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Capstone/Thesis

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Online Journal Club to Improve Perception of Interprofessional Collaboration

Online Journal Club to Improve Perception of Interprofessional Collaboration

Capstone Project

Russelyn Connor

Submitted to Dr. Louise Suit, Ed.D., RN

In partial fulfillment of NR706C

Regis University

May 29, 2016

Online Journal Club to Improve Perception of Interprofessional Collaboration

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Online Journal Club to Improve Perception of Interprofessional Collaboration

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Online Journal Club to Improve Perception of Interprofessional Collaboration

Executive Summary

Problem

Rural community mental health centers (CMHC) can be spread across many counties with various locations and programs. Physical isolation and professional diversity often create a perception among staff of poor interprofessional collaboration (IPC). A strong need exists in such settings to use up-to-date internet technology to manage collaboration, as mandated by the Institute of Medicine and the American Association of Colleges of Nursing.

The Capstone practice question is to discover if, for staff from all sites of a mental health center who volunteer to participate, does the creation of an online asynchronous monthly journal club lead to improvement of perception of interprofessional collaboration (IPC)?

Purpose

This project intended to demonstrate that, given an online venue to discuss subjects of mutual interest among staff at a CMHC, a perception of improved IPC would be achieved.

Goal

The goal of this project was intended to evaluate the usefulness of an online journal club for improving staff perception of IPC at a rural Community Mental Health Center.

Objective

The objective was to identify if there was improved perception of IPC among participating staff within three months as measured by a comparison of pre-test/post-test aggregate mean scores for the Index for Interdisciplinary Collaboration (IIC) instrument.

Plan

In order to measure this objective, all staff of a rural CMHC were invited to participate. 32 participants were given a pre-test survey, using the modified Index for Interdisciplinary Collaboration and 20 completed the post-test. One journal article was uploaded into GoogleDocs every month for three months and sent to all participants with a request to comment. At the end of the three month pilot, the identical survey was sent to all participants and results were analyzed.

There was a statistically significant improvement of 2.8% in pre-test and post-test aggregate mean scores; however, other factors may have influenced this score. Further research into the effects of a Journal Club on IPC is indicated.

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Online Journal Club to Improve Perception of Interprofessional Collaboration

Problem Recognition and Definition

In 2011, of the 1,669 designated areas with a shortage of mental health professionals, 85% were in rural America (Larrison, Hack-Ritzo, Koerner, Schoppelrey, Ackerson, & Korr, 2011). While a lower pay scale is the biggest factor in why professionals do not choose to work in rural areas, isolation and absence of “teamwork” have been cited as additional common reasons (Onyett, Pillinger, & Muijen, 1997; Watanabe-Galloway, Madison, Watkins, Nguyen, Chen, 2015). Physical isolation and professional diversity often create a perception among staff of poor interprofessional collaboration (IPC) (Farrell & McKinnon, 2003; Onyett, Pillinger, & Muijen, 1997).

Interprofessional Collaboration (IPC) has been defined by Bronstein (2003) as “an effective interpersonal process that facilitates the achievement of goals that cannot be reached when individual professionals act on their own” (p. 299). It is a synergistic experience that comes from working closely together in an active and productive manner (Parker-Oliver, Bronstein, & Kurzejeski, 2005).

An integrated practice model community mental health center (CMHC) in Southwest Colorado covers five counties and has six sites in three of them, with a total of 28 programs also located in schools, hospitals, and jails. Staff are spread throughout the area and often report feeling isolated from colleagues. Staff rely heavily on technology in order to do their work. In addition, the organization is a multi-disciplinary agency: psychologists, licensed clinical social workers, psychiatrists, general practice doctors, mental health nurse practitioners, family nurse practitioners, masters’ prepared therapists, bachelor-level psychology case managers, two and four year registered nurses, recovery specialists, emergency medical technicians, and medical

assistants. All of these professionals make up the clinical teams, while an equally wide range of non-clinical staff provide the infrastructure and support. The agency has recently moved to an integrated care model offering both primary care and behavioral health. The model depends on accurate and immediate communication to provide the best service to patients, improve engagement, decrease hospitalizations and crisis events, and improve patient outcomes on identified key performance indicators (KPIs) such as Body Mass Index, depression, and blood pressure. The vision for the agency is to provide services which are “patient-centered, population-based, technology-enabled, and outcome-driven” (Axis Health System, 2013).

Anecdotally at the CMHC, communication issues are cited by both staff and patients as a serious barrier in providing best outcomes for patients. Besides physical separation and frequent inability to share records, other factors can lead to poor communication. For example, the CMHC utilizes 2 electronic health records (EHR) along with ten paper records and other EHRs or chart systems within the community partners. Unfortunately, none of these systems of documentation are capable of talking to any other. In spite of great efforts to become integrated, the differing professions often work in only one area and may rarely interact with those from a different discipline or team. Some never come to an office at all, but use televideo. One psychiatrist lives in Tel Aviv. Large areas of the five counties still have only dial-up internet service, and no cell service. Efforts to bring staff together face-to-face tend to result in poor turn-out, and only a small proportion have access to televideo technology.

Patients, however, tend to move through many of the 28 programs within the agency at one time or another. It is not uncommon to have one patient transfer through up to five different programs, in several counties, and even out of the area, in less than a week. Up-to-date information does not always follow consistently from place to place, and responsible staff can

feel left to make important decisions on their own, often not sure who else to consult, or who exactly the “team” might be. Finally, these factors, coupled with a high turnover of staff, as recognized by the Human Resources department, can lead to a sense of distrust between staff who literally do not know one another, but are depending on each other to provide the best of care.

Interprofessional collaboration (IPC) a term sometimes used interchangeably with either interdisciplinary collaboration or teamwork, is considered an “essential part of effective health care delivery. To deliver quality care, often a large number of professionals with diverse expertise must work together” (Valentine, Nembhard, & Edmondson, 2011. p.4). An increasing body of research indicates that good teamwork produces better outcomes (Valentine, Nembhard, & Edmondson, 2011). Improved patient outcomes such as lowered infection rates and length of stay related to improved interprofessional collaboration have been seen in surgical units and ICUs, while in mental health settings, shortened lengths of hospital stays, decreased delays in obtaining treatment, shorter treatment episodes, and lowered treatment costs have been recognized (Hoffman, Haffmans, Spinhoven, & Hoencamp, 2009; Mellin, Bronstein, Anderson-Butcher, Amorose, Ball, & Green, 2011).

This Capstone project was developed to determine if staff perception of interprofessional collaboration at a rural community mental health center could be improved by the implementation of an online journal club. The project used available technology to encourage staff who rarely meet face-to-face to dialogue and offer opinions through an online journal club; to share professional viewpoints on subjects that have meaning to all; and review evidence-based best practices for persons suffering mental illness with a hope that this process might increase trust and make IPC more possible.

PICO Statement

Definition: **P:** Problem statement, **I:** Intervention, **C:** Current practice or comparison group, and **O:** Outcomes, a common framework for focusing capstone projects.

P: Interdisciplinary staff located at all sites of a community mental health center who voluntarily chose to participate.

I: Online journal club pilot with monthly articles posted for 3 months, and a discussion opportunity through GoogleDocs, accessible at the convenience of staff.

C: No current technology-based method of improving IPC.

O: Improved perception of IPC between participating staff.

PICO question

For staff from all sites of a mental health center who volunteer to participate, does the creation of an online, asynchronous monthly journal club and discussion lead to improvement of perception of interprofessional collaboration?

Project Significance, Scope and Rationale

The significance of this project was to examine the value of an online, asynchronous journal club in improving IPC. The scope was a three-month pilot of the journal club in a rural community mental health setting with the goal of building perception of IPC. The rationale was that such a pilot project might improve communication and IPC among staff, which would then lead to a continuation of the project, greater retention and job satisfaction, and, ultimately, improved patient outcomes. A long-term goal of improved patient outcomes through improved IPC has been recommended by the Institute of Medicine (2010) and the American Association of Colleges of Nursing (2006, 2011).

Theoretical Foundation

Health Promotion Model

Nola Pender, in her Health Promotion Model, defined nurses as persons “who develop and execute health promoting interventions” from the individual to the community level (McEwen & Wills, 2014, pp. 234-6; Pender, Murdaugh, & Parsons, 2011) (See Table 1). The model integrates nursing with behavioral sciences and identifies those factors which can lead to improvement in health outcomes. It also looks for those processes which can motivate change behavior. Motivating staff into making a change in practice is an important part of creating culture change (Scott, Mannion, Davies, & Martin, 2003). As such, Pender’s model is applicable as the underlying theory in this project, which examines the relationship between the introduction of a new process (an online journal club) and practice change (improved collaboration).

