

Running head: IMPROVING AROMATHERAPY

Improving an Aromatherapy Program by Implementing an Evidence-based Clinical Guideline

Using Empowered Holistic Nursing Education

DNP Project

Submitted in Partial Fulfillment

Of the Requirements for the Degree of

Doctor of Nursing Practice

xxxxxx University

xxxxx

xxxxx

June 2023

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## IMPROVING AROMATHERAPY

### Abstract

A home care agency provided a program for nurse delivered essential oil aromatherapy. Little documentation of the utilization of essential oils in client care was found two years after initial implementation. The aromatherapy program lacked clear guidance on how to apply the six stages of the home care nursing process. The Project Lead wrote an Evidence-Based Clinical Guideline for the home care agency Aromatherapy Program, including all six stages of the nursing process. Empowered Holistic Nurse Education theory guided the creation of nurse education materials to teach nurses to use the clinical guideline. Components of the nurse education theory were paired with the stages of rapid cycle quality improvement, Plan, Do, Study, Act. Improvement in the rate of documentation of the program indicated the project was successful with all participating homes achieving better than zero times of documentation per week and improved nurse scores on a Pre- and Post- Test of aromatherapy knowledge. Difficulties with implementation included lack of training time outside of regular duties and accessing online materials. A finding from the Pre- and Post-Implementation Surveys was an increase in nurses' perceived authority to implement evidence-based practice change. Nurse education theory is useful for nurse leaders who want to promote changes in nursing practice. Teaching and learning circles of nurses in practice co-create quality improvements in patient care. Empowered nurses contribute practice-based evidence to evidence-based practice. Areas for further study include engaging nurses in the forty to sixty-year-old demographic and working with clients who have their own aromatherapy practices.

*Keywords:* aromatherapy, clinical guideline development, Empowered Holistic Nurse Education, home care nursing, quality improvement, nurse leadership, nurse education, PDSA

## IMPROVING AROMATHERAPY

### Improving an Aromatherapy Program by Implementing an Evidence-based Clinical Guideline Using Empowered Holistic Nursing Education

. Families living with chronic complex care needs necessitating private duty home care nursing are economically disadvantaged, and therapeutic grade essential oils are costly and not covered by medical assistance (Rawlings & Meerabeau, 2003). A privately-owned home care agency (HCA) specializing in the care of ventilator dependent clients, initiated an aromatherapy program in 2016, to provide clients access to aromatherapy using essential oils at no cost to the client. All clients wanted to try using aromatherapy for symptom relief.

#### **Background**

This quality improvement project (QIP) was implemented in an HCA that provides 24-hour nursing care to ventilator (vent) dependent and other medically complex clients in their own homes. The QI Project Lead (PL) is the Director of Nursing at this HCA. The aromatherapy program is referred to as the MAP, an acronym representing the first initial of the agency name and aromatherapy program. Aromatherapy is the therapeutic use of plant essential oils.

#### **Problem description**

Responsible parties and clients of the HCA (n=7) were interviewed about their interest in using aromatherapy. Responsible parties are family or friends responsible for decision-making for the client. Every client or their responsible party expressed interest in using therapeutic aromatherapy in 2016. The PL conducted chart reviews in March and December of 2018 that revealed only five instances of documentation of aromatherapy for three of the clients between January 2016 and December 2018. Follow-up interviews and chart reviews provided limited evidence of clients receiving aromatherapy. All current clients are positively inclined toward using essential oils, but five families have little knowledge about their application and use. Two

## IMPROVING AROMATHERAPY

nurses (n=20) who currently work with clients for the HCA completed the initial two-hour training in 2016, no clients attended. Afterward, nurses had access to the information about the program for self-study and the essential oils. Four clients had essential oils in their homes per their request, and while verbalizing understanding and interest in using them, they did not ask the nurses to deliver them. There was little evidence that HCA nurses adopted the original aromatherapy program as a standard of care.

### **Available Knowledge**

The original aromatherapy program lacked practice guidelines for assessment and documentation. It provided the means to deliver aromatherapy and reasons to utilize it, but no guidance for assessment, documentation, and evaluation. The nursing process in home care includes six phases of the nursing process: assessment, diagnosis, goal identification, planning, implementing, and evaluation (Narayan & Ferris, 2017). Initially, implementation of aromatherapy in this HCA lacked clear clinical practice guidelines that incorporate these six phases. This impacted practice because the HCA nurses were not provided with the tools they need to deliver aromatherapy using the nursing process. Therefore, crucial nursing care elements were missing, as evidenced by the lack of documentation. To address this aspect of the problem, the PL wrote an evidence-based clinical practice guideline for the MAP and designed this QIP to improve the MAP.

