Gaps In Assisted Living Pain Management Practices

by

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Bio sketch

Pamela Wisor, RN, MSN Ed. is the interim Dean of Nursing at Eastern Virginia Career College since November 2015. Before that she was a full time nursing faculty for ECPI at Manassas, VA (2014), Mountain State University at Martinsburg, WVA (2010-2012), and Adjunct clinical faculty at Shenandoah University in Winchester, VA (2010-2011) and Lord Fairfax Community College at Middletown, VA (2009-2010) for Medical Surgical Nursing, Geriatrics, and Leadership courses. Her vast clinical and leadership experiences have been working as a Certified Hospice and Palliative Nurse with over 20 years experience. Prior nursing experiences include critical care nursing in the cardiac and cardio-thoracic units with ICU and ER assignments, and serving in leadership roles with various hospices, long-term care facilities with Rehabilitation and Dementia units, and assisted living facilities.

Abstract

Assisted living (AL) is a growing lifestyle choice option available to the ailing aged in the United States. Increases in chronic disease may predispose this population to acute and chronic pain due to increased longevity with medical advances. The elderly populations in these facilities are frail with multiple chronic illnesses and cognitive and/or functional impairment adding to the difficulty in effective pain management practices. The burden of providing pain management in AL is on the nursing assistant whose education and scope of practice may not include performing pain assessments that impact resident quality of life and outcomes. Continuing education in pain management in AL settings may improve the ability of unlicensed staff members to provide pain management strategies to meet best practice guidelines. This project identifies nursing assistants' knowledge of pain management after receiving education in pain management. A single group pre-post test design using the Pallative Care Quiz for Nursing (PCQN) and Frommelt's Attitudes Toward Care of the Dying Scale (FATCOD) measured the effect of a pain management educational intervention. Results support the need for pain management continuing education for nursing assistants caring for residents in AL.

***Keywords*:** geriatric population, pain management, nursing assistant, assisted living, palliative care, nurse education, Palliative Quiz for Nurses (PCQN), Frommelt's Attitudes Toward the Dying Scale (FATCOD), continuing education, psychometric instruments, attitudes towards dying, chronic disease.

Gaps in Assisted Living Pain Management Practices

Assisted living (AL) is the fastest growing preference available for the estimated one million personsaging people in the United States requiring assistance with activities of daily living. In response to the rise of geriatric populations with chronic disease including dementias, AL provides a viable option for living. (Ball, Kemp, Hollingsworth, & Perkins, 2014). For the aging population, increases in the chronic advancing disease processes may significantly reduce the function and quality of life, thereby predisposing this population to acute and chronic pain (Long, 2013). *Aging in place* is a term used that describes a philosophy wherein, persons are cared for in an assisted living facility if they require assistance with an average of three areas of activities of daily living (Ball et .al., 2014). AL is based on a social model, and may not focus directly on the issue of pain management. In AL the majority of direct care is provided by unlicensed staff with little training in pain management and end-of-life (EOL) care (Cimino, Lockman, Grant, & McPherson, 2014) Residents' ability to remain in the AL setting depends on the capacity of the facility to manage resident decline as the residents are progressively declining both physically and cognitively. Providing pain management is made more poignant since individual states dictate requirements for AL with most requiring no 24 hour on-site licensed registered nurse. Therefore, the burden of providing pain management is on the nursing assistant whose education and scope of practice may not include performing pain assessments or even being able to discern the data needed to report the situation to qualified providers (Sharpp, Kayser-Jones, & Young, 2012). In order to improve the ability of unlicensed staff members to address challenges in pain management, continuing education in pain management in AL settings is needed. Barriers to meeting this goal include cost constraints for staff education and difficulty arranging staff schedules to facilitate attendance at educational activities (Cimino, et al.

2014). To ensure safe, high quality care for this globally growing population, there is a need for a multifaceted approach to understand the dynamics of the AL setting, to care for the aging population in AL, and the urgency to provide effective ongoing education to non-professional direct care staff in pain management (Long, 2013). The purpose of this performance improvement project is to propose solutions for unlicensed personnel to meet quality and safety outcomes for pain management while considering organizational constraints and direct staff learning needs.

