

IMPLEMENTATION OF AN INTERPROFESSIONAL CLINIC  
EDUCATION PROGRAM AT AN INTEGRATIVE MEDICAL CLINIC IN  
HONOLULU, HAWAI'I

A DOCTOR OF NURSING PRACTICE PROJECT SUBMITTED TO THE  
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## ABSTRACT

Healthcare providers are challenged with keeping abreast of new developments in prevention, diagnosis, and treatment of disease, while facing rapidly evolving guidelines and busy schedules. The purpose of this Doctor of Nursing Practice project was to implement a 5-month interprofessional clinic education program using a journal club format at an integrative medical clinic in Honolulu, Hawaii to increase health professionals' current knowledge, literature reading, self-reported application of evidence to practice, and participation in discussion and awareness of interprofessional approaches. The effect of the clinic education program was evaluated with pre- and post-program surveys using the 5-point Likert scale. Additionally, journal club methods were evaluated following each journal club using the 5-point Likert scale. Additional questions were asked following the program to assess attendance, most and least beneficial factors, and interest in program continuation. Unique characteristics of this journal club are the inclusion of administrative staff members in addition to health professionals, and to report success with a relatively short 20-minute journal club meeting time. The findings reported here are broadly applicable and indicate that clinics may adapt to meet the needs of their unique setting and realize the benefits.

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Implementation of an Interprofessional Clinic Education Program at an Integrative  
Medical Clinic in Honolulu, Hawai'i

**Introduction, Background, & Significance**

Keeping abreast of new developments in diagnosis, treatment, and prevention of disease in the rapidly changing world of healthcare can be challenging for busy health professionals. Educational programs in the clinic setting using a journal club format can provide a unique opportunity for health professionals to learn about evidence-based approaches to care. Key outcomes of journal clubs are increased or updated knowledge (Hunt & Topham, 2002; Ilic et al., 2020), increased use of literature and research awareness (Lindquist et al., 1990; Malay, 2018) and improved clinical practice behaviors (Honey & Baker, 2011; Hunt, 2006). Additionally, interprofessional journal clubs report increased discussion and awareness of cross-discipline approaches (Cantin et al., 2013; Hunt, 2006). For this Doctor of Nursing Practice (DNP) project, I implemented an interprofessional clinic education program using a journal club format at an integrative medical clinic in Honolulu, Hawaii.

When asked about the primary need at Manakai O Malama (hereafter referred to as the Clinic), the medical director identified that health professionals would benefit from reviewing recent publications on topics relevant to the Clinic. Health professionals at the Clinic include an interprofessional team of medical doctors, a nurse practitioner, a physician assistant, physical therapists, occupational therapists, psychologists, chiropractors, acupuncturists, naturopaths, and massage specialists. The medical director identified specific topics of interest for the education program focusing on metabolic syndrome. Specifically, sequela and causative factors of metabolic syndrome such as

sleep and obstructive sleep apnea, pain management and fibromyalgia, depression and anxiety, and related tests and procedures. The education program aimed to help health professionals of various specialties to work together and gain further insight into metabolic syndrome.

Characterized by abdominal obesity or BMI  $>30 \text{ kg/m}^2$ , insulin resistance, hypertension, and hyperlipidemia, metabolic syndrome is a widespread disease and increases risk of heart disease, stroke, and type 2 diabetes. It is estimated to affect one quarter of the world's population (Saklayen, 2018). The prevalence of metabolic syndrome is difficult to measure as the definitions vary and the incidence of conditions associated with metabolic syndrome are used to estimate metabolic syndrome prevalence. In Hawaii, adult rates of obesity have more than doubled since the mid 1990s, and one third of kindergarteners are overweight or obese (State of Hawaii Department of Health, 2020a). Moreover, self reported type 2 diabetes rates increased by 60% from 2000 to 2010 (State of Hawaii Department of Health, 2020b). Thus, it is essential that health professionals in Hawaii are well informed on evidence-based practices related to conditions associated with metabolic syndrome.

### **Needs Assessment**

The needs of the Clinic related to metabolic syndrome were: increased current knowledge, increased use of literature and research awareness, improved clinical practice behaviors, and increased discussion and awareness of interprofessional approaches. Gaining knowledge of other professions and procedures provided at the Clinic also allows health professionals to better identify situations in which to refer a patient to a

colleague. Patients are indirectly affected as they will receive care based on the latest evidence and will be more efficiently referred across disciplines.

### **Problem and Purpose Statement**

The Population Intervention Comparison Outcome Time (PICOT) question (Hall & Roussel, 2017) is: will health professionals at an integrative medical clinic in Honolulu, Hawaii report an increase in current knowledge, literature reading, self-reported application of evidence to practice, and participation in discussion and awareness of interprofessional approaches after implementation of a 5-month education program using a journal club format?

### **Literature Review**

Mosby's grading system was used for this literature review. This system uses seven levels of evidence (Winona State University, 2020). Level I includes systematic reviews or meta-analyses of all relevant randomized controlled trials (RCTs), or evidence-based clinical practice guidelines based on systematic reviews of RCTs or three or more RCTs of good quality. Level II includes experimental designs, such as multi-site RCTs. Level III includes quasi-experimental design: a well-designed controlled trial without randomization. Level IV includes case-controlled, cohort, and longitudinal studies. Level V includes correlation studies: systematic reviews of descriptive and qualitative studies. Level VI includes descriptive or qualitative studies. Level VII includes authority opinion or expert committee reports.