### **Literature Review**

A critical review of the literature was conducted in March and April of 2018. The PL searched the data bases CINAHL, PubMed, and the Cochrane Library using the search terms *guideline development, aromatherapy, home care nursing, implementation, and quality improvement*. Literature was selected for review that was relevant to the context of home care

## IMPROVING AROMATHERAPY

nursing and ventilator dependent clients. Selected literature was rated for level and quality according to the Johns Hopkins Nursing Evidence-Based Practice evidence appraisal tool (Dearholt & Dang, 2017). Search limiters included scholarly articles published in the last seven years. Articles selected for inclusion were rated Level 1 (randomized controlled trials or RCT's) through 4 (expert guidance or panel recommendations) and quality A or B. Compelling evidence for implementing an evidence-based clinical guideline to improve the quality of care delivered was discovered in the search and influenced the plan for improvement. The evidence is here described in three sections according to the reason the evidence is included. First is evidence of the efficacy of aromatherapy for clients similar to the HCA clients, used to create the MAP Clinical Practice Guideline. Second is evidence of the effectiveness of implementing clinical practice guidelines. Third is evidence of the effectiveness of the quality improvement strategy, Plan, Do, Study, Act.

**Evidence to support aromatherapy.** There is compelling evidence that aromatherapy can be effective for relieving pain, anxiety, nausea, and insomnia. A retrospective review of records of nurse delivered aromatherapy in a hospital system in Minnesota by Johnson et al. (2016) found statistically significant improvement in pain, anxiety, and nausea. These symptoms are frequently experienced by home care clients. The finding that aromatherapy is effective for reducing nausea was validated by a systematic review of RCT's that concluded some well-designed studies demonstrated the effectiveness of aromatherapy for reducing nausea (Lua & Zakaria, 2012). A study of vent dependent patients in ICU's also found improvements in degree of insomnia, a common symptom for vent dependent clients (Cho, Lee, & Hur, 2017) and a systematic review of literature regarding aromatherapy for sleep revealed compelling evidence of its effectiveness (Hwang & Shin, 2015). A meta-analysis of studies of aromatherapy for anxiety

## IMPROVING AROMATHERAPY

found two RCT's suggested lavender is effective for reducing anxiety (Perry, Terry, Watson & Ernst, 2012). The level of evidence for the effectiveness of aromatherapy for the four symptoms mentioned above lead to their inclusion in the clinical guideline for nurse delivered inhalation aromatherapy. The MAP Evidence-Based Clinical Practice Guideline provides an evidence grid for the nurses to view summaries of these and other scholarly articles that demonstrate the effectiveness of aromatherapy.

**Evidence for guideline development.** Although few RCT's are relevant to the development of a guideline for home care nurses to provide aromatherapy, there is qualitative evidence of high quality that describes the importance and usefulness of clinical guidelines (Stewart, Doody, Bailey & Morgan, 2017; Cook, Avery & Frisvold, 2014; Kingsnorth et al., 2015). An expert panel graded the usefulness of a tool for creating and assessing clinical guidelines, the Global Rating Scale (GRS) for the Appraisal of Guidelines and Research Evaluation (AGREE II) guideline and found it to be reliable (AGREE Research Trust, 2010, 2014; Brouwers et al., 2014). Therefore, expert aromatherapists agreed to vet the clinical guideline using the GRS before the guideline was distributed to HCA nurses. An RCT study about strategies for implementing clinical guidelines was discovered in the evidence review that found a multifaceted strategy is more effective for educating staff and introducing a new guideline (Riis et al., 2016). This means offering education in many formats. This strategy was adopted for this QIP.

**Evidence for quality improvement.** Van der Weijman et al. found improved adoption of EBP when an assessment of nurses' attitudes, knowledge, and readiness to change preceded staff education (2013). U. S. Department of Health and Human Services Agency for Healthcare Research and Quality (AHRQ) (n.d.) also recommends that innovation implementation begins



## IMPROVING AROMATHERAPY

with assessment of readiness to change. The nurse education theory, Empowered Holistic Nurse Education (EHNE) (Love, 2014) posits that meeting nurse students where they are in terms of prior knowledge, wisdom, and experience helps empower their learning experiences. Assessing nurses' current level of knowledge and readiness to change before teaching them to use a new clinical guideline is consistent with recommendations of EHNE. Nurse education theory is helpful for nurse leaders when teaching nurses new skills and knowledge because nurse education theories foster collaboration between the learners and teachers (Hulse, 2018). EHNE theory encourages a teaching/learning circle including the teacher and learners. Peer review and staff validation were found to improve innovation implementation (Ramsey et al., 2018), therefore, one nurse who works in each home was recruited to be that home's change champion, called the MAP Guide.

Evidence supports application of the Plan, Do Study, Act (PDSA) method of rapid cycle quality improvement recommended by the Institute for Healthcare Improvement (IHI) (2018) (Bohnenkamp, Pelton, Rishel, & Kurtin, 2014). The PDSA model of QI was found to be effective for implementing practice change by improving the system of practice, rather than only focusing on changing individual's behavior (Bohnenkamp et al., 2014). PDSA promotes nurse collaboration in QI because it is a model that requires participant feedback and acting on the experiences and suggestions of participating nurses. This method for implementation of practice innovation requires data collection, study, and evaluation of practice, and encourages further improvement of practice systems. PDSA is a systematic change process, rather than a process of assessing individual's innovation implementation, it provides a structure for integrating feedback that guides further improvement to the innovation implementation (Bohnenkamp et al., 2014).

