box was illustrated by the primary investigator and how potential participants would complete and turn in completed surveys. Finally, potential participants were informed of the time that data would be collected, namely between mid July 2016 and early August 2016.

Each participant was given a survey, asked to complete the survey, and place the completed survey face down inside a collection box. Precautions for participant identifying information linking responses to the participant were implemented during data collection. When the data collection period ended, the primary investigator collected all boxes containing completed surveys for data analysis.

Measures

The Modified Index for Interdisciplinary Collaboration (MIIC) is a 42-item self-report questionnaire that measures IPC among health care professionals of different disciplines (Oliver,

Wittenberg-Lyles, & Day, 2007). The instrument is a modification of the Index of Interdisciplinary Collaboration (IIC) scale which measures social workers' perceptions of IPC (Bronstein, 2003). This scale was developed as a measure of IPC in a hospice team (Oliver et al., 2007). The 31 item questionnaire was scored on a 5-point Likert-type scale where 1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, and 5 = strongly agree (see *Figure 3* for MIIC study instrument).

The MIIC was selected for a variety of reasons. The scale measures the major components of the Mickan & Rodgers's Healthy Teams Model. The MIIC was easy to administer and does not require the participant to make additional written statements or comments which could be misinterpreted during data analysis. The scale was well-suited for statistical analysis by its Likert-type scoring. Original testing revealed a high internal consistency with Cronbach's alpha of 0.935 (Oliver et al., 2007). The Cronbach's alpha for the current study was 0.928. The MIIC contains 5 subscales that together culminate in the total perception of IPC score. These scales are the following: (1) interdependence; (2) professional activities; (3) flexibility; (4) collective ownership of goals; and (5) reflection on process. Means for the MIIC represent the scores for the overall scale and subscales.

Five socio-demographic questions were added to the questionnaire to collect data on the participant's discipline, age, sex, years of experience, and educational level. After the participant completed the MIIC, the participant returned the survey to the collection box face down to ensure confidentiality and anonymity. Completion of the MIIC generally took less than 30 minutes for participants.

Data Analysis Plan

Data analysis was conducted via SPSS for Windows Version 16.0 (SPSS Inc., Chicago, Illinois). Data normality was evaluated for skewness and kurtosis. If the data was skewed, an

appropriate statistic was computed. Non-participation rates were calculated. Descriptive statistics was computed for the demographic characteristics in each professional group (psychiatric nurses/clinical care coordinators), and the two groups was compared. Chi-square tests were used for categorical variables and t-tests were used for continuous variables. T-tests were used to compare the mean index score of registered nurses to clinical care coordinators. T-Tests were also used to compare the means of subscales between the two groups. Pearson correlations were used to discover relationships between nurses and clinical care coordinators and MIIC scores. Pearson's correlations were compared for age, years of experience in occupation, educational level and total MIIC scores and subscale scores.

Protection of Human Subjects

The study proposal was submitted to facility and academic Internal Review Boards (IRB) for approval of the study prior to the commencement of data collection. Upon approval, the primary investigator sought to obtain signed consent from all potential participants prior to data collection. Potential participants were given a presentation that describes the purpose, the study question, and how data will be collected. Each potential participant were read the study consent form (see *Figure 4* for study consent form) by the primary investigator verbatim. The researcher was responsible for ensuring that participants understand the contents of the consent form. After the presentation, potential participants had the opportunity to sign the consent form. A copy of the consent form was given to all participants. For those who were unable to attend the presentation, the primary care investigator provided individual sessions and reviewed the above information. The primary investigator was responsible for maintaining original copies of the signed consent forms. The questionnaire did not collect personal identifying information to protect participants' confidentiality and anonymity. All written data was double protected and stored in a locked container within a locked cabinet. Written data was translated into electronic

coded data for statistical analysis. Data was input by the investigator into SPSS. Copies will be destroyed via shredding after completion of researcher's doctoral degree program. The electronic data was preserved according to University of Virginia data storage procedures.

There was a risk that questions asked on the MIIC could be sensitive to participants. Participants were free to not answer any of the questions. The benefits of the study included: (1) increased knowledge of the perceptions of IPT between psychiatric nurses and clinical care coordinators; (2) improve nursing practice through an exploration of perceived IPT; and (3) provide a foundational research basis for potential IPT intervention studies between different disciplines practicing on inpatient psychiatric units.

Results

Modified Index of Interdisciplinary Collaboration Scores and Subscale Scores

Analysis of MIIC scores revealed an overall mean total score of (M = 3.99, SD = 0.42). Registered nurses had a slightly less mean score for overall perception of IPT (M = 3.92, SD = 0.46) than clinical care coordinators (M 4.10, SD = 0.33) (Table 2). An independent samples *t*-test revealed no significant difference between registered nurses and clinical care coordinators on mean MIIC scores $t(50) = -0.18$, $p = 0.15$. Subscales scores between registered nurses and clinical care coordinators did not significantly differ statistically (Table 2). A positive relationship was found between educational level and total MIIC score $r = 0.28$, n = 52, $p < 0.05$ (Table 3). Nevertheless, educational correlation was not large enough to influence any of the subscale statistical findings. No significant correlations were found between subscale scores and years of experience. However, there was a significant negative correlation found between age and flexibility $r = -0.28$, n = 52, $p < 0.05$ (Table 3).

Discussion

The primary focus of this study was to describe the perceptions of IPT from inpatient psychiatric nurses and clinical care coordinators. MIIC scores from registered nurses and clinical care coordinators presented that both disciplines on average agreed IPT was present in the practice setting. Mean MIIC scores did not significantly differentiate exhibiting similar perceptions of IPT between the two groups. Similarly, registered nurses and clinical coordinators did not differ on perceptions of interdependence, professional activities, flexibility, collective ownership of goals, and reflection on process between professions. These results represent beliefs of positive IPT between registered nurses and clinical care coordinators. The identified relationships may have simply occurred by chance due to small sample size.

Interestingly, educational level provided two significant relational findings in regards to MIIC scores. First, there was a positive correlation between educational level and MIIC score, $r = 0.28$, $n = 52$, $p < 0.05$. Thus, as the registered nurse or clinical care coordinator achieved higher levels of education, this positively affected MIIC score and IPT perception. One explanation from this finding could stem from those with higher levels of education have usually worked longer in the clinical area and may have been able to form closer professional relationships between co-workers. Another reason could be those with higher levels of education have been introduced to more forms of interdisciplinary formats in educational training allowing a fluid transition of core IPT principals to be transferred to the clinical arena. Finally, those with higher degrees may have more comfortability in professional communication and feel more professional equity which could enhance perceptions of IPT.

The other significant study finding demonstrated an inverse relationship between age and the subscale "flexibility," $r = -0.28$, $n = 52$, $p < 0.05$. As the age of the clinician increased, the perception of role flexibility decreased. An explanation for this relationship could assume that as

clinicians age, they become more fixed in their expectations of specific disciplinary roles. Clinicians generally exude progressive expertise in their role; however, having the ability to be flexible in other roles may become increasingly difficult with age. There can be resistance by the clinician to adopt additional interdisciplinary roles that are not familiar. Diminished flexibility may lead to resentment among interdisciplinary team members through an unwillingness to engage in vital functions beyond explicit professional roles.

Findings from this study validated concepts of Mickan and Rodger's (2005) Healthy Teams Model. Mickan and Rodger assert that effective teams have well-defined goals. Results of this study illustrated both professional groups perceived having collective ownership of goals. According to the Health Teams Model, leadership is an important aspect of professional activities in IPT. Study findings represented registered nurses and clinical care coordinators having a positive sense of professional activities including effective leadership. Healthy teams have efficient communication and commitment to professional camaraderie. The MIIC subscale "interdependence" was favorably scored by study clinicians and illustrates attributes of good communication and professional cohesion. Mickan & Rodger posit that team members have flexibility in acknowledging variable opinions and beliefs. Registered nurses and clinical care coordinators agreed to have a positive amount of flexibility cultivating a degree of mutual respect. Finally, Mickan & Rodger stated interprofessionals who have a team identity and collaboratively work together have strong IPT. Findings from this study represent a reflection on interprofessional process where registered nurses and clinical care coordinators positively believed to have interprofessional collaboration and interpersonal team identity.

Nursing Practice Implications

The study had several nursing practice implications. The study examined the concept of IPT with psychiatric nurses and clinical care coordinators working on an inpatient unit which has

not been studied in past nursing research. Results of the study provided patterns of IPT that hindered or advanced patient care through the perceptions of psychiatric nurses. Analysis of data yielded factors that could significantly affect the perception of IPT and disciplinary interdependence such as level of education. From findings, there should potentially be a focused on the attainment of higher educational degrees, especially for registered nurses to improve the perception of IPT and clinical interdependence. The study findings supported a basis for future nursing research by providing data that can be used to formulate new hypotheses and interventions to test hypotheses in relation to IPT and psychiatric nurses. Finally, the study has future implications for nurses who work with inpatient psychiatric populations with improved patient care delivery through the enhancement of IPT.