Target Population and Environment

Eighty-three percent of the aging populations in long term care settings experience unrecognized and undertreated pain with inadequate treatment despite recognized studies indicated pain is not part of the normal aging process (Tousignant-Laflamme et al., 2012). Clinical challenges include the of lack of adherence to evidenced-based practice for pain management, inaccurate pain assessment especially in dementia residents, non-supporting documentation for interventions or reporting, inadequate or incorrect treatment of pain, and inadequate support from clinical experts. Pain is not part of the normal aging process but a result of co-morbidities, such as; musculoskeletal, gastric, cardiac, urinary, oral physiological problems and pressure ulcer conditions (Achterberg et al., 2013). The most common adverse event for the geriatric population is falling due to increased gait instability, confusion, urinary incontinence, and side effects from medications used to ameliorate acute and chronic pain (Lange et al., 2009).

Dementia is a common comorbidity in the geriatric population as these individuals are at higher risk for falls. Also, pain may be unrecognized due to the inability of the patient to report pain or the causes for their distress. Patient behaviors may be attributed to the disease process rather than pain alone (Achterberg et al., 2013). Pain in the dementia population has been

associated with agitation, wandering, resistance to care, verbal aggression, and constant repetitious requests for attention resulting in treatment with psychotropic medications that may mask the underlying pain issue (Ballard, Smith, Husebo, Aarsland, & Corbett, 2011). Many organizations have addressed the lack of pain assessment and treatment in the elderly as well as the lack of knowledge by health care providers that risks poor patient outcomes, yet no sustainable solutions have been discovered (Cimino et .al, 2014). AL remains isolated from mainstream healthcare systems, and lacks sufficient professional staff to utilize evidence-based information to guide practice and improve outcomes.

Assisted Living Direct Caregivers

Staffing at AL facilities is composed mainly of unlicensed nursing assistants who provide direct care consisting of bathing, dressing toileting, mobility, and eating support around the clock. Nursing assistants generally have little more than a high school education and are certified by the state board of nursing after completing a 75-180 hour training that includes classroom and clinical experiences to qualify to test for certification (Liu, 2014; Paraprofessional Healthcare Institute, 2016). The program curriculum for certified nursing assistants contains only a small amount of content in pain management for the geriatric resident. Unlicensed assistive personnel often focus on reporting suspected pain to the nurse and these reports are often not acknowledged by professional staff (Liu, 2014). Feelings of powerlessness, increased burden of caring for cognitively impaired residents, inadequate instruction and training, and perceptions of adding to the patient's pain with caregiving are often reported by nursing assistants and may contribute to high turnover and job dissatisfaction. These dedicated caregivers are the most

undervalued staff with the greatest potential to influence patient outcomes if given standardized pain management protocol with continued education (Liu, 2014).

Significance of the Project

The evolving practice of nursing requires critical thinking, advanced skills, the provision of leadership and mentoring of supervised staff, and knowledge of current evidenced based practice to provide safe, effective care and foster teamwork (Sherwood & Zomorodi, 2014). Continuing education for supervised caregiving staff is required of the supervising licensed professionals to disseminate best practices and knowledge to, in an ad hoc manner, to fill the educational gap and affect positive outcomes, for current and future geriatric populations. Why is there a gap between evidence-based pain management practices and assisted living staff adherence to best practices? This project attempts to answer the question, what is the effect on non-licensed direct patient care staff in an assistive living facility participating in a dedicated pain assessment education course that emphasizes best practices compared to the same staff prior to the geriatric course?

Objectives for the project are (a) to identify pain management knowledge after a geriatric pain education program aimed at nursing assistants, (b) to determine perceptions affecting work satisfaction by addressing pain management misconceptions, and (c) to compare EBP guideline compliance for those who complete the geriatric education program based on pre and postevaluation.