## IMPROVING AROMATHERAPY

### **Rationale**

The PL hypothesized that an evidence-based clinical practice guideline that provides a standardized method of setting goals and assessing, diagnosing, planning, documenting and evaluating the need for and use of essential oil therapies would improve the quality of the nursing practice. A clinical guideline for implementing evidence-based aromatherapy will give nurses the information they need to know to apply the nursing process to the delivery of aromatherapy treatments in home care. Implementation of the guideline will ensure more HCA nurses safely provide the MAP to clients who want to use aromatherapy.

### **Theoretical Framework**

The stages of the PDSA cycle (IHI, 2018), linked to components of the Empowered Holistic Nursing Education (EHNE) theory (Love, 2014), guided the improvement process. The components of EHNE are Meet Them Where They Are, Self-Care, Interconnectedness, Prior Knowledge, and Contextual Teaching-Learning (Love, 2014). The PL hypothesized that the EHNE pedagogy would result in successful implementation of the QIP by following the steps of the PDSA cycles with consideration for holistically empowering the nurses to participate in contextual teaching/learning. EHNE teaches educators to meet students where they are, recognizing the knowledge and wisdom they bring to the learning experience. In the context of this QIP, planning (IHI, 2018) was inclusive of meeting the nurses where they are (Love, 2014), by learning about the knowledge they bring to the education through the Pre-Implementation Survey. Doing (IHI, 2018) included the components of self-care and interconnectedness (Love, 2014) by encouraging nurses to experience aromatherapy as they learned to deliver it. The doing also encompassed implementation of the MAP guideline and delivering the therapy to clients. The Study stage of the cycle (IHI, 2018) was linked to contextual teaching/learning (Love, 2014)

## IMPROVING AROMATHERAPY

by including and sharing nurses' observations and ideas through biweekly phone calls with peer mentors called MAP Guides. The Act stage of the PDSA cycle (IHI, 2018) fit well with interconnectedness (Love, 2014) because ideas from nurses from each of the homes were shared and incorporated into the clinical guideline. PDSA cycles combined with the theoretical framework of EHNE supported an iterative process of teaching/learning, applying, evaluating, and adjusting to improve nursing practice. Refer to figure 1 for a flow chart illustration of the pairing of PDSA and EHNE and changes the nurses implemented. Though this QIP implemented three cycles of PDSA combined with EHNE, the iterative process of quality improvement and the teaching/learning circle created will continue to support improvement of nursing care.

### **Specific Aims**

The purpose of the project was to improve the quality of the MAP. The PL created an evidence-based aromatherapy clinical guideline for home care nurses including a standardized documentation flow sheet to document aromatherapy in home care. Successful implementation of the guideline depended on nurses learning to utilize it and increasing the rate of documentation.

The vision for the project was that the MAP QIP will result in incorporating an evidence-based clinical guideline for nurses to use aromatherapy for clients in home care. The nurses safely provide evidence-based aromatherapy treatments when clients want them and document the treatments on the MAP flowsheet. Nurses' knowledge of aromatherapy would increase as evidenced by improved scores on a test given before and after education and by changes in pre- and post-implementation surveys.

## IMPROVING AROMATHERAPY

### Methods

#### Context

The Minnesota Nursing Board Statement of Accountability for Utilization of Integrative Therapies in Nursing Practice (Minnesota Board of Nursing (BON) 2003, 2010) guides nurses using integrative therapies and states: “Complementary and alternative practices and integrative therapies... may be adjunctive or primary interventions in nursing care (p.1).” The BON holds nurses accountable for having adequate knowledge and skill to safely provide integrative therapies and to assure that the therapy “emanates from a recognized body of knowledge relative to nursing” (p.1). Evidence-based practice is mandated for nurses providing integrative therapies such as aromatherapy.

Majid et al. (2011) found most nurses want to use evidence-based practices (EBP) but traditionally rely on the experience of their supervisors rather than scientific evidence to know how to care for clients. The lack of time and authority to make change were the most commonly perceived barriers to implementing EBP. Because they are one to one with a client, HCA nurses have time to implement EBP, and their relationships with their clients give them authority to implement new practices. The change in assumptions, from the belief in expert authority to the reliance on evidence, is affecting nurses worldwide (Majid et al., 2011). HCA nurses are part of the change in assumptions that is occurring as they learn to apply evidence in practice.

#### Intervention

The MAP focused on nurses and not Patient Care Attendants or family members to limit the scope of the Project and because nurses are accountable for the provision of integrative therapies, according to the Minnesota Board of Nurses (MN BON) (2003, 2010).

## IMPROVING AROMATHERAPY

Implementation started with site assessment. When the site was found to be supportive and ready for change, nurse Pre-Implementation Surveys were conducted. Then nurse education was tailored to the existing knowledge and readiness reported by the nurses in the Pre-Implementation Survey. When the nurses completed the Pre-Test of aromatherapy knowledge, the education, and the Post-Tests, full implementation began. Implementation followed the model of PDSA for three cycles. The Project concluded with nurse Post-Implementation Surveys.