Design Strengths & Weaknesses

The study purpose and study question were appropriate for a comparative descriptive research design. This study was the first study to investigate IPT on an American inpatient psychiatric unit since 1986. As presented in the literature review section, this study specifically elucidated patterns of IPT between psychiatric nurses and clinical care coordinators that had not been presented before in the research literature. The information gathered from this study provided the foundation for generating research hypotheses and formed the basis for future intervention studies involving IPT on inpatient psychiatric units.

There were number of weaknesses inherent utilizing this research design. With a descriptive study, no randomization occurs which limited generalizability of the findings. In addition, research was conducted at only one inpatient psychiatric facility with a small number of registered nurses and clinical care coordinators, again limiting the generalizability to other inpatient psychiatric settings. Lastly, the mean number of years of clinical experience for each

group was more than ten years, which may indicate that those who participated in the study had remained in clinical practice longer than those who did not participate.

Project Products

This project culminated in several professional products beyond its completion. The study contributed to the body of nursing knowledge. Study results will laid the groundwork for future intervention studies with IPT and psychiatric nurses that can be established into programs to ultimately advance IPT on psychiatric units. An abstract will be submitted for presentation at poster sessions during American Psychiatric Nurses Association (APNA) or International Society of Psychiatric Nurses (ISPN) conferences. The study could also be presented to interdisciplinary peers at IPT or IPC meetings or conferences. A manuscript of the project is expected to be submitted for publication. The researcher has chosen *Archives of Psychiatric Nursing* as the journal for submission of the manuscript (see Appendix A for author guidelines for journal submission and Appendix B for manuscript).

Conclusions

According to Peplau (1960), an essential component for effective psychiatric work from professional colleagues is collaborative teamwork. This study provides support for the Healthy Teams Model (Mickan & Rodger, 2005) by demonstrating positive perceptions of IPT by nurses and clinical care coordinators in an inpatient psychiatric setting. This study contributes to the knowledge base regarding IPT in mental health settings which can influence the care of those with psychiatric needs.

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Table 1.

Interpersonal Teamwork Perceptions Among Mental Health Professionals

Authors, Year	Purpose	Design and Rating*	Subjects and Setting	Pertinent Findings
Larkin & Callaghan, 2005	Examine the presence of core structures that influenced professionals' understanding of interprofessional working with their teams	Cross-sectional, descriptive study Evidence Level: 3B	244 community mental health workers practicing in London, England	**Perception of Interpersonal Teamwork:** No relationship between holding business meetings, case discussion, referral meeting, staff support group and perceptions of IPC ($p > 0.05$) Weak relationship between joint documentation policy and perception of IPC ($r = -0.168$, $p < 0.05$). Majority of participants were able to define their roles but felt their role was not recognized or understood by other team members ($X^2 = 19.373$, $p < 0.05$). **Limitations:** Did not confirm or reject any hypothesis; Utilized convenience sample; study did not allow for further explanation of how professionals' perceptions impacted team as a whole; setting in community mental health limits generalizability
Toseland, Palmer-Ganeles & Chapman (1986)	Describe the functioning of teams in an inpatient psychiatric unit	Mixed methods, descriptive and qualitative Evidence Level: 3B	71 psychiatric interdisciplinary professionals working in one of two state psychiatric hospitals in the United States	**Perception of Interpersonal Teamwork:** Respondents were for a majority satisfied with the level of teamwork in their groups (72.6%). Most participants agreed that their team functioned effectively (77%). Most of the participants agreed with the decisions of the team (90%) and their input was valued by team members (83%). From qualitative data, role

Authors, Year	Purpose	Design and Rating*	Subjects and Setting	Pertinent Findings
				ambiguity was found to be the most significant factor to the detraction of teamwork. **Limitations:** Study coordinators used a convenience sample with a low sample size limiting generalizability. There was no presentation of significant differences in teamwork via statistical analysis between disciplines. Some disciplines responded more significantly than other disciplines. Inability to discern which discipline(s) were more favorable or non-favorable in their perception of teamwork
Ødegård & Strype, 2009	Explore professionals' perception of prominent aspect of IPC in service delivery towards children with mental health problems and assess characteristics that influence perceptions of IPC	Exploratory, descriptive study Evidence Level: 3B	157 mental health professionals working with children in western Norway	**Perception of Interpersonal Teamwork:** Most prominent aspects of IPC was motivation, leadership, and support. Organizational culture was also important aspect of IPC. Men and women participants significantly differed in perceived aspect of coping, communication, and organizational domain ($p < 0.05$). Professional education, workplace setting, working experience, and age had no bearing on perceived level of IPC ($p > 0.05$). **Limitations:** Conceptual framework used was tentative; reliability and validity of PINCOM-Q not addressed in study; small sample size; utilized convenience sample for limited generalizability and increased risk of bias
Simpson, 2007	Identify structures and interactions	Qualitative Evidence Level:	15 community mental health nurses serving in an	**Perception of Interpersonal Teamwork:** Nurses reported communication between team members in weekly team meetings as important

Authors, Year	Purpose	Design and Rating*	Subjects and Setting	Pertinent Findings
	within community mental health team that facilitate or impede effective teamwork in psychiatric case management	3B	urban population in England	to IPT. Lack of agreed policies on referral processes negatively affected perception of IPT. Mutual respect and appropriate use of humor had positive effect on perception of IPT. Nurses valued supportive environment to express work-related difficulties. **Limitations:** Small sample size; recommendations for IPT are limited to staff working at community mental health centers in England; convenience sample risking bias.
Chong, Aslani, & Chen, 2013	Identify perceived barriers and facilitators of IPC from healthcare providers involved in provision of services to mental health consumers	Qualitative Evidence Level: 3B	31 Australian healthcare professionals providing mental health services from mental health units, general practitioner practices, hospital and community pharmacy departments	**Perception of Interpersonal Teamwork:** Participants reported mutual respect as a component of good level of IPC. Teams with clear goals were perceived as having more effective IPC. Barrier to IPC was lack of understanding of others' roles. IPC hindered when role does not match clinical skills or training. Integral part of IPC is effective communication and information sharing. **Limitations:** Small sample size; purposive sampling risking potential bias; conducted in Australia limiting generalizability.

Abbreviations: IPC = Interprofessional Collaboration; IPT = Interprofessional Teamwork
*Evidence strength and quality rating based on Johns Hopkins Nursing Evidence-Based Practice Model

Table 2.

Characteristics of study sample (N = 52)

Characteristic	Total (n = 52)	Registered Nurse (n = 34)	Care Coordinator (n = 18)
Gender # (%)			
Female	46 (88.5)	31 (91.2)	15 (83.3)
Male	6 (11.5)	3 (8.8)	3 (16.7)
Highest Education # (%)			
Diploma	2 (3.8)	2 (5.9)	0
Assoc. Degree	19 (36.5)	19 (55.9)	0
Baccalaureate	13 (25.0)	12 (35.3)	1 (5.6)
Master's	18 (34.6)	1 (2.9)	17 (94.4)
Age in Years M (SD)	42.4 (11.5)	42.4 (11.5)	42.3 (11.8)
Prof. Experience M (SD)	11.6 (10.1)	10.8 (10.3)	13.2 (9.9)

Note. M = Mean; SD = Standard Deviation

Table 3.

T-tests for Modified Index of Interdisciplinary Scale and Subscales

Scale	RN (n = 34)	CCC (n = 18)	*T*-Test	Probability *
MIIC	3.92	4.10	-0.18	0.15
Interdependence	4.13	4.31	-0.18	0.12
Professional Activities	3.18	3.98	-0.17	0.17
Flexibility	4.03	4.23	-0.20	0.22
Goal Ownership	3.78	3.94	-0.15	0.35
Reflection of Process	3.49	3.68	-0.20	0.36

Note. * = non-significant at 0.05; RN = Registered Nurse; CCC= Clinical Care Coordinator

Table 4.