As outlined in Table 1, the majority articles used for this literature review were descriptive studies (Level VI, n=15), followed by randomized controlled trials (Level II, n=4), correlation studies (Level V, n=3), and authority opinions or expert committee



reports (Level VII, n=2). Additionally, one article of each of the following were included: a meta-analysis (Level I) and a cohort study (Level IV). No studies with a quasi-experimental design (Level III), or performance improvement, case reports and literature reviews were included.

Table 1

*Mosby's Level of Evidence and Number of Relevant Articles*

<b>Mosby's Level of Evidence</b>	<b>Number of Articles (N=26)</b>
<b>Level I:</b> Meta-analysis	1
<b>Level II:</b> Experimental design (RCT)	4
<b>Level III:</b> Quasi-experimental design	0
<b>Level IV:</b> Case-controlled, cohort, longitudinal studies	1
<b>Level V:</b> Correlation studies	3
<b>Level VI:</b> Descriptive studies	15
<b>Level VII:</b> Authority opinion or expert committee reports	2
<b>Other:</b> Performance improvement, case reports, literature reviews, etc.	0

PubMed and the Cumulative Index to Nursing and Allied Health Literature (CINAHL) were used for the literature search of the implementation of journal clubs at integrative medical clinics. PubMed searches included the subject headers “journal club” with or without “integrative” or “multidisciplinary” or “multidisciplinary clinic” or “interdisciplinary” or “interprofessional” or “Hawaii”. CINAHL searches included the subject headers “journal club” with or without “integrative” or “multidisciplinary” or

“interdisciplinary” or “interprofessional” or “Hawaii”. Boolean operators were applied. Searches were not limited to full text or free full text. The reference list of each article was also searched to discover previously unidentified evidence. A total of 26 articles were obtained from the search.

### **Literature Synthesis**

The effects of clinic education programs using a journal club format are widely published and provide numerous benefits. Key outcomes are increased or updated knowledge (Hunt & Topham, 2002; Ilic et al., 2020; Talmon et al., 2019) increased use of literature and research awareness (Honey & Baker, 2011; Lindquist et al., 1990) and improved clinical practice behaviors (Hunt, 2006; Moraes & Spiri, 2019). Additionally, journal clubs spur networking (Kjerholt & Hølge-Hazelton, 2018), and interprofessional journal clubs report increased discussion and awareness of cross-discipline approaches (Cantin et al., 2013; Hunt, 2006). Besides the key outcomes, the literature synthesis provided insight into best practices regarding participant engagement, logistics, and program evaluation.

When implementing an intervention, participant engagement is crucial. A descriptive study by Kitson (2009) suggests that success is more likely when participants are directly involved and have some level of control of the intervention. A systematic review of the impact of journal clubs identified that 64% of studies used articles that were selected by participants (Honey & Baker, 2011).

The literature on clinic education programs using a journal club format was relatively consistent with regards to timing and frequency of journal clubs, group size, and delivery method. Ideally, the article is distributed to health professionals two weeks

prior to the journal club meeting (Hunt, 2006). The recommended frequency was monthly (Duffy et al., 2011; Sadeghi et al., 2016) The length of journal club meetings varied between studies. While most aimed for one hour (Wenke et al., 2018; Williams & Mann, 2017), others met for 30-45 minutes (Cantin et al., 2013; Hunt, 2006). With regard to the number of participants, one study recommends 5-15 participants (McLeod et al., 2010), while another recommends subdividing into groups of five to eight members (Bounds & Boone, 2018). Another variable is use of web-based instead of traditional in-person journal clubs. Several studies noted that web-based journal clubs provided a beneficial educational and professional experience (Hammond et al., 2019; Sortedahl, 2012; Topf et al., 2017). A randomized controlled trial suggested traditional journal clubs are superior, likely due to low participation with web-based journal clubs (McLeod et al., 2010).

Methods of evaluation varied between studies. In some studies participants completed pre- and post-intervention evaluations (Wenke et al., 2018; Wilson et al., 2015). In other studies, surveys followed each journal club (Carta et al., 2018; MacRae et al., 2004). Frequent evaluations allow adaptation of the intervention to health professional's needs. One study used only 5-point Likert scale questions (MacRae et al., 2004) while others included both 5-point Likert scale questions and open-ended questions (Arif et al., 2012; Carta et al., 2018).

There is a significant amount of literature supporting the positive outcomes of a journal club. There is high level evidence including one meta-analysis (Ilic et al., 2020) and several randomized controlled trials (Wenke et al., 2018; Williams & Mann, 2017). The majority of research has a lower level of evidence, which is likely due to the nature of journal clubs: most authors did not primarily intend to research the effectiveness of

journal clubs or compare journal club methods. Rather, they implemented a journal club to benefit from the outcomes and secondarily published their findings. Limitations of the literature include a lack of studies performed in Hawaii and dependence on self-reporting potentially leading to bias.