**Site assessment.** The Agency for Healthcare Research and Quality (AHRQ) recommends that quality improvement projects start with site assessment (n.d.). Site assessment involved finding out about the organizational culture and the knowledge, skills, and attitudes nurses and key stakeholders had relevant to the project (AHRQ, n.d.).

The PL interviewed key stakeholders, evaluated current practice data and practitioners' readiness for change, and assessed organizational culture in preparation for implementation of improvement innovation. The owners of the agency, the CEO and the Administrator, are key stakeholders. The Administrator, said of the agency nurses: "If the clients want it and it will help the clients, they will do it!" (personal communication, June 11, 2018). She said the barriers to implementation of the MAP are lack of awareness and lack of knowledge. She also explained that the nurses would have to complete the education while working their regular shifts because the company cannot afford to pay for extra hours for education. The CEO stated participation in the program is mandatory for all nurses. Organizational leadership supported the change.

**Evidence-Based Practice Clinical Guideline.** The PL followed the recommendations for guideline development published online by the International Home Care Nursing Organization (Narayan, Harris, Ferris, & Fong, 2017), the guidance of the World Health

## IMPROVING AROMATHERAPY

Organization (WHO) (2016), and the practice guidelines for aromatherapy safety published by the Alliance of International Aromatherapists Clinical Committee (AIA) (2018) in their online members only journal. Optimal pain assessment documentation was standardized to include a ten-point Likert scale and pain faces assessment (Kingsnorth, Joachimides, Krug, Davies & Higuchi 2015). Four Interprofessional experts in aromatherapy vetted the clinical guideline using the AGREE II GRS (AGREE Research Trust, 2010-2015) before its approval for the nurses to use. GRS scores indicated a high degree of alignment with international standards for clinical guideline development. The guideline included safety guidelines, methods of delivery, an evidence grid describing the scientific evidence for the effectiveness of each oil for symptoms they have been shown to improve, a standardized documentation flowsheet on which nurses could rate the four symptoms before and after treatment and check off a box indicating which essential oil was delivered, and a sustainability plan. Assessments were documented on ten-point Likert scales to align with the assessment scale utilized by Allina nurses, in keeping with the recommendations of the American Medical Informatics Association's action plan for comparable nursing data (Westra et al., 2015).

**Pre-Implementation Surveys.** Nurse readiness for change, assessed via pre-implementation Google surveys completed by 20 nurses either online or on paper, showed a high degree of readiness for change on average (the average of all responses to five questions related to readiness for change, on a five-point Likert scale was 4.1). The surveys assessed nurses' current knowledge of aromatherapy (3.2), the MAP (2.9), and their belief in their authority to implement evidence-based practice change (3.0), and open-ended questions provided space for nurses to add their unique input. Links to the survey were emailed to all nurses, and paper

## IMPROVING AROMATHERAPY

versions of the survey were distributed to the client homes for nurses who are uncomfortable doing surveys online. Change champions identified by the surveys were called MAP Guides.

**Nurse education.** The educational materials were adjusted to meet the nurses where they are in their knowledge of aromatherapy and their readiness to change. It included encouragement to inhale the aromatherapy and give the PL feedback about their experiences smelling the aromas. The PL emailed a PowerPoint (PPT) presentation with audio recorded narration to all nurses. Printed copies of the presentation with speaker's notes were delivered to each client home in a MAP book with Pre-Test and Post-Test forms, the MAP Clinical Guideline, and MAP flow sheets.

With the MAP books, each home received a kit containing one dram each of the four essential oils and cotton pads in individual sealable plastic bags with one reusable aroma nasal inhaler and a two-ounce lidded jar. The two-ounce jar was used with the cotton pad and one drop of essential oil for applying the anosmia method of essential oil delivery. The method used therapeutically for those who have anosmia is called smell training (Bookman, 2016). This a method for inhalation of essential oils that is easy for vent dependent clients and clients who breathe through their mouths to utilize. Five books and kits were hand delivered to client homes by the PL, two MAP Guides retrieved the books and kits from the office and delivered them to client homes. A nurse recommended posting the education as a video on Youtube.com for nurses who have difficulty opening PowerPoint videos, and the PL posted it at <https://youtu.be/RvhV6mxQHfw> and emailed the link to all nurses. The nurses texted, emailed, or brought to the office their completed tests and received a certificate for Continuing Nurse Education.

## IMPROVING AROMATHERAPY

**Implementation.** The QIP was designed to follow the framework of Rapid Cycle Improvement, the PDSA method of testing improvements and further improving implementation over time (IHI, 2018). The PL, MAP Guides and nurse completed one cycle of PDSA every two weeks. The PL called the MAP Guides or met with them in the office every two weeks. The MAP Guides counted the number of times the Program was documented every two weeks and checked for completeness of documentation. The PL visited six of seven homes to deliver new versions of the flowsheet, check on completeness of documentation, and to receive feedback in person. The seventh home withdrew from the MAP.