Correlations for Modified Index of Interdisciplinary Scale and Subscales

Scale	Age	Educational Level	Years of Experience
MIIC	-0.15	0.28*	-0.08
Interdependence	-0.62	0.27	-0.03
Professional Activities	-0.04	0.25	-0.02
Flexibility	-0.28*	0.20	-0.13
Goal Ownership	-0.13	0.23	-0.02
Reflection of Process	-0.20	0.23	-0.09

Note. * = significance < 0.05

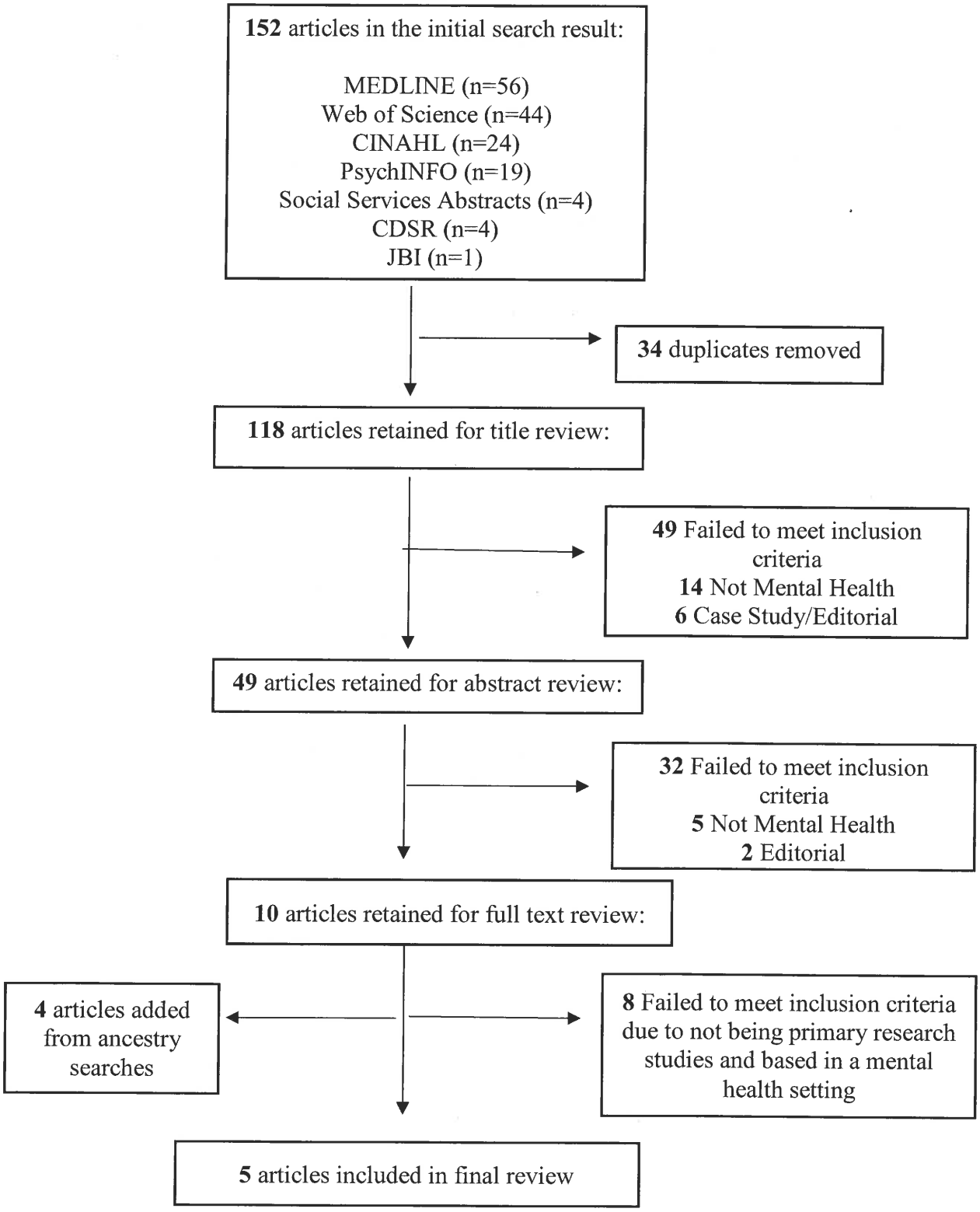

Figure 1. Literature search procedure.

To Whom It May Concern:

This letter has been written in order to specify that Brian Capel, UVa Doctor of Nursing Practice student, has the permission of the signed parties to conduct his research study entitled "Interprofessional Teamwork in the Inpatient Psychiatric Unit" at Tucker Pavilion with nursing and clinical care coordinator staff. It is the expectation that internal review boards for Chippenham Hospital and the University of Virginia have been given prior approval of this study before commencement. It is also expected the researcher will make provisions as defined by law that all participants who agree to be in the study are ensured confidentiality and anonymity. The researcher is also expected to provide listed parties with a brief summary of data results and interpretation of results after the summary has concluded.

Thank you for your willingness to allow this study to be conducted at Tucker Pavilion.

Signed,

X _____ Date 4/20/16
Chief Operating Officer
Chippenham Hospital

X _____ Date 4/20/16
Administrative Director of Clinical Services
Tucker Psychiatric Pavilion

X _____ Date 4/20/16
Study Coordinator
University of Virginia Doctor of Nursing Practice Student

Figure 2. Letter of support for facility access.

Modified Index of Interdisciplinary Collaboration (MIIC)

Demographics

Please complete this section before starting survey below.

1. Please check one: RN _____ Clinical Care Clinician/Coordinator:_____
2. Age: _____
3. Sex: Male:_____ Female:_____
4. Years of Experience as RN or Clinical Care Clinician/ Coordinator: _____
5. Education Level: Please check one below:
   Diploma_____
   Associate's Degree_____
   Baccalaureate Degree _____
   Master's Degree _____
   Doctorate Degree _____

All responses to the survey below are measured on a 5-point Likert scale:

5 = Strongly Agree

4 = Agree

3 = Neither Agree or Disagree

2 = Disagree

1 = Strongly Disagree

Registered Nurses: Any question below pertaining to "another discipline" relates to clinical care coordinators

Clinical Care Clinicians/Coordinators: Any question below pertaining to "another discipline" relates to registered nurses

With regard to your current primary work setting, please indicate the extent to which you agree or disagree with each of the following statements (please circle the appropriate box):

Question 1: I utilize other professionals in a different discipline for their particular expertise.

5	4	3	2	1
Strongly Agree	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly Disagree**

Question 2: I consistently give feedback to other professionals in another discipline in my setting.

5	4	3	2	1
Strongly Agree	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly Disagree**

Question 3: Professionals in a different discipline in my setting utilize me for a range of tasks.

5	4	3	2	1
Strongly Agree	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly Disagree**

Question 4: Teamwork with professionals from another discipline is not important in my ability to help clients.

5	4	3	2	1
Strongly Agree	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly Disagree**

Question 5: The colleagues from another discipline and I rarely communicate.

5	4	3	2	1
Strongly Agree	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly Disagree**

Question 6: The colleagues from another discipline with whom I work have a good understanding of the distinction between my role and their role.

5	4	3	2	1
Strongly Agree	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly Disagree**

Question 7: My colleagues from other disciplines make inappropriate referrals to me.

5	4	3	2	1
Strongly Agree	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly Disagree**

Question 8: I can define those areas that are distinct in my professional roles from that of professionals from another discipline with whom I work.

5	4	3	2	1
Strongly Agree	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly Disagree**

Question 9: I view part of my professional role as supporting the role of others with whom I work.

5	4	3	2	1
Strongly Agree	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly Disagree**

Question 10: My colleagues from another discipline refer to me often.

5	4	3	2	1
Strongly Agree	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly Disagree**

Question 11: Cooperative work with colleagues from another discipline is not a part of my job description.

5	4	3	2	1
Strongly Agree	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly Disagree**

Question 12: My colleagues from another professional discipline do not treat me as an equal.

5	4	3	2	1
Strongly Agree	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly Disagree**

Question 13: My colleagues from another discipline believe that they could not do their jobs as well without my professional discipline.

5	4	3	2	1
Strongly Agree	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly Disagree**

Question 14: Distinct new programs emerge from the collective work of colleagues from a different discipline.

5	4	3	2	1
Strongly Agree	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly Disagree**

Question 15: Organizational protocols reflect the existence of cooperation between professionals from a different discipline.

5	4	3	2	1
Strongly Agree	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly Disagree**

Question 16: Formal procedures/mechanisms exist for facilitating dialogue between professionals from another discipline (i.e. rounding, inservice, staff meetings, etc).

5	4	3	2	1
Strongly Agree	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly Disagree**

Question 17: I am not aware of situations in my agency in which a coalition, task force, or committee has developed out of interdisciplinary efforts.

5	4	3	2	1
Strongly Agree	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly Disagree**

Question 18: Working with colleagues from another discipline leads to outcomes that we could not achieve alone.

5	4	3	2	1
Strongly Agree	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly Disagree**

Question 19: Creative outcomes emerge from my work with colleagues from another profession that I could not have predicted.

5	4	3	2	1
Strongly Agree	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly Disagree**

Question 20: I am willing to take on tasks outside my job description when that seems important.

5	4	3	2	1
Strongly Agree	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly Disagree**

Question 21: I am not willing to sacrifice a degree of autonomy to support cooperative problem solving.

5	4	3	2	1
Strongly Agree	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly Disagree**

Question 22: I utilize formal and informal procedures for problem-solving with my colleagues from another discipline.

5	4	3	2	1
Strongly Agree	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly Disagree**

Question 23: The professional colleagues from another discipline with whom I work stick rigidly to their job descriptions.

5	4	3	2	1
Strongly Agree	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly Disagree**

Question 24: Colleagues from another discipline and I work together in many different ways.

5	4	3	2	1
Strongly Agree	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly Disagree**

Question 25: Professionals from another discipline with whom I work encourage family members' participation in the treatment process.