Table 1: Nursing Theory: Nola Pender’s Health Promotion Model (2011)

Individual Characteristics & Experiences	Behavior-Specific Cognitions & Affect	Behavioral Outcomes
<ul style="list-style-type: none"> • Prior related behavior • Personal factors Biological, Psychological Socio-cultural 	<ul style="list-style-type: none"> • Perceived benefits of actions • Perceived barriers to actions • Perceived self-efficacy • Activity-related affect • Interpersonal influences • Situational influences 	<ul style="list-style-type: none"> • Immediate competing demands • Commitment to a plan of action: • Health promoting behavior
<p>PROJECT: Pre-existing perception of poor collaboration, influenced by work culture, professional differences, “role blurring”.</p>	<p>PROJECT: Perception of collaboration as benefit. Perception of stress and lack of time to participate as barrier. Self-efficacy would be the confidence</p>	<p>PROJECT: Positive outcome if participants feel the journal club is worth the time, if there is a sense of commitment beyond the pilot, and if</p>

	to participate in a journal club.	the long-term outcomes are met.
--	-----------------------------------	---------------------------------

Pender's model defines three concepts:

1. Individual characteristics and experiences, which include learned behaviors and factors that influence how individuals see themselves;
2. Behavior-specific cognitions and affect, in which Pender recognizes that how individuals see (perceive) an action can influence both understanding and behavior related to that action;
3. Behavioral outcomes, where immediate competing demands (time, stress) and level of commitment to a plan of action which may improve a situation can influence outcomes.

Pender's health promotion concepts were applied to this project (See Table 1).

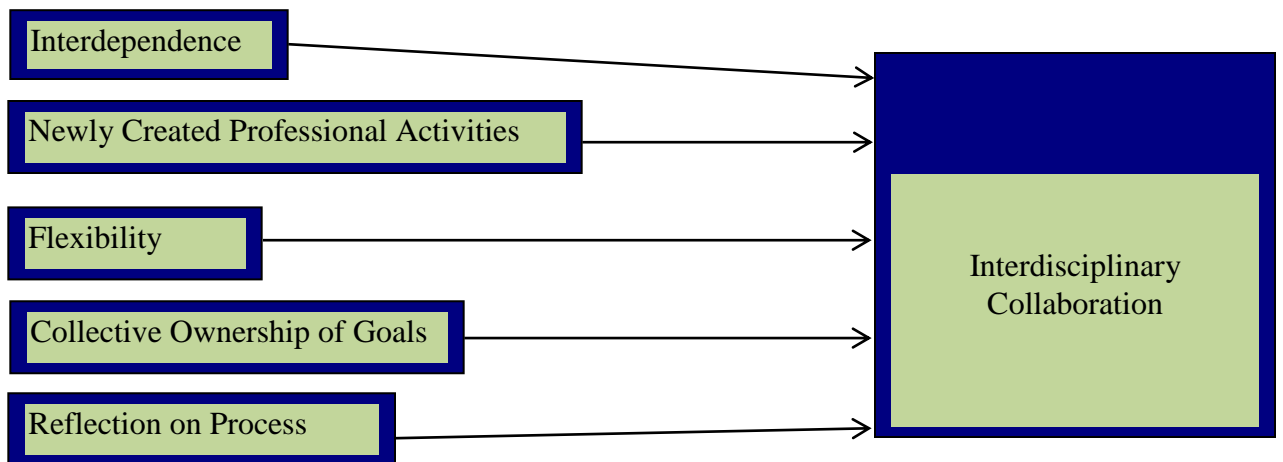
Perception is an important factor and is how a person subjectively sees the benefits or barriers to an action may have more influence on behavior than the actual benefits or barriers themselves. Individuals' perception of their ability to achieve outcomes (self-efficacy) determines their willingness to engage in change behavior. Interprofessional collaboration is a difficult concept to measure, but the subjective perception of it is possible to examine (Goldman, Meuser, Rogers, et al.; 2010Valentine, et al., 2011). If professional staff perceive IPC as something they can achieve, and that it will benefit themselves and their patients, they will be more likely to work toward greater IPC.

Model of Interdisciplinary Collaboration

A second theory was also chosen as the foundation for this project. The theoretical basis for the Model of Interdisciplinary Collaboration, developed by Laura Bronstein (2003) is a

combination of the “theory of collaboration, role theory, and ecological systems theory” and identifies the five components of an interdisciplinary collaboration model as interdependence, newly created professional activities, flexibility, collective ownership of goals, and reflection on process (p. 299).

Figure 1: Bronstein’s Model of Interdisciplinary Collaboration and Five Constructs (2002)



1. Interdependence is the recognition that professionals must rely on each other for expertise.

2. Newly created professional activities are those shared collaborations and programs that can achieve more than individuals can do on their own, and that can lead to shared sense of creativity and expertise.

3. Flexibility is deliberate role-blurring, where team members feel comfortable expanding out of their usual scope of practice when needed, knowing that the team is there for support.

4. Collective ownership of goals refer to shared responsibility in reaching goals, in designing interventions, and in including a commitment to improving patient outcomes.

5. Reflection on process is the ability a collaborative team has to pay attention to how they work together, to talk about their working relationship, and provide feedback to one another.

The degree to which a team is able to successfully build on these five areas determines the degree of collaboration that exists within the team. From this model, Bronstein developed a tool for measuring IPC, the Index for Interdisciplinary Collaboration (IIC). This scale of 49 original items and a modified 42-item version have been validated by further studies in schools, mental health, and hospice teams. (Parker-Oliver, Bronstein, & Kurzejeski, 2005; Oliver, Wittenberg-Lyles, & Day, 2007; Mellin, Bronstein, Anderson-Butcher, Amorose, Ball, & Green, 2010). The scale was divided into five subscales, based on the five constructs, and each was also tested independently. Bronstein's (2002) original Index for Interdisciplinary Collaboration (IIC) was found to have face validity by using items that were commonly found in the literature. A pilot test was performed with a sample of students who took the test and offered feedback to measure both the wording of the questions and to determine if collaboration was being addressed. Test-retest reliability was determined by administering the IIC twice within a two week period to two classes of Masters in Social Work students. Internal consistency of each component was analyzed using Crohnbach's alpha and had a coefficient of 0.92 (p. 117). Seven questions were eliminated at that point. Intercorrelation between the five components of the model was further measured. Pearson's correlation coefficient of $r = 0.82$ indicated internal

stability over time. Finally, a number of questions were inversely scaled, to increase content validity.

The student researcher received permission to use a shortened and modified version of this index from Dr. Bronstein in June, 2015 (See Appendix B). The researcher reviewed the 49 questions with two non-participating staff members, one clinical and one non-clinical, and eliminated those specific to Social Work, inapplicable to the setting, and redundant due to reverse scaling. 24 questions were chosen for this project from the 49 original questions (See Appendix A). Reversed scaled questions were reworded to be consistent in scaling.

Review of the Evidence

Background of the problem

This Capstone project brought together four concepts: nursing, technology, interprofessional collaboration, and rural health care. In 2003, the Institute of Medicine (IOM) identified five core competencies to be achieved within future educational programs of all health care professionals: “patient-centered care, quality improvement, evidence-based practice, informatics, and interdisciplinary teams” (Institute of Medicine, 2003). Following that, an IOM 2004 report, “Quality Through Collaboration: The Future of Rural Health”, outlined the need for interprofessional collaboration (IPC) as one part of that process of overhauling the healthcare system in rural America. The IOM (2004) further stated that one of the five strategies for achieving this overhaul included the development of technology infrastructure in rural communities in order to assist in improving healthcare communication. The use of internet technology, from Electronic Health Records to social media, has been recognized as a major tool in improving health outcomes through increased collaboration. Hilty & Yelleowlees (2015) note that hybrid use of telemedicine and live, face-to-face collaborative care may be the future of

mental health care and the new standard of practice. The guidelines set by the 2013 Meaningful Use Incentive Program created by Medicare and Medicaid to develop electronic health records are indications that internet technology for managing the healthcare industry is only going to grow (Meaningful Use, 2013).

Interprofessional collaboration has been well accepted as a method toward improving patient outcomes, however, IPC has been difficult to measure statistically, as it is a highly subjective concept (AbuAlRub, 2004; Hall & Weaver, 2001; Marshall, Harrison, & Flanagan, 2009; Goldman, et al., 2010; Kenaszchuk, Reeves, Nicholas, & Zwarenstein, 2010). Meyer, Sellers, Browning, McGuffie, Solomon, & Truog (2009) state that interprofessional communication skills are “essential core competencies associated with improved health outcomes” (p. 352), and that opportunities for persons from differing professions to come together and share experiences and opinion are both imperative and lacking in today’s healthcare arena. Tools that accurately measure efforts to improve IPC exist, but most are highly specific to medical settings. At this time, Bronstein’s Model of Interdisciplinary Collaboration is one of only a few that addresses the community mental health setting in the United States. Bronstein’s measurement tool, the Index for Interdisciplinary Collaboration (IIC) is a subjective questionnaire that examines mental health professionals’ perceptions of collaboration in the workplace (Bronstein, 2002).

Review of the Literature

The literature review for this project was conducted using both broad inclusion and exclusion criteria for any peer-reviewed published English-language articles in healthcare from 1995. This search resulted in over 90 articles found from CINHAHL, MedLine, Sage,

PsycINFO, PsycNET, EBSCOhost, BIOMed Central, Wiley Online, DirectScience and EmeraldInsight. Ultimately, 37 articles were chosen for inclusion, which were divided into three themes: journal clubs, IPC, and measurement tools. Search terms utilized were interdisciplinary collaboration, interprofessional collaboration, journal club, online journal club, mental health collaboration, perception of collaboration, measurement tools in collaboration, and behavioral health collaboration. Inclusion criteria were: English language, peer-reviewed journals, later than 1995. Exclusionary criteria were ICU and school-based educational settings which utilized face-to-face journal clubs.

Levels of research using Melnyk's seven-tiered Level of Evidence (Houser & Oman, 2011) are included below in Table 2.