Literature Review

Relationships to the project topic were explored using the Cumulative Index of Nursing and Allied Health Literature (CINAHL) and PubMed databases. Numerous articles were discovered using the combined search terms; nursing assistant education, assisted living

facilities, evidenced-based pain management, pain management, geriatric, elderly, and long term care. Prioritization based on the project objectives was engaged to distribute literature for final review. Consideration of the literature discovered numerous global perspectives revealing a gap in literature regarding pain management practices in the assisted living setting. Nine studies out of eleven were identified in the initial literature search as meeting the inclusion criteria. Few quantitative studies addressed chronic illness or pain management with aspects of psychosocial or emotional perceptions resulting in low ranking at levels II or III on the evidence heirarchy; most of which these were qualitative studies with small sample sizesof existing literature on the evidence hierarchy. Meta-analysis of results, using the GRADE system of analysis, showed positive attitudes by nurses in symptom management with increased exposture to advanced education. Reliable relationships between nursing assistant education and the care of chronically ill geriatric patients were discovered in the meta-analysis (McAuliffe, Brown, & Fetherstonhaugh, 2012). Disparities in curriculum content and pedagogic approaches with varied instructor expertise demonstrate the need for academic reform in preparing nursing assistants for pain management applications. The lack of education was also linked to emotional turmoil for staff caring for residents in pain. Meta-analysis concluded the need for incorporation of dissemination of new research into evidenced based practice (Aldridge, et al., 2016). The strongest support for the project design based on the GRADE system of evidence evaluation, comes from Treesi et al (2013) study that concluded low cost staff educational interventions targeting specific quality of life indicators can have postive patient outcomes when based on disemiation of evidence based practice.

Theoretical Framework

Facilitation for learning patient-centered care and translation of knowledge to practice requires a focus on persons' dimension, psychosocial, physical and scientific domains. Neuman's System Model and Carper's Fundamental Patterns of Knowing in Nursing served as a blueprint for guiding the performance improvement project. Neuman's holistic views for providing care to vulnerable populations may account for the elements that effect nursing assistant perceptions in pain management. The person is seen as an open-ended system surrounded by lines of defense with the potential for negative outcomes when the person's defense and resistance coping mechanisms are overwhelmed (Current Nursing, 2012). Carper's Fundamental Patterns of Knowing in Nursing describes four patterns of knowledge: (a) empirical referring to the science of nursing, (b) esthetics referring to the art of nursing that is subjective, (c) personal knowledge, and (d) ethics which is the moral knowledege that obligates one to do what needs to be done (Porter, 2010). Lack of empirical knowledge for the nursing assistant requires the use of ethics and personal knowledge to fill the gap in pain management knowledge required to care for frail elderly residents.

Project Design

The project design comprised a single group pre and posttest quasi-experimentalntitative design incorporating the Palliative Care Quiz for Nursing (PCQN) and Frommelt's Attitudes Toward Care of the Dying Scale (FATCOD) with a pain management educational intervention (Lange et al., 1996). Subjective topics like pain are difficult with no one tool critiquing the human experience of pain or the perceptions held by those in charge of managing their experience. The PCQN tool was selected to attempt to capture the knowledge of staff on the subject of palliative care with the FATCOD tool capturing caregiver perceptions on dealing with end-of-life issues faced by the geriatric population in residential facilities. The Project site,

located in western Virginia, was a 55 bed privately owned licensed facility employing 24 nursing assistant staff and one Registered Nurse daytime supervisor. Medications were administered by nursing assistants certified as medication technicians. Employees worked in three 8 hours shifts to attend to residents' needs with the Registered Nurse supervisor available by phone after dayshift hours. Administrators identified lack of meaningful documentation or communication related to recognition of pain symptoms, effective use of pain assessment tools, and reassessment for effectiveness of interventions as areas for focused objectives.

Implementation

Ethics and Human Subject Protection were ensured with staff being provided an information sheet and a detailed description of the project, including rights of the participants. A informed consent form was provided and included the right to voluntary withdraw from the project at anytime. The project will not require any form of personal identification to be marked on any of the questionnaires. Participant de-identification of data was ensured with all data will be stored at the facility locked in administrator office. The approval of the project was received from Capella IRB and Virginia Department of Social Service.

Six employees from various shifts agreed to participation in the project after reviewing the syllabus including course objectives and signing a participation agreement. Participants were given opportunities for the educational intervention before the beginning of all shifts after first completing the PCQN and FATCOD pretests. Powerpoint presentation, case studies, and discussion group interventions relating to pain, pain management, and nursing assistant roles were presented after which the measurement tools were readministered.