The main concepts from the literature review are:

1. Key outcomes of journal clubs are increased knowledge, increased use of literature, and improved clinical practice behaviors
2. Interprofessional journal clubs report increased discussion and awareness of cross-discipline approaches
3. Local autonomy is essential and can be achieved by including health professionals in the selection of the article(s)
4. Article(s) should be distributed two weeks prior to each journal club, each journal club meeting should last up to an hour, and occur monthly
5. The journal club should be assessed using both 5-point Likert scale questions and open-ended questions, and surveys should occur both pre- and post-program and following each journal club

### **Conceptual Framework**

The Conceptual Framework used to guide the implementation of this clinic education program, is the Consolidated Framework for Implementation Research (CFIR) (Damschroder et al., 2009). The CFIR states that a systematic approach to intervention implementation is essential to ensure success of the project and consists of five domains: the intervention, the inner setting, the outer setting, the individuals, and the

implementation process. Notable characteristics as applied to the proposed clinic education program are:

1. The domain “intervention” urges consideration of costs. The costs associated with this program include printing of articles to distribute to health professionals, as well as the participation of health professionals and their time.
2. The domain “inner setting” considers variables that affect implementation. Extensive depth of knowledge is associated with higher likelihood of innovation adoption (Dewar & Dutton, 1986). A variable that could affect implementation negatively may be the lack of time in a busy clinic setting.
3. The domain “individuals” reviews how health professionals’ characteristics influence program adoption, implementation and maintenance. The degree of commitment to an organization affects the willingness of health professionals to engage in the intervention.
4. The domain “implementation process”, includes strategies or tactics that might influence implementation (Keith et al., 2017). For example, providing clear guidelines regarding the implementation of the program minimizes complexity.

### **Goals and Objectives**

The goals of the 5-month clinic education program using a journal club format were to increase health professionals’ current knowledge, literature reading, self-reported application of evidence to practice, and participation in discussion and awareness of interprofessional approaches related to metabolic syndrome.

The objectives were:

1. Identify articles related to metabolic syndrome, its sequela, and causative factors such as sleep and obstructive sleep apnea, pain management and fibromyalgia, depression and anxiety, as well as tests and procedures for metabolic syndrome that have potential to contribute to evidence-based practice at the Clinic
2. Present and discuss at least one article per month for five consecutive months
3. Measure health professionals' self-assessment of current knowledge, use of literature, use of evidence-based practice, and discussion and awareness of interprofessional approaches before and after implementation of the program
4. Survey health professionals' evaluation of the clinic education program methods.

### **Project Design**

In order to provide clarity and structure, stakeholders and their roles were determined. The stakeholders of this project include the DNP student performing the project, the project chair and the third reader, who are both University of Hawaii faculty, the content expert, who is a Family Nurse Practitioner at the Clinic, the medical director of the Clinic, and the health professionals at the Clinic.

The project started with a meeting at the Clinic during which the health professionals were introduced to the program and took the pre- program survey. This survey consists of questions regarding the program goals (Table 2). The 5-point Likert scale was used for these questions: "Novice" was assigned 1 point and "Expert" was

assigned 5 points. Following the introduction, the journal clubs occurred monthly for five months.

Table 2

*Pre-program survey to evaluate the effect of the clinic education program*

<b>5-Point Likert items</b>	
Question 1	Rate your current knowledge of metabolic syndrome
Question 2	Rate your use of literature related to metabolic syndrome
Question 3	Rate your use of evidence-based practice related to metabolic syndrome
Question 4	Rate your participation in discussion of interprofessional approaches to metabolic syndrome
Question 5	Rate your awareness of interprofessional approaches to metabolic syndrome

The article(s) were selected 1-2 months in advance and distributed to the Clinic's health professionals 0-3 days prior to the journal club meeting. Although evidence suggests distributing the article 2 weeks prior to the journal club meeting, the content expert identified that participants were reading more if the article was handed out closer to the date of the journal club. In order to involve the health professionals during this project, articles were selected based on professions, procedures, and the patient population familiar to the Clinic. Additionally, health professionals were encouraged to suggest articles. The journal clubs occurred during lunch break and consisted of a 7-10 minute presentation of the article by the DNP student, followed by a 10-minute group discussion. The DNP student prepared a handout for each journal club meeting to guide the presentation of the article. To stimulate discussion, the DNP student asked participants about their experiences related to the topic of the article, if they believe they will be able to apply the findings into practice, what their current practices are, if they foresee any issues, concerns, or obstacles, and what works well in their experience. At the conclusion

of each journal club, health professionals completed a survey to evaluate the methods of the journal club (Table 3).

Table 3

*Post-journal club survey to evaluate program methods*

<b>5-Point Likert items</b>	
Question 1	The journal club met the objectives
Question 2	The purpose of the journal club was established and linked to the article(s)
Question 3	The method of presentation was appropriate
Question 4	The level of information was appropriate
<b>Open ended questions</b>	
Question 5	What are your suggestions for improvement?

A 5-point Likert scale was used for the first four questions: “Strongly disagree” was assigned 1 point, “Somewhat disagree” was assigned 2 points, “Neutral” was assigned 3 points, “Somewhat agree” was assigned 4 points, and “Strongly agree” was assigned 5 points.

Following the final journal club, the health professionals completed the post-program survey regarding the program goals, attendance, beneficial aspects, feedback for the facilitator, and interest in program continuation (Table 4). A 5-point Likert scale was used for the first five questions: “Novice” was assigned 1 point and “Expert” was assigned 5 points. For the multiple choice question on the number of sessions attended answers were “1 session”, “2 sessions”, “3 sessions”, “4 session”, and “5 sessions”. For the multiple choice question on how much of the article health professionals were able to read, answers were “0-25%”, “26-50%”, “51-75%”, and “76-100%”. All surveys were anonymous.