5	4	3	2	1
Strongly Agree	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly Disagree**

Question 26: My colleagues from another discipline are not committed to working together.

5	4	3	2	1
Strongly Agree	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly Disagree**

Question 27: My colleagues from another discipline work through conflicts with me in efforts to resolve them.

5	4	3	2	1
Strongly Agree	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly Disagree**

Question 28: When colleagues from another discipline make decisions together, they go through a process of examining alternatives.

5	4	3	2	1
Strongly Agree	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly Disagree**

Question 29: My interactions with colleagues from another discipline occur in a climate where there is freedom to be different and to disagree.

5	4	3	2	1
Strongly Agree	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly Disagree**

Question 30: Clients/patients participate in interdisciplinary planning that concerns them.

5	4	3	2	1
Strongly Agree	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly Disagree**

Question 31: Colleagues from another professional discipline take responsibility for developing treatment plans.

5	4	3	2	1
Strongly Agree	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly Disagree**

Question 32: Colleagues from another professional discipline do not participate in implementing treatment plans.

5	4	3	2	1
Strongly Agree	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly Disagree**

Question 33: Professionals from another discipline are straightforward when sharing information with patients.

5	4	3	2	1
Strongly Agree	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly Disagree**

Question 34: My colleagues from another discipline and I often discuss different strategies to improve our working relationships.

5	4	3	2	1
Strongly Agree	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly Disagree**

Question 35: My colleagues from another discipline and I talk about ways to involve other professionals in our work together.

5	4	3	2	1
Strongly Agree	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly Disagree**

Question 36: Colleagues from another discipline do not attempt to create a positive climate in our organization.

5	4	3	2	1
Strongly Agree	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly Disagree**

Question 37: I am optimistic about the ability of my colleagues from other disciplines to work with me to resolve problems.

5	4	3	2	1
Strongly Agree	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly Disagree**

Question 38: I help my colleagues from another discipline to address conflict with other professionals directly.

5	4	3	2	1
Strongly Agree	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly Disagree**

Question 39: Colleagues from other disciplines are as likely as I am to address obstacles to our successful collaboration.

5	4	3	2	1
Strongly Agree	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly Disagree**

Question 40: My colleagues from other disciplines and I talk together about professional similarities and differences including role, competencies, and stereotypes.

5	4	3	2	1
Strongly Agree	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly Disagree**

Question 41: My colleagues from another discipline and I do not evaluate our work together.

5	4	3	2	1
Strongly Agree	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly Disagree**

Question 42: I discuss with professionals from another discipline the degree to which each of us should be involved in a particular patient case.

5	4	3	2	1
Strongly Agree	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly Disagree**

Figure 3. Modified Index of Interdisciplinary Collaboration. Adapted from Oliver, D. P., Wittenberg-Lyles, E. M., & Day, M. (2007). Measuring interdisciplinary perceptions of collaboration on hospice teams. *American Journal of Hospice and Palliative Care, 24*(1), 49-53. doi:10.1177/1049909106295283. Used with permission.

CONSENT FORM

Study Title: Interprofessional Teamwork in the Inpatient Psychiatric Unit

Investigator:

Brian Capel, RN-BC, MSN, PMHNP-BC

Graduate Student, School of Nursing, University of Virginia

Phone Number: 919-280-1390

bjc4hc@virginia.edu

Project Supervisor:

Dr. Catherine Kane, PhD, RN, FAAN

Professor of Nursing, University of Virginia

Office Phone Number: 434-924-0100

cfk9m@virginia.edu

Location: Tucker Pavilion

You are being asked to take part in a research study of the perceptions of interdisciplinary teamwork in your work area. The contents of this form will be read to you. Please ask any questions you may have before agreeing to take part in the study.

Study Purpose:

The purpose of this study is to learn how psychiatric registered nurses and clinical care coordinators at Tucker Pavilion perceive interdisciplinary teamwork among each other.

Research Process:

If you agree to be in this study, you will be asked to complete a short survey that will take about 20-30 minutes to complete. The survey will also ask five brief demographic questions. The survey questions will pertain specifically to your perceptions of interdisciplinary teamwork with colleagues at Tucker Pavilion. Surveys will be posted in an envelope on each unit and you may complete them at your convenience. An end-date will be provided when surveys will no longer be collected by the researcher.

Study Risks & Benefits:

There is a risk that you may find some of the questions regarding your perception of interdisciplinary teamwork sensitive. There is a risk that you may find some of the questions regarding your perception of interdisciplinary teamwork sensitive. There is a minimal risk that sensitive information could actually identify you as a participant. This risk will be minimized by not incorporating any specific identifiers on the questionnaire and any demographic information will not be linked to any individual response.

There is no direct benefit to you for participating in this study. However, your responses will provide useful knowledge in the area of psychiatric inpatient interprofessional teamwork which has not been studied in the United States. In addition, your responses may help in future

research endeavors to construct interventions that will advance interprofessional teamwork among interdisciplinary team members working on inpatient psychiatric units.

Privacy

The researcher will collect the results of surveys and will only collect information that is needed for the research. All information collected from the study will be kept private as required by law. Written data will be stored in a locked box within a locked cabinet at Tucker Pavilion. Electronic data will be double password protected utilizing University of Virginia policy of electronic storage of highly sensitive data. If results of this study are published, you will not be named. Only the researcher or project supervisor will be able to look at your survey information. Tucker Pavilion and Chippenham Hospital will not be specifically identified if results of this study are published in an academic journal. After the researcher has completed his degree program at UVa, all survey data will be destroyed via shredding by the investigator.

Voluntariness:

Taking part in this study is completely voluntary. You may skip questions on the survey you do not want to answer. If you decide not to take part or skip some of the questions, it will not affect your current or future relationship with Tucker Pavilion or Chippenham Medical Center. If you decide to take part, you are free to withdraw at any time. You will be given a copy of this form to keep for your records.

Contact Information:

If you have any questions about this study, you may contact me, Brian Capel, primary investigator at bjc4hc@virginia.edu or 919-280-1390. You may reach Dr. Catherine Kane, project supervisor at cfk9m@virginia.edu or 434-924-0100. If you have questions or concerns regarding your rights as a subject in this study, you may contact the Chippenham and Johnston-Willis Medical Center Institutional Review Board at 804-228-6868 or the University of Virginia Institutional Review Board for Health Sciences Research (IRB-HSR) at 434-924-2620 or access their website at http://www.virginia.edu/vpr/irb/hsr/

Statement of Consent:

I have read the above information, and received answers to any questions I asked. I consent to take part in the study.

Your Signature_____ Date_____

Your Name (printed)_____

Signature of Person Obtaining Consent_____ Date_____

Printed Name of Person Obtaining Consent_____ Date_____

**This consent form will be kept by the researcher until May 15, 2017 and subsequently destroyed*

Figure 4. Consent Form.

Appendix A

Author Instructions for Submission to *Archives of Psychiatric Nursing*

Preparation

NEW SUBMISSIONS

Submission to this journal proceeds totally online and you will be guided stepwise through the creation and uploading of your files. The system automatically converts your files to a single PDF file, which is used in the peer-review process.
As part of the Your Paper Your Way service, you may choose to submit your manuscript as a single file to be used in the refereeing process. This can be a PDF file or a Word document, in any format or lay-out that can be used by referees to evaluate your manuscript. It should contain high enough quality figures for refereeing. If you prefer to do so, you may still provide all or some of the source files at the initial submission. Please note that individual figure files larger than 10 MB must be uploaded separately.

References

There are no strict requirements on reference formatting at submission. References can be in any style or format as long as the style is consistent. Where applicable, author(s) name(s), journal title/book title, chapter title/article title, year of publication, volume number/book chapter and the pagination must be present. Use of DOI is highly encouraged. The reference style used by the journal will be applied to the accepted article by Elsevier at the proof stage. Note that missing data will be highlighted at proof stage for the author to correct.

Formatting requirements

There are no strict formatting requirements but all manuscripts must contain the essential elements needed to convey your manuscript, for example Abstract, Keywords, Introduction, Materials and Methods, Results, Conclusions, Artwork and Tables with Captions.
If your article includes any Videos and/or other Supplementary material, this should be included in your initial submission for peer review purposes.
Divide the article into clearly defined sections.

Figures and tables embedded in text

Please ensure the figures and the tables included in the single file are placed next to the relevant text in the manuscript, rather than at the bottom or the top of the file. The corresponding caption should be placed directly below the figure or table.

Double-blind review

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Blinded manuscript (no author details): The main body of the paper (including the references, figures, tables and any acknowledgements) should not include any identifying information, such as the authors' names or affiliations.

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REVISED SUBMISSIONS

Use of word processing software

Regardless of the file format of the original submission, at revision you must provide us with an editable file of the entire article. Keep the layout of the text as simple as possible. Most formatting codes will be removed and replaced on processing the article. The electronic text should be prepared in a way very similar to that of conventional manuscripts (see also the Guide to Publishing with Elsevier). See also the section on Electronic artwork.
To avoid unnecessary errors you are strongly advised to use the 'spell-check' and 'grammar-check' functions of your word processor.