**Post-Implementation Surveys.** The final stage of the Project was delivery and completion of Post-Implementation Surveys that matched the Pre-Implementation Surveys in the areas of knowledge, readiness to change, and behavior with the addition of a section requesting feedback about the nurse's experience of the MAP. The composite scores for readiness to change remained the same (4.0) and the self-report of knowledge of aromatherapy increased slightly (3.3) and knowledge of the MAP increased. The greatest change was in the perceived authority to implement change, which increased one and a half points on the Likert scale (4.6 compared to 3.0).

### Measures

The goal of this quality improvement project (QIP) was to increase the rate of documentation of the MAP as evidence of its adoption as a standard of care. To achieve an improved rate of documentation, an evidence-based clinical practice guideline was developed to provide nurses with the information they needed to adopt the Program. Pre-Implementation surveys measured nurses' knowledge, beliefs, and readiness for change and collected demographic information. Pre- and Post-Tests measured the change in nurses' knowledge



## IMPROVING AROMATHERAPY

resulting from the education for the MAP. MAP Guides called the PL to report the number of times the MAP was documented bi-weekly for each home, and an overall rate of documentation was calculated for each home for the implementation study period. After seven weeks of implementation, the PL emailed links to the Post-Implementation Surveys to all nurses to evaluate the nurses' perceptions of the experience of the QIP and changes in their self-reports of levels of knowledge, beliefs, and behaviors relating to the MAP using five point Likert scales and space for individual qualitative responses.

### **Analysis**

Documentation rates varied by home. Two homes had a documentation rate of 1 per day. The other four homes that agreed to include the MAP had rates from 0.04 times per day to 0.2. Nurse demographics were assessed to identify patterns in adoption of the MAP by age, gender, level of education, and qualitative data from nurse surveys was assessed for keys to why some nurses did not adopt the Program for further future improvement. No difference was noted by gender. Nurses aged sixty and over, and nurses aged under forty documented the MAP more than nurses aged forty to sixty years old did. The nurse with the highest level of education documented the most frequently (n=1), while Licensed Practical Nurses (LPN's) (n=2) documented use of the MAP more often than most other nurses. A confounding variable for increased LPN documentation is the fact that they were more frequently in contact with the PL during implementation due to other practice needs. An area for future learning is engagement of nurses aged forty to sixty in practice innovation implementation.

MAP education Pre-Test scores were distributed normally, with Post-Test scores higher and with less variation. A Related-Samples Wilcoxon Signed Rank test of the results found the

## IMPROVING AROMATHERAPY

asymptotic significance  $<.005$ , indicating the difference was unlikely to be due to chance. The test results suggest the nurses had increased their knowledge of the MAP. (figure 2)

When Pre-Implementation Survey scores were compared to Post-Implementation Survey scores, the readiness for change questions had a slightly higher composite score compared to Pre-Implementation, and knowledge of aromatherapy and the MAP were similar Pre- and Post-Implementation. The surprising finding was that the nurses' perceived authority to implement practice change increased the most.

### **Ethical Considerations**

Nurse specific information was confidentially maintained, and data related to each nurse was assigned to a randomly generated two-digit number. The list of numbers with names of the nurses assigned to them was secured in a password protected database. Pre- and Post-Implementation survey results including demographic information and Pre- and Post-Education test data were de-identified to preserve nurse confidentiality. Nurses were screened for sensitivity to essential oils through the Pre-Implementation survey. No nurses reported sensitivity reactions other than emotional attractions to particular oils or unknown reactions. Nurses were informed that allergic type sensitivities to essential oils are contraindications to delivering the therapies.

Ethical considerations regarding essential oils included procuring them in ways that do not exploit people or harm the environment. Essential oils used for this project were not obtained through multilevel marketing companies, and no funding was received from essential oil distributors. Organic oils selected were sourced from reputable distributors. Oils chosen were not from endangered plant species. No funding was received for this Project from any essential oil producer or distributor.

## IMPROVING AROMATHERAPY

### Results

The QIP helped nurses improve client care by teaching nurses to use an evidence-based clinical practice guideline for nurse delivered aromatherapy in home care. The PL learned with the nurses how to streamline documentation and include client centered goals. As the nurses implemented the improved MAP, they recommended changes to the flow sheet and to the format of the education that improved the adoption of the practice. Nurse feedback and collaboration were essential to the QIP because it resulted in integration of the process of documentation of the MAP with paperwork that was already a standard practice. Also, nurse feedback led to the inclusion of client-centered goal setting with interprofessional collaboration in the improved guideline.

The rate of documentation of the MAP varied by client home. Two homes achieved a rate of once per day by the end of the implementation phase. The clients whose nurses documented daily were clients with chronic intractable pain. They both experienced reductions in pain after inhaling aromatherapy and the nurses were motivated to continue delivering the treatment because of the positive results. One home had a spike in rate of documentation in the beginning followed by a drop-off. The client in that home had a reduction in symptoms during the implementation period and nurses did not document assessment of absent symptoms. One client was in the hospital four of the weeks of implementation, which interfered with data collection. Rates of documentation of the MAP were influenced by many factors..