Table 4

*Post-program survey to evaluate the effect of the clinic education program*

<b>5-Point Likert items</b>	
Question 1	Rate your current knowledge of metabolic syndrome
Question 2	Rate your use of literature related to metabolic syndrome
Question 3	Rate your use of evidence-based practice related to metabolic syndrome
Question 4	Rate your participation in discussion of interprofessional approaches to metabolic syndrome
Question 5	Rate your awareness of interprofessional approaches to metabolic syndrome
<b>Multiple choice questions</b>	
Question 6	How many journal club sessions did you attend?
Question 7	On average, how much of the article were you able to read prior to the sessions you attended?
<b>Open ended questions</b>	
Question 8	What were the most beneficial factors?
Question 9	What were the least beneficial factors?
Question 10	What other feedback do you have for the facilitator?
<b>Yes or no questions</b>	
Question 11	Are you interested in continuation of the education program?
Question 12	If yes, would you be willing to manage or co-manage the program?

Due to the coronavirus pandemic and associated social distancing measures fewer than expected health professionals were present at the clinic every day. Journal club sessions were originally planned to occur during the monthly lunch meetings when lunch is provided. However, lunch meetings were discontinued during the pandemic, leading to a lower than expected turnout. Administrative staff members were present at the Clinic throughout the pandemic and they were interested to join the education program. Consequently, there were fewer health professionals and more administrative staff members participating in the education program. Meetings were in-person and social distancing measures were applied, including wearing masks and keeping 6-foot distance.

## **Evaluation Plan**

To assess the effects of the clinic education program the pre- and post-program questions regarding the program goals were compared. Averages of all health professionals per question were calculated for both pre- and post- program surveys, and reported in a clustered column chart. Answers regarding attendance, beneficial and non-beneficial factors, and interest in continuation of the program are discussed below.

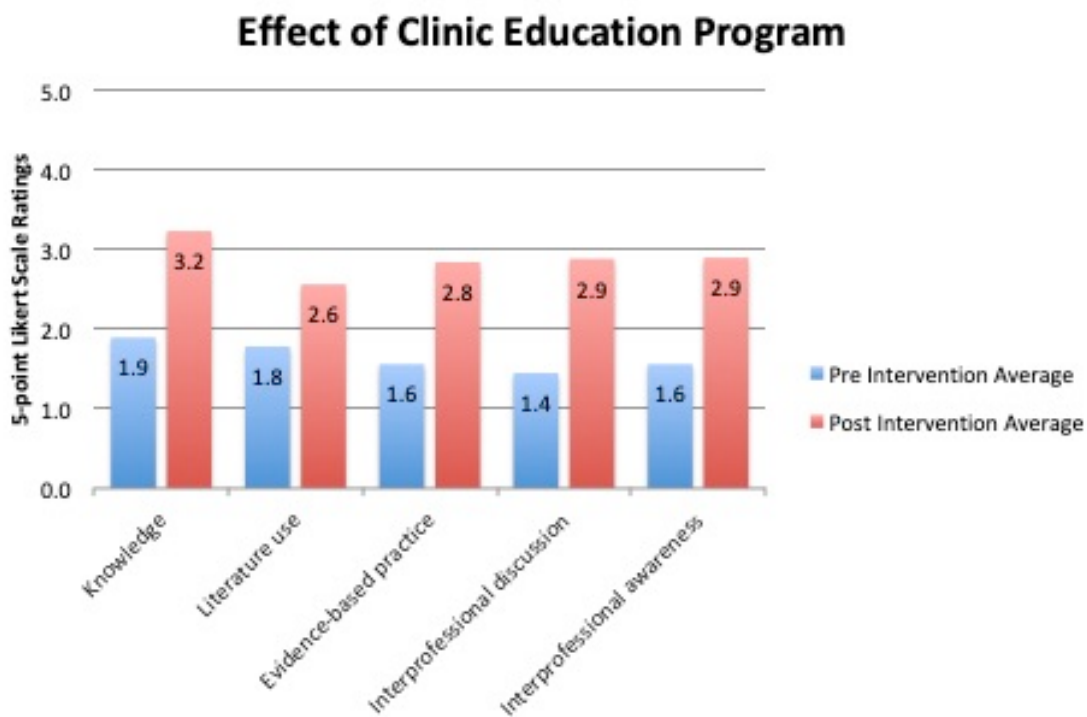
To evaluate the methods of the education program, the post-journal club survey was reviewed each month and modifications were made during the 5-month period as needed. Responses of all health professionals were averaged per question for each journal club and reported in a clustered column chart.

## **Data Analysis & Results**

This evidence-based project of a clinic education program using a journal club format yielded several important insights. Data were collected to 1) determine the effects of the clinic education program, 2) evaluate the methods of the education program, and 3) assess attendance, most and least beneficial factors, and interest in program continuation.

To determine the effects of the clinic education program, health professionals were asked about current knowledge, literature use, evidence-based practice, interprofessional discussion, and interprofessional awareness with regards to metabolic syndrome, before and after the program. A 5-point Likert scale was used for these questions: “Novice” was assigned 1 point and “Expert” was assigned 5 points. Health professional self-reported knowledge of metabolic syndrome increased from 1.9 prior to the program to 3.2 after the program. Literature use increased from 1.8 to 2.6. Evidence-based practice increased from 1.6 to 2.8.