Table 2: Review of the Literature Table

Articles Reviewed	Over 90
Articles Included	37
Search Engines	CINHAHL, MedLine, Sage, PsycINFO, PsycNET, EBSCOHost, BIOMed Central, Wiley Online, Direct Science, EmeraldInsight
Search Terms	Interdisciplinary collaboration, interprofessional collaboration, journal club, online journal club, mental health collaboration, perception of collaboration, measurement tools collaboration, behavioral health collaboration.
Inclusion Criteria	English, peer-reviewed journals, since 2000, mental health, behavioral health
Exclusion Criteria	Face-to-face journal clubs, ICUs, educational settings.
Levels of Evidence – Melnyk’s 7-tiered Levels of Evidence (Houser & Oman, 2011).	I. #4 Systematic Reviews of RCTs. II. #8: single RCTs. III. #10: Trials without randomization IV. #5: Cohort, case reviews, non-experimental. V. #3: Systematic Reviews of Qualitative studies. VI. #11: Single descriptive studies. VII. #0.
Articles Reviewed	Over 90
Articles Included	40
Search Engines	CINHAHL, MedLine, Sage, PsycINFO, PsycNET, EBSCOHost, BIOMed Central, Wiley Online, Direct Science, EmeraldInsight
Search Terms	Interdisciplinary collaboration, interprofessional collaboration, journal club, online journal club, mental health collaboration, perception of collaboration, measurement tools collaboration, behavioral health collaboration.
Inclusion Criteria	English, peer-reviewed journals, since 2000, mental health, behavioral health
Exclusion Criteria	Face-to-face journal clubs, ICUs, educational settings.
Levels of Evidence – Melnyk’s 7-tiered Levels of Evidence (Houser & Oman, 2011).	I. #4 Systematic Reviews of RCTs. II. #7: single RCTs. III. #10: Trials without randomization IV. #5: Cohort, case reviews, non-experimental. V. #3: Systematic Reviews of Qualitative studies. VI. #11: Single descriptive studies. VII. #0.

Theme One: Journal Clubs

Journal clubs have been utilized in healthcare for over 100 years and are well-represented in the literature (Honey, 2011). However, the majority of research articles concerning journal clubs involve face-to-face meetings. These meetings are measured for their effectiveness in

educating staff on recent evidence-based practices (EBP). Effectiveness on how those practices are then implemented is also measured (Brooks & Scott, 2006; Cramer & Mahoney, 2001; Staveski, Leong, Graham, Pu, & Roth 2012; O’Nan, 2011). Many articles center on teaching medical residents specific knowledge and then testing that knowledge. A number include only nurses and doctors in specific settings such as ICUs. Several articles look at “knowledge sharing” in online communities, which might or might not include journal clubs (Hunt, 2006; Hara & Hew, 2007; Barak, Boniel-Nissim, Suler, 2008; Sortedahl, 2012). Several additional articles were single case studies describing how journal clubs were formed and offered analysis of their benefits (Hunt, 2006; Cave & Clandinin, 2007; Baker, 2013; Berger, Hardin, & Topp, 2011; Dovi, 2014). While useful in offering suggestions for implementing a journal club, they did not constitute research.

Two comprehensive systematic reviews of the literature were found concerning journal clubs (Deenadayalan, Grimmer-Somers, Prior, & Kumar, 2008; Honey, 2011). Deenadayalan, et al., attempted to identify “core processes of a successful health journal club” (p. 898). Their search identified 101 articles, of which 21 were ultimately included. None of the outcomes being assessed in these articles concerned collaboration. Rather, they centered on critical reading skills, reading habits, satisfaction, knowledge, and instruction. The Deenadaylan, et al., review, however, did clearly identify those aspects of journal clubs which made them successful in reaching those outcomes and offered statistical analysis of their findings. These include regular and mandatory meetings, clear short and long range goals, a trained leader, disseminating articles prior to meeting, and using an accepted appraisal of critique.

Honey and Baker (2011) did a systematic review of 16 papers, looking at the value of a journal club in “bridging the theory-to-practice gap” (p. 825). Although Honey & Baker found

evidence that journal clubs impact critical thinking and appraisal skills, along with improving knowledge-base, only two of the studies, Murphy (1994) and O'Sullivan, Pinsker, Jeremiah, & Wartman (1995), examined ultimately found a correlation between a journal club and impact on care delivery. None of the 16 studies examined collaboration specifically, but Honey & Baker concluded, that the review “draws from the strength of journal clubs to recommend the multidisciplinary work based journal club as a cost effective way of enhancing practitioner capability” (p.825).

Finally, several more recent articles examined “hybrid” journal clubs; those which used a combination of asynchronous, online delivery of articles with occasional face-to-face or televideo meetings between participants as effective ways to promote evidence-based practice, but again, perception of collaboration was not included (Honey & Baker, 2011, Hunt 2006, O'Nan, 2011; Wilson, Ice, Nakashima, Cox, Morse, Philip, & Vuong, 2015). Wilson, et al (2015) noted that greater participation could be found in online journal clubs specifically, but that overall satisfaction with a journal club was slightly greater when implemented with face-to-face meetings.

The research has demonstrated that evidence-based practice learning increases with the introduction of a journal club as a method of delivery. However, Sortedahl (2012), Honey & Baker (2011) and Deenadayalan, et al, (2008) point out a lack of cohesive research into exactly how a journal club might improve interprofessional collaboration, and recommend further research into this area.

Theme Two: Interprofessional Collaboration (IPC)

Given its stated importance in improving health care outcomes, there exists a large body of research on IPC in healthcare, especially on the nurse/physician relationship (Dachairo-

Marino, Jordan-Marsh, Traiger, & Saulo, 2000; Vazirani, Hays, Shapiro, & Cowan, 2005). Some of that literature has been able to identify those aspects of patient outcomes improved specifically by improved IPC. Kvarnstrom (2008) identified that problems in IPC can lead to negative patient outcomes and services, and notes that improved IPC is expected to increase professionals responsiveness to patient needs, and ability to access resources needed for best patient care. Dougherty & Larson (2005) identified decreased risk-adjusted mortality, length of stay, fewer negative outcomes and improved patient satisfaction as those aspects of patient care that are related directly to increased nurse/physician collaboration.

Thannhauser, Russell-Mayhew, & Scott (2010) reviewed measurement tools used to identify and measure IPC and found a need to continue to refine and examine both the definition of IPC and the constructs relevant to IPC in order to increase our understanding of exactly how IPC can improve patient outcomes. Zwarenstein, Goldman, Meuser, Rogers, Lawrie, and Reeves (2009) review of the literature examined the effects of interventions on IPC. The authors point out the lack of cohesive research into exactly how collaboration leads to improved patient outcomes. They found five studies that looked at the effects of specific IPC interventions, including rounds, interprofessional meetings, and interprofessional audits. Three of these studies showed improvement in patient outcomes such as drug use, length of stay, and total patient cost. One showed no change in outcomes and one had mixed results. Butt, Markle-Reid, and Browne (2008) also looked at specific tools being used to improve IPC in chronic illness care, and found two measures that reached validity and reliability. These authors noted that “although partnerships are widely embraced, research into the factors that influence their collaborative processes and outcomes is not well established” (p. 2).

Most research on IPC looks at improving specific outcomes such as rounds and post-surgical outcomes in individual hospital units and is attempting to increase dialogue opportunity between professions within that setting (Dachairo-Marino, Jordan-Marsh, Traiger, & Saulo, 2000). However, Hall and Weaver (2001) note that as healthcare workers become more specialized, chances for interdisciplinary dialogue decrease. "...[C]ommunication becomes even more problematic as socioeconomic pressures move care out of institutions and into the community where health care professionals are usually not in the same geographical location at the same time" (p. 867). A possible consequence of this isolation and separation might be lowered job satisfaction, increased job stress, redundancy in tasks and the bottom line may well be poor patient care (Onyett, Pillinger, & Muijen 1997; Hall & Weaver, 2001; Ito, Eisen, Sederer, Yamada, & Tachimori 2014; Van Gordon, Shonin, Zangeneh, & Griffiths, 2014). (IOM, 2004).

While perception of collaboration is discussed in the literature, no research studies have been found which explicitly examine perception of IPC, nor the collaborative effects of a journal club, and this may be necessary to research further. For example, Ateah, Snow, Wener, McDonald, Metke, and Davis (2011), demonstrates that educating professionals on each other's roles followed by an immersion experience of collaboration created a more positive perception of others, but this research did not include a journal club. Sortedahl (2011) examined an online journal club project amongst rural, isolated school nurses and found that it demonstrated anecdotally that the nurses benefited from the perceived collaboration. This study was not multidisciplinary, had a small sample (N=27), and examined a journal club as a method for increasing evidence-based practice.

Theme Three: IPC Measurement tools

Many tools and programs have been created to measure interprofessional collaboration in educational settings and hospital specialty units (Valentine, Nembhard, & Edmondson, 2012). The older tools before the year 2000 address nurse-physician relationships. Some of these have been modified to include other inpatient staff (Hojat, 1999; Dechairo-Marini, 2001; Kenaszchuk, et al., 2010; Baggs, 1993). Butt, et al. (2008) found two IPC measurement tools, the Partnership Self-Assessment Tool and the Team Climate Inventory as valid for use in chronic illness care. Dougherty & Larson (2005) reviewed instruments used to measure nurse/physician collaboration and found five tools that were recommended for further study. One of these was the Index for Interdisciplinary Collaboration developed by Bronstein (2002).