Article structure

Subdivision - unnumbered sections

Divide your article into clearly defined sections. Each subsection is given a brief heading. Each heading should appear on its own separate line. Subsections should be used as much as possible when cross-referencing text: refer to the subsection by heading as opposed to simply 'the text'.

Essential title page information

• ***Title.*** Concise and informative. Titles are often used in information-retrieval systems. Avoid abbreviations and formulae where possible.
• ***Author names and affiliations.*** Please clearly indicate the given name(s) and family name(s) of each author and check that all names are accurately spelled. Present the authors' affiliation addresses (where the actual work was done) below the names. Indicate all affiliations with a lower-case superscript letter immediately after the author's name and in front of the appropriate address. Provide the full postal address of each affiliation, including the country name and, if available, the e-mail address of each author.
• ***Corresponding author.*** Clearly indicate who will handle correspondence at all stages of refereeing and publication, also post-publication. **Ensure that the e-mail address is given and that contact details are kept up to date by the corresponding author.**
• ***Present/permanent address.*** If an author has moved since the work described in the article was done, or was visiting at the time, a 'Present address' (or 'Permanent address') may be indicated as a footnote to that author's name. The address at which the author actually did the work must be retained as the main, affiliation address. Superscript Arabic numerals are used for such footnotes.

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A concise and factual abstract is required. The abstract should state briefly the purpose of the research, the principal results and major conclusions. An abstract is often presented separately from the article, so it must be able to stand alone. For this reason, References should be avoided, but if essential, then cite the author(s) and year(s). Also, non-standard or uncommon abbreviations should be avoided, but if essential they must be defined at their first mention in the abstract itself.

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Acknowledgements

Collate acknowledgements in a separate section at the end of the article before the references and do not, therefore, include them on the title page, as a footnote to the title or otherwise. List here those individuals who provided help during the research (e.g., providing language help, writing assistance or proof reading the article, etc.).

Formatting of funding sources

List funding sources in this standard way to facilitate compliance to funder's requirements:

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It is not necessary to include detailed descriptions on the program or type of grants and awards. When funding is from a block grant or other resources available to a university, college, or other research institution, submit the name of the institute or organization that provided the funding.

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General points
- Make sure you use uniform lettering and sizing of your original artwork.
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- Number the illustrations according to their sequence in the text.
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- Indicate per figure if it is a single, 1.5 or 2-column fitting image.
- For Word submissions only, you may still provide figures and their captions, and tables within a single file at the revision stage.
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References

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List: references should be arranged first alphabetically and then further sorted chronologically if necessary. More than one reference from the same author(s) in the same year must be identified by the letters 'a', 'b', 'c', etc., placed after the year of publication.

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Van der Geer, J., Hanraads, J. A. J., & Lupton, R. A. (2010). The art of writing a scientific article. *Journal of Scientific Communications, 163*, 51–59.
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Mettam, G. R., & Adams, L. B. (2009). How to prepare an electronic version of your article. In B. S. Jones, & R. Z. Smith (Eds.), *Introduction to the electronic age* (pp. 281–304). New York: E-Publishing Inc.
Reference to a website:
Cancer Research UK. Cancer statistics reports for the UK. (2003).
http://www.cancerresearchuk.org/aboutcancer/statistics/cancerstatsreport/ Accessed 13.03.03.
Reference to a dataset:
[dataset] Oguro, M., Imahiro, S., Saito, S., Nakashizuka, T. (2015). *Mortality data for Japanese oak wilt disease and surrounding forest compositions*. Mendeley Data, v1. http://dx.doi.org/10.17632/xwj98nb39r.1.

Journal abbreviations source

Journal names should be abbreviated according to the List of Title Word Abbreviations.

Appendix B

Manuscript

Interprofessional Teamwork in the Inpatient Psychiatric Unit

Brian J. Capel, DNP, RN-BC, PMHNP-BC;

Catherine Kane, PhD, RN, FAAN

Authors' Affiliations: Doctoral student (Dr. Capel); Professor of Nursing & Associate Professor of Psychiatric Medicine, Family, Community & Mental Health Systems (Dr. Kane), School of Nursing; University of Virginia; Charlottesville, Virginia

Correspondence: Brian J. Capel, DNP, School of Nursing, University of Virginia, 255 Jeanette Lancaster Way, Charlottesville, VA 22903 *(bjc4hc@virginia.edu)*

Conflicts: The authors declare no conflicts of interest

Abstract

Interprofessional teamwork involves professionals of different disciplines working collaboratively together to meet specific goals or solve problems. Members of health care teams must effectively collaborate to promote favorable quality of care. Effective collaboration has been found to be associated with improved patient outcomes. The Healthy Teams Model (Mickan & Rodger, 2004) identified four major themes relevant to perceived interprofessional teamwork (IPT) in mental health: communication, mutual respect, roles, and team culture. This descriptive study assessed the perceptions of interprofessional teamwork by psychiatric nurses and clinical care coordinators in a psychiatric inpatient unit. Thirty-four registered nurses and eighteen clinical care coordinators completed the Modified Index for Interdisciplinary Collaboration at a Central Virginia inpatient psychiatric facility. Findings demonstrated positive evaluations of IPT by registered nurses and clinical care coordinators. Level of academic degree was found to be correlated ($r = 0.28$, $p < 0.05$) to IPT and an inverse relationship was found between age and flexibility ($r = -0.28$, $p < 0.05$). This study provides support for the Healthy Teams Model by demonstrating positive perceptions of IPT by nurses and clinical care coordinators in an inpatient psychiatric setting.

Keywords: interprofessional, interdisciplinary, teamwork, collaboration, mental health, psychiatry

Interprofessional Teamwork in the Inpatient Psychiatric Unit

Contemporary American psychiatric care continues to be an ever-changing and increasingly complex arena that requires mental health care teams to implement team-based care. The World Health Organization (WHO) and Institute of Medicine (IOM) have emphasized the importance of health care professionals working collaboratively to achieve the highest level of quality of care (Institute of Medicine, 2002; World Health Organization, 2010). Realistically, it is self-evident that no one discipline in mental health can provide comprehensive psychiatric services to meet all the recovery needs of persons with mental health problems (Rossen, Bartlett, & Herrick, 2008). Historically, mental health care has for decades involved the use of multidisciplinary teams on most inpatient psychiatric units. However, many mental health teams remain in isolative disciplines and have not migrated into a more interdisciplinary approach where team members collaborate around a common set of goals in order to make effective care decisions (Batorowicz & Shepherd, 2008). Unfortunately, with this lack of interprofessional teamwork (IPT) or interprofessional collaboration (IPC) in inpatient mental health settings, psychiatric care becomes inefficient and fragmented resulting in poorer quality care for clients.

Study Purpose

The purpose of this study was to describe the perceptions of psychiatric nurses and clinical care coordinators about IPT in an inpatient psychiatric unit.

Study Question

For this study, the following research question was proposed: What are the perceptions of IPT of psychiatric nurses and clinical care coordinators in an inpatient psychiatric facility?

Background

Teamwork is a nebulous term that has many conceptual understandings. For this review, teamwork was conceptualized as a process of involving two or more health professionals with

complementary backgrounds and skills who collaboratively assess, plan, and evaluate patient care utilizing common health goals (Xyrichis & Ream, 2008). Members of the team function interdependently, share knowledge, information, and resources, and synergistically provide solutions to problems (Bareil et al., 2015). According to Salas, Shuffler, Thayer, Bedwell, & Lazzara (2015), teamwork is more than having members of different disciplines or professions working beside each other; teamwork focuses on the processes of team members' behaviors, attitudes and cognitions to accomplish necessary tasks. In other words, what team members' do, what they feel or believe, and what they think or know are vital to the explicit functioning of the team (Salas et al., 2015). Each of these processes are contextually bound and have the ability to hinder or harmonize the team. Although harmonization of mental health team members seems essential, effective teamwork is difficult to achieve (Reeves, Lewin, Espin, & Zwarenstein, 2010).

The literature is replete with rationales for utilizing IPT in health care settings. Primarily, IPT brings health care professionals together to handle complex situations and facilitate creative solutions (Hall, 2005; Vyt, 2008). IPT emphasizes the capacity to interactively and collaboratively examine the client's resources and problems rather than individual team members independently evaluating and reporting their findings (Herrman, Trauer, Warnock, & Professional Liaison Committ Austr, 2002). The result is a more robust and efficient care decision. Another advantage is the mutual support IPT provides to team members (Vyt, 2008; Xyrichis & Lowton, 2008). IPT improves staff morale because client problems can be discussed amongst team members and clinical knowledge and resources can be shared culminating in improved job satisfaction and staff retention (Xyrichis & Lowton, 2008). Poorly coordinated teamwork can result in clinical mistakes that can be costly. IPT has been demonstrated to result in cost-effective measures that improve care for persons with chronic illnesses (Hall & Weaver,

2001). Effective IPT may reduce costs by reducing unnecessary interventions and avoiding service duplication (Hall & Weaver, 2001). Finally, IPT has been found to contribute to the perception of satisfactory care by patients and families (Reeves et al., 2010). According to Reeves et al. (2010), IPT helps to address the problems of service delivery that can undermine the quality and safety of care. Thus, the team produces better work than its individual members working as solo practitioners (Herrman et al., 2002). Achieving a level of competent IPT in mental health is a complex process. There are more than a few postulated facilitators and barriers that advance the construction of IPT.