Project Details

Palliative care quiz for nursing. The questionnaire is comprised of a 20-item instrument with true, false, and do not know answer choices. The instrument takes approximately 20 minutes to complete and measures nursing knowledge of palliative care by challenging knowledge and identification of misconceptions (Ross, McDonald, & McGuinness, 1996). The instrument is designed to stimulate discussion of palliative care issues and assess learning needs with a correct answer to an item deeming the student proficient in the particular performance standard as measured by the individual item. The quiz was used in the project to identify misconceptions and determine learning needs of the participants in the use of pain scale tools. The quiz was designed for use with novice nurses, which presented limitations in a comprehensive knowledge assessment with the participant group (refer to Appendix A).

Frommelt attitude towards dying scale. The questionnaire is composed of a 30-item five point Likert scale to assess respondent's attitudes toward the caring of dying patients (Lange, Thorn, & Kline, 2009). An equal number of positive and negative worded statements are presented with possible scores ranging from 30-150 and higher scores reflecting more positive attitudes in the care of dying patients. The instrument takes an average of 10-15 minutes to complete. Statement contents include perceptions on death and dying focusing on fears, death avoidance, and death acceptance views. Most represented samples using the scale have been experienced female specialty nurses with the limitation of false positive self-report responses by participants as an uncontrolled variable(variable (refer to Appendix B).

Course content. PowerPoint content included (a) defining the four stages of dementia, (b) determining the effects of different types of pain on dementia patients, (c) reviewing of types of pain assessment tools, (d) determining the effects of untreated or undertreated pain manifests symptoms in cognitively impaired adults, and (e) defining the role of the nursing assistant in

identification of pain. Following the presentation and lecture, participants used case studies and group discussions to recognize the relationships among higher patient pain scores and patient negative behaviors, the effects of limited mobility, complications from lowered resistance to infection, and the symptom of social withdrawal. Opposite effects of increased appetite, activity, brighter affect and restful sleep coincided with lower pain scores and improved patient outcomes. The participants discussed documentation examples of patient symptoms and behaviors before and after a pain management intervention as part of the group activity.

Analysis of Results

Pre and posttest scores were calculated and entered into a database using numerical codes for participants to maintain anonymity using SPSS software (refer to Appendices A, B, C, , and D). The final convenience sample size calculated as N=6 with 100 % participation in both pre and post evaluations (Table CD11). Results of the FATCOD questionnaires indicated pretest scores of 100 to 138 and posttest scores equaling 109-141(refer(refer to Appendix B). Higher posttest scores indicated participants' increased positive attitudes in caring for end-of-life populations after the pain management education. Participant perceptions on the statements of caregivers talking about death to the dying person and caregiver roles in educating families about death and dying remained unchanged for the undecided answer choice in both pre and post evaluations indicating education needed in those areas. Discussions post education presentations revealed participants' verbalizations of the tool encouraging individual self-analysis of held perceptions and fears related to caring for geriatric populations at end-of-life. Although the tool gave participants higher scores for positive results post education, it also opened up avenues for future self-reflection analysis of other emotions concerning care of the geriatric population and further educational needs.

Pretest scores for the PCQN ranged from 35% to 55% out of a possible 100% on the 20-question true/false quiz (refer to Appendix A). Two outliers were one participant with a score of 5% and another with a score of 70%. Posttest scores curved at 45% to a 75% range with no participant obtaining the proficient score of 100% or meeting the 79% goal for post intervention testing. Results clearly indicate continuing education for staff in palliative care and pain management is effective but needing further educational interventions. Post-intervention discussions resulted in verbalizations from participants that mentoring on-site with a professional pain management expert to apply the learned information and establish protocols would enhance retention and application of the material.

Results

Results from the implemented performance improvement project support the need for pain management continuing education and training development in the assistive living setting to support nursing assistants providing care to the geriatric population. Discussions echoed themes of feeling unsupported and ignored in reporting observed changes in residents' behaviors related to possible pain indicators with empowerment after the project interventions. Medication Technicians voiced continued areas of uncertainty in implementing pain treatments and documentation with recommendations for more training and mentoring on-site as follow-up support by community experts such as the hospice nurses currently caring for selected residents. These themes are supported by PCQN posttest results and the review of patient records by the facility nursing supervisor and are recognized in previous studies reviewed in the literature (Cimino, Lockman, Grant, & McPherson, 2014). Best practices in long term care are derived from the Minimum Data Set (MDS) tool from the Centers for Medicare and Medicaid Services (CMS) which determine quality measure benchmarks to be met by the facilities for

reimbursement of services, including the percent of residents who self-report moderate to severe pain (McMullen, Resnick, Chin Hanson, Miller, & Rubinstein, 2015). The project supports implementation of cost effective continuing education measures to meet the MDS established benchmarks for the quality indicators for pain management.