The quality of documentation varied by home, from consistently complete to irregularly complete. Incomplete documentation most frequently was missing the post-treatment evaluation. Changes to the design of the flowsheet may have contributed to variations in the completeness of documentation. The rapidity of changes in the Program made it challenging to keep every home

## IMPROVING AROMATHERAPY

abreast of the changes. Every two weeks improvement to the documentation flowsheet was implemented, and some MAP Guides and the homes they represented were slow to adopt changes. The MAP Guides and the PL had to remind nurses of the changes and show nurses where there were omissions.

### **Innovation Improvements**

The flow sheet was adjusted to make room for other indications that the clients wanted to target as a goal for aromatherapy treatments. The Guideline was amended to instruct nurses to add new symptoms or goals in consultation with a clinical aromatherapist. Client-centered care requires the ability to respond to a client's specific goals rather than enforcing nursing goals upon the client. Nurses have a responsibility to set goals with clients with respect for their unique way of knowing and inherent dignity (Athwal et al., 2014).

Nurse feedback helped improve the practice guideline every cycle as the flow sheet was redesigned to improve the assessment documentation, provide space for other indications as requested by clients and families, and finally making it part of the vital signs flow sheet where pain was already measured, eliminating documentation duplication and improving the perception that delivering aromatherapy is a standard of care for HCA nurses.

### **Client Responses**

Clients enjoyed the aromatherapy treatments, and one nurse wrote: "I am amazed by how quickly my client's pain is reduced by smelling aromatherapy." Another client told the PL that smelling sweet marjoram essential oil (*Origanum marjorana*) reduced his pain and his nausea simultaneously. A nonverbal client smiled every time aromatherapy was delivered to her and had fewer spasms of her arms for a period after inhalation. More study of client responses can

## IMPROVING AROMATHERAPY

be done in the future. Statistical analysis of pre- and post-treatment scores for pain, anxiety, nausea, and insomnia is beyond the scope of this project but is an area for future analysis.

### **Limitations**

One limitation of the MAP QIP was technological difficulties experienced by the nurses when completing surveys and accessing the education online. For this agency, nurses document on paper, and some do not use online forms. Workshops on information technology would help some nurses be able to better take advantage of the changing information environment and find evidence to improve client care (Mather & Cummings, 2017). Homes that the PL visited more frequently had increased rates of documentation compared to one the PL did not visit in-person. Nurse comments included the request for in person communication for clarity and understanding. More frequent in-person interaction with the PL improved MAP implementation.

Economic limitations in home care prevent the agency from providing paid training outside of hours of direct client care. In Minnesota, 25% of disabled people who qualify for private home care nursing do not have access to nurses who are willing to work in home care; there are too few home care nurses to meet the demand (Tollefson, 2018). The rate of reimbursement to home care agencies in Minnesota is less than the wages earned by hospital nurses. Therefore, the pay for nurses in home care is less than in other areas of nursing. To give nurses the maximum hourly wage that is sustainable, the agency does not pay for any hours that do not include direct patient care after orientation. This limitation affects the ability of the agency to provide the in-person group education that five nurses stated they would prefer.

Limitations to data collection included a family emergency that kept one MAP Guide out of work for three weeks in the middle of the Project. One client declined to participate, stating they do not want to have the MAP because they already have their aromatherapy practices and

## IMPROVING AROMATHERAPY

want the nurses to provide it their way. Another client was hospitalized during the data collection period.

A major limitation of the Project is the small number of data points that prevents generalizability. Also, bias in the data collection was unavoidable because the PL was also the Director of Nursing; therefore, nurses were inclined to report favorably on the implementation process to appease their direct supervisor. Despite these limitations, this small QIP is useful as a starting point for a larger organization to adapt and implement the evidence-based aromatherapy clinical guideline in home care.

### **Conclusion**

Combining the method of rapid cycle quality improvement recommended by the IHI (2018) with the theoretical concepts of EHNE (Love, 2014) proved useful for implementing an evidence-based practice guideline. The outcome of combining the PDSA cycle with the theory of EHNE was the co-creation of the guideline with practitioners' wisdom and input. Co-creating the Guideline prevents the objectification of nurses, experienced when nurses are the subject of a guideline, rather than the owners (Barrow & Gasquione, 2017). The increase in nurses' perceived authority to implement practice change (from 3.0 to 4.6) may indicate that the theoretical framework was successful in creating a sense of empowerment.

Nurse leaders benefit from knowledge about nurse education theory because nurses are continually teaching and learning to provide improvements in the safety and quality of client care. Educational theory helps nurse leaders transmit clinical skills and knowledge and foster a collaborative interprofessional learning environment (Hulse, 2018). Further interprofessional collaboration between nurses and aromatherapists will build on the knowledge and skills of nurses for effective evidence-based aromatherapy treatments in home care.

## IMPROVING AROMATHERAPY

Sustaining change requires strategizing, monitoring workplace culture, celebrating successes, and continuing measurement and adjustment of tools (AHRQ, n.d.) such as the MAP flowsheet. Further communication, discussion, and explanation will help move the MAP toward becoming a sustained standard of practice for the HCA nurses. Annual literature reviews to add to the evidence base and periodic communication with MAP Guides will improve the program with peer review and staff validation (Ramsey et al., 2018).