Tomizawa et al (2014) recently published research on a scale to assess teamwork in mental health settings, but the tools and data are unavailable as of this writing. To date, only one validated collaborative tool and theory which involves staff in a non-acute, non-educational setting such as a mental health center has been found, in social work literature. This measurement tool, the Index for Interdisciplinary Collaboration, as previously discussed (Dougherty & Larson, 2005, Bronstein, 2003).

Summary

The literature indicates the need for continuing to examine the usefulness of journal clubs in improving IPC. Although there is evidence in the literature that improving IPC can improve patient care, the literature points out a lack of agreement on the concepts that make up IPC and their relationship to patient outcomes. Numerous tools have been developed to measure the effects of interventions on IPC, but the results are mixed. There are fewer tools developed to measure IPC itself. For that reason, there is a need for this type of research that is examining the use of a specific tool, a journal club, in building IPC.

Project Plan and Evaluation

Market/risk analysis

The risks involved in this project involved possible subject burden. Participants may have felt compelled to complete the project, including the completion of two surveys, and also interact with colleagues in ways that may have felt new and uncomfortable. To counter this, the information sheet emphasized that this project was voluntary at all times and they could withdraw at any time. In addition, there were risks in unexpected technological issues, internet failures, or participant stress over needing to learn new programs such as GoogleDocs and Survey Monkey. There may have been risk in the amount of time involved with reviewing articles and providing comments leading to additional feelings of stress by participants. A final risk was sampling bias based on the supervisory relationship the researcher has with staff. This relationship, with a few exceptions, is primarily based in clinical care, and participation in this project did not influence staff evaluations in any way. Benefits of this study included the possibility of a positive outcome of improved perception of IPC, job satisfaction, and retention, along with the chance of improved patient outcomes.

Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis

This project's strengths, weaknesses, opportunities and threats are identified in the SWOT analysis (See Table 3). This project was easily feasible, simple to implement, and low cost. In addition to the above potential risks, unintended consequences might have included an overall negative impact on perception of IPC based on the comments made by participants.

Table 3: SWOT Analysis

Internal	Strengths 1. Simple to implement. 2. No patient information	Weaknesses 1. Potential implementation problems from technological issues.
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	involved (Human Protection). 3. Agency engagement in improving collaboration.	2. Convenience sample and length of study. 3. Staff turnover/attrition.
External	Opportunities 1. Build collaboration. 2. Improve patient care. 3. Possibility to continue. 4. Possibility to expand externally.	Threats 1. Internet issues. 2. Copyright issues. 3. Length of project (too long or too short). 4. Potential lack of participation. 5. Supervisory relationship with participants.

Driving and restraining forces were identified for the project (See Table 4).

Interestingly, while there existed a strong desire among staff to improve IPC, there was also an identified potential constraint in staff’s desire to make the practice change necessary to actually improve IPC. Lack of time and technological issues were identified as constraints and ultimately led to lower participation. A sustaining force was the perception that this project was beneficial in developing improved IPC and in creating a culture that builds on the five components of Bronstein’s Model of Interdisciplinary Collaboration.

Table 4: Driving/Restraining Forces.

Driving Forces:	1. Desire among staff to improve collaboration and patient outcomes. 2. Interest in learning new relevant information. 3. Culture of personal growth. 4. Administrative interest in improving Interprofessional Collaboration.
Restraining Forces:	1. General disinterest in collaboration. 2. Perception of having no time to participate. 3. Staff perception of being stressed. 4. Lack of computer skill to use the tools.
Sustaining Forces:	1. Perceived benefit of project in achieving successful outcomes for participants. 2. “Buy-in” from executive team. 3. Culture of interdependence, flexibility, collective ownership, reflection and new activity (Bronstein, 2003).

Stakeholders and Project team

The stakeholders for this project included the executive team of the CMHC and the staff participants. Ultimately, all staff would have a stake in the success of this project, especially if collaboration was seen to improve. The patients and families served through the CMHC might also eventually benefit from this project if the objective of improved collaboration were met.

The project team to complete this online journal club project included the DNP student, the student's mentor, Capstone Chair, IT department, and the executive team of the CMHC.

Cost/Benefit Analysis

Costs for the project included the cost of the small incentive (\$5.00/pp) to be borne by the researcher, printing costs to AHS for participants who preferred printing articles over reading online, and, potentially, the cost in time to participate. For this project, there were no copyright costs, as the articles were chosen from free articles available. To replicate this study, there may be future copyright costs, in order to access the newest EBP research. The potential benefits of this project would be improved perception of interprofessional collaboration among participants at a minimal financial cost (See Table 5).

Table 5: Cost Analysis

	Capstone Project Cost	Cost to Replicate Project
Incentive	\$5.00 per participant who complete project (to student).	Same per person cost.
Printing	\$0.10 per page per person (to agency).	Same
Copyright costs	\$0.00 (all articles were linked from free sites to participants).	May increase, if copyrighted articles are used.

Mission and Vision Statement

The project Mission Statement was to effectively measure the value of an online venue through a journal club in improving interprofessional perception of collaboration. The Vision Statement has been to create an ongoing opportunity for professional staff to improve their perception of interprofessional collaboration.

Project Outcomes and Objectives

The objective of this project was to successfully investigate the effect of the use of an online, asynchronous journal club on improving interprofessional staff perception of collaboration. The outcome for this project was organization-sensitive, as it was looking at creating practice change at the staff level for IPC. This Capstone Project was a quality improvement initiative, not meant to develop new knowledge or to be generalized outside of the organization.

Logic Model

Logic Model schematic demonstrates the inclusion of the Logic Model for the project (See Appendix I). The dependent variable was the measurement of perception of interprofessional collaboration amongst staff. The independent variable was the online journal club. Extraneous variables included such unknowns as technological issues that might arise during the project, the degree of support received from the agency for pursuing this project, the interest level for the articles selected for inclusion, staff turnover, time and level of stress, and finally, the voluntary nature of the project. Cramer & Mahoney (2001), Deenadayalan (2008), and Honey (2011) note that voluntary participation leads to lower levels of learning and completion, but greater satisfaction with the journal club overall. As job satisfaction was one of the desired outcomes, project participation was voluntary.

The Logic Model outlines the resources, activities, desired outcome, objectives, and constraints of the project (See Table 6).. The resources included having institutional support for implementing this project. There were initial concerns over confidentiality and participant burden which were addressed by the researcher to the satisfaction of the organization.

Other significant resources included an adequate review of the literature, support from the Internet Technology (IT) staff to utilize GoogleDocs and SurveyMonkey within a highly

TABLE 6: LOGIC MODEL			
RESOURCES	ACTIVITIES	DESIRED TIME-SENSITIVE OUTCOMES/ OBJECTIVES	CONSTRAINTS
<ol style="list-style-type: none"> 1. Institutional support. 2. Review of literature on chosen topic. 3. Internet capability and IT approval: Survey Monkey and GoogleDocs accounts. 4. Pre- and Post- surveys including both Likert-type questions and semi-structured questions. 5. Staff who agrees to participate. 6. Identified journal subject matter of interest. 	<ol style="list-style-type: none"> 1. Complete review of literature on perceptions of IPC, the use of journal clubs, online interventions. 2. Obtain agency and IRB approval for project. 3. Initial email explaining project, asking for current perception of collaboration, willingness to participate and suggestions for subject matter. 4. Implement journal club through GoogleDocs for 3 months. 5. Facilitate comments, maintain discussion. 6. Post-survey with participants and non-participants. 7. Statistical analysis. 	<ol style="list-style-type: none"> 1. Improved perception of communication and collaboration amongst staff within 3 months. 	<ol style="list-style-type: none"> 1. Institutional support. 2. Technological issues. 3. Staff turnover. 4. Staff time and stress level. 5. Voluntary participation. 6. Choice of subject matter to engage staff in discussion.

secure network system, internet capability for participating staff, the identification of an adequate measurement tool, development of pre-test and post-test surveys, and staff willing to participate. Activities included doing an in-depth and adequate review of the literature, obtaining permission from the IRB board and organization, and developing and implementing the methodology of the project (See Appendices A, F & G). The desired outcome objective was the improvement of perception of IPC within three months by participants. Constraints for this project included technological issues, staff attrition, stress and lack of time to participate, the voluntary nature of participation, and choice of article subject matter to engage participants.

Appropriateness for Objectives and Research Design and for Setting of an EBP Project

This study used a pre-test/ post-test quantitative design to gather answers to identical questions concerning participants' views on interprofessional collaboration. The Index for Interdisciplinary Collaboration (IIC) instrument was chosen because it has been validated as an appropriate tool for this type of research. There were 32 participants who completed the pre-test survey, but only 20 who completed the post-test survey. Because of the small number of participants, attrition, and Likert scale of measurement, an ordinal level of measurement was used for analysis. The rural community mental health center setting is appropriate because issues of IPC are significant to the population served, and because the instrument was developed for that setting.

Project Timeline

Phase 1: Pre-intervention

- 5/2014: Introducing project to executive team, acquiring preliminary approval.
- 6-8/2014: Begin review of literature; initial PICO
- 9/2014: Same. Start population assessment.
- 10/2014: Same. Finish population assessment.
- 12/2014: Final PICO approval.