The purpose of this proposal was to evaluate mental health care team professionals' perceptions of IPT or IPC and how these perceptions differed in various mental health settings. The following research question was addressed: What are the perceptions of IPT by psychiatric nurses and clinical care coordinators working in an inpatient psychiatric facility?

Theoretical Framework

Mickan and Rodger (2005) produced an ideal theoretical framework for the examination of IPT in health care. Using personal construct theory and inductive theory building, Mickan and Rodger (2005) used qualitative methods to collect perspectives from health care practitioners to denote productive contributions to teamwork. The collected data were analyzed and categorized into hierarchies to determine themes of effective IPT. Four interdependent themes emerged during data analyses (i.e. environment, structure, process, and individual contribution) and were expanded to six categories that included: purpose, goals, leadership, communication, cohesion, and mutual respect (Mickan & Rodger, 2005). This research culminated in the Healthy Teams Model that has functional utility for contemporary health care practitioners (Mickan & Rodger, 2005).

According to Mickan and Rodger (2005), effective teams have a well-defined purpose that is associated with the goals and objectives of the organization. Team members express a shared ownership of purpose in order to serve patients. The team's goals are linked to the team's purpose and outcomes. Goals are set collaboratively and able to be clearly measured. These goals help to define the team's task and how they could be accomplished. With clear team goals, this increases the focus of the development of strategies for achievement.

Leadership is important for the attainment of team goals and objectives. Mickan and Rodger (2005) posit that optimal leaders are able to maintain an appropriate structure for making decisions. Team leaders effectively manage conflict and coordinate tasks equally and encourage the sharing of ideas and information. Good leaders provide feedback about the team members' contributions while maintaining an environment where members feel heard, supported and trusted.

Healthy teams have discernable patterns of communications where all members are freely able to share knowledge and ideas (Mickan & Rodger, 2005). Communication within healthy teams incorporate the diversity of team members' communication styles while continuing to provide efficient information with each other (Mickan & Rodger, 2005).

Effective teams share a sense of camaraderie that develops over time into a cohesive group. Team members have commitment to the team and trust the professional expertise of each member (Mickan & Rodger, 2005). A cohesive team has a unique team spirit and individuals are proud of the team's endeavors.

All team members have a high level of mutual respect for one another (Mickan & Rodger, 2005). Each professional contribution is acknowledged and validated by other team members. There can be disagreement between team members; however, diverse opinions or beliefs are openly expressed by group members and respected accordingly.

The Healthy Teams Model has categories that are pertinent to IPT perception. According to Reeves and Freeth (2006), IPT is perceived as strong if interprofessionals believe they share a team identity and able to work collaboratively together to solve problems. Most of the six tenets in the theory have been cited multiple times in the research literature as facilitators or barriers to the development of IPT. The model assists in the identification of effective teamwork factors and can be used to critically evaluate and enhance team functioning.

Review of Literature

For this review, a total of 152 articles were extracted from all databases based on inclusion and exclusion criteria. The John-Hopkins Nursing Evidence-Based Practice Research Evidence Appraisal tool was utilized to determine the strength and quality of the evidence. Inclusion criteria for article selection were the following: (1) primary research articles; (2) published between years 1985 and 2015; (3) were based in a mental health setting; (4) addressed the concept of perceived IPT or IPC among psychiatric professionals. Exclusion criteria included the following: (1) case studies, case series, editorials, and commentaries; (2) non-English language articles; (3) studies that were not situated in the mental health environment; (4) perceptions of IPT or IPC were not addressed. Five studies that met criteria for final inclusion.

Study Descriptions

Toseland, Palmer-Ganeles, & Chapman (1986) found for the majority of respondents (72.6%) that teams were more effective than individual approaches to psychiatric care (Toseland, Palmer-Ganeles, & Chapman, 1986). According to Toseland, Palmer-Ganeles, & Chapman (1986), role ambiguity was found to be the most profound detractor of IPT. Larkin and Callaghan (2005) found the majority of professionals had a clear definition of their role; however, members of the team did not perceive their roles as being validly recognized or

understood by other team. Chong, Aslani, & Chen (2013) posited that team members with clear goals were perceived as having more effective IPC.

Ødegård and Strype (2009) findings indicated that IPC characteristics of communication, coping and organizational domain were more associated with women than men (Ødegård & Strype, 2009). The most prominent aspects of IPC were motivation, followed by leadership and social support (Ødegård & Strype, 2009). Simpson (2007) found that collaboration, communication and information sharing were enhanced when team members perceived each other as being respectful. Team members acknowledged the need to have a supportive environment where they could openly explore work-related difficulties and feel supported and empowered by team members. Members expressed the more support he or she received from the team, the greater the collaborative effort that could occur within the team.

The studies reviewed have both similarities and contrasts. For example, Larking and Callaghan (2005), findings are supported by Chong et al. (2013) where a lack of understanding of member roles was considered a significant barrier to IPC. Similar to Simpson (2007), Chong et al. (2013) concurred that clinicians who reported having a good level of IPC believed their work environment incorporated mutual respect between team members. In relation to Ødegård and Strype (2009), results of this study support Simpson (2007) that supportive environments foster the perception of IPT. Finally, participants reported the importance of communication between members via weekly team meetings and IPT (Simpson, 2007), which is contrasted by Larkin & Callaghan (2005) findings that team meetings had no impact on perceived IPT.

From the five studies presented, four primary themes related to IPT emerged upon analyzing research outcomes: communication, professional roles, mutual respect, and team culture.

Communication

The concept of communication is certainly one that is well entrenched in the domain of IPT and considered to be foundational for interdisciplinary collaboration. A well-functioning mental health team involves having members who can competently share various information clearly while actively listening to diverse ideas and suggestions for patient care (Simpson, 2007; Ødegård & Strype, 2009). For effective IPT, team members frequently have both informal and formal interactions and able to adapt these modes of interactions based on the information required to convey. According to Simpson (2007), efficient communication cultivates the professional relationship between team members and produces improved outcomes in mental health work. Poor communication may complicate patient issues and stagnate the team from meeting its objectives. Without effective communication, team members are not able to actualize their contributions to team objectives and have the potential to create conflict between professionals.

Roles

Two of the qualitative studies presented in this review have alluded to professional roles as a criteria of good IPT (Chong et al., 2013; Larkin & Callaghan, 2005). To have effective IPT, each team member must be able to define his or her role in the operation of the team. Chong et al. (2013) posit that if healthcare providers were not able to define their roles based on professional skills and training, then IPC would be sub-optimal. Despite the majority of professionals in the Larkin and Callaghan (2005) study reporting being clear about their individual roles, many did not view their role as being understood by other team members. Consequently, this perceived lack of understanding of roles is a significant contributing factor to segregation and unintentional stereotyping of other disciplines.

Mutual Respect

Similar to effective communication, mutual respect is considered to be a hallmark of productive IPT. In the qualitative studies by Chong et al., 2013 & Simpson (2007), providers involved in mental health reported that a good level of IPC was present in the work environment when each professional afforded a sense of respect for other team members. From the evidence, mutual respect can be further demonstrated in IPT with the allowance that all team members perceive the ability to freely communicate knowledge and ideas without fear of inconsideration or invalidation (Simpson, 2007). However, some participants in the Simpson (2007) study felt that individuals with notable power in the team were condescending to viewpoints contrary to their own. Such antagonism created tensions in the team and impacted the quality of team functioning. This limited evidence suggested that when team members felt disrespected, the result was an impairment in the provision and coordination of patient care.

Team Culture

The cultural environment of the mental health team is crucial to IPT. Professionals in the Ødegård and Strype (2009) study suggested that having social support from the team was an important aspect of IPC. According to Ødegård and Strype (2009), professionals have a need to experience support while working with difficult cases. Those teams which have support are a key proponent of IPC. Support for members can also be elicited from a team that effectively utilizes appropriate humor during times of stressful situations (Simpson, 2007). Humor could actually be used to unite team members while attenuating anxieties. Specific demographic characteristics of professional team members could influence the team culture and IPC. However, in the study by Odegard and Strype (2009), professional education, work experience, and age did not significantly affect perceptions of IPC. Results of this exploratory study suggest that diversity of professional backgrounds and clinical experiences among mental health care professionals are less representative aspects of perceived IPC.