Implications for further study in the field include finding ways to engage the demographic of nurses between the age of forty and sixty, and how to include clients who have their own methods of utilizing aromatherapy. Home care clients can safely enjoy and benefit from nurse delivered aromatherapy when empowered nurses implement evidence-based clinical practice guidelines and contribute practice-based evidence. Statistical analysis of client responses to aromatherapy is another area for future study.

More knowledge is also needed about how to interact with clients' own aromatherapy practices. For example, what is the responsibility of the nurse working with clients who apply essential oils neat, directly to the skin? The Evidence-Based Clinical Practice Guideline provides instructions for first aid in case of spills and dermatologic reactions, but what other implications result from clients' use of aromatherapy other than inhalation?

The PL wrote this report in conformation with the Standards of Quality Improvement Reporting Excellence (SQUIRE 2.0) (Ogrinc et al. 2017). Quality improvement always focusses on local problems and behaviors, but the results of quality improvement can be shared to help others learn and spread quality improvement innovations. It is hoped that other home care nurses will be interested in implementing the Evidence-Based Clinical Practice Guideline and report to

## IMPROVING AROMATHERAPY

the author their experiences with implementation. Please contact the author at xxxx if you would like an electronic copy of the Guideline.



## IMPROVING AROMATHERAPY

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IMPROVING AROMATHERAPY

Figure 1. PDSA and EHNE Pairing

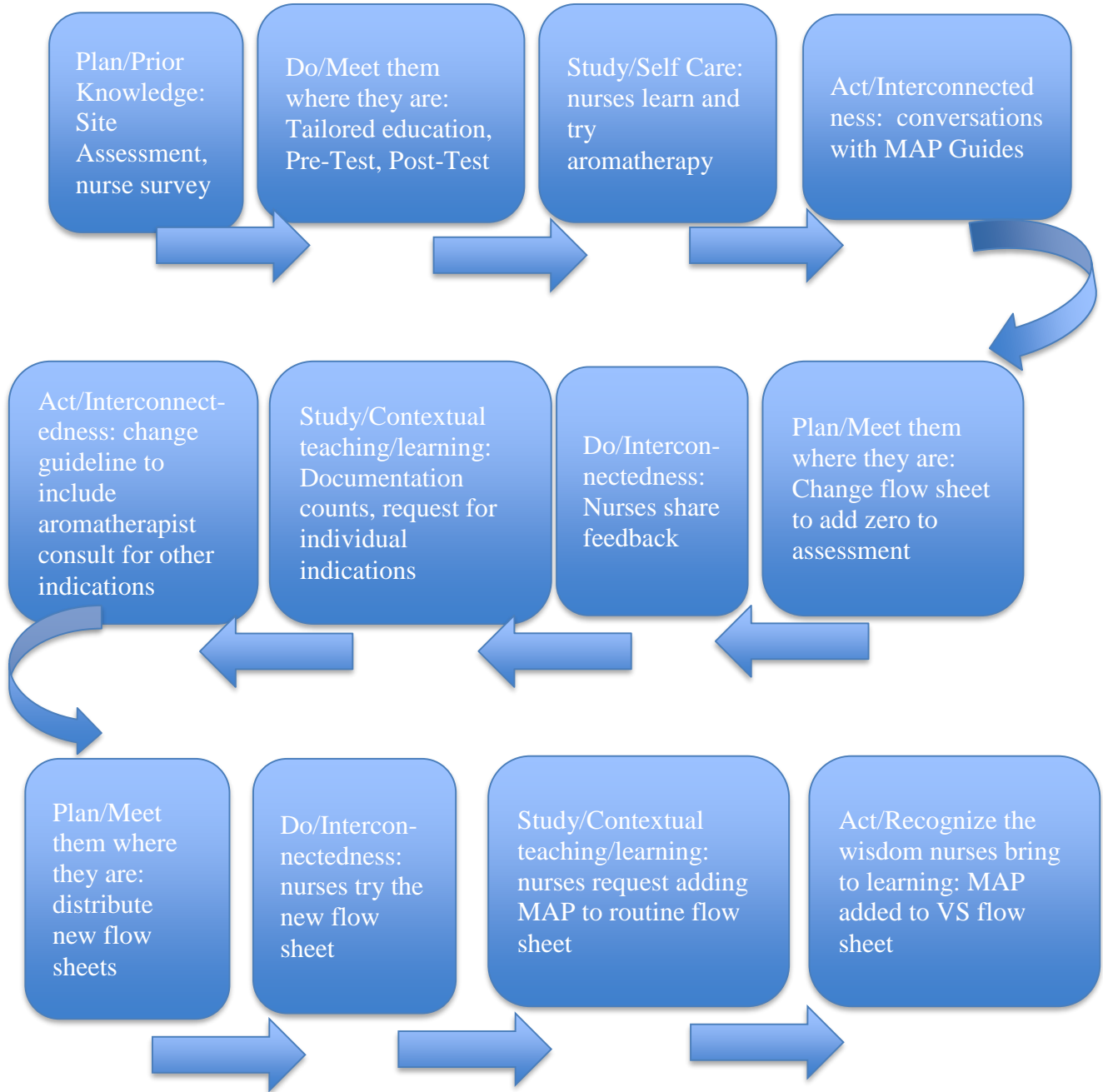
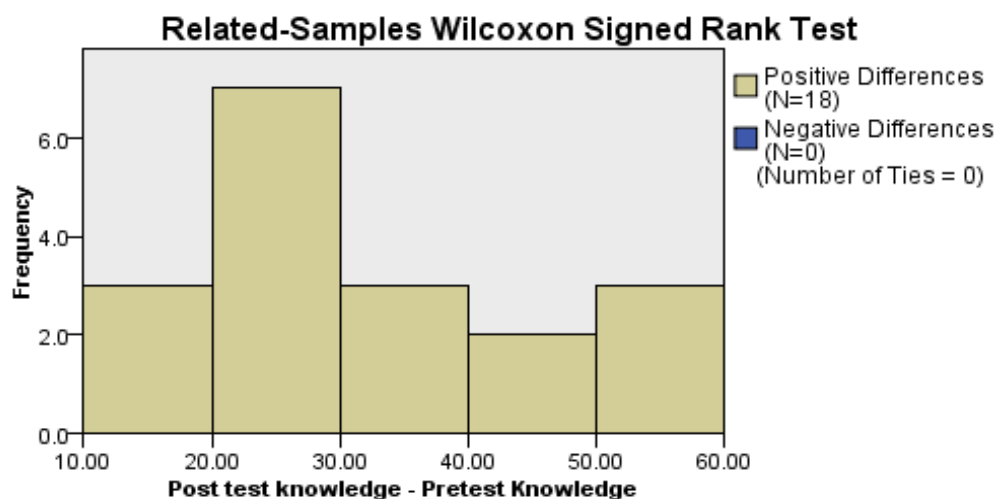