- 1/2015: Work with IT to finalize delivery method.
- 3/2015: Finish IT plan. All teams will be informed of project.
- 9/2015: Final IRB approval.
- 10/2015: Begin to recruit participants through email. Develop pre and post surveys.
- 11/2015: Identify EBP articles. Send out first survey

Phase 2: Intervention

- 12/2015: First journal article.
- 1/2016: Second journal article.
- 2/2016: Third journal article.
- 3/2016: Send out second/final survey.

Phase 3: Post-intervention

- 3/2016: Collect final surveys and begin statistical analysis.
- 4/2016: Statistical analysis, prepare for orals and final paper.
- 5/2016: Finish, send out \$5 completion incentives.

Evidence-Based Practice Methodology

Protection of Human Rights

This project fit within Category Two identified by guidelines outlined in 45CFR46, Policy for Protection of Human Research Subjects, under §46.101, as being exempt (See Appendix F). The research was conducted using survey procedures. Information gathered was recorded in such a way that human subjects could not be identified and no disclosure of responses could reasonably place the subjects at risk of liability. Personal identifiers were not collected linking individuals to the collected data. To further protect anonymity of the subjects, no demographics were collected.

Staff education through an online journal club was accomplished with the ultimate purpose of improving interprofessional collaboration. Survey data was reported as aggregate data. No individual data was linked with participants, and subject participation was voluntary

and they could withdraw at any time without penalty. Data was stored on a password protected computer and will be deleted after 3 years.

Institutional Considerations:

This project was intended to improve collaboration and did not reflect negatively on Regis University, nor have negative conflicts with Catholic ethical and religious directives.

CITI:

The student researcher completed the required CITI training in February, 2015 (See Appendix E).

Population and sampling

Inclusionary criteria for this study were identified as all staff employed by an integrated community mental health center (CMHC) in Southwest Colorado. Altogether, this represented 201 persons from a wide range of professions available within the center: social workers, masters prepared counselors, psychiatric and primary care nurses, nurse practitioners, psychiatrists, primary care doctors, case managers, medical assistants, physician assistants, Emergency Medical Technicians, administrative and non-clinical staff. The decision to include the non-clinical staff was made because of the close relationship and collaborative efforts necessary between clinical and support staff to provide the best services to patients.

Exclusionary criteria included those staff who did not plan to be employed with the organization throughout the entire project and those who did not wish to participate. There has been no estimated population correlation (ρ) from prior research. The desired sample would be at least 40 (Polit, 2010, p. 202). The number of initial participants was 32 and 20 participants completed the entire study.

Data Collection and Study Protocol

This project utilized a pre-test / post-test quantitative research design. Approval was obtained from the Institutional Review Board at Regis University and the host organization. Recruitment was managed through an email sent internally to all staff (See Appendix C). This email included the Informational Sheet (See Appendix G). Those interested in participating responded to the email, and a group email list was created of voluntary participants. To encourage involvement, a small \$5.00 incentive was offered to all participants who completed the entire project. The first email was followed by a second, containing a link to the pre-test survey, developed within Survey Monkey. This survey included the 24 questions chosen from the Index of Collaboration to best represent perception of IPC. These questions and exact wording and order of questions were presented in SurveyMonkey (See Appendix A). One additional question was added in the initial survey asking for participants to choose from a list of five subject matter possibilities for journal club articles. The survey was collected anonymously and data was not linked back to participants.

Once these surveys were collected, the first link to an evidence-based and relevant research article chosen by the researcher was sent to all participants. The article opened into GoogleDocs and allowed for participant comments to be made and comments visible to all. Links to articles were repeated two more times for a total of three articles over three months. The student researcher monitored and assisted with technological issues and encouraged comments through GoogleDocs messages sent weekly to participants. After the third month, a Survey Monkey post-test survey, identical to the pre-test, was sent to all participants. An additional question asked if the participants would like to see the journal club continue. A final question asked participants to rank from one to three the difficulties they experienced in participation, common technological problems, not finding time to participate, and difficulty in

understanding the articles. This survey was also collected anonymously. All data was contained within the student researcher's own password protected SurveyMonkey account and no one other than the student had access.

At that point, the survey data was digitally downloaded and summarized within a password protected SPSS file.

Project Findings and Results

Data Analysis

The Online Journal Club to Improve Interprofessional Collaboration Capstone Project addressed the problem of inadequate interprofessional collaboration at a rural integrated community mental health center. The student researcher's objective was to examine if there would be improved perception of interprofessional collaboration among staff after a three month pilot project. 24 questions were chosen from Bronstein's Index for Interdisciplinary Collaboration for inclusion in the pre-test/ post-test design.

Statistics.

The means of the pre-test and post- test questions were compared. A graph comparing the aggregate scores of each question was prepared (See Figure 3).

Figure 2: Graph of Pre-test, Post-test Mean Scores



Aggregate data was developed by combining all scores from all participants and summarizing all questions from each test. Each question had an answer ranging from 1 (strongly disagree) to 5 (strongly agree). A comparison of aggregate means of the pre-test and post- test scores were done in both SPSS and Excel (See Table 7). T-test analysis showed no statistically significant differences between the means for the pre-test and post-test.

Table 7: Results

	Total aggregate scores	Divided by # of questions	Divided by # of respondents: aggregate mean score
Pre-test total scores: 32 respondents	2697	112.37	3.51
Post-test total scores: 20 respondents	1722	71.75	3.59
Difference in aggregate mean scores			0.08
Percent difference in mean aggregate scores			$0.08/3.51 \times 100 =$ 2.8% increase in aggregate mean scores from pre- to post-test surveys.

Conclusions

The results showed a 2.8% increase in the pre-test and post-test aggregate mean score, indicating that there was a small improvement in IPC during this three-month project. However, it is impossible to determine if that improvement was the result of the Journal Club implementation alone.

Limitations

Limitations to this project need to be addressed. External changes not controlled during this project may have influenced the results: changes in management leadership during the project timeline, and the introduction of a new leadership training program designed to improve negative communication may also have impacted the results. The 32 initial numbers of participants lessened to 20 by the time the post-test was administered. Due to staff attrition through termination, moving, and agency position changes. No control group made comparison impossible. At the request of the organization to assure confidentiality, no demographics were collected on participants. Finally, the three month period of the project may have been too short. The first month included working out technological issues with GoogleDocs. In the final question asked of participants, 54% indicated they had difficulty finding time to participate, 29% indicated they had trouble with GoogleDocs, and 17% indicated they had trouble understanding the articles.

Recommendations for Practice

A longer study with a larger sample is recommended with required training on GoogleDocs ahead of time for all participants. Greater time would allow participants to develop comfort with the process, and possibly be more comfortable in communicating with each other. Collecting demographics, including profession and years of practice would allow for

comparisons to be made regarding who appears most comfortable with this type of collaborative tool, and if experience and/or profession influenced the results. A control group would allow for comparison of change in IPC and address external factors. As many of the most up-to-date relevant articles are copyrighted and are available to purchase, a small budget of \$500 would be suggested to buy articles. Finally, examining the IIC in relation to its five component subscales would allow for identification of which subscale might be most influenced directly by the Journal Club implementation, and offer a clearer view into how IPC occurs.

Implications for Practice

Additional research is indicated to determine the value of a virtual Journal Club in building IPC. Journal Clubs have been well documented as being effective tools for building EBP knowledge and education, but to date there has been no research on if it can be a tool to build collaboration (Deenadayalan et al., 2008; Honey & Baker, 2011; Sortedahl, 2011). There is a need to continue examination of subjective nature of IPC related to Pender's theoretical concepts of perception of benefits and barriers to action. If staff believe that the implementation of an online Journal Club may benefit their practice, they would be more likely to find time to participate. If they perceive it as something that interferes with their daily routine and has no benefit they would be unlikely to engage.

While research and policy has long held that collaboration benefits patient outcomes, there is little identification of exactly what aspects of collaboration create those benefits (Bronstein, 2002, 2003; Butt, et al., 2008; Kvanstrom, 2008; Zwarenstein, et al., 2009; Thannhauser, et al., 2010). Bronstein's five identified components need to be examined more carefully to identify which component might be most effective in improving IPC.

Doctor of Nursing Practice (DNP) nurses in community mental health are in a prime position to identify a need for IPC practice change as they often work in roles that bridge many programs and multi-disciplinary professions. Their education and mandated scope of practice include improving interprofessional collaboration. As such, psychiatric nurses in leadership positions should work to implement projects to examine IPC and encourage positive change within the work environment.

Schroder, Medves, Paterson, Byrnes, Chapman, O’Riordan, Pichora, and Kelly, (2011) note that globally, national health policies are now being rewritten to include specific goals for IPC in healthcare systems. However, these policies rarely identify exactly what tools or processes of IPC are best suited to reach these goals. Continued research into identifying the aspects of IPC that create positive change is needed. In addition, how subjective perceptions of IPC might influence patient outcomes is a critical issue to explore.

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Wilson, M., Ice, S., Nakashima, C. Y., Cox, L. A., Morse, E. C., Philip, G., & Vuong, E. (2015). Striving for evidence-based practice innovations through a hybrid model journal club: A pilot study. *Nurse education today*, 35(5), 657-662.