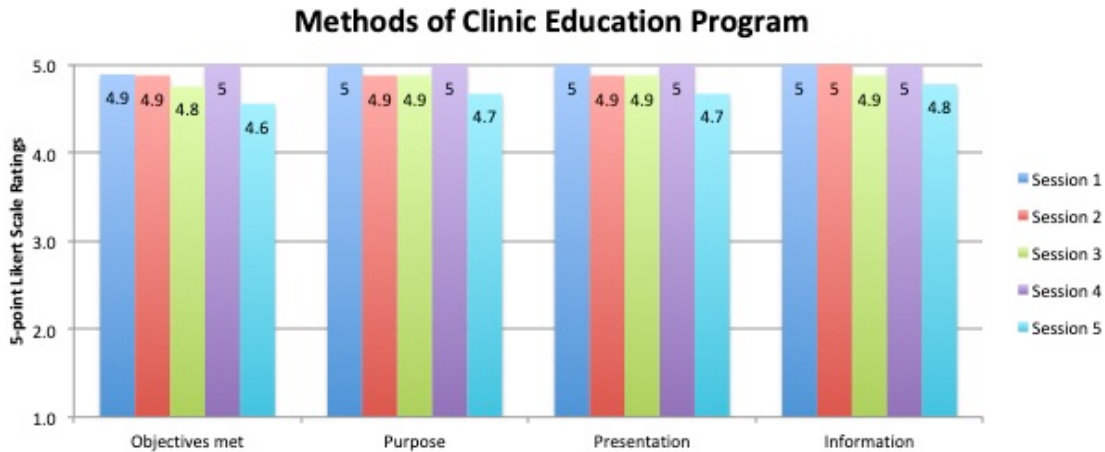
Interprofessional discussion increased from 1.4 to 2.9. And finally, interprofessional awareness increased from 1.6 to 2.9 (Figure 1). Although all scores improved, it was a relatively moderate increase. This is likely attributed to the high number of administrative staff who participated in this project. As restrictions related to the coronavirus pandemic loosen, more health professionals will be present at the Clinic and able to participate during potential future journal club meetings.



*Figure 1.* Effect of clinic education program measured by knowledge, literature use, use of evidence-based practice, interprofessional discussion, and interprofessional awareness related to metabolic syndrome before and after the intervention.

To evaluate the methods of the education program, health professionals were asked if objectives were met, if the purpose was established and linked to the article, if

the method of presentation was appropriate, and if the level of information was appropriate (Figure 2).



*Figure 2.* Methods of clinic education program, evaluated by meeting objectives, establishment of purpose, presentation methods, and appropriateness of information.

The 5-Point Likert scale was used for these questions: “Strongly disagree” was assigned 1 point, “Somewhat disagree” was assigned 2 points, “Neutral” was assigned 3 points, “Somewhat agree” was assigned 4 points, and “Strongly agree” was assigned 5 points. When asked if objectives were met, averages ranged between 4.6 and 5.0. When asked if the purpose was established and linked to the article, averages ranged between 4.7 and 5.0. When asked if the method of presentation was appropriate, averages ranged between 4.7 and 5.0. Finally, when asked if the level of information was appropriate, answers ranged between 4.8 and 5.0. The slight decrease in ratings during the fifth journal club session is possibly caused by the participation of a few new participants. This decrease may also be attributed to participants joining the session after the review of the objectives and the purpose. Moreover, participants were asked about suggestions for improvement. During the first journal club one health professional suggested “visuals”; consequently,

visuals were added or referred to during the following journal club sessions. No other suggestions for improvement were made.

During the post- program survey health professionals were also asked how many journal clubs they had attended, how much of the article they read on average, what they thought were the most and least beneficial factors, and if they were interested in continuation of the program. When asked how many journal clubs health professionals had attended, two out of nine participants reported they attended one session, two participants attended two sessions, one participant attended three sessions, one participant attended four sessions, and three participants attended all five sessions. This indicates that although there were some participants who attended all sessions, most participants did not attend all sessions, and there were still new participants joining during the fifth journal club session. When asked how much of the article they read, five out of nine participants answered 0-25%; two answered 26-50%; one answered 51-75%; and one answered 75-100%. This may be due attributed to a high number of administrative staff members joining the journal club sessions. Health professionals reported that most beneficial factors were the discussions and questions, the bullet points on the handout, increased knowledge, and increased use of literature. No least beneficial factors were reported. With regards to other feedback for the facilitator, one participant suggested to “increase engagement”. When asked about interest to continue the program six out of seven participants answered “Yes” and one participant answered “No”. When asked if they were willing to manage or co-manage the program, one out of seven participants answered “Yes” and six participants answered “No”. The low number of participants interested to manage or co-manage the program may be attributed to the fact that only

one primary care provider was present during the last meeting when this survey was conducted.

### **Relationship of Results to Purpose, Goals, & Objectives**

The PICOT question was “Will health professionals at an integrative medical clinic in Honolulu, Hawaii report an increase in current knowledge, literature reading, self-reported application of evidence to practice, and participation in discussion and awareness of interprofessional approaches after implementation of a 5-month education program using a journal club format?” The goals of the 5-month clinic education program using a journal club format were to increase health professionals’ current knowledge, literature reading, self-reported application of evidence to practice, and participation in discussion and awareness of interprofessional approaches related to metabolic syndrome. The results indicate that there was an increase in current knowledge, literature reading, self-reported application of evidence to practice, and participation in discussion and awareness of interprofessional approaches after implementation of the 5-month education program using a journal club format.