Even though demonstrative limitations were present in this review, there was level 3 evidence that supported mental health care professionals viewed communication, roles, mutual respect, and team culture as necessary components of perceived IPC. However, with the paucity of present evidence related to IPT in US inpatient mental health units, further research was needed to address IPT on psychiatric units in the US among mental health providers. In addition, research was needed to assess perceived IPT between specific mental health disciplines such as nurses and clinical care coordinators or social workers. Once perceptions of IPT between nurses and clinical care coordinators have been examined, then intervention studies based on IPT principles may be formulated for the improvement of professional clinical relationships which could promote improved patient outcomes.

Effective interdisciplinary functioning in psychiatric-mental health care requires a high level of perceived IPT. The level of teamwork needed in psychiatric care is not intuitively constructed but must be consciously cultivated from all team members. With increasingly complex needs for patients with mental health problems and limited resources, it remains exigent that mental health professionals collaboratively work together to achieve the best outcomes for those being served. Research on IPT among mental health professionals on inpatient psychiatric units will contribute to better understanding how to optimize the clinical environment to promote the recovery of those suffering from mental disorders.

Methods

The methods utilized in this project were employed to answer the research question.

Study Purpose

The purpose of this study was to describe the perceptions of IPT from psychiatric nurses and clinical care coordinators in an inpatient psychiatric unit.

Definition of Terms

IPT has been described with multiple interpretations throughout the literature. Operationally defined for this study, IPT is a type of work between disciplinary professionals who share a team identity and work collaboratively together to solve problems and deliver care to clients (Reeves et al., 2010). IPT and IPC should be considered in this study as synonymous terms. The role of clinical care coordinator is considered to have similar work duties as a social worker. The clinical care coordinator works to find resources in the community for the client's optimal functioning. The clinical care coordinator is involved in placement of the client beyond the inpatient facility and performs family therapy.

Study Design

A comparative descriptive design was used to describe the perceptions of IPT between psychiatric nurses and clinical care coordinators.

Study Setting

The study was conducted at a community-based hospital psychiatric facility in the Central Virginia metropolitan area. The psychiatric facility provided inpatient behavioral health services to children, adolescents, adults, and elderly persons living in Virginia. The facility contained 137 licensed beds on six units that is a part of the combined 752 acute care beds that makeup the entire medical center.

Sample

The study sample was compromised of two groups: psychiatric nurses and clinical care coordinators who were working in an inpatient psychiatric unit serving children, adolescents, adults, and elderly persons with psychiatric disorders. The inclusion criteria was twofold: (1) staff who are either registered nurses or clinical care coordinators and (2) have completed facility orientation. The exclusion criteria included the following: (1) working as a temporary or per diem registered nurse or clinical care coordinator, (2) working as a floater staff member, (3) has

not completed facility orientation, (4) not functioning as a registered nurse or clinical care coordinator on the unit, and (5) opposed to completing study survey data. The study sample was limited to registered nurses and clinical care coordinators. Nursing assistants and licensed practical nurses were not included in the sample in order to have a well-defined study group.

A convenience sample of 45 registered nurses and 20 clinical care coordinators were approached for participation in the study. Forty-three nurses (96%) and 19 clinical care coordinators (95%) signed consent for the study. Thirty-four registered nurses and eighteen clinical care coordinators completed and returned questionnaires for a return rate of 79% and 95% respectively for final analysis. Demographic data is represented in Table 1. The sample contained 65.4% registered nurses and 34.6 % clinical care coordinators. Females represented the majority of the sample with 88.5% and males were 11.5% of the sample. Similar to the overall sample, registered nurses contained 91.2% females and 8.8% males while the clinical care coordinators had 83.3% females and 16.7% males. The average age of registered nurses was 42.4 $\pm$ 11.5 years and the average age of the clinical coordinators was 42.3 $\pm$ 11.8 years. The mean number of practice experience years was 10.8 years for registered nurses and 13.2 years for clinical care coordinators. Most registered nurses held an Associate degree (55.9%) or Bachelor of Science in Nursing (35.3%) as their highest educational degree. The majority of the clinical care coordinators held a Master's degree (94.4%). There were no significant differences found between registered nurses and clinical care coordinators in regards to sex, age, and years of experience.

Study Procedure

Eligible registered nurses and clinical care coordinators were invited via printed flyer that was posted on the unit and via email correspondence to attend a brief information session describing the study. The sessions were held twice weekly at various times for two-weeks in

July 2016 for improved convenience of attendance. During these sessions, the study purpose and study question were described to potential participants. IPT was defined for the audience. The importance of the study in relation to the uniqueness of the research question and potential products of the study was described. The primary investigator confirmed that participation was voluntary and that all completed surveys were kept confidential and anonymous. The mechanics of data collection via collection box was illustrated by the primary investigator and how potential participants would complete and turn in completed surveys. Finally, potential participants were informed of the time that data would be collected, namely between mid July 2016 and early August 2016.

Each participant was given a survey, asked to complete the survey, and place the completed survey face down inside a collection box. Precautions for participant identifying information linking responses to the participant were implemented during data collection. When the data collection period ended, the primary investigator collected all boxes containing completed surveys for data analysis.

Measures

The Modified Index for Interdisciplinary Collaboration (MIIC) is a 42-item self-report questionnaire that measures IPC among health care professionals of different disciplines (Oliver, Wittenberg-Lyles, & Day, 2007). The instrument is a modification of the Index of Interdisciplinary Collaboration (IIC) scale which measures social workers' perceptions of IPC (Bronstein, 2003). This scale was developed as a measure of IPC in a hospice team (Oliver et al., 2007). The 31 item questionnaire was scored on a 5-point Likert-type scale where 1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, and 5 = strongly.

The MIIC was selected for a variety of reasons. The scale measures the major components of the Mickan & Rodgers's healthy teams model. The MIIC was easy to administer

and does not require the participant to make additional written statements or comments which could be misinterpreted during data analysis. The scale was well-suited for statistical analysis by its Likert-type scoring. Original testing revealed a high internal consistency with Cronbach's alpha of 0.935 (Oliver et al., 2007). The analysis of this study sample resulted in a Cronbach's alpha of 0.928. The MIIC contains 5 subscales that together culminate in the total perception of IPC score. These scales are the following: (1) interdependence; (2) professional activities; (3) flexibility; (4) collective ownership of goals; and (5) reflection on process. Means for the MIIC represent the scores for the overall scale and subscales.

Five socio-demographic questions were added to the questionnaire to collect data on the participant's discipline, age, sex, years of experience, and educational level. After the participant completed the MIIC, the participant returned the survey to the collection box face down to ensure confidentiality and anonymity. Completion of the MIIC generally took less than 30 minutes for participants.

Data Analysis Plan

Data analysis was conducted via SPSS for Windows Version 16.0 (SPSS Inc., Chicago, Illinois). Data normality was evaluated for skewness and kurtosis. If the data was skewed, an appropriate statistic was computed. Non-participation rates was calculated. Descriptive statistics was computed for the demographic characteristics in each professional group (psychiatric nurses/clinical care coordinators), and the two groups was compared. Chi-square tests were used for categorical variables and t-tests were used for continuous variables. T-tests were used to compare the mean index score of registered nurses to clinical care coordinators. T-Tests were also used to compare the means of subscales between the two groups. Pearson correlations were used to discover relationships between nurses and clinical care coordinators

and MIIC scores. Pearson's correlations were compared for age, years of experience in occupation, educational level and total MIIC scores and subscale scores.

Protection of Human Subjects

This proposal was submitted to the Chippenham Medical Center Internal Review Board (IRB) for approval of the study prior to the commencement of data collection. Upon approval, the primary investigator sought to obtain signed consent from all potential participants prior to data collection. Potential participants were given a presentation that describes the purpose, the study question, and how data will be collected. Each potential participant were read the study consent form by the primary investigator verbatim. The researcher was responsible for ensuring that participants understand the contents of the consent form. A copy of the consent form was given to all participants. The primary care investigator provided individual sessions and reviewed the above information. The primary investigator was responsible for maintaining original copies of the signed consent forms. The questionnaire did not collect personal identifying information to protect participants' confidentiality and anonymity. All written data was double protected and stored in a locked container within a locked cabinet. Written data was translated into electronic coded data for statistical analysis. Data was input by the investigator into SPSS. Copies will be destroyed via shredding after completion of researcher's doctoral degree program. The electronic data was preserved according to University of Virginia data storage procedures.

There was a risk that questions asked on the MIIC may be sensitive to participants. Participants were always free to not answer any questions. The benefits of the study included: (1) increased knowledge of the perceptions of IPT between psychiatric nurses and clinical care coordinators; (2) improve nursing practice through an exploration of perceived IPT; and (3)

provide a foundational research basis for potential IPT intervention studies between different disciplines practicing on inpatient psychiatric units.