Zwarenstein, M., Goldman, Meuser, Rogers, Lawrie, & Reeves (2009). Interprofessional collaboration: Effects of practice-based interventions on professional practice and healthcare outcomes. *Cochrane database of Systematic Reviews*. doi:

10.1002/14651858.CD000072.pub2

Appendix A: Systematic Literature Review Table

Author	Year	Title/Journal	Theme/Implications	Level
Hara, N. & Hew, K.H.	2007	Knowledge-sharing in an online community of health-care professionals/ <i>Information Technology & People</i> .	Journal Club: Importance of knowledge-sharing in building; improved with asynchronous design and voluntary membership.	VI
Sortedahl, C.	2011	Effect of online journal club on evidence-based practice knowledge, intent, and utilization in school nurses/ <i>Worldviews on Evidence-Based Nursing</i> .	Journal Club: Decreased isolation noted after participation. Hybrid model journal club.	VI
Deenadayalan, Y., Grimmer-Somers, K., Prior, M., Kumar, S.	2008	How to run an effective journal club: a systematic review/ <i>Journal of Evaluation in Clinical Practice</i> .	Journal Club: Described effectiveness: 2 online clubs had positive outcomes. Non-voluntary and goal oriented, with leader.	I
Honey, C., Baker, J.	2011	Exploring the impact of journal clubs: a systematic review/ <i>Nurse Education Today</i> .	Journal Club: Identified attributes of successful journal clubs: voluntary, asynchronous. Recommends IPC journal club as a cost effective way to enhance practitioner abilities.	I
Hunt, M.	2006	Interdisciplinary Journal Club: An innovative tool for the transfer of knowledge and the promotion of a culture of interdisciplinarity/ <i>Journal of Interprofessional Care</i> .	Journal Club/IPC: Examined a successful single JC for transfer of knowledge and building IPC among staff.	VI
Vazirani, S., Hays, R., Shapiro, M., Cowan, M.	2005	Effect of a multidisciplinary intervention on communication and collaboration among physicians and nurses/ <i>American Journal of Critical Care</i> .	IPC: Examined the introduction of rounds, a NP, a hospitalist to inpatient unit on communication. Conclusion was that introduction of these improved collaboration.	III
Brooks, F. & Scott, P.	2006	Exploring knowledge work and leadership in online midwifery communication/ <i>Nursing and Healthcare Management and Policy</i> .	IPC/Journal Club: Introduction of online discussion forum to develop midwives communication and knowledge: conclusion was that midwives were open to adopting contributions made by others.	VI
Cramer, S. & Mahoney, M	2001	Introducing evidence based medicine to the journal club, using	Journal Club: Introduction of JC to medical	IV

		a structured pre and post test: a cohort study/ <i>BMC Medical Education</i> .	residents for improving understanding of evidence-based practices was effective.	
Staveski, S, Leong, K., Graham, K., Pu, L., & Roth, S.	2012	Nursing mortality and morbidity and journal club cycles/ <i>AACN Advanced Critical Care</i> .	Journal Club: Introduction of regular journal clubs, with monthly IPC staffing and morbidity/mortality meetings improved patient safety, enhanced professional autonomy, and increased use of EBPs in an ICU.	VI
O’Nan, C.	2011	The effect of a journal club on perceived barriers to the utilization of nursing research in a practice setting/ <i>Journal for Nurses in Staff Development</i> .	Journal Club: Study to determine in a journal club could lessen barriers for nurses in using research to improve EBP. N=14 with only 1/3 participating, but found significant difference in participant attitudes, and reduce perception of barriers.	III
Bronstein, L.R.	2003	A model for interdisciplinary collaboration/ <i>Social Work</i> .	IPC: Theoretical underpinnings for developing index.	I
Bronstein, L.R.	2002	Index of interdisciplinary collaboration/ <i>Social Work Research</i> .	Measurement tool/IPC: Instrument development.	II
Mellin, E. & Bronstein, L.	2010	Measuring interprofessional team collaboration in expanded school mental health: Model refinement and scale development/ <i>Journal of Interprofessional Care</i> .	Measurement tool/IPC: Refinement of Bronstein’s IIC for school mental health setting supported the tool as a reliable instrument.	I
Parker-Oliver, D., Bronstein, L., & Kurzejeski, L.	2005	Examining variables related to successful collaboration on the hospice team. <i>Health & Social Work</i> .	IPC: Use of Bronstein’s IIC within a hospice team to explore successful collaboration found a high level of IPC among hospice team members, although education, census, nor quality of care had any impact.	II
Parker-Oliver, D., Wittenberg-Lyles, E. & Day, M.	2007	Measuring interdisciplinary perceptions of collaboration on hospice teams/ <i>American Journal of Hospice & Palliative Medicine</i> .	IPC: Found validity and reliability of Index of Interdisciplinary Collaboration for hospice team.	III
Dougherty, M. & Larson, E.	2005	A review of instruments measuring nurse-physician collaboration/ <i>Journal of Nursing Administration</i> .	Measurement tools/IPC: Review of literature for instruments of IPC of nurses and physicians. Found 5 tools that	I

			met reliability and validity.	
Dechairo-Marino, A., Jordan-Marsh, M., Traiger, G. & Saulo, M.	2001	Nurse/physician collaboration: Action research and the lessons learned/ <i>Journal of Nursing Administration</i> .	IPC: A hospital-wide collaborative initiative including case management tools and principles for improving IPC was introduced through a one-time educational class, with good results on several units.	III
Baggs, J., Schmitt, M., Mushlin, A., Mitchell, P., Eldredge, D., Oakes, D., & Hutson, A.	1999	Association between nurse/physician collaboration and patient outcomes in three intensive care units. <i>Critical Care Medicine</i> .	IPC: Significant in offering a history of IPC in healthcare; RNs report of collaboration were associated positively with patient outcomes.	VI
Kenaszchuk, C., Reeves, S., Nicholas, D. & Zwarenstein, M.	2010	Validity and reliability of a multiple-group measurement scale for interprofessional collaboration/ <i>BMC Health Services Research</i> .	Measurement tool/IPC: A Canadian nursing scale for IPC adapted for multi-disciplines was found useful to address nurses assessing physicians on IPC, but not found valid with other groups, needing further study.	III
Wilson, M., Ice, S., Nakashima, C. Y., Cox, L. A., Morse, E. C., Philip, G., & Vuong, E.	2015	Striving for evidence-based practice innovation through a hybrid model journal club: A pilot study. <i>Nurse Education Today</i> .	Journal Club; Case study of hybrid journal club found that it can improve adoption of EBP innovations.	II
Farrell, S., &McKinnon, C.	2003	Technology and Rural Mental Health. <i>Archives of Psychiatric Nursing</i> .	IPC: Discussion of the use of internet-based technology to improve rural mental health, including teamwork and collaboration.	VII
Goldman, J., Meuser, J., Rogers, J., Lawrie, L. & Reeves, S.	2010	Interprofessional collaboration in family health teams. <i>Canadian Family Physician</i> .	IPC: Multiple case study identified five themes that impact the interventions used to improve IPC: roles and scope of practice, management styles, time and space, IPC initiatives, and early perceptions of IPC.	IV
Thannhauser, J., Russell-Mayhew, S., & Scott, C.	2010	Measures of interprofessional education and collaboration/ <i>Journal of Interprofessional Care</i> .	Measurement tools/IPC: Review of literature of quantitative instruments for IPC. 23 tools identified, only 2 found to have both reliability and validity: RILS and IEPS.	VI
Marshall, S., Harrison, J. &	2009	The teaching of a structured tool improves the clarity and content of	Measurement tool/IPC: Introduction of the ISBAR	IV

Flanagan, B.		interprofessional clinical communication. <i>Quality and Safety in Health Care</i> .	communication tool through an educational session with medical students led to improved communication on pre- and post-test scores.	
Onyett, S., Pillinger, T., & Muijen, M.	1997	Job satisfaction and burnout among members of community mental health teams/ <i>Journal of Mental Health</i> .	IPC: Source of historical view of staff burnout in CMHCs, including pay rates, poor team development, isolation.	III
Ito, H., Eisen, S. V., Sederer, L. I., Yamada, O., & Tachimori.	2014	Factors affecting psychiatric nurses' intention to leave their current job. <i>Psychiatric Services</i> .	IPC: Discussion of factors that lead to burnout, including poor sense of teamwork, poor pay, role confusion.	IV
Meyer, E., Sellers, D., Browning, D., McGuffie, K., Solomon, M., & Truog, R.	2009	Difficult conversations: Improving communication skills and relational abilities in health care. <i>Pediatric Critical Care Medicine</i> .	IPC: Pre-post test to measure impact of IPC on-day learning paradigm. Findings were positive over 5 months in improved communication skills.	IV
Hilty, D. & Yellowlees, P.	2015	Collaborative mental health services using multiple technologies: The new way to practice and a new standard of practice? <i>Journal of the American Academy of Child and Adolescent Psychiatry</i> .	IPC: Discussion of effectiveness of hybrid technological services to offer mental health services to children, including telemedicine, taken from the CATTS study.	II
Schroder, C., Medves, J., Paterson, M., Byrnes, V., Chapman, C., O'Riordan, A., Pichora, D. & Kelly, C.	2011	Development and pilot testing of the collaborative practice assessment tool. <i>Journal of Interprofessional Care</i> .	Measurement tool/IPC: Measurement tool development for CPAT.	VI
Butt, G., Markle-Reid, M., & Browne	2008	Interprofessional partnerships in chronic illness care: A conceptual model for measuring partnership effectiveness. <i>International Journal of Integrated Care</i> .	IPC: Systematic review to help identify partnership measurement issues and identify valid tools: PSAT, TCI.	V
Berger, J., Hardin. H., & Topp, R.	2011	Implementing a virtual journal club in a clinical nursing setting. <i>Journal for Nurses in Staff Development</i> .	Journal Club: Single case study of the implementation of a virtual, asynchronous journal club, the steps taken. Identified it as being non-threatening, accessible, able to be of interest to all, an option for self-study,	VI