The objectives were to 1) identify articles related to metabolic syndrome, its sequela, and causative factors such as sleep and obstructive sleep apnea, pain management and fibromyalgia, depression and anxiety, as well as tests and procedures for metabolic syndrome that have potential to contribute to evidence-based practice at the Clinic, 2) present and discuss at least one article per month for five consecutive months, 3) measure health professionals’ self-assessment of current knowledge, use of literature, use of evidence-based practice, and discussion and awareness of interprofessional approaches before and after implementation of the program, and 4) survey health

professionals' evaluation of the clinic education program methods. All objectives were met. The articles discussed included one on the metabolic impacts of confinement during the coronavirus pandemic (Martinez-Ferran et al., 2020), one article on the relationship between sleep and sleep apnea and metabolic syndrome (Borel, 2019), one article on management strategies for fibromyalgia (Arnold et al., 2016), one article on depression and metabolic syndrome in the older population (Repousi et al., 2018), and one article on the very low calorie diet associated with bariatric surgery (Holderbaum et al., 2018).

### **Implications**

The results of this evidence-based project are congruent with key outcomes of other journal clubs, and showed increased current knowledge, literature reading, self-reported application of evidence to practice, and participation in discussion and awareness of interprofessional approaches. This has implications for other clinics as they may choose to adopt a journal club as well. Furthermore, as participants expressed interest in maintenance of the program, implications for the Clinic include that health professionals along with administrative staff members may continue the journal club and expand to topics beyond metabolic syndrome.

Due to the coronavirus pandemic many health professionals were not present at the clinic. Simultaneously, administrative staff members expressed interested to join the journal club. This provided a unique situation in which our journal club consisted of a combination of health professionals and administrative staff members. Although the administrative staff members were not able to share experiences with patients, they contributed by sharing their personal experiences and stimulated the discussion with meaningful questions. Moreover, including administrative staff members further

strengthened the team culture at the Clinic. These findings may encourage other clinics to welcome administrative staff members to their journal club as well.

One of the barriers to implementing a journal club is the busy schedules of today's health professionals. While most journal clubs aim for about 1 hour of meeting time, the meeting time of this project was about 20 minutes. Although the length of our meeting was short compared to other journal clubs, the results indicate that even a 20-minute meeting will increase current knowledge, literature reading, self-reported application of evidence to practice, and participation in discussion and awareness of interprofessional approaches. These findings may provide options for clinics with tight schedules.

Altogether, this evidence-based project of a clinic education program using a journal club format yielded several important insights. Besides meeting the goals and objectives, the adaptations that were made in response to the coronavirus pandemic and in response to limited available time led to promising new information. The findings reported here are broadly applicable to clinics, and indicate journal clubs may adapt to meet the needs of a unique clinic setting and still be effective.

### **Strengths & Limitations**

Limitations of the education program discussed here are in having a small number of health professionals participate. During the meetings there were one or two primary care providers present, and one or two physical therapists. Due to the pandemic, the majority of health professionals were not present at the clinic in person. The other participants were administrative staff members. Also, although there was some overlap, the participants of each meeting varied. Another limitation is that all data consists of self-



reported surveys and thus is potentially subject to bias. Moreover, because all surveys were anonymous and because the participants varied, we were not able to conduct a paired analysis. Strengths of this evidence-based project are in providing data for an educational program using a journal club format in Hawaii. Also, as we completed surveys after each journal club, we were able to make adjustments as needed. For example, during the first journal club, a participant suggested including visuals and this was applied during the remaining journal club sessions. Also, this journal club is unique as it includes a combination of both health professionals and administrative staff members, and to report success with a relatively short (20-minute) journal club meeting time.

### **Sustainability & Dissemination Plan**

The majority of individuals expressed interest in continuation of the education program and one participant also expressed interest to manage or co-manage the program. This number of people interested to manage or co-manage may increase as more health professionals return to the Clinic. When moving forward, managers may consider discussing with participants how to increase reading of the selected article prior to the meeting to adapt to their personal needs. During the journal club, the manager may summarize the article as done during this project or discuss the findings and applications to practice by asking the participants about their interpretation. The later option may address the feedback during the last survey to increase engagement. Following discussion about the content of the article, the manager may lead with questions regarding the participant's experiences related to the topic of the article, if adopting the suggestions is realistic or achievable, what their current practices are, if they foresee any issues,

concerns, or obstacles, and what works well in their experience. Following the journal club the participants may discuss the topic of interest for the next journal club to encourage participation, and address any suggestions for improvement.

### **DNP Essentials**

This evidence-based project was conducted to meet DNP Essentials requirements: the curricular elements of accredited DNP programs. The American Association of Colleges of Nursing suggests that students of practice-focused programs, such as DNP programs, conduct a practice-oriented final DNP project. At the University of Hawaii School of Nursing and Dental Hygiene DNP program, DNP students identify a project by questioning a health professional in the community about a need. The DNP student searches to determine if there is literature to address the need and, if supportive evidence is found, proposes an evidence-based project. After implementation of the project, the DNP student analyses the results and reports the findings in writing and presentation format. During the design, implementation, and analysis of the project, the DNP student receives guidance and feedback from the DNP committee. The final DNP product serves as a foundation for future scholarly practice.