The Quality and Safety Education for Nurses (QSEN) define the knowledge, skills and attitudes requirements for nursing education based on evidenced based practice, including quality and safety, for which in actual practice, they often lack the proper tools or work in facilities where evidenced based practice is not current or disseminated (Sherwood & Zomorodi, 2014). Evidenced-based practice will continue to evolve just as assistive living facilities will grow, requiring a constant reevaluation of the educational needs of staff to promote safe, effective pain management strategies for the cognitively impaired residents desiring to age in place. The need for cost-efficient sustainable educational support programs will require community partnerships to draw on the expertise of professionals overseeing the industry of community healthcare. Collaboration and continuous quality improvement education with tools such as the Plan-Do-Check-Act cycle can give facilities resources to educate and mentor staff and obtain sustainable change (American Society for Quality, 2016). Although the clinical objectives were not fully met due to the short duration of the project, the knowledge given evoked the power to change and plan future projects for improved realistic outcomes. Identification of resident care areas in long-term care with translation of best practice is essential and can be implemented using cost effective educational approaches to improve patient outcomes and identify areas of educational needs using a continuous quality improvement approach.

Implications For Unchanged Practice

Compromised quality care, continued staff turnover, increased healthcare cost, inadequate pain management, and shortages in geriatric providers will continue without adequate on-going education for non-professional staff in residential assisted living facilities (Achterberg, et al., 2013; Sharpp, Kayser-Jones, & Young, 2012). Unbroken barriers including continuing education cost constraints, scheduling to allow attendance at training, and inadequate support or recognition of nursing assistants as qualified reporters of pain symptoms will continue to plague the AL industry resulting in poor patient outcomes (Cimino et al., 2014). Change is possible to ensure safe quality care for the growing aging population with on-going efforts to search for sustainable options including culture shift of the industry that supports translative evidenced-based practice in pain management (Long, 2013).

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Appendix A

Statistical Results: Palliative Care Quiz for Nurses

Table A1

PCQN participants

	PCQN pretest	PCQN posttest
N Valid	6	6
N Missing	0	0
Mean	43.33	62.50
Std. Deviation	22.509	11.292

Table A2

PCQN Pretest Frequencies

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	5	1	16.7	16.7	16.7
	35	1	16.7	16.7	33.3
	40	1	16.7	16.7	50.0
	55	2	33.3	33.3	83.3
	70	1	16.7	16.7	100.0
Total		6	100.0	100.0	

Appendix A

Statistical Results: Palliative Care Quiz for Nurses

Table A3

PCQN Posttest Frequencies

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	45	1	16.7	16.7	16.7
	55	1	16.7	16.7	33.3
	60	1	16.7	16.7	50.0
	70	2	33.3	33.3	83.3
	75	1	16.7	16.7	100.0
Total		6	100.0	100.0	

Table A4

PCQN One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
PCQN Pretest	6	43.33	22.509	9.189
PCQN Posttest	6	62.50	11.292	4.610

Table A5

PCQN One-Sample Test

	Test Value= 0				95% Confidence Interval of the Difference	
	t	df	sig.(2-tailed)	Mean Difference	Lower	Upper
PCQN Pretest	4.716	5	.005	43.333	19.71	66.96
PCQN Posttest	13.558	5	.000	62.50	50.65	74.35

Appendix B

Statistical Results: Frommelt Form B

Table B6

Frommelt Form B Participants

	Frommelt pretest	Frommelt posttest
N Valid	6	6
N Missing	0	0
Mean	121.17	124.33
Std. Deviation	17.680	9.812

Table B7

Frommelt Pretest Frequencies

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	100	1	16.7	16.7	16.7
	107	1	16.7	16.7	33.3
	120	1	16.7	16.7	50.0
	124	1	16.7	16.7	66.7
	125	1	16.7	16.7	83.3
	151	1	16.7	16.7	100.0
Total		6	100.0	100.0	