			appealing to young nurses.	
Hoffman, Haffmans, Spinhoven, & Hoencamp	2009	Collaborative mental health care versus care as usual in a primary care setting: a randomized controlled trial. <i>Psychiatric Services</i>	IPC: In integrated primary care/mental health settings, shorter lengths of hospital stays, decreased delays in obtaining treatment, shorter treatment episodes and lowered treatment costs have been recognized as r/t improved collaboration.	II
Kvarnstrom, S.	2008	Difficulties in collaboration: A critical incident study of interprofessional healthcare teamwork. <i>Journal of interprofessional care.</i>	IPC: Significant for noting that it is difficult to identify what actually works in IPC to improve patient care.	VI
Barak, A., Boniel-Nissim, M., Suler, J.	2008	Fostering empowerment in online support groups. <i>Computers in Human Behavior.</i>	Journal Club/IPC: The value of online groups in building community and empowerment: directed toward patient support (i.e.: cancer groups, MS support, etc.), but discussed how such a format could both foster communication, but possibly isolating members more.	VII
Valentine, M., Nembhard, I., & Edmondson, A.	2012	Measuring teamwork in healthcare settings: A review of survey instruments. <i>Harvard Business School; a working copy.</i>	IPC: Systematic review of instruments: found only 9 met psychometric validity of 36 scales examined. Demonstrated inconsistency in defining IPC.	I
Ateah, C., Snow, W., Wener, P., McDonald, L., Metke, C. Davis, P.	2011	Stereotyping as a barrier to collaboration: does interprofessional education make a difference? <i>Nurse Education Today.</i>	IPC: Found that the introduction of an immersion educational intervention for multi-disciplinary students improved perception of IPC up to five months post-intervention.	II
Cave, M., & Clandinin, D. J.	2007	Revisiting the journal club. <i>Medical Teacher.</i>	Journal Club: Examined the effectiveness of reading MD authored books within a JC with physicians to enhance EBP. Found that reading medical literature that is different but complementary to usual JC material was helpful for alternative JCs.	VI

Hall, P. & Weaver, L.	2001	Interdisciplinary education and teamwork: a long and winding road. <i>Medical Education.</i>	IPC: Discussion of difficulties found in defining and implementing educational tools that build teamwork, in a single case study.	VI
Zwarenstein, M., Goldman, Meuser, Rogers, Lawrie, & Reeves	2009	Interprofessional collaboration: Effects of practice-based interventions on professional practice and healthcare outcomes. <i>Cochrane database of Systematic Reviews.</i>	IPC: Systematic review of interventions to impact IPC.	I
Watanabe-Galloway S, Madison L, Watkins KL, Nguyen AT, Chen L.	2015	Recruitment and retention of mental health care providers in rural Nebraska: perceptions of providers and administrators. <i>Rural and Remote Health.</i>	IPC: Rural mental health staffing/ Identifies poor pay, isolation and poor team involvement as key factors in job retention.	III

Appendix B: Index for Interdisciplinary Collaboration (used with permission from Laura Bronstein, PhD (2002).

The index includes original 49 questions, scaled from one to five as shown below, with the lower number the better score. The same scaling was used in the SurveyMonkey surveys:

- 1: strongly agree
- 2: agree
- 3: neutral
- 4: disagree
- 5: strongly disagree

Factor analysis and Component analysis for each of the five components of Bronstein's Model for Interdisciplinary Collaboration for each question can be found in the original document. Those items highlighted have been chosen for use in this project. A list of the exact wording and questions used in SurveyMonkey follows this original index.

APPENDIX A—Index of Interdisciplinary Collaboration

DIRECTIONS: With regard to your current primary work setting/organization, please indicate the extent to which you agree or disagree with each of the following statements by circling the appropriate number beside each statement. Please answer all questions to the best of your ability.

1. I utilize other professionals for their particular expertise.
2. I consistently give feedback to other professionals in my setting.
3. Other professionals in my setting utilize social workers for a range of tasks.
4. Teamwork with professionals from other disciplines is not important in my ability to help clients.
5. My colleagues from other professional disciplines and I rarely communicate.
6. The colleagues from other disciplines with whom I work have a good understanding of the distinction between my role and their role(s).
- * 7. I communicate in writing with my colleagues from other disciplines to verify

information shared verbally.

8. My colleagues from other disciplines make inappropriate referrals to me.

9. I can define those areas that are distinct in my professional role from that of professionals from other disciplines with whom I work.

10. I view part of my professional role as supporting the role of others with whom I work.

11. My colleagues from other disciplines refer to me often.

12. Cooperative work with colleagues from other disciplines is a part of my job description.

* 13. I utilize informal methods of communication (i.e. social networks, lunchtime, etc.) to communicate with my colleagues from other disciplines.

14. My colleagues from other professional disciplines do not treat me as an equal.

15. My colleagues from other disciplines believe that they could not do their jobs as well without the assistance of social workers.

* 16. Incorporating views of treatment held by my colleagues from other disciplines improves my ability to meet clients' needs.

17. Distinct new programs emerge from the collective work of colleagues from different disciplines.

18. Organizational protocols reflect the existence of cooperation between professionals from different disciplines.

19. Formal procedures/mechanisms exist for facilitating dialogue between professionals from different disciplines (i.e., at staffings, inservice, rounds, etc.).

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

* 21. Some meetings, committees etc. in my agency/organization are consistently run jointly by social workers and other professionals.

22. Working with colleagues from other disciplines leads to outcomes that we could not achieve alone.

23. Creative outcomes emerge from my work with colleagues from other professions that I could not have predicted.

24. I am willing to take on tasks outside of my job description when that seems important.

25. I am not willing to sacrifice a degree of autonomy to support cooperative problem solving.

26. I utilize formal and informal procedures for problem-solving with my

colleagues from other disciplines.

27. The professional colleagues from other disciplines with whom I work stick rigidly to their job descriptions.

28. My non-social work professional colleagues and I work together in many different ways.

* 29. Relationships with my colleagues sustain themselves despite external changes in the organization or outside environment.

* 30. Decisions about approaches to treatment are made unilaterally by professionals from other disciplines.

31. Professionals from other disciplines with whom I work encourage family members' participation in the treatment process.

32. My colleagues from other disciplines are not committed to working together.

33. My colleagues from other disciplines work through conflicts with me in efforts to resolve them.

34. When colleagues from different disciplines make decisions together they go through a process of examining alternatives.

35. My interactions with colleagues from other disciplines occurs in a climate where there is freedom to be different and to disagree.

36. Clients/patients/students participate in interdisciplinary planning that concerns them.

37. Colleagues from all professional disciplines take responsibility for developing treatment plans.

38. Colleagues from all professional disciplines do not participate in implementing treatment plans.

39. Professionals from different disciplines are straightforward when sharing information with clients/patients/students.

40. My colleagues from other disciplines and I often discuss different strategies to improve our working relationships.

41. My colleagues from other professions and I talk about ways to involve other professionals in our work together.

* 42. I work to create a positive climate in our organization.

43. My non-social work colleagues do not attempt to create a positive climate in our organization.

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

45. I help my non-social work colleagues to address conflicts with other

professionals directly.

46. My non-social work colleagues are as likely as I am to address obstacles to our successful collaboration.

47. My colleagues from other disciplines and I talk together about our professional similarities and differences including role, competencies and stereotypes.

48. My colleagues from other professions and I do not evaluate our work together.

49. I discuss with professionals from other disciplines the degree to which each of us should be involved in a particular case.

- Data analysis indicates starred items may be dropped from scale

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Modified Index of Interprofessional Collaboration

Exact wording and sequence as it appears in SurveyMonkey:

DIRECTIONS: With regard to your current primary work setting, please indicate the extent to which you agree or disagree with each of the following statements by choosing the appropriate number beside each statement. Please answer all questions to the best of your ability.

Scale:

1. Strongly Agree
2. Agree
3. Neutral
4. Disagree
5. Strongly disagree

1. I consistently give feedback to other professionals in my setting.
2. Collaborative work with colleagues is part of my job description.
3. My colleagues from other professional disciplines and I often communicate.
4. The colleagues from other disciplines with whom I work have a good understanding of the distinction between my role and their role(s).

5. I view part of my professional role as supporting the role of others with whom I work.
6. I can define those areas that are distinct in my professional role from that of professionals from other disciplines with whom I work.
7. My colleagues from other disciplines treat me as an equal.
8. I utilize informal methods of communication (i.e. social networks, lunchtime, etc.) to communicate with my colleagues from other disciplines.
9. Incorporating views of treatment held by my colleagues from other disciplines improves my ability to meet clients' needs.
10. Distinct new programs emerge from the collective work of colleagues from different disciplines.
11. Organizational protocols reflect the existence of cooperation between professionals from different disciplines.
12. Creative outcomes emerge from my work with colleagues from other professions that I could not have predicted.
13. I am willing to take on tasks outside of my job description when that seems important.
14. The professional colleagues from other disciplines with whom I work do not stick rigidly to their job descriptions.
15. Formal procedures/mechanisms exist for facilitating dialogue between professionals from different disciplines (i.e., at staffings, inservice, rounds, etc.).
16. Relationships with my colleagues sustain themselves despite external changes in the organization or outside environment.
17. Decisions about approaches to treatment are not made unilaterally by professionals from other disciplines.
18. My colleagues from other disciplines work through conflicts with me in efforts to resolve them.
19. My interactions with colleagues from other disciplines occurs in a climate where there is freedom to be different and to disagree.
20. My colleagues from other disciplines and I often discuss different strategies to improve our working relationships.