Figure 1. Flow chart showing the steps of PDSA paired with the components of EHNE and the changes to the Program developed through the teaching/learning circle of participants and the Project Lead.

## IMPROVING AROMATHERAPY

Figure 2.1 Related-Samples Wilcoxon Signed Rank Test



<b>Total N</b>	18
<b>Test Statistic</b>	171.000
<b>Standard Error</b>	22.773
<b>Standardized Test Statistic</b>	3.754
<b>Asymptotic Sig. (2-sided test)</b>	.000

*Figure 2.* Pre- and Post-Test scores, taken before and after reading, listening to or watching the nurse education for the clinical guideline as paired samples. Generated by IBM SPSS Statistics software.

## IMPROVING AROMATHERAPY

### **Executive Summary**

The problem identified for quality improvement in a privately-owned home care agency (HCA) was the under utilization of an aromatherapy program. Little evidence was found in client health records that the program was being utilized. The original program provided information on the reasons to use specific essential oils and how to use them, but did not provide guidance for assessment, evaluation, goal setting, or documentation of the delivery of aromatherapy. The organization supported pursuing quality improvement of the aromatherapy program, renamed the MAP, an acronym for the first initial of the agency name and aromatherapy program.

A critical review of the literature, retrieved from CINAHL, PubMed, and the Cochrane data bases, included three areas of information: aromatherapy effectiveness, evidence-based clinical practice guidelines, and quality improvement. An evidence grid was created to include in the guideline for nurses to see what scientists reported about aromatherapy. Implementation of clinical practice guidelines was supported by compelling evidence. Quality improvement using the Plan, Do, Study, Act (PDSA) method was reported to be successful in implementing system change in nursing practice.

The project lead wrote an evidence-based clinical practice guideline to address the need for information on how to apply the stages of home care nursing when delivering aromatherapy to clients. The guideline was vetted by aromatherapy experts using the Global Rating Scale (GRS) for the Appraisal of Guidelines and Research Evaluation tool (AGREE Trust, 2014).

Nurses completed a Pre-Implementation Survey about their knowledge, beliefs, behaviors, and readiness to change using a Google survey. Some nurses were unable to open the survey online and completed it on paper or with the PL's assistance. A MAP Guide was



## IMPROVING AROMATHERAPY

recruited to be peer mentor and count the rate and assess the quality of documentation for each client home.

Implementation followed the PDSA method paired with the components of Empowered Holistic Nurse Education (EHNE). The nurse education theory helped to engage nurses in collaboration as the implementation progressed. Every two weeks, MAP Guides provided nurse feedback that resulted in improvements to the guideline and the documentation flowsheet. The PL and the nurses learned together, in a teaching/learning circle consistent with the pedagogy of EHNE. Post-Implementation Survey results indicated nurses had increased their belief in their authority to implement evidence-based practice change. Increasing the rate of documentation was the primary goal of the project, and every client home that accepted the MAP had an increase in rate of documentation. One client declined to participate because the family had their own aromatherapy practices.

Further study is needed about the role of the home care nurse when clients use aromatherapy independently. Analysis of client responses is another area for future study. The PL hopes to share the Evidence-Based Clinical Practice Guideline with other HCA's. For an electronic copy, xxxxx