### **Conclusion**

A 20-minute journal club including both health professional and administrative staff can be meaningful and is widely applicable to clinics. Administrative staff members were welcomed during this education program, which provided further insight into personal experiences, stimulated discussion, and further established team culture. The duration of the journal club was approximately 20 minutes, which is shorter than the commonly used 60 minutes. This suggests other clinics with busy schedules may also be

able to benefit from the positive aspects of a journal club without committing a full hour. The findings of this evidence-based project indicate an increase in current knowledge, literature reading, self-reported application of evidence to practice, and participation in discussion and awareness of interprofessional approaches related to metabolic syndrome. The majority of participants expressed interest in continuation of the education program, and topics besides metabolic syndrome may be explored during future journal clubs. The education program using a journal club format benefitted the Clinic in numerous ways, and based on the results and experience of this program, initiation of similar programs is advisable at other clinics in Hawaii and beyond.

## References

- Arif, S. A., Gim, S., Nogid, A., & Shah, B. (2012). Journal clubs during advanced pharmacy practice experiences to teach literature-evaluation skills. *American Journal of Pharmaceutical Education*, 76(5), 88.  
<https://doi.org/10.5688/ajpe76588>
- Arnold, L. M., Gebke, K. B., & Choy, E. H. S. (2016). Fibromyalgia: Management strategies for primary care providers. *International Journal of Clinical Practice*, 70(2), 99–112. <https://doi.org/10.1111/ijcp.12757>
- Borel, A.-L. (2019). Sleep apnea and sleep habits: Relationships with metabolic syndrome. *Nutrients*, 11(11), 2628. <https://doi.org/10.3390/nu11112628>
- Bounds, R., & Boone, S. (2018). The flipped journal club. *Western Journal of Emergency Medicine*, 19(1), 23–27. <https://doi.org/10.5811/westjem.2017.11.34465>
- Cantin, B., Borasio, G. D., & Beauverd, M. (2013a). The interdisciplinary journal club: A learning opportunity. *European Journal of Palliative Care*, 20(1), 38–39.
- Carta, T., Gawaziuk, J. P., Cristall, N., Forbes, L., & Logsetty, S. (2018). Evaluation of a multidisciplinary burn care journal club: Lessons learned. *Burns*, 44(3), 560–565.  
<https://doi.org/10.1016/j.burns.2017.10.017>
- Damschroder, L. J., Aron, D. C., Keith, R. E., Kirsh, S. R., Alexander, J. A., & Lowery, J. C. (2009). Fostering implementation of health services research findings into practice: A consolidated framework for advancing implementation science. *Implementation Science*, 4(1), 50. <https://doi.org/10.1186/1748-5908-4-50>

- Dewar, R. D., & Dutton, J. E. (1986). The adoption of radical and incremental innovations: An empirical analysis. *Management Science*, 32(11), 1422–1433. <https://doi.org/10.1287/mnsc.32.11.1422>
- Duffy, J. R., Thompson, D., Hobbs, T., Niemeyer-Hackett, N. L., & Elpers, S. (2011). Evidence-based nursing leadership: Evaluation of a joint academic-service journal club. *The Journal of Nursing Administration*, 41(10), 422–427. <https://doi.org/10.1097/NNA.0b013e31822edda6>
- Hall, H. R., & Roussel, L. A. (2017). *Evidence-based practice: An integrative approach to research, administration, and practice* (Second edition). Jones & Bartlett Learning.
- Hammond, D. A., McGinn, K., Rech, M. A., Grgurich, P., Mulherin, D. W., Gonzales, J. P., & Berger, K. (2019). Professional benefits of a web-based journal club for critical care residents and their mentors. *American Journal of Pharmaceutical Education*, 83(7), 6907. <https://doi.org/10.5688/ajpe6907>
- Holderbaum, M., Casagrande, D. S., Sussenbach, S., & Buss, C. (2018). Effects of very low calorie diets on liver size and weight loss in the preoperative period of bariatric surgery: A systematic review. *Surgery for Obesity and Related Diseases*, 14(2), 237–244. <https://doi.org/10.1016/j.soard.2017.09.531>
- Honey, C. P., & Baker, J. A. (2011). Exploring the impact of journal clubs: A systematic review. *Nurse Education Today*, 31(8), 825–831. <https://doi.org/10.1016/j.nedt.2010.12.020>