Results

Modified Index of Interdisciplinary Collaboration Scores and Subscale Scores

Analysis of MIIC scores revealed an overall mean total score of (M = 3.99, SD = 0.42). Registered nurses had a slightly less mean score for overall perception of IPT (M = 3.92, SD = 0.46) than clinical care coordinators (M 4.10, SD = 0.33) (Table 2). An independent samples *t*-test revealed no significant difference between registered nurses and clinical care coordinators on mean MIIC scores $t(50) = -0.18$, $p = 0.15$. Subscales scores between registered nurses and clinical care coordinators did not significantly differ (Table 2). A significantly mild positive relationship was found between educational level and MIIC score $r = 0.28$, n = 52, $p < 0.05$ (Table 3). Nevertheless, educational correlation was not large enough to sway any of the subscale measures. No significant correlations were found between subscale scores and years of experience. However, there was a significant negative correlation found between age and flexibility $r = -0.28$, n = 52, $p < 0.05$ (Table 3).

Discussion

The primary focus of this study was to describe the perceptions of IPT from inpatient psychiatric nurses and clinical care coordinators. MIIC scores from registered nurses and clinical care coordinators presented that both disciplines on average agreed IPT was present in the practice setting. Mean MIIC scores did not significantly differentiate exhibiting similar perceptions of IPT between the two groups. Similarly, registered nurses and clinical coordinators did not differ on perceptions of interdependence, professional activities, flexibility, collective ownership of goals, and reflection on process between professions. These results represent beliefs of positive IPT between registered nurses and clinical care coordinators.

However, this perception of IPT was not a strongly held perception between either profession as evident by mean MIIC scores. For relationships between MIIC scores and demographic variables such as age, sex, and years of experience this was not a factor in level of IPT for either professional group. Correspondingly, sex and educational level were also not significantly influential in MIIC subscale scores. The identified relationships may have simply occurred by chance due to small sample size.

Interestingly, educational level provided two significant relational findings in regards to MIIC scores. First, there was a mild positive correlation between educational level and MIIC score, $r = 0.28$, n = 52, $p < 0.05$. Thus, as the registered nurse or clinical care coordinator achieved higher levels of education, this positively affected MIIC score and IPT perception. One explanation from this finding could stem from those with higher levels of education have usually worked longer in the clinical area and may have been able to form closer professional relationships between co-workers. Another reason could be those with higher levels of education have been introduced to more forms of interdisciplinary formats in educational training allowing a fluid transition of core IPT principals to be transferred to the clinical arena. Finally, those with higher degrees may have more comfortability in professional communication and feel more professional equity which could enhance perceptions of IPT.

The other significant study finding demonstrated an inverse relationship between age and the subscale "flexibility," $r = -0.28$, n = 52, $p < 0.05$. As the age of the clinician increased, a perception of role flexibility decreased. An explanation for this relationship could assume that as clinicians age, they become more concretized in their specific disciplinary roles. Clinicians generally exude progressive expertise in their role; however, having the ability to be flexible in other roles becomes increasingly difficult with age. There can be an obstinate attitude by the clinician to adopt additional interdisciplinary roles that are not familiar. The aging clinician may

think having additional duties or roles is not a part of their professional identity or responsibility. Diminished flexibility can lead to resentment among interdisciplinary team members through an unwillingness to engage in vital functions beyond explicit professional roles. Unfortunately, this lack of flexibility with older clinicians can splinter needed interventions that could improve patient outcomes.

The study only exhibited a couple of significant results in relation to IPT between psychiatric registered nurses and clinical care coordinators. There are a number of rationales which could highlight the meaning behind these results. First, this was the first study that specifically examined IPT solely between inpatient psychiatric registered nurses and clinical care coordinators. Only one facility was utilized for subject recruitment and data collection which reduced the sample size. Also, there was a limited number of subjects in each professional group from the sample population which could have eclipsed significant findings of perceived IPT. Second, the mean number of years of clinical experience for each group was more than ten years. Therefore, many of the participants have been exposed to interdisciplinary relationships in psychiatric care through clinical expertise which could have skewed results. Organizational factors could have influenced findings where the facility actively encourages or discourages use of IPT principles. It would be interesting to see the contrasts of IPT operating in other inpatient psychiatric facilities. Lastly, there were a high percentage of clinical care coordinators with graduate degrees which may have given them opportunities to learn and experience modes of IPT which could have created more positive perceptions of IPT.

Findings from this study validated concepts of Mickan & Rodger (2005) healthy teams model. Mickan & Rodger purport that effective teams have well-defined goals. Results of this study illustrated both professional groups perceived having collective ownership of goals. According to Mickan & Roger, leadership is an important aspect of professional activities in IPT.

Study findings represented registered nurses and clinical care coordinators having a positive sense of professional activities including effective leadership. Healthy teams have efficient communication and commitment to professional camaraderie. The MIIC subscale "interdependence" was favorably scored by study clinicians and illustrates attributes of good communication and professional cohesion. Mickan & Rodger posit that team members have flexibility in acknowledging variable opinions and beliefs. Registered nurses and clinical care coordinators agreed to have a positive amount of flexibility cultivating a degree of mutual respect. Finally, Mickan & Rodger stated interprofessionals who have a team identity and collaboratively work together have strong IPT. Findings from this study represent a reflection on interprofessional process where registered nurses and clinical care coordinators positively believed to have interprofessional collaboration and interpersonal team identity.

Nursing Practice Implications

The study had several nursing practice implications. The study examined the concept of IPT with psychiatric nurses and clinical care coordinators working on an inpatient unit which has not been studied in past nursing research. Results of the study provided patterns of IPT that hindered or advanced patient care through the perceptions of psychiatric nurses. Analysis of data yielded factors that could significantly affect the perception of IPT and disciplinary interdependence such as level of education. From findings, there should potentially be a focused on the attainment of higher educational degrees, especially for registered nurses to improve the perception of IPT and clinical interdependence. The study findings supported a basis for future nursing research by providing data that can be used to formulate new hypotheses and interventions to test hypotheses in relation to IPT and psychiatric nurses. Finally, the study has future implications for nurses who work with inpatient psychiatric populations with improved patient care delivery through the enhancement of IPT.

Design Strengths & Weaknesses

The study purpose and study question were appropriate for a comparative descriptive research design. This study was the first study to investigate IPT on an American inpatient psychiatric unit since 1986. As presented in the literature review section, this study specifically elucidated patterns of IPT between psychiatric nurses and clinical care coordinators that had not been presented before in the research literature. The information gathered from this study provided the foundation for generating research hypotheses and formed the basis for future intervention studies involving IPT on inpatient psychiatric units.

There were number of weaknesses inherent utilizing this research design. With a descriptive study, no randomization occurs which limited generalizability of the findings. In addition, research was conducted at only one inpatient psychiatric facility with a small number of registered nurses and clinical care coordinators, again limiting the generalizability to other inpatient psychiatric settings. The descriptive design did not identify causal relationships between subjects and IPT.

Conclusions

According to Peplau (1960), an essential component for effective psychiatric work from professional colleagues is collaborative teamwork. This study provides support for the Healthy Teams Model (Mickan & Rodger, 2005) by demonstrating positive perceptions of IPT by nurses and clinical care coordinators in an inpatient psychiatric setting. This study contributes to the knowledge base regarding IPT in mental health settings which can influence the care of those with psychiatric needs.

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Table 1.

Characteristics of study sample (N = 52)

Characteristic	Total (n = 52)	Registered Nurse (n = 34)	Care Coordinator (n = 18)
Gender # (%)			
Female	46 (88.5)	31 (91.2)	15 (83.3)
Male	6 (11.5)	3 (8.8)	3 (16.7)
Highest Education # (%)			
Diploma	2 (3.8)	2 (5.9)	0
Assoc. Degree	19 (36.5)	19 (55.9)	0
Baccalaureate	13 (25.0)	12 (35.3)	1 (5.6)
Master's	18 (34.6)	1 (2.9)	17 (94.4)
Age in Years M (SD)	42.4 (11.5)	42.4 (11.5)	42.3 (11.8)
Prof. Experience M (SD)	11.6 (10.1)	10.8 (10.3)	13.2 (9.9)

Note. M = Mean; SD = Standard Deviation

Table 2.

T-tests for Modified Index of Interdisciplinary Scale and Subscales

Scale	RN (n = 34)	CCC (n = 18)	*T*-Test	Probability *
MIIC	3.92	4.10	-0.18	0.15
Interdependence	4.13	4.31	-0.18	0.12
Professional Activities	3.18	3.98	-0.17	0.17
Flexibility	4.03	4.23	-0.20	0.22
Goal Ownership	3.78	3.94	-0.15	0.35
Reflection of Process	3.49	3.68	-0.20	0.36

Note. * = non-significant at 0.05; RN = Registered Nurse; CCC= Clinical Care Coordinator

Table 3.

Correlations for Modified Index of Interdisciplinary Scale and Subscales

Scale	Age	Educational Level	Years of Experience
MIIC	-0.15	0.28*	-0.08
Interdependence	-0.62	0.27	-0.03
Professional Activities	-0.04	0.25	-0.02
Flexibility	-0.28*	0.20	-0.13
Goal Ownership	-0.13	0.23	-0.02
Reflection of Process	-0.20	0.23	-0.09

Note. * = significance < 0.05