Appendix C

Statistical Results: Frommelt Form B

Table C8

Frommelt Posttest Frequencies

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	109	1	16.7	16.7	16.7
	120	1	16.7	16.7	33.3
	122	1	16.7	16.7	50.0
	128	1	16.7	16.7	66.7
	129	1	16.7	16.7	83.3
	138	1	16.7	16.7	100.0
Total		6	100.0	100.0	

Table C9

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Frommelt Pretest	6	121.17	17.680	7.218
Frommelt Posttest	6	124.33	9.812	4.006

Table C10

Frommelt One-Sample Test

	Test Value= 0						
	t	df	sig.(2-tailed)	Mean Difference	95% Confidence Interval of the Difference Lower	Upper	
Frommelt Pretest	16.88	5	.000	121.167	102.61	139.72	
Frommelt Posttest	31.040	5	.000	124.333	114.04	134.63	

Appendix D

Paired Statistical Results

Table D11

Pair Results

	N	Mean	Std. Deviation	Std. Error Mean
Pair 1 Frommelt Pretest	6	121.17	17.680	7.218
Frommelt Posttest	6	124.33	9.812	4.006
Pair 2 PCQN Pretest	6	43.33	22.509	9.189
PCQN Posttest	6	62.50	11.292	4.610

Table D12

Paired Differences

	Mean	Std. Deviation	Std. Error Mean	t	df	Sig.(2-tailed)	95% Confidence Interval of the Difference Lower	Upper
Pair 1 Frommelt Pretest Posttest	-3.167	22.999	9.389	-.337	5	.750	-27.303	20.970
Pair 2 PCQN Pretest Posttest	19.167	17.725	7.236	2.649	5	.045	-37.768	-.566

Appendix D

Paired Statistical Results

Table D13

Paired Sample Correlations

	N	Correlation	Sig
Pair 1 Frommelt Pretest Posttest	6	-.346	.501
Pair 2 PCQN Pretest Posttest	6	.630	.180

APPENDIX E:

STATEMENT OF ORIGINAL WORK

Academic Honesty Policy

Capella University's Academic Honesty Policy (3.01.01) holds learners accountable for the integrity of work they submit, which includes but is not limited to discussion postings, assignments, comprehensive exams, and the dissertation or capstone project.

Established in the Policy are the expectations for original work, rationale for the policy, definition of terms that pertain to academic honesty and original work, and disciplinary consequences of academic dishonesty. Also stated in the Policy is the expectation that learners will follow APA rules for citing another person's ideas or works.

The following standards for original work and definition of *plagiarism* are discussed in the Policy:

> Learners are expected to be the sole authors of their work and to acknowledge the authorship of others' work through proper citation and reference. Use of another person's ideas, including another learner's, without proper reference or citation constitutes plagiarism and academic dishonesty and is prohibited conduct. (p. 1)
>
> Plagiarism is one example of academic dishonesty. Plagiarism is presenting someone else's ideas or work as your own. Plagiarism also includes copying verbatim or rephrasing ideas without properly acknowledging the source by author, date, and publication medium. (p. 2)

Capella University's Research Misconduct Policy (3.03.06) holds learners accountable for research integrity. What constitutes research misconduct is discussed in the Policy:

> Research misconduct includes but is not limited to falsification, fabrication, plagiarism, misappropriation, or other practices that seriously deviate from those that are commonly accepted within the academic community for proposing, conducting, or reviewing research, or in reporting research results. (p. 1)

Learners failing to abide by these policies are subject to consequences, including but not limited to dismissal or revocation of the degree.

Statement of Original Work and Signature

I have read, understood, and abided by Capella University's Academic Honesty Policy (3.01.01) and Research Misconduct Policy (3.03.06), including the Policy Statements, Rationale, and Definitions.

I attest that this dissertation or capstone project is my own work. Where I have used the ideas or words of others, I have paraphrased, summarized, or used direct quotes following the guidelines set forth in the APA *Publication Manual*.

Learner name and date: Pamela Wisor 128/19/16

Mentor name and school: Dr. Lydia Forsythe , Capella University