21. I am optimistic about the ability of my colleagues from other disciplines to work with me to resolve problems.
22. My colleagues from other professions and I talk about ways to involve other professionals in our work together.
23. My colleagues from other disciplines and I talk together about our professional similarities and differences including role, competencies and stereotypes.
24. My colleagues from other professions and I do not evaluate our work together.
25. Please rank from 1 to (1 is best) your choices for journal club subject matter.
 - Psychiatric medications.
 - New EBP concepts in community mental health.
 - Integrated health.
 - Professional development/roles.
 - Other.
26. Please add any comments here.

Appendix C: Permission to Use Index of Interdisciplinary Collaboration

Dr. Bronstein,

I am a doctoral nursing student at Regis University doing my Capstone Project on the impact of an online journal club on staff perception of interdisciplinary collaboration within a rural community mental health center in Southwest Colorado. In searching for related measurement tools, I found your Index of Interdisciplinary Collaboration, which fits both my location and desired outcomes very well.

I am requesting permission to use a modified (shortened) version of the index, choosing questions specific to perception of collaboration between all of the disciplines working within this mental health center of 200 employees.

Please let me know of any additional information I can offer.

Thank you for your consideration,

Russelyn Connor, MS, RN, CNS

Permission to use Index of Interdisciplinary Collaboration

Notes x



Rusty Connor

Jun 2

Dr. Bronstein, I am a doctoral nursing student at Regis University doing my Capstone Project concerning Interdisciplinary Collaboration in a Community Mental Health Center. I am asking permission to utilize a modified version of your Index for Interdisciplinary Collaboration as the measurement tool for this project.



Laura R Bronstein <lbronst@binghamton.edu>

Jun 2

to me

You are certainly welcome to use the Index. Good luck with your research.

From: Rusty Connor [mailto:russelynconnor@gmail.com]

Sent: Tuesday, June 02, 2015 12:54 PM

To: lbronst@binghamton.edu

Subject: Permission to use Index of Interdisciplinary Collaboration

Appendix D: Group email to all staff inviting participation

To: All Staff

From: rconnor@axishealthsystem.org

Subject: Invitation to participate in research

Attachment: Informational Sheet

To all AHS staff,

As many of you know, I am currently pursuing a Doctorate in Nursing Practice from Regis University. To complete this program, I must finish a research project. The project I am working on involves staff perception of interprofessional collaboration through the use of an online journal club.

I am inviting any of you who may be interested to participate in this three month pilot project online journal club. Attached is an Informational Sheet which explains the project in detail, along with your role as participant, what would be expected of you, and the approximate time it might take on your part.

If you decide to join the group, please respond to this email with something that says "I'm in!" by **November 10, 2015**.

Thanks for your time,

Rusty

Appendix E: CITI certificate



citiCompletionReport4647636.pdf

Appendix F: Regis University IRB Approval Letter

IRB – REGIS UNIVERSITY

September 30, 2015

Russelyn Connor
8622 County Road 502
Bayfield, CO 81122

RE: IRB # 15-254

Dear Ms. Connor:

Your application to the Regis IRB for your project, "Interprofessional Journal Club to Improve Interprofessional Collaboration", was approved as an exempt study on September 30, 2015. This study was approved per exempt study category of research 45CFR46.101.b(#2).

The designation of "exempt" means no further IRB review of this project, as it is currently designed, is needed.

If changes are made in the research plan that significantly alter the involvement of human subjects from that which was approved in the named application, the new research plan must be resubmitted to the Regis IRB for approval.

Sincerely,

A handwritten signature in black ink that reads "Patsy McGuire Cullen / Rene McCall".

Patsy McGuire Cullen, PhD, CPNP-PC
Chair, Institutional Review Board
Professor & Director
Doctor of Nursing Practice & Nurse Practitioner Programs
Loretto Heights School of Nursing
Regis University

cc: Dr. Louise Suite

Appendix G: Organizational Approval Letter



Letter of Agreement

September 7, 2015

To Regis University Institutional Review Board (IRB):

I am familiar with Russelyn Connor's research project entitled "The Perception of Interdisciplinary Collaboration through an Online Journal Club". I understand Axis Health System's involvement to be in allowing staff to voluntarily participate in this project, an Online Journal Club, using internal email, GoogleDocs, and SurveyMonkey. The protocol will involve an email sent to all staff to provide information of the project along with an invitation to participate. This will be followed by an anonymous pre-test survey to measure interdisciplinary collaboration to be sent to participants, followed by three monthly relevant evidence-based articles linked to a GoogleDocs account with access given to all willing participants forming the online journal club. After three months, an anonymous post-test survey will be sent to all participants.

I understand that this research will be carried out following sound ethical principles and that participant involvement in this research project is strictly voluntary and provides confidentiality of research data, as described in the proposal.

Therefore, as a representative of Axis Health System, I agree that Russelyn Connor's research project may be conducted at our agency.

Sincerely,

Stephanie Allred
 Stephanie Allred, PhD
 Print name

Senior Clinical Director
 Title

Instructions (Select one):

Fax with original signature to: (303) 964-5528

Email as PDF with original signature to irb@regis.edu from an official agency email address.

Adobe electronic signature to irb@regis.edu



Appendix H: Participation Information Sheet



RUECKERT-HARTMAN COLLEGE FOR HEALTH PROFESSIONS
LORETTO HEIGHTS SCHOOL OF NURSING

Participation Information Sheet

Capstone Project
Russelyn Connor

The Perception of Interdisciplinary Collaboration through an Online Journal Club

This research project is a requirement to graduate with my Doctorate in Nursing Practice (DNP) degree from Regis University. It combines my interest in technology, rural mental health services, nursing, and collaboration. The purpose of the study is to examine the effect of an online, asynchronous journal club on staff perception of collaboration between disciplines. I want to see if the use of a tool such as an online journal club can help Axis Health System employees feel more connected to one another in our diverse locations, roles and professions. The ultimate outcome would be improved patient outcomes as a result of increased perception of collaboration.

The process of this study will involve two 25-question surveys which will be posted on Survey Monkey at both the start and end of the project and whose answers will be anonymously gathered by Survey Monkey. The surveys should take no more than 15 minutes to finish and do not require writing. Between the two surveys, each participant will be emailed a link to one article per month for three months. The articles will open in a GoogleDocs account. If you do not already have a Google account, you may be asked to create one.

Participants will be encouraged to read and comment on the articles within GoogleDocs. Posting and responding to comments can happen at participants' leisure throughout the month. This part of the study will not be anonymous, as the point, of course, is to collaborate. The articles will be related to the work we do, be recent, evidence-based research, and will hopefully be of interest to everyone. There will be a space in the first survey to suggest subjects of interest. The article will be able to be printed for ease of reading, but all comments will be made in GoogleDocs to share with others. The article will be accessible from any internet-capable computer. I will be participating myself, along with tracking comments, and assisting with technological problems.

Following the three months and three articles, the survey will again be emailed to participants, this time with one additional question about whether the journal club should continue. Once received, I will be collating the results of this survey, and doing my data analysis, and participant involvement will be done. The "experimental" aspect of this project is actual engagement and use of GoogleDocs to read and comment in staff's own time as a way to

potentially increase a sense of collaboration in our rural setting. I will be able to share results with you after the project is finished.

Foreseeable risks of participating might be feelings of discomfort or stress over a sense of responsibility to participate, or of the time it will take to read and make comments. There may be unforeseen frustrating technological problems. It would be possible to experience some discomfort because of my role as supervisor and on-call supervisor. Participation will not effect job performance evaluations in any way.

Benefits, on the other hand, may include the positive outcome of feeling more connected with colleagues and co-workers in other locations, of being part of a new project ultimately beneficial to both staff and patients, and of acquiring new knowledge from the articles and comments. Again, your responses to the surveys will be completely anonymous to me and anyone who might be examining this study and will be only reported as aggregate data with no linking of feedback to individual participants. Your participation is voluntary and you may stop at any time without penalty. I would ask staff not to participate if you plan to leave Axis Health System's employ during the period of the study.

As a final incentive to participation, a five dollar (\$5.00) gift card will be given to all participants who complete the entire study.

Questions about the study can be answered by contacting one of the following persons:

Rusty Connor: rconnor@regis.edu or (970) 403-9325.

Dr. Louise Suit, Ed.D, RN, CNS, lsuit@regis.edu or (303) 458-4187 or (800) 388-2366 x 4187.

If questions arise concerning your rights as a research subject, you can contact

Regis University Institutional Review Board (IRB) at: irb@regis.edu or (303) 458-4206.

The Executive Team at Axis.

Thank you all for considering being part of this project.

Rusty Connor

Appendix I: Figure 3: Logic Model Schematic

Online Journal Club to Improve Interprofessional Collaboration

**Logic Model Schematic:
Improving Staff Perception of Collaboration through the Use of
an Online Journal Club**

Key: Pink: moderating and extraneous variables; Orange: PICO components