- Hunt, C., & Topham, L. (2002). Setting up a multidisciplinary journal club in learning disability. *British Journal of Nursing*, *11*(10), 688–693.  
<https://doi.org/10.12968/bjon.2002.11.10.688>
- Hunt, M. (2006). Interdisciplinary journal club: An innovative tool for the transfer of knowledge and the promotion of a culture of interdisciplinarity. *Journal of Interprofessional Care*, *20*(2), 196–198.  
<https://doi.org/10.1080/13561820600622182>
- Ilic, D., Voogt, A., & Oldroyd, J. (2020). The use of journal clubs to teach evidence-based medicine to health professionals: A systematic review and meta-analysis. *Journal of Evidence-Based Medicine*, *13*(1), 42–56.  
<https://doi.org/10.1111/jebm.12370>
- Keith, R. E., Crosson, J. C., O'Malley, A. S., Crompton, D., & Taylor, E. F. (2017). Using the Consolidated Framework for Implementation Research (CFIR) to produce actionable findings: A rapid-cycle evaluation approach to improving implementation. *Implementation Science*, *12*(1), 15.  
<https://doi.org/10.1186/s13012-017-0550-7>
- Kjerholt, M., & Hølge-Hazelton, B. (2018). Cultivating a culture of research in nursing through a journal club for leaders: A pilot study. *Journal of Nursing Management*, *26*(1), 42–49. <https://doi.org/10.1111/jonm.12518>
- Lindquist, R., Robert, R., & Treat, D. (1990). A clinical practice journal club: Bridging the gap between research and practice. *Focus on Critical Care*, *17*(5), 402–406.
- MacRae, H. M., Regehr, G., McKenzie, M., Henteleff, H., Taylor, M., Barkun, J., Fitzgerald, G. W., Hill, A., Richard, C., Webber, E. M., & McLeod, R. S. (2004).

- Teaching practicing surgeons critical appraisal skills with an Internet-based journal club: A randomized, controlled trial. *Surgery*, 136(3), 641–646.  
<https://doi.org/10.1016/j.surg.2004.02.003>
- Malay, D. S. (2018). An effective journal club is important. *The Journal of Foot and Ankle Surgery*, 57(3), 435. <https://doi.org/10.1053/j.jfas.2018.02.001>
- Martinez-Ferran, M., de la Guía-Galipienso, F., Sanchis-Gomar, F., & Pareja-Galeano, H. (2020). Metabolic impacts of confinement during the COVID-19 pandemic due to modified diet and physical activity habits. *Nutrients*, 12(6), 1549.  
<https://doi.org/10.3390/nu12061549>
- McLeod, R. S., MacRae, H. M., McKenzie, M. E., Victor, J. C., & Brasel, K. J. (2010). A moderated journal club is more effective than an Internet journal club in teaching critical appraisal skills: Results of a multicenter randomized controlled trial. *Journal of the American College of Surgeons*, 211(6), 769–776.  
<https://doi.org/10.1016/j.jamcollsurg.2010.08.016>
- Moraes, V. C. O. de, & Spiri, W. C. (2019). Development of a journal club on the nursing management process. *Revista Brasileira de Enfermagem*, 72(1), 221–227.  
<https://doi.org/10.1590/0034-7167-2018-0019>
- Repousi, N., Masana, M. F., Sanchez-Niubo, A., Haro, J. M., & Tyrovolas, S. (2018). Depression and metabolic syndrome in the older population: A review of evidence. *Journal of Affective Disorders*, 237, 56–64.  
<https://doi.org/10.1016/j.jad.2018.04.102>

- Sadeghi, A., Biglari, M., Nasser-Moghaddam, S., & Soltani, A. (2016). Medical journal club as a new method of education: Modifications for improvement. *Archives of Iranian Medicine, 19*(8), 556–560.
- Saklayen, M. G. (2018). The global epidemic of the metabolic syndrome. *Current Hypertension Reports, 20*(2), 12. <https://doi.org/10.1007/s11906-018-0812-z>
- Sortedahl, C. (2012). Effect of online journal club on evidence-based practice knowledge, intent, and utilization in school nurses. *Worldviews on Evidence-Based Nursing, 9*(2), 117–125. <https://doi.org/10.1111/j.1741-6787.2012.00249.x>
- State of Hawaii Department of Health. (2020a). *Physical activities & nutrition—Chronic disease prevention & health promotion division*. Retrieved from <https://health.hawaii.gov/physical-activity-nutrition/>
- State of Hawaii Department of Health. (2020b). *Diabetes—Chronic disease prevention & health promotion division*. Retrieved from <https://health.hawaii.gov/diabetes/>
- Talmon, G., Wolf, A., Molani, M., Martin, K., Waibel, E., Jacobs, J., & Wisecarver, J. (2019). The advocacy journal club: A novel method to teach pathologists about health policy. *American Journal of Clinical Pathology, 153*(2), 1–6. <https://doi.org/10.1093/ajcp/aqz154>
- Topf, J. M., Sparks, M. A., Phelan, P. J., Shah, N., Lerma, E. V., Graham-Brown, M. P. M., Madariaga, H., Iannuzzella, F., Rheault, M. N., Oates, T., Jhaveri, K. D., & Hiremath, S. (2017). The evolution of the journal club: From Osler to Twitter. *American Journal of Kidney Diseases, 69*(6), 827–836. <https://doi.org/10.1053/j.ajkd.2016.12.012>



- Wenke, R. J., Thomas, R., Hughes, I., & Mickan, S. (2018). The effectiveness and feasibility of TREAT (Tailoring Research Evidence and Theory) journal clubs in allied health: A randomised controlled trial. *BMC Medical Education*, *18*(1), 104. <https://doi.org/10.1186/s12909-018-1198-y>
- Williams, A. D., & Mann, B. D. (2017). Improved knowledge gain and retention for third-year medical students during surgical journal club using basic science review: A pilot study. *The American Journal of Surgery*, *213*(2), 238–243. <https://doi.org/10.1016/j.amjsurg.2016.09.055>
- 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. <https://doi.org/10.1016/j.nedt.2015.01.026>
- Winona State University. (2020, May 29). *Evidence based practice toolkit*. <https://libguides.winona.edu/c.php?g=11614&p=